SPECIFICATION and CONTRACT

DOCUMENTS FOR

Fisher Basin Expansion Project

CITY OF MORGAN HILL

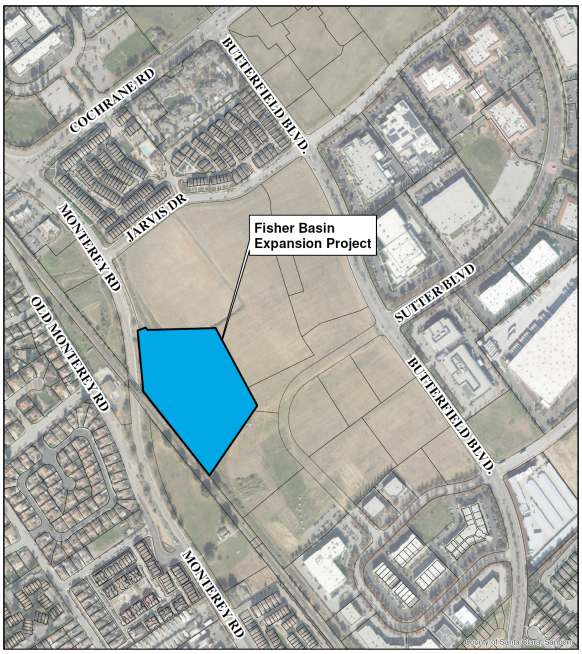
MORGAN HILL, CALIFORNIA
PUBLIC WORK

PREPARED BY

ENGINEERING

DEPARTMENT MAY 2021

LOCATION MAP



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Technical Specifications 1

NOTICE INVITING BIDS

1. **Bid Submission.** The City of Morgan Hill ("City") will accept sealed bids for its Fisher Basin Expansion Project ("Project"), by or before June 7, 2021, at 12:00 p.m., at its DEVELOPMENT SERVICES CENTER, located at 17575 PEAK AVENUE MORGAN HILL, California, at which time the bids will be publicly opened and read aloud.

You are invited to a Zoom meeting.
When: Jun 7, 2021 12:00 PM Pacific Time (US and Canada)

Register in advance for this meeting:
https://us02web.zoom.us/meeting/register/tZ0qde-urjlpG9cGsEDtReCXC0BO7w11-EYq

After registering, you will receive a confirmation email containing information about joining the meeting.

2. **Project Information.**

2.1 Location and Description. The Project is located at along Monterey Road between Jarvis Dr. and Sutter Boulevard (APN: 726-25-028) in Morgan Hill, CA 95037, and is described as follows:

Furnish all labor, materials, and equipment to complete all the work as show on the Plans & Specifications, included but not limited to:

- Excavation and grading of Project Site (Approximately 44,000 Cubic Yards of Cut).
- Construction of a 12' wide Access Road
- Construction of Concrete outfall and Rip-Rap (multiple locations on site)
- Complete all other incidental work related to the above project.

2.2 Time for Final Completion. The Project must be fully completed within 100 calendar days from the start date set forth in the Notice to Proceed. City anticipates that the Work will begin on or about July/2021, but the anticipated start date is provided solely for convenience and is neither certain nor binding.

3. **License and Registration Requirements.**

3.1 License. This Project requires a valid California contractor's license for the following classification(s): Class B License.

3.2 DIR Registration. City will not accept a Bid Proposal from or enter into the Contract with a bidder, without proof that the bidder and its

Subcontractors are registered with the California Department of Industrial Relations ("DIR") to perform public work pursuant to Labor Code Section 1725.5, subject to limited legal exceptions.

4. **Contract Documents.** The plans, specifications, bid forms and contract documents for the Project, and any addenda thereto ("Contract Documents") may be obtained from the City of Morgan Hill, at 17575 Peak Avenue, Morgan Hill, CA, (408) 778-6480. Electronic copies of the Contract Documents are available on CD for ten dollars ($10.00). If mailing by USPS, a five dollar ($5.00) charge will be added. To download plans and specifications at no charge, register at www.publicpurchase.com.

5. **Bid Proposal and Security.**

5.1 Bid Proposal Form. Each Bid must be submitted using the Bid Proposal form provided with the Contract Documents.

5.2 Bid Security. The Bid Proposal must be accompanied by bid security of ten percent of the maximum bid amount, in the form of a cashier's or certified check made payable to City of Morgan Hill, or a bid bond executed by a surety licensed to do business in the State of California on the Bid Bond form included with the Contract Documents. The bid security must guarantee that within ten (10) days after City issues the Notice of Award, the successful bidder will execute the Contract and submit payment and performance bonds and insurance certificates and endorsements as required by the Contract Documents and the Notice of Award.

6. **Prevailing Wage Requirements.**

6.1 General. Pursuant to California Labor Code Section 1720 *et seq*., this Project is subject to the prevailing wage requirements applicable to the locality in which the Work is to be performed for each craft, classification or type of worker needed to perform the Work, including employer payments for health and welfare, pension, vacation, apprenticeship and similar purposes.

6.2 Rates. These prevailing rates are available online at http://www.dir.ca.gov/DLSR. Each Contractor and Subcontractor must pay no less than the specified rates to all workers employed to work on the Project. The schedule of per diem wages is based upon a working day of eight hours. The rate for holiday and overtime work must be at least time and one-half.

6.3 Compliance. The Contract will be subject to compliance monitoring and enforcement by the California Department of Industrial Relations, pursuant to Labor Code Section 1771.4.

7. **Performance and Payment Bonds.** The successful bidder will be required to provide performance and payment bonds each for one hundred percent of the Contract Price as further described in the Contract Documents.

8. **Substitution of Securities.** Substitution of appropriate securities in lieu of retention amounts from progress payments is permitted under Public Contract Code Section 22300.

9. **Subcontractor List.** Each Subcontractor must be registered with the DIR to perform work on public projects. Each bidder must submit a completed Subcontractor List form with its Bid Proposal, including the name, location of the place of business, California contractor license number and DIR registration number and percentage of the Work to be performed (based on the base bid price) for each Subcontractor who will perform Work or service or fabricate or install Work for the prime contractor in excess of one-half (1/2) of one percent (1%) of the bid price, using the Subcontractor List form included with the Contract Documents. For street or highway construction, this requirement applies to any subcontract of $10,000 or more.

10. **Instructions to Bidders.** All bidders should carefully review the Instructions to Bidders for more detailed information before submitting a Bid Proposal. The definitions provided in Article 1 of the General Conditions apply to all of the Contract Documents, as defined therein, including this Notice Inviting Bids.

11. **Bidders' Conference.** A bidders' conference will be held on May 20, 2021 1:00 p.m., at the following location: Fisher Basin (APN: 726-25-028) for the purpose of acquainting all prospective bidders with the Contract Documents and the Worksite. The bidders' conference is not mandatory.

12. **Estimated Cost.** The estimated construction cost is $1.45 million.

By: Michelle Bigelow Date: May 7, 2021

Publication Dates: 1) May 14, 2021 2) May 21, 2021

END OF NOTICE INVITING BIDS

INSTRUCTIONS TO BIDDERS

Each Bid Proposal submitted to the City of Morgan Hill ("City") for its Fisher Basin Expansion Project ("Project") must be submitted in accordance with the following instructions and requirements:

1. Bid Submission.

1.1 General. Each Bid Proposal must be signed, sealed and submitted to City, using the form provided in the Contract Documents, by or before the date and time set forth in Section 1 of the Notice Inviting Bids, or as amended by subsequent addendum. Faxed or emailed Bid Proposals will not be accepted, unless otherwise specified. Late submissions will be returned unopened. City reserves the right to postpone the date or time for receiving or opening bids. Each bidder is solely responsible for all of its costs to prepare and submit its bid and by submitting a bid waives any right to recover those costs from City. The bid price(s) must include all costs to perform the Work as specified, including all labor, materials, supplies, and equipment and all other direct or indirect costs such as applicable federal, state and local taxes, insurance and overhead.

1.2 Bid Envelope. The envelope containing the sealed Bid Proposal and all required forms and attachments must be clearly labeled and addressed as follows:

BID PROPOSAL
Morgan Hill Development Services Center
_____
City of Morgan Hill
17575 Peak Avenue
Morgan Hill, CA 95037
Attention: Bid Opening
Bid Date:_____
Bid Time: _____

The envelope must also be clearly labeled, as follows, with the bidder's name, address, and its registration number with the California Department of Industrial Relations ("DIR") for bidding on public works contracts (Labor Code sections 1725.5 and 1771.1):

[Contractor company name]
[Street address]
[City, state, zip code]
DIR Registration No._____

1.3 DIR Registration. Subject to limited legal exceptions for joint venture bids and federally-funded projects, City will not accept a Bid Proposal from a bidder without proof that the bidder is registered with the DIR to perform public work under Labor Code Section 1725.5.

Please note: If City is unable to confirm that the bidder is currently registered with the DIR, City may disqualify the bidder and return its bid unopened (Labor Code Section 1725.5 and 1771.1(a)).

2. Bid Proposal Form and Enclosures. Each Bid Proposal must be completed in ink using the Bid Proposal form included with the Contract Documents. The Bid Proposal form must be fully completed without interlineations, alterations, or erasures. Any necessary corrections must be clear and legible, and must be initialed by the bidder's authorized representative. A Bid Proposal submitted with exceptions or terms such as "negotiable," "will negotiate," or similar, will be considered nonresponsive. Each Bid Proposal must be accompanied by bid security, as set forth in Section 4 below, and by a completed Subcontractor List and Non-Collusion Declaration using the forms included with the Contract Documents.

3. Authorization and Execution. Each Bid Proposal must be signed by the bidder's authorized representative. A Bid Proposal submitted by a partnership must be signed in the partnership name by a general partner with authority to bind the partnership. A Bid Proposal submitted by a limited liability company (LLC) must be signed in the name of the LLC by a member or manager with authority to bind the LLC. A Bid Proposal submitted by a corporation must be signed with the legal name of the corporation, followed by the signature and title of two officers of the corporation with full authority to bind the corporation to the terms of the Bid Proposal, under California Corporation Code Section 313.

4. Bid Security. Each Bid Proposal must be accompanied by bid security of ten percent of the maximum bid amount, in the form of a cashier's check or certified check, made payable to the City, or bid bond using the form included in the Contract Documents and executed by a surety licensed to do business in the State of California. The bid security must guarantee that, within ten days after issuance of the Notice of Award, the bidder will: execute and submit the enclosed Contract for the bid price; submit payment and performance bonds for 100% of the maximum Contract Price; and submit the insurance certificates and endorsements and any other submittals, if any, required by the Contract Documents or the Notice of Award.

4.1 Withdrawal of Bid Proposals. A Bid Proposal may not be withdrawn for a period of 90 days after the bid opening without forfeiture of

the bid security, except as authorized for material error under Public Contract Code Section 5100 *et seq*.

5. Requests for Information. Questions or requests for clarifications regarding the Project, the bid procedures, or any of the Contract Documents must be submitted in writing to Yat Cho, Project Engineer, at Yat.Cho@morganhill.ca.gov. Oral responses are not authorized and are not binding on the City. Bidders should submit any such written inquiries at least five Working Days before the scheduled bid opening. Questions received any later might not be addressed before the bid deadline. An interpretation or clarification by City in response to a written inquiry will be issued in an addendum.

6. Pre-Bid Investigation.

6.1 General. Each bidder is solely responsible at its sole expense for diligent and thorough review of the Contract Documents, examination of the Project site, and reasonable and prudent inquiry concerning known and potential site and area conditions prior to submitting a Bid Proposal. Each bidder is responsible for knowledge of conditions and requirements which reasonable review and investigation would have disclosed. However, except for any areas that are open to the public at large, bidders may not enter property owned or leased by the City or the Project site without prior written authorization from City.

6.2 Document Review. Each bidder is responsible for review of the Contract Documents and any informational documents provided "For Reference Only," e.g., as-builts, technical reports, test data, and the like. A bidder is responsible for notifying City of any errors or, omissions, inconsistencies, or conflicts it discovers in the Contract Documents prior to submitting a Bid Proposal, subject to the limitations of Public Contract Code Section 1104. Notification of any such errors, omissions, inconsistencies, or conflicts must be submitted in writing to the City no later than five Working Days before the scheduled bid opening. (See Section 5, above.) City expressly disclaims responsibility for assumptions a bidder might draw from the presence or absence of information provided by City.

6.3 Project Site. Questions regarding the availability of soil test data, water table elevations, and the like should be submitted to the City in writing, as specified in Section 5, above. Any subsurface exploration at the Project site must be done at the bidder's expense, but only with prior written authorization from City. All soil data and analyses available for inspection or provided in the Contract Documents apply only to the test hole locations. Any water table elevation indicated by a soil test report existed on the date the test hole was drilled. The bidder is responsible for

determining and allowing for any differing soil or water table conditions during construction. Because groundwater levels may fluctuate, difference(s) in elevation between ground water shown in soil boring logs and ground water actually encountered during Project construction will not be considered changed Project site conditions. Actual locations and depths must be determined by bidder's field investigation. The bidder may request access to underlying or background information on the Project site in City's possession that is necessary for the bidder to form its own conclusions, including, if available, record drawings or other documents indicating the location of subsurface lines, utilities, or other structures.

6.4 Utility Company Standards. The Project must be completed in a manner that satisfies the standards and requirements of any affected utility companies or agencies (collectively, "utility owners"). The successful bidder may be required by the third-party utility owners to provide detailed plans prepared by a California registered civil engineer showing the necessary temporary support of the utilities during coordinated construction work. Bidders are directed to contact the affected third-party utility owners about their requirements before submitting a Bid Proposal.

7. Bidders Interested in More Than One Bid. No person, firm, or corporation may submit or be a party to more than one Bid Proposal unless alternate bids are specifically called for. However, a person, firm, or corporation that has submitted a subcontract proposal or quote to a bidder may submit subcontract proposals or quotes to other bidders.

8. Addenda. Any addenda issued prior to the bid opening are part of the Contract Documents. Subject to the limitations of Public Contract Code section 4104.5, City reserves the right to issue addenda prior to bid time. Each bidder is solely responsible for ensuring it has received and reviewed all addenda prior to submitting its bid. Bidders should check City's website periodically for any addenda or updates on the Project at: http://www.publicpurchase.com.

9. Brand Designations and "Or Equal" Substitutions. Any specification designating a material, product, thing, or service by specific brand or trade name, followed by the words "or equal," is intended only to indicate quality and type of item desired, and bidders may request use of any equal material, product, thing, or service. All data substantiating the proposed substitute as an "equal" item must be submitted with the written request for substitution. This provision does not apply to materials, products, things, or services that may lawfully be designated by a specific brand or trade name under Public Contract Code Section 3400(c).

9.1 Pre-Bid Requests. Any request for submission made before the Contract is awarded must be submitted to the City Engineer at least ten

(10) days before the opening of bids so that all interested bidders may be notified of any approved alternative.

9.2 Post-Award Requests. After the Contract is awarded, Contractor may submit a substitution within fourteen (14) days after the date of award of the Contract, or as specified in the Special Conditions.

10. Bid Protest. Any bid protest against another bidder must be submitted in writing and received by City at the City Attorney's Office at 17575 Peak Avenue, Morgan Hill, CA, (Fax: (408) 779-1592), before 5:00 p.m. no later than two Working Days following bid opening ("Bid Protest Deadline") and must comply with the following requirements:

10.1 General. Only a bidder who has actually submitted a Bid Proposal is eligible to submit a bid protest against another bidder. Subcontractors are not eligible to submit bid protests. A bidder may not rely on the bid protest submitted by another bidder, but must timely pursue its own protest. If required by City, the protesting bidder must submit a non-refundable fee in the amount specified by City, based upon City's reasonable costs to administer the bid protest. Any such fee must be submitted to City no later than the Bid Protest Deadline, unless otherwise specified. For purposes of this Section 10, a "Working Day" means a day that City is open for normal business, and excludes weekends and holidays observed by City. Pursuant to Public Contract Code Section 4104, inadvertent omission of a Subcontractor's DIR registration number on the Subcontractor List form is not grounds for a bid protest, provided it is corrected within 24 hours of the bid opening or as otherwise provided under Labor Code Section 1771.1(b).

10.2 Protest Contents. The bid protest must contain a complete statement of the basis for the protest and must include all supporting documentation. Material submitted after the Bid Protest Deadline will not be considered. The protest must refer to the specific portion or portions of the Contract Documents upon which the protest is based. The protest must include the name, address, email address, and telephone number of the protesting bidder and any person submitting the protest on behalf of or as an authorized representative of the protesting bidder.

10.3 Copy to Protested Bidder. Upon submission of its bid protest to City, the protesting bidder must also concurrently transmit the protest and all supporting documents to the protested bidder, and to any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest, by email or hand delivery to ensure delivery before the Bid Protest Deadline.

10.4 Response to Protest. The protested bidder may submit a written response to the protest, provided the response is received by City before 5:00 p.m., within two Working Days after the Bid Protest Deadline or after actual receipt of the bid protest, whichever is sooner (the "Response Deadline"). The response must include all supporting documentation. Material submitted after the Response Deadline will not be considered. The response must include the name, address, email address, and telephone number of the person responding on behalf of or representing the protested bidder if different from the protested bidder.

10.5 Copy to Protesting Bidder. Upon submission of its response to the bid protest to City, the protested bidder must also concurrently transmit by email or hand delivery, by or before the Response Deadline, a copy of its response and all supporting documents to the protesting bidder and to any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest.

10.6 Exclusive Remedy. The procedure and time limits set forth in this Section are mandatory and are the bidder's sole and exclusive remedy in the event of a bid protest. A bidder's failure to comply with these procedures will constitute a waiver of any right to further pursue a bid protest, including filing a Government Code Claim or initiation of legal proceedings.

10.7 Right to Award. City reserves the right, acting in its sole discretion, to reject any bid protest that it determines lacks merit, to award the Contract to the bidder it has determined to be the responsible bidder submitting the lowest responsive bid, and to issue a Notice to Proceed with the Work notwithstanding any pending or continuing challenge to its determination.

11. Reservation of Rights. City reserves the unfettered right, acting in its sole discretion, to waive or to decline to waive any immaterial bid irregularities; to accept or reject any or all bids; to cancel or reschedule the bid; to postpone or abandon the Project entirely; or to perform all or part of the Work with its own forces. The Contract will be awarded, if at all, within ninety days after opening of bids or as otherwise specified in the Special Conditions, to the responsible bidder that submitted the lowest responsive bid. Any planned start date for the Project represents the City's expectations at the time the Notice Inviting Bids was first issued. City is not bound to issue a Notice to Proceed by or before such planned start date, and it reserves the right to issue the Notice to Proceed when the City determines, in its sole discretion, the appropriate time for commencing the Work. The City expressly disclaims responsibility for any assumptions a bidder might draw from the presence or absence of information provided

by the City in any form. Each bidder is solely responsible for its costs to prepare and submit a bid, including site investigation costs.

12. Bonds. Within ten calendar days following City's issuance of the Notice of Award to the apparent low bidder, the bidder must submit payment and performance bonds to City as specified in the Contract Documents using the bond forms included in the Contract Documents. All required bonds must be calculated on the maximum total Contract Price as awarded, including additive alternates, if applicable.

13. License(s). The successful bidder and its Subcontractor(s) must possess the California contractor's license(s) in the classification(s) required by law to perform the Work. The successful bidder must also obtain a City business license within ten days following City's issuance of the Notice of Award. Subcontractors must also obtain a City business license before performing any Work.

14. Ineligible Subcontractor. Any Subcontractor who is ineligible to perform work on a public works project under Labor Code Sections 1777.1 or 1777.7 is prohibited from performing work on this Project.

15. Evidence of Responsibility. Within twenty four (24) hours following a request by City, a bidder must submit to City satisfactory evidence showing the bidder's financial resources, the bidder's experience in the type of work being required by City, the bidder's organization available for the performance of the Contract and any other required evidence of the bidder's qualifications to perform the proposed Contract. City may consider such evidence before making its decision awarding the proposed Contract.

END OF INSTRUCTIONS TO BIDDERS

16. Subcontractor Work Limits. The prime contractor must perform at least 50% of the Work on the Project, calculated as a percentage of the base bid price, with its own forces, except for any Work identified as "Specialty Work" in the Contract Documents. The total bid amount for any such Specialty Work, as shown on the Bid Schedule, may be deducted from the base bid price before computing the <__>% self-performance requirement. The remaining Work may be performed by qualified Subcontractor(s).

18. **Bidder's Questionnaire.** A completed, signed Bidder's Questionnaire using the form provided with the Contract Documents and including all required attachments must be submitted within 48 hours following a request by City. A bid that does not fully comply with this requirement may be rejected as nonresponsive. A bidder who submits a Bidder's Questionnaire which is subsequently determined to contain false or misleading information, or material omissions, may be disqualified as non-responsible.

19. Bid Schedule. Each bidder must complete the Bid Schedule form with unit prices as indicated, and submit the completed Bid Schedule with its Bid Proposal.

19.1 Incorrect Totals. In the event a computational error for any bid item (base bid or alternate) results in an incorrect extended total for that item, the submitted base bid or bid alternate total will be adjusted to reflect the corrected amount as the product of the estimated quantity and the unit cost. In the event of a discrepancy between the actual total of the itemized or unit prices shown on the Bid Schedule for the base bid, and the amount entered as the base bid on the Bid Proposal form, the actual total of the itemized or unit prices shown on the Bid Schedule for the base bid will be deemed the base bid price. Likewise, in the event of a discrepancy between the actual total of the itemized or unit prices shown on the Bid Schedule for any bid alternate, and the amount entered for the alternate on the Bid Proposal form, the actual total of the itemized prices shown on the Bid Schedule for that alternate will be deemed the alternate price. Nothing in this provision is intended to prevent a bidder from requesting to withdraw its bid for material error under Public Contract Code § 5100 et seq.

19.2 Estimated Quantities. The quantities shown on the Bid Schedule are estimated and the actual quantities required to perform the Work may be greater or less than the estimated amount. The Contract Price will be adjusted to reflect the actual quantities required for the Work based on the itemized or unit prices provided in the Bid Schedule, with no allowance for anticipated profit for

quantities that are deleted or decreased, and no increase in the unit price, and without regard to the percentage increase or decrease of the estimated quantity and the actual quantity.

20. Safety Orders. If the Project includes construction of a pipeline, sewer, sewage disposal system, boring and jacking pits, or similar trenches or open excavations, which are five feet or deeper, each bid must include a bid item for adequate sheeting, shoring, and bracing, or equivalent method, for the protection of life or limb, which comply with safety orders as required by Labor Code Section 6707.

BID PROPOSAL

FISHER BASIN EXPANSION PROJECT

_____ ("Bidder") hereby submits this Bid Proposal to the City of Morgan Hill ("City") for the above-referenced project ("Project") in response to the Notice Inviting Bids and in accordance with the Contract Documents referenced therein.

1. **Base Bid.** Bidder proposes to perform and fully complete the Work for the Project as specified in the Contract Documents, within the time required for full completion of the Work, including all labor, materials, supplies, and equipment and all other direct or indirect costs including, but not limited to, taxes, insurance and all overhead for the following price ("Base Bid"):
   $ _____.

2. **Addenda.** Bidder agrees that it has confirmed receipt of or access to, and reviewed, all addenda issued for this Bid. Bidder waives any claims it might have against the City based on its failure to receive, access, or review any addenda for any reason. Bidder specifically acknowledges receipt of the following addenda:

Addendum:	Date Received:	Addendum:	Date Received:
#01	_____	#05	_____
#02	_____	#06	_____
#03	_____	#07	_____
#04	_____	#08	_____

3. **Bidder's Certifications and Warranties.** By signing and submitting this Bid Proposal, Bidder certifies and warrants the following:

   3.1 Examination of Contract Documents. Bidder has thoroughly examined the Contract Documents, and represents that, to the best of Bidder's knowledge there are no errors, omissions, or discrepancies in the Contract Documents subject to the limitations of Public Contract Code Section 1104.

   3.2 Examination of Worksite. Bidder has had the opportunity to examine the Worksite and local conditions at the Project location.

   3.3 Bidder Responsibility. Bidder is a responsible bidder, with the necessary ability, capacity, experience, skill, qualifications, workforce, equipment, and resources to perform or cause the Work to be performed in accordance with the Contract Documents and within the Contract Time.

3.4 Responsibility for Bid. Bidder has carefully reviewed this Bid Proposal and is solely responsible for any errors or omissions contained in its completed Bid. All statements and information provided in this Bid Proposal and enclosures are true and correct to the best of Bidder's knowledge.

3.5 Nondiscrimination. In preparing this Bid, the Bidder has not engaged in discrimination against any prospective or present employee or Subcontractor on grounds of race, color, ancestry, national origin, ethnicity, religion, sex, sexual orientation, age, disability, or marital status.

4. Award of Contract. By signing and submitting this Bid Proposal, Bidder agrees that if Bidder is awarded the Contract for the Project, that within ten days following issuance of the Notice of Award to Bidder, Bidder will do all of the following:

4.1 Execute Contract. Enter into the Contract with City in accordance with the terms of this Bid Proposal, by signing and submitting to City the Contract prepared by City using the form included with the Contract Documents;

4.2 Submit Required Bonds. Submit to City a payment bond and a performance bond, each for one hundred percent (100%) of the Contract Price, using the bond forms provided and in accordance with the requirements of the Contract Documents; and

4.3 Insurance Requirements. Submit to City the insurance certificate(s) and endorsement(s) as required by the Contract Documents.

5. Wage Theft Prevention. All Bidders are expected to have read and understand the "Wage Theft Prevention Policy" adopted by the City Council on July 26, 2017.

The undersigned Bidder certifies that neither Bidder nor its principals have been found by a final court judgement or final administrative action of an investigatory agency to have violated federal, state or local wage and hour laws within the past five years from the date of the submitted bid. Bidder or its principals who are unable to so certify, must disclose wage and hour violations, and shall provide a copy of (i) the court order and judgment and/or final administrative decision; and (ii) documents demonstrating either that the order/judgment has been satisfied, or if the order/judgment has not been fully satisfied, a written and signed description of Bidder's efforts to date to satisfy the order/judgment. Signing this bid shall constitute signature of this Certification.

The City, at its sole discretion, may disqualify a bidder based on one or more disclosed judgments consistent with the criteria set forth in the Policy.

6. Bid Security. As a guarantee that if awarded the Contract, Bidder will perform its obligations under Section 4 above Bidder is enclosing bid security in the amount of ten percent (10%) of its maximum bid amount in one of the following forms (check one):

____ A cashier's check or certified check payable to City of Morgan Hill and issued by _____ Bank in the amount of $_____.

____ A bid bond, using the Bid Bond form included with the Contract Documents, payable to City of Morgan Hill and executed by a surety licensed to do business in the State of California.

7. Iran Contracting Act. Bidder certifies that it is not identified on a list created under the Iran Contracting Act, Public Contract Code Section 2200 *et seq*. (the "Act"), as a person engaging in investment activities in Iran, as defined in the Act, or is otherwise expressly exempt under the Act.

This Bid Proposal is hereby submitted on _____, 20__:

s/ _____ _____
Name and Title [print]

_____ _____
Company Name License # and Classification

_____
DIR Registration #

_____ _____
Address Phone

_____ _____
City, State, Zip Fax

END OF BID PROPOSAL

BID SCHEDULE I – GENERAL

FISHER BASIN EXPANSION PROJECT

This Bid Schedule must be completed in ink and included with the sealed Bid Proposal. Pricing must be provided for each Bid Item as indicated. Items marked "(SW)" are Specialty Work that must be performed by a qualified Subcontractor. The lump sum or unit cost for each item must be inclusive of all costs, whether direct or indirect, including profit and overhead. The sum of all amounts entered in the "Extended Total Amount" column must be identical to the Base Bid price entered in Section 1 of the Bid Proposal Form. Quantities shown are required for bid purposes and may or may not be final pay quantities. Actual quantities, if different, must be substantiated during the Project by the Contractor (either by field measurement, trucking tags, or other means acceptable to the Engineer).

AL = Allowance CF = Cubic Feet CY = Cubic Yard EA = Each LB = Pounds
LF = Linear Foot LS = Lump Sum SF = Square Feet TON = Ton (2000 lbs)

Bid Item No.	Description of Bid Item	Estimated Quantity/Unit of Measure	Unit Price	Extended Total Amount
1	Mobilization	LS		
2	Maintaining Traffic	LS		
3	Clearing and Grubbing	LS		
4	Earthwork – Cut and Dispose	44,727 CY		
5	Earthwork – Fill	756 CY		
6	Rock Rip-Rap, Complete in Place	222 CY		
7	Maintaining Drainage	LS		
8	Erosion Control	LS		
9	Storm Water Pollution Prevention Plan	LS		
10	Supplemental Work	LS	$20,000	$20,000

Bid Schedule I Total	

TOTAL BASE BID: Items 1 through _____ inclusive: $_____

Note: The amount entered as the "Total Base Bid" should be identical to the Base Bid amount entered in Section 1 of the Bid Proposal form.

END OF BID SCHEDULE

SUBCONTRACTOR LIST

For each Subcontractor who will perform a portion of the Work in an amount in excess of one-half of 1% of the Bidder's total Contract Price,[1] the bidder must list a description of the Work, the name of the Subcontractor, its California contractor license number, the location of its place of business, its DIR registration number, and the portion of the Work that the Subcontractor is performing based on a percentage of the Base Bid price.
Bidders: Please print legibly. Illegible forms may be rejected.

DESCRIPTION OF WORK	SUBCONTRACTOR NAME	CALIFORNIA CONTRACTOR LICENSE NUMBER	DIR REG. NO.	LOCATION OF BUSINESS	LOCAL VENDOR[2] YES/NO	PERCENT OF WORK

END OF SUBCONTRACTOR LIST

[1] For street or highway construction this requirement applies to any subcontract of $10,000 or more.
[2] A Subcontractor is considered local if its principle place of business is within the city limits of Morgan Hill.

NONCOLLUSION DECLARATION

(To be executed by bidder and submitted with bid)

State of California County of _____	)))	ss.

The undersigned declares:

I am the _____ [title] of _____ [business name], the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid and will not pay, any person or entity for such purpose.

This declaration is intended to comply with California Public Contract Code Section 7106 and Title 23 U.S.C Section 112.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [date], at _____ [city], _____ [state].

s/_____

_____
Name [print]

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT CIVIL CODE ' 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of **CALIFORNIA**)

County of SANTA CLARA)

On _____, before me,

_____

a Notary Public in and for said County and State, personally appeared

_____

_____

proved to me on the basis of satisfactory evidence to be the person/s whose name/s is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity/ies, and that by his/her/their signature/s on the instrument the person/s, or the entity upon behalf of which the person/s acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____

SIGNATURE OF NOTARY PUBLIC

Place Notary Seal Above

BID BOND

_____ ("Bidder") has submitted a bid, dated _____, 20_____ ("Bid"), to the City of Morgan Hill ("City") for work on the _____ ("Project"). Under this duly executed bid bond ("Bid Bond"), Bidder as Principal and _____, its surety ("Surety"), are bound to City as obligee in the penal sum of ten percent (10%) of the maximum amount of the Bid (the "Bond Sum"). Bidder and Surety bind themselves and their respective heirs, executors, administrators, successors and assigns, jointly and severally, as follows:

1. **General.** If Bidder is awarded the Contract for the Project, Bidder will enter into the Contract with City in accordance with the terms of the Bid.

2. **Submittals.** Within ten days following issuance of the Notice of Award to Bidder, Bidder must submit to City the following:

   2.1 Contract. The executed Contract, using the form provided by City in the Project contract documents ("Contract Documents");

   2.2 Payment Bond. A payment bond for one hundred percent (100%) of the maximum Contract Price, executed by a surety licensed to do business in the State of California using the Payment Bond form included with the Contract Documents;

   2.3 Performance Bond. A performance bond for one hundred percent (100%) of the maximum Contract Price, executed by a surety licensed to do business in the State of California using the Performance Bond form included with the Contract Documents; and

   2.4 Insurance. The insurance certificate(s) and endorsement(s) required by the Contract Documents, and any other documents required by the Instructions to Bidders.

3. **Enforcement.** If Bidder fails to execute the Contract and to submit the bonds and insurance certificates as required by the Contract Documents, Surety guarantees that Bidder forfeits the Bond Sum to City. Any notice to Surety may be given in the manner specified in the Contract and delivered or transmitted to Surety as follows:

   Attn: _____
   Address: _____
   City/State/Zip: _____
   Phone: _____

Fax: _____
Email: _____

4. **Duration; Waiver.** If Bidder fulfills its obligations under Section 2, above, then this obligation will be null and void; otherwise it will remain in full force and effect for ninety days following the bid opening or until this Bid Bond is returned to Bidder, whichever occurs first. Surety waives the provisions of Civil Code Sections 2819 and 2845.

This Bid Bond is entered into and is effective on _____, 20_____.

SURETY:

_____

s/ _____

Name: _____

Title: _____

(Attach Acknowledgement, Notary Seal, and Attorney-In-Fact Certificate)

CONTRACTOR:

_____

s/ _____

Name: _____

Title: _____

APPROVED AS TO FORM:

By:_____
Donald A. Larkin, City Attorney

Date:_____

BIDDER'S QUESTIONNAIRE

FISHER BASIN EXPANSION PROJECT

Within forty-eight (48) hours following a request by City, a bidder must submit to City a completed, signed Bidder's Questionnaire using this form and all required attachments, including clearly labeled additional sheets as needed. City may request the Questionnaire from one or more of the apparent low bidders following the bid opening, and may use the completed Questionnaire as part of its investigation to evaluate a bidder's qualifications for this Project. The Questionnaire must be filled out completely, accurately, and legibly. Any errors, omissions, or misrepresentations in completion of the Questionnaire may be grounds for rejection of the bid or termination of a Contract awarded pursuant to the bid.

Part 1: General Information

Bidder Business Name: _____ ("Bidder")

Check One: ___ Corporation State of Incorporation _____
___ Partnership
___ Sole Proprietorship
___ Joint Venture of:_____
___ Other:_____

Main Office Address:
_____

_____

Phone: _____

Fax: _____

Local Office Address and Phone: _____

_____

Website address: _____

Owner of Business: _____

Contact Name and Title: _____

Contact phone and email:
_____

Bidder's California Contractor's License Number(s):
_____

Bidder's DIR Registration Number: _____

Part 2: Bidder Experience

1. How many years has Bidder been in business under its present business name? _____ years

2. Has Bidder completed projects similar in type and size to this Project as a general contractor? ___ Yes _____ No

3. Has Bidder ever been disqualified from a bid on grounds that it is not responsible, or otherwise disqualified or disbarred from bidding under state or federal law? ?

_____ Yes _____ No

If yes, provide additional information on a separate sheet regarding the disqualification or disbarment, including the name and address of the agency or owner of the project, the type and size of the project, the reasons that Bidder was disqualified or disbarred, and the month and year in which the disqualification or disbarment occurred.

4. Has Bidder ever been terminated for cause, alleged default, or legal violation from a construction project, either as a general contractor or as a subcontractor?

_____ Yes _____ No

If yes, provide additional information on a separate sheet regarding the termination, including the name and address of the agency or owner of the subject project, the type and size of the project, whether Bidder was under contract as a general contractor or a subcontractor, the reasons that Bidder was terminated, and the month and year in which the termination occurred.

5. Provide information about Bidder's past projects performed as general contractor as follows:

5.1 Six most recently completed public works projects within the last three years;

5.2 Three largest completed projects within the last three years; and

5.3 Any project which is similar to this Project including scope and character of the work.

6. Use separate sheets to provide all of the following information for each project identified in response to the above three categories:

6.1 Project name
6.2 Location
6.3 Owner
6.4 Owner contact (name, address, email, and phone number)
6.5 Prime contractor, if applicable (name, address, email, and phone number);
6.6 Architect or engineer name
6.7 Architect or engineer contact (name, email and phone number)
6.8 Project and/or construction manager (name and current phone number)
6.9 Description of project, scope of work performed
6.10 Initial contract value (at time of bid award)
6.11 Final cost of construction (including change orders)
6.12 Original scheduled completion date
6.13 Time extensions granted (number of days)
6.14 Actual date of completion
6.15 Number and amount of stop notices or mechanic's liens filed
6.16 Amount of liquidated damages assessed against Bidder
6.17 Nature and resolution of any project-related claim, lawsuit, mediation and/or arbitration involving Bidder.

Part 3: Safety

1. Provide Bidder's Experience Modification Rate (EMR) for the last three years:

Year	EMR

2. Complete the following, based on information provided in Bidder's CalOSHA Form 300 or Form 300A, Annual Summary of Work-Related Illnesses and Injuries, from the most recent past calendar year:

2.1 Number of lost workday cases: ____
2.2 Number of medical treatment cases: ____
2.3 Number of deaths: ____

3. Has Bidder ever been cited, fined, or prosecuted by any local, state, or federal agency, including OSHA, CalOSHA, or EPA, for violation of any law, regulation, or requirements pertaining to health and safety?

_____ Yes _____ No

If yes, provide additional information on a separate sheet regarding each such citation, fine, or prosecution, including the name and address of the agency or owner of the project, the type and size of the project, the reasons for and nature of the citation, fine, or prosecution, and the month and year in which the incident giving rise to the citation, fine, or prosecution occurred.

4. Name, title, and email for person responsible for Bidder's safety program:

_____	_____	_____
Name	Title	Email
_____	_____	_____
Name	Title	Email

Part 4: Verification

In signing this document, I, the undersigned, declare that I am duly authorized to sign and submit this Bidder's Questionnaire on behalf of the named Bidder, and that all responses and information set forth in this Bidder's Questionnaire and accompanying attachments are, to the best of my knowledge, true, accurate and complete as of the date of submission. **I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.**

Signature: _____ Date: _____

By [name, title]: _____

END OF BIDDER'S QUESTIONNAIRE

CONTRACT

This public works contract ("Contract") is entered into by and between the City of Morgan Hill ("City") and _____ ("Contractor") for work on the _____ Project ("Project").

The parties agree as follows:

1. **Award of Contract**. In response to the Notice Inviting Bids, Contractor has submitted a Bid Proposal to perform the Work to construct on the Project. On _____, 20___, City authorized award of this Contract to Contractor for the amount set forth in Section 4, below.

2. **Contract Documents**. The Contract Documents incorporated into this Contract include and are comprised of all of the documents listed below. The definitions provided in Article 1 of the General Conditions apply to all of the Contract Documents, including this Contract.

   2.1 Notice Inviting Bids;
   2.2 Instructions to Bidders;
   2.3 Addenda, if any;
   2.4 Bid Proposal and attachments thereto;
   2.5 Contract;
   2.6 Payment and Performance Bonds;
   2.7 General Conditions;
   2.8 Special Conditions;
   2.9 Project Plans and Specifications;
   2.10 Change Orders, if any;
   2.11 Notice of Award;
   2.12 Notice to Proceed; and
   2.13 The following: Appendix

3. **Contractor's Obligations.** Contractor will perform all of the Work required for the Project, as specified in the Contract Documents. Contractor must provide, furnish, and supply all things necessary and incidental for the timely performance and completion of the Work, including all necessary labor, materials, supplies, tools, equipment, transportation, onsite facilities, and utilities, unless otherwise specified in the Contract Documents. Contractor must use its best efforts to diligently prosecute and complete the Work in a professional and expeditious manner and to meet or exceed the performance standards required by the Contract Documents.

4. **Payment.** As full and complete compensation for Contractor's timely performance and completion of the Work in strict accordance with the terms and conditions of the Contract Documents, City will pay Contractor _____ Dollars ($_____) (the "Contract Price"), for all of Contractor's direct and indirect costs to perform the Work, including all labor, materials, supplies, equipment, taxes, insurance, bonds and all overhead costs, in accordance with the payment provisions in the General Conditions.

5. **Time for Completion.** Contractor will fully complete the Work for the Project, meeting all requirements for Final Completion, within 100 calendar days from the commencement date given in the Notice to Proceed ("Contract Time"). By signing below, Contractor expressly waives any claim for delayed early completion.

6. **Liquidated Damages.** If Contractor fails to complete the Work within the Contract Time, City will assess liquidated damages in the amount of One-Thousand-Five-Hundred-Dollars ($1500.00) per day for each day of unexcused delay in achieving Final Completion, and such liquidated damages may be deducted from City's payments due or to become due to Contractor under this Contract Price will be reduced accordingly.

7. **Labor Code Compliance.**

   7.1 General. This Contract is subject to all applicable requirements of Chapter 1 of Part 7 of Division 2 of the Labor Code, including requirements pertaining to wages, working hours and workers' compensation insurance, as further specified in Article 9 of the General Conditions.

   7.2 Prevailing Wages. This Project is subject to the prevailing wage requirements applicable to the locality in which the Work is to be performed for each craft, classification or type of worker needed to perform the Work, including employer payments for health and welfare, pension, vacation, apprenticeship and similar purposes. Copies of these prevailing rates are available online at http://www.dir.ca.gov/DLSR.

   7.3 DIR Registration. City will not enter into the Contract with a bidder without proof that the bidder and its Subcontractors are registered with the California Department of Industrial Relations to perform public work pursuant to Labor Code Section 1725.5, subject to limited legal exceptions.

8. **Workers' Compensation Certification.** Pursuant to Labor Code Section 1861, by signing this Contract, Contractor certifies as follows: "I am aware of the provisions of Labor Code Section 3700 which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work on this Contract."

9. **Conflicts of Interest**. Contractor, its employees, Subcontractors and agents, may not have, maintain or acquire a conflict of interest in relation to this Contract in violation of any City ordinance or requirement, or in violation of any California law, including Government Code Section 1090 *et seq*., or the Political Reform Act, as set forth in Government Code Section 81000 *et seq*. and its accompanying regulations. Any violation of this Section constitutes a material breach of the Contract.

10. **Independent Contractor.** Contractor is an independent contractor under this Contract and will have control of the Work and the means and methods by which it is performed. Contractor and its Subcontractors are not employees of City and are not entitled to participate in any health, retirement, or any other employee benefits from City.

11. **Notice.** Any notice required by the Contract Documents must be made in writing, signed, dated, and sent to the other party by personal delivery, U.S. Mail, a reliable overnight delivery service, or by email as a PDF (or comparable) file. Notice is deemed effective upon delivery unless otherwise specified. Notice for each party must be given as follows:

City:

City of Morgan Hill
17575 Peak Avenue
Morgan Hill, CA 95037
Phone: (409) 779-7259
Attn: City Clerk
Email: michelle.bigelow@morganhill.ca.gov
Copy to: _____

Contractor:

Name:_____
Address:_____
City/State/Zip:_____
Phone:_____
Attn:_____
Email:_____
Copy to:_____

12. **General Provisions.**

12.1 Assignment and Successors. Contractor may not assign its rights or obligations under this Contract, in part or in whole, without City's written

consent. This Contract is binding on Contractor's and City's lawful heirs, successors and permitted assigns.

12.2 Third Party Beneficiaries. There are no intended third-party beneficiaries to this Contract.

12.3 Governing Law and Venue. This Contract will be governed by California law and venue will be in the Superior Court of Santa Clara County, and no other place. Contractor waives any right it may have pursuant to Code of Civil Procedure Section 394, to file a motion to transfer any action arising from or relating to this Contract to a venue outside of Santa Clara County, California.

12.4 Amendment. No amendment or modification of this Contract will be binding unless it is in a writing duly authorized and signed by the parties to this Contract.

12.5 Integration. This Contract and the Contract Documents incorporated herein, including authorized amendments or Change Orders thereto, constitute the final, complete, and exclusive terms of the agreement between City and Contractor.

12.6 Severability. If any provision of the Contract Documents, is determined to be illegal, invalid, or unenforceable, in whole or in part, the remaining provisions of the Contract Documents will remain in full force and effect.

12.7 Iran Contracting Act. If the Contract Price exceeds $1,000,000, Contractor certifies, by signing below, that it is not identified on a list created under the Iran Contracting Act, Public Contract Code Section 2200 *et seq*. (the "Act"), as a person engaging in investment activities in Iran, as defined in the Act, or is otherwise expressly exempt under the Act.

12.8 Authorization. Each individual signing below warrants that he or she is authorized to do so by the party that he or she represents, and that this Contract is legally binding on that party. If Contractor is a corporation, signatures from two officers of the corporation are required pursuant to California Corporation Code Section 313. If Contractor is a partnership, signature by a general partner with authority to bind the partnership is required. If Contractor is a limited liability company (LLC), a signature by a member or manager with authority to bind the LLC is required.

[Signatures are on the following page.]

AS SET FORTH IN CA. CORP. CODE § 313, TWO SIGNATURES ARE REQUIRED FOR CALIFORNIA CORPORATIONS:
(1) CHAIRPERSON OF THE BOARD, PRESIDENT, OR VICE PRESIDENT; AND
2) SECRETARY, ASSISTANT SECRETARY, CHIEF FINANCIAL OFFICER OR ASSISTANT TREASURER.

The parties agree to this Contract as witnessed by the signatures below:

CITY OF MORGAN HILL:

_____
Christina J. Turner
City Manager

Date: _____

Attest:

_____
Michelle Bigelow
City Clerk

Date: _____

Approved as to Form:

_____
Donald A. Larkin
City Attorney

Date: _____

CONTRACTOR:
[NAME OF CONTRACTOR]

_____
Signature

_____
Name/Title [print]

Date: _____

Corporate entities must provide a second signature:

_____
Signature

_____
Name/Title [print]

Date: _____

_____
Contractor's License Number(s)

_____
Expiration Date(s)

Seal:

_____
Contractor's DIR Registration Number(s)

_____
Expiration Date

END OF CONTRACT

PAYMENT BOND

The City of Morgan Hill ("City") and _____ ("Contractor") have entered into a contract for work on the _____ Project ("Project"). The Contract is incorporated by reference into this Payment Bond ("Bond").

1. **General.** Under this Bond, Contractor as principal and _____ _____, its surety ("Surety"), are bound to City as obligee in an amount not less than _____ Dollars ($_____) ("Bond Sum"), under California Civil Code Sections 9550, *et seq*., to ensure payment to authorized claimants. This Bond is binding on the respective successors, assigns, owners, heirs, or executors of Surety and Contractor

2. **Surety's Obligation.** If Contractor or any of its Subcontractors fails to pay a person authorized in California Civil Code Section 9100 to assert a claim against a payment bond, any amounts due under the Unemployment Insurance Code with respect to work or labor performed under the Contract, or any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of Contractor and its Subcontractors, under California Unemployment Insurance Code Section 13020, with respect to the work and labor, then Surety will pay the obligation.

3. **Beneficiaries.** This Bond inures to the benefit of any of the persons named in California Civil Code Section 9100, so as to give a right of action to those persons or their assigns in any suit brought upon this Bond. Contractor must promptly provide a copy of this Bond upon request by any person with legal rights under this Bond.

4. **Duration.** If Contractor promptly makes payment of all sums for all labor, materials, and equipment furnished for use in the performance of the Work required by the Contract, in conformance with the time requirements set forth in the Contract and as required by California law, Surety's obligations under this Bond will be null and void. Otherwise, Surety's obligations will remain in full force and effect.

5. **Waivers.** Surety waives any requirement to be notified of alterations to the Contract or extensions of time for performance of the Work under the Contract. Surety waives the provisions of Civil Code Sections 2819 and 2845. City waives the requirement of a new bond for any supplemental contract under Civil Code Section 9550. Any notice to Surety may be given

in the manner specified in the Contract and delivered or transmitted to Surety as follows:

Attn: _____
Address: _____
City/State/Zip: _____
Phone: _____
Email: _____

6. **Law and Venue.** This Bond will be governed by California law, and venue for any dispute pursuant to this Bond will be in the Superior Court of Santa Clara County, and no other place. Surety will be responsible for City's attorneys' fees and costs in any action to enforce the provisions of this Bond.

7. **Effective Date; Execution.** This Bond is entered into and is effective on _____, 20__.

SURETY:	CONTRACTOR:
s/ _____	s/ _____
Name: _____	Name: _____
Title: _____	Title: _____
(Attach Acknowledgment with Notary Seal and Power of Attorney)	

APPROVED AS TO FORM:

By:_____
Donald A. Larkin, City Attorney

Date:_____

END OF PAYMENT BOND

PERFORMANCE BOND

The City of Morgan Hill ("City") and _____ ("Contractor") have entered into a contract for work on the _____ ("Project"). The Contract is incorporated by reference into this Performance Bond ("Bond").

1. **General.** Under this Bond, Contractor as Principal and _____ _____, its surety ("Surety"), are bound to City as obligee for an amount not less than _____ Dollars ($_____) (the "Bond Sum"). By executing this Bond, Contractor and Surety bind themselves and their respective heirs, executors, administrators, successors and assigns, jointly and severally, to the provisions of this Bond.

2. **Surety's Obligations.** Surety's obligations are co-extensive with Contractor's obligations under the Contract. If Contractor fully performs its obligations under the Contract, including its warranty obligations under the Contract, Surety's obligations under this Bond will become null and void. Otherwise, Surety's obligations under this bond will remain in full force and effect.

3. **Waiver.** Surety waives any requirement to be notified of and further consents to any alterations to the Contract made under the applicable provisions of the Contract Documents, including changes to the scope of Work or extensions of time for performance of Work under the Contract. Surety waives the provisions of Civil Code Sections 2819 and 2845.

4. **Application of Contract Balance.** Upon making a demand on this Bond for completion of the Work prior to acceptance of the Project, City will make the Contract Balance available to Surety for completion of the Work under the Contract. For purposes of this provision, the Contract Balance is defined as the total amount payable by City to Contractor as the Contract Price minus amounts already paid to Contractor, and minus any liquidated damages, credits, or backcharges to which City is entitled under the terms of the Contract.

5. **Contractor Default.** Upon written notification from City that Contractor is in default under Article 13 of the Contract General Conditions, time being of the essence, Surety must act within the time specified in Article 13 to remedy the default through one of the following courses of action:

   5.1 Arrange for completion of the Work under the Contract by Contractor, with City's consent, but only if Contractor is in default solely due to its financial inability to complete the Work;

5.2 Arrange for completion of the Work under the Contract by a qualified contractor acceptable to City, and secured by performance and payment bonds issued by an admitted surety as required by the Contract Documents, at Surety's expense, or

5.3 Waive its right to complete the Work under the Contract and reimburse City the amount of City's costs to have the remaining Work completed.

6. **Surety Default.** If Surety defaults on its obligations under the Bond, City will be entitled to recover all costs it incurs due to Surety's default, including legal, design professional, or delay costs.

7. **Notice.** Any notice to Surety may be given in the manner specified in the Contract and delivered or transmitted to Surety as follows:

Attn: _____
Address: _____
City/State/Zip: _____
Phone: _____
Fax: _____
Email: _____

8. **Law and Venue.** This Bond will be governed by California law, and venue for any dispute pursuant to this Bond will be in the Superior Court of Santa Clara County, and no other place. Surety will be responsible for City's attorneys' fees and costs in any action to enforce the provisions of this Bond.

9. **Effective Date; Execution.** This Bond is entered into and effective on _____, 20___.

[Signatures are on the following page.]

SURETY:

s/ _____

Name: _____

Title: _____

(Attach Acknowledgment with Notary Seal and Power of Attorney)

CONTRACTOR:

s/ _____

Name: _____

Title: _____

APPROVED AS TO FORM:

By:_____
Donald A. Larkin, City Attorney

Date:_____

END OF PERFORMANCE BOND

GENERAL CONDITIONS

Article 1 - Definitions

1.1 Definitions. The following definitions apply to all of the Contract Documents unless otherwise indicated, e.g., additional definitions that apply solely to the Specifications or other technical documents. Defined terms and titles of documents are capitalized in the Contract Documents, with the exception of the following (in any tense or form): “day,” “furnish,” “including,” “install,” “work day” or “working day.”

Allowance means a specific amount that must be included in the Bid Proposal for Work that may or may not be included in the Project, depending on conditions that will not become known until after bids are opened. If the Contract Price includes an Allowance and the cost of performing the Work covered by that Allowance is greater or less than the Allowance, the Contract Price will be increased or decreased accordingly.

Article, as used in these General Conditions, means a numbered Article of the General Conditions, unless otherwise indicated by the context.

Change Order means a written document duly approved and executed by City, which changes the scope of Work, the Contract Price, or the Contract Time.

City means the City of Morgan Hill, acting through its City Council, officers, employees, and authorized representatives.

City Engineer means the City Engineer for City and his or her authorized delegee(s) designated to oversee and manage the Project on City’s behalf.

Claim means a separate demand by Contractor for a change in the Contract Time or Contract Price, that has previously been submitted to City in accordance with the requirements of the Contract Documents, and which has been rejected by City, in whole or in part; or a written demand by Contractor objecting to the amount of Final Payment.

Contract means the signed agreement between City and Contractor for performing the Work required for the Project, and all documents expressly incorporated therein.

Contract Documents means, collectively, all of the documents listed as such in Section 2 of the Contract, including the Notice Inviting Bids; the Instructions to Bidders; addenda, if any; the Bid Proposal, and attachments thereto; the Contract; the Notice of Award and Notice to Proceed; the payment and performance bonds; the General Conditions; the Special Conditions; the Project Plans and Specifications; any Change Orders; and any other documents

expressly made part of the Contract Documents. The Contract Documents do not include documents provided “For Reference Only,” or documents that are intended solely to provide information regarding existing conditions.

Contract Price means the total compensation to be paid to Contractor for performance of the Work, as set forth in the Contract and as may be amended by Change Order or adjusted for an Allowance. The Contract Price is not subject to adjustment due to inflation or due to the increased cost of labor, material, supplies, or equipment following submission of the Bid Proposal. The Contract Price is deemed to include all applicable federal, state, and local taxes.

Contract Time means the number of calendar days specified for complete performance of the Work, as set forth in the Contract and as may be amended by Change Order.

Contractor means the individual, partnership, corporation, or joint-venture that has signed the Contract with City to perform the Work.

Day means a calendar day unless otherwise specified.

Design Professional means the licensed individual(s) or firm(s) retained by City to provide architectural or engineering services for the Project. If no Design Professional has been retained for this Project, any reference to Design Professional is deemed to refer to the Engineer.

DIR means the California Department of Industrial Relations.

Drawings has the same meaning as Plans.

Engineer means the City Engineer for the City of Morgan Hill and his or her authorized delegee(s).

Excusable Delay is defined in Section 5.3(B), Excusable Delay.

Extra Work means new or unforeseen work added to the Project, as determined by the Engineer in his or her sole discretion, including Work that was not part of or incidental to the scope of the Work when the Contractor’s bid was submitted; Work that is substantially different from the Work as described in the Contract Documents at bid time; or Work that results from a substantially differing and unforeseeable condition.

Final Completion means Contractor has fully completed all of the Work required by the Contract Documents to the City’s satisfaction, including all punch list items, and any required commissioning or training, and has provided the City with all required submittals, including the instructions and manuals, product warranties, and as-built drawings.

Final Payment means payment to Contractor of the unpaid Contract Price, including release of undisputed retention, less amounts withheld or deducted pursuant to the Contract Documents.

Furnish means to purchase and deliver for the Project.

Government Code Claim means a claim submitted pursuant to California Government Code § 900 et seq.

Hazardous Materials means any substance or material identified now or in the future as hazardous under any Laws, or any other substance or material that may be considered hazardous or otherwise subject to Laws governing handling, disposal, or cleanup.

Including, whether or not capitalized, means "including, but not limited to," unless the context requires otherwise.

Inspector means the individual(s) or firm(s) retained or employed by City to inspect the workmanship, materials, and manner of construction of the Project and its components to ensure compliance with the Contract Documents and all Laws.

Install means to fix in place for materials, and to fix in place and connect for equipment.

Law(s) means all applicable local, state, and federal laws, regulations, rules, codes, ordinances, permits, orders, and the like enacted or imposed by or under the auspices of any governmental entity with jurisdiction over any of the Work or any performance of the Work, including health and safety requirements.

Non-Excusable Delay is defined in Section 5.3(D), Non-Excusable Delay.
Plans means the City-provided plans, drawings, details, or graphical depictions of the Project requirements, but does not include Shop Drawings.

Project means the public works project referenced in the Contract.

Project Manager means the individual designated by City to oversee and manage the Project on City's behalf and may include his or her authorized delegee(s) when the Project Manager is unavailable. If no Project Manager has been designated for this Project, any reference to Project Manager is deemed to refer to the Engineer.

Recoverable Costs is defined in Section 5.3(F), Recoverable Costs.

Request for Information or RFI means a Contractor's written request for information about the Contract Documents, the Work or the Project, submitted to City in the manner and format specified by City.

Section, when capitalized in these General Conditions, means a numbered section or subsection of the General Conditions, unless the context clearly indicates otherwise.

Shop Drawings means drawings, plan details or other graphical depictions prepared by or on behalf of Contractor, and subject to City acceptance, which are intended to provide details for fabrication, installation, and the like, of items required by or shown in the Plans or Specifications.

Specialty Work means Work that must be performed by a specialized Subcontractor with the specified license or other special certification, and that the Contractor is not qualified to self-perform.

Specifications means the technical, text specifications describing the Project requirements, which are prepared for and incorporated into the Contract by or on behalf of City, and does not include the Contract, General Conditions or Special Conditions.

Subcontractor means an individual, partnership, corporation, or joint-venture retained by Contractor directly or indirectly through a subcontract to perform a specific portion of the Work. The term Subcontractor applies to subcontractors, suppliers, fabricators, and equipment lessors of all tiers, unless otherwise indicated by the context. A third party such as a utility performing related work on the Project is not a Subcontractor, even if Contractor must coordinate its Work with the third party.

Technical Specifications has the same meaning as Specifications.

Work means all of the construction and services necessary for or incidental to completing the Project in conformance with the requirements of the Contract Documents.

Work Day or Working Day, whether or not capitalized, means a weekday when the City is open for business, and does not include holidays observed by City.

Worksite means the place or places where the Work is performed, which includes, but may extend beyond the Project site, including separate locations for staging, storage, or fabrication.

Article 2 - Roles and Responsibilities

2.1 City.

(A) ***City Council.*** The City Council has final authority in all matters affecting the Project, except to the extent it has delegated authority to the Engineer.

(B) ***Engineer.*** The Engineer, acting within the authority conferred by the City Council, is responsible for administration of the Project on behalf of City, including authority to provide directions to the Design Professional and to Contractor to ensure proper and timely completion of the Project. The Engineer's decisions are final and conclusive within the scope of his or her authority, including interpretation of the Contract Documents.

(C) ***Project Manager.*** The Project Manager assigned to the Project will be the primary point of contact for the Contractor and will serve as City's representative, for daily administration of the Project on behalf of City. Unless otherwise specified, all of Contractor's communications to City (in any form) will go to or through the Project Manager. City reserves the right to reassign the Project Manager role at any time or to delegate duties to additional City representatives, without prior notice to or consent of Contractor.

(D) ***Design Professional.*** The Design Professional is responsible for the overall design of the Project, and, to the extent authorized by City, may act on City's behalf to ensure performance of the Work in compliance with the Plans and Specifications, including any design changes authorized by Change Order. The Design Professional's duties may include review of Contractor's submittals, visits to any Worksite, inspecting the Work, evaluating test and inspection results, and participation in Project-related meetings, including any pre-construction conference, weekly meetings, and coordination meetings. The Design Professional's interpretation of the Plans or Specifications is final and conclusive.

2.2 Contractor.

(A) ***General.*** Contractor must provide all labor, materials, supplies, equipment, services, and incidentals necessary to perform and timely complete the Work in strict accordance with the Contract Documents, and in an economical and efficient manner in the best interests of City, and with minimal inconvenience to the public.

(B) ***Responsibility for the Work and Risk of Loss.*** Contractor is responsible for supervising and directing all aspects of the Work to facilitate the efficient and timely completion of the Work. Contractor is

solely responsible for, and required to exercise full control over the Work, including the construction means, methods, techniques, sequences, procedures, safety precautions and programs, and coordination of all portions of the Work with that of all other contractors and Subcontractors, except to the extent that the Contract Documents provide other specific instructions. Contractor's responsibilities extend to any plan, method or sequence suggested, but not required by City or specified in the Contract Documents. From the date of commencement of the Work until either the date on which City formally accepts the Project or the effective date of termination of the Contract, whichever is later, Contractor bears all risks of injury or damage to the Work and the materials and equipment delivered to any Worksite, by any cause including fire, earthquake, wind, weather, vandalism or theft.

(C) ***Project Administration.*** Contractor must provide sufficient and competent administration, staff, and skilled workforce necessary to perform and timely complete the Work in accordance with the Contract Documents. Before starting the Work, Contractor must designate in writing and provide complete contact information, including telephone numbers and email address, for the officer or employee in Contractor's organization who is to serve as Contractor's primary representative for the Project, and who has authority to act on Contractor's behalf. A Subcontractor may not serve as Contractor's primary representative.

(D) ***On-Site Superintendent.*** Contractor must, at all times during performance of the Work, provide a qualified and competent full-time superintendent, acceptable to City, and assistants, as necessary, who must be physically present at the Project site while any aspect of the Work is being performed. The superintendent must have full authority to act and communicate on behalf of Contractor, and Contractor will be bound by the superintendent's communications to City. City's approval of the superintendent is required before the Work commences. If City is not satisfied with the superintendent's performance, City may request a qualified replacement of the superintendent. Failure to comply may result in temporary suspension of the Work, at Contractor's sole expense and with no extension of Contract Time, until an approved superintendent is physically present to supervise the Work. Contractor must provide written notice to City, as soon as practicable, before replacing the superintendent.

(E) ***Standards.*** Contractor must, at all times, ensure that the Work is performed in an efficient, skillful manner following best practices and in full compliance with the Contract Documents and Laws and applicable manufacturer's recommendations. Contractor has a material and ongoing obligation to provide true and complete information, to the best of its knowledge, with respect to all records, documents, or communications

pertaining to the Project, including oral or written reports, statements, certifications, Change Order requests, or Claims.

(F) ***Meetings.*** Contractor, its project manager, superintendent, and any primary Subcontractors requested by City, must attend a pre-construction conference, if requested by City, as well as weekly Project progress meetings scheduled with City. If applicable, Contractor may also be required to participate in coordination meetings with other parties relating to other work being performed on or near the Project site or in relation to the Project, including work or activities performed by City, other contractors, or other utility owners.

(G) ***Construction Records.*** Contractor will maintain up-to-date, thorough, legible, and dated daily job reports, which document all significant activity on the Project for each day that Work is performed on the Project. The daily report for each day must include the number of workers at the Project site; primary Work activities; major deliveries; problems encountered, including injuries, if any; weather and site conditions; and delays, if any. Contractor will take date and time-stamped photographs to document general progress of the Project, including site conditions prior to construction activities, before and after photographs at offset trench laterals, existing improvements and utilities, damage and restoration. Contractor will maintain copies of all subcontracts, Project-related correspondence with subcontractors, and records of meetings with Subcontractors. Upon request by the City, Contractor will permit review of and/or provide copies of any of these construction records.

(H) ***Responsible Party.*** Contractor is solely responsible to City for the acts or omissions of any Subcontractors, or any other party or parties performing portions of the Work or providing equipment, materials or services for or on behalf of Contractor or the Subcontractors. Upon City's written request, Contractor must promptly and permanently remove from the Project, at no cost to City, any employee, Subcontractor, or employee of a Subcontractor who the Engineer has determined to be incompetent, intemperate or disorderly, or who has failed or refused to perform the Work as required under the Contract Documents.

(I) ***Correction of Defects.*** Contractor must promptly correct, at Contractor's sole expense, any Work that is determined by City to be deficient or defective in any way, including workmanship, materials, parts or equipment. Workmanship, materials, parts or equipment that do not conform to the requirements under the Plans, Specifications and every other Contract Document, as determined by City, will be considered defective and subject to rejection. Contractor must also promptly correct, at Contractor's sole expense, any Work performed beyond the lines and grades shown on the Plans or established by City, and any Extra Work

performed without City's prior written approval. If Contractor fails to correct or to take reasonable steps toward correcting defective Work within five days following notice from City, or within the time specified in City's notice to correct, City may elect to have the defective Work corrected by its own forces or by a third party, in which case the cost of correction will be deducted from the Contract Price. If City elects to correct defective Work due to Contractor's failure or refusal to do so, City or its agents will have the right to take possession of and use any equipment, supplies, or materials available at the Project site or any Worksite on City property, in order to effectuate the correction, at no extra cost to City. Contractor's warranty obligations under Section 11.2, Warranty, will not be waived nor limited by City's actions to correct defective Work under these circumstances. Alternatively, City may elect to retain defective Work, and deduct the difference in value, as determined by the Engineer, from payments otherwise due to Contractor. This paragraph applies to any defective Work performed by Contractor during the one-year warranty period under Section 11.2.

(J) ***Contractor's Records.*** Contractor must maintain all of its records relating to the Project in any form, including paper documents, photos, videos, electronic records, approved samples, and the construction records required pursuant to paragraph (G), above. Project records subject to this provision include, but are not limited to, complete Project cost records and records relating to preparation of Contractor's bid, including estimates, take-offs, and price quotes or bids.

(1) Contractor's cost records must include all supporting documentation, including original receipts, invoices, and payroll records, evidencing its direct costs to perform the Work, including, but not limited to, costs for labor, materials and equipment. Each cost record should include, at a minimum, a description of the expenditure with references to the applicable requirements of the Contract Documents, the amount actually paid, the date of payment, and whether the expenditure is part of the original Contract Price, related to an executed Change Order, or otherwise categorized by Contractor as Extra Work. Contractor's failure to comply with this provision as to any claimed cost operates as a waiver of any rights to recover the claimed cost.

(2) Contractor must continue to maintain its Project-related records in an organized manner for a period of five years after City's acceptance of the Project or following Contract termination, whichever occurs first. Subject to prior notice to Contractor, City is entitled to inspect or audit any of Contractor's Project records relating to the Project or to investigate Contractor's plant or equipment during Contractor's normal business hours. The record-

keeping requirements set forth in this subsection 2.2(J) will survive expiration or termination of the Contract.

(K) ***Copies of Project Documents.*** Contractor and its Subcontractors must keep copies, at the Project site, of all Work-related documents, including the Contract, permit(s), Plans, Specifications, Addenda, Contract amendments, Change Orders, RFIs and RFI responses, Shop Drawings, as-built drawings, schedules, daily records, testing and inspection reports or results, and any related written interpretations. These documents must be available to City for reference at all times during construction of the Project.

2.3 Subcontractors.

(A) ***General.*** All Work which is not performed by Contractor with its own forces must be performed by Subcontractors, <subject to the _____ limitation set forth in the Instructions to Bidders>. City reserves the right to approve or reject any and all Subcontractors proposed to perform the Work, for reasons including the subcontractor's poor reputation, lack of relevant experience, financial instability, and lack of technical ability or adequately trained workforce. Each Subcontractor must obtain a City business license before performing any Work.

(B) ***Contractual Obligations.*** Contractor must require each Subcontractor to comply with the provisions of the Contract Documents as they apply to the Subcontractor's portion(s) of the Work, including the generally applicable terms of the Contract Documents, and to likewise bind their subcontractors. Contractor will provide that the rights that each Subcontractor may have against any manufacturer or supplier for breach of warranty or guarantee relating to items provided by the Subcontractor for the Project, will be assigned to City. Nothing in these Contract Documents creates a contractual relationship between a Subcontractor and City, but City is deemed to be a third-party beneficiary of the contract between Contractor and each Subcontractor. Copies of subcontracts must be available to the Engineer upon request. Before a Subcontractor commences Work on the Project, Contractor must provide the Engineer a written statement with the name of the Subcontractor, a description of each portion of the Work performed by the Subcontractor, and the percentage of the overall Work to be performed by the Subcontractor.

(C) ***Termination.*** If the Contract is terminated, each Subcontractor's agreement must be assigned by Contractor to City, subject to the prior rights of any surety, but only if and to the extent that City accepts, in writing, the assignment by written notification, and assumes all rights and obligations of Contractor pursuant to each such subcontract agreement.

(D) ***Substitution of Subcontractor.*** If Contractor requests substitution of a listed Subcontractor under Public Contract Code Section 4107, Contractor is solely responsible for all costs City incurs in responding to the request, including legal fees and costs to conduct a hearing, and any increased subcontract cost to perform the Work that was to be performed by the listed Subcontractor. If City determines that a Subcontractor is unacceptable to City based on the Subcontractor's failure to satisfactorily perform its Work, or for any of the grounds for substitution listed in Public Contract Code Section 4107(a), City may request removal of the Subcontractor from the Project. Upon receipt of a written request from City to remove a Subcontractor pursuant to this paragraph, Contractor will immediately remove the Subcontractor from the Project and, at no further cost to City, will either (1) self-perform the remaining Work to the extent that Contractor is duly licensed and qualified to do so, or (2) substitute a Subcontractor that is acceptable to City, in compliance with Public Contract Code Section 4107, as applicable.

2.4 Coordination of Work.

(A) ***Concurrent Work.*** City reserves the right to perform have performed, or permit performance of other work on or adjacent to the Project site while the Work is being performed for the Project. Contractor is responsible for coordinating its Work with other work being performed on or adjacent to the Project site, including by any utility companies or agencies, and must avoid hindering, delaying, or interfering with the work of other contractors, individuals, or entities, and must ensure safe and reasonable site access and use as required or authorized by City. To the full extent permitted by law, Contractor must hold harmless and indemnify City against any and all claims arising from or related to Contractor's avoidable, negligent, or willful hindrance of, delay to, or interference with the work of any utility company or agency or another contractor or subcontractor.

(B) ***Coordination.*** If Contractor's Work will connect or interface with work performed by others, Contractor is responsible for independently measuring and visually inspecting such work to ensure a correct connection and interface. Contractor is responsible for any failure by Contractor or its Subcontractors to confirm measurements before proceeding with connecting Work. Before proceeding with any portion of the Work affected by the construction or operations of others, Contractor must give the Project Manager prompt written notification of any defects Contractor discovers which will prevent the proper execution of the Work. Failure to give notice of any known or reasonably discoverable defects will be deemed acknowledgement by Contractor that the work of others is not defective and will not prevent the proper execution of the Work. Contractor must also promptly notify City if work performed by others, including work

or activities performed by City's own forces, is operating to hinder, delay, or interfere with Contractor's timely performance of the Work. City reserves the right to backcharge Contractor for any additional costs incurred due to Contractor's failure to comply with the requirements in this Section 2.4.

2.5 Submittals. Unless otherwise specified, Contractor must submit to Engineer for review and acceptance, all schedules, Shop Drawings, samples, product data and similar submittals required by the Contract Documents, or upon request by Engineer. Unless otherwise specified, all submittals, including Requests for Information (RFIs) are subject to the provisions of this Section, as well as specific submittal requirements that may be included elsewhere in the Contract Documents, including the Special Conditions or Specifications. The Engineer may require submission of a submittal schedule at or before a pre-construction conference, as may be specified in the Notice to Proceed.

(A) ***General.*** Contractor is responsible for ensuring that its submittals are accurate and conform to the Contract Documents.

(B) ***Time and Manner of Submission.*** Contractor must ensure that its submittals are prepared and delivered in a manner consistent with the current City-accepted schedule for the Work and within the applicable time specified elsewhere in the Contract Documents, or if no time is specified, in such time and sequence so as not to delay the performance of the Work or completion of the Project.

(C) ***Required Contents.*** Each submittal must include the Project name and contract number, Contractor's name and address, the name and address of any Subcontractor or supplier involved with the submittal, the date, and references to applicable Specification section(s) and/or drawing and detail number(s).

(D) ***Required Corrections.*** If corrections are required, Contractor must promptly make and submit any required corrections as specified in full conformance with the requirements of this Section, or other requirements that apply to that submittal.

(E) ***Effect of Review and Acceptance.*** Review and acceptance of a submittal by City will not relieve Contractor from complying with the requirements of the Contract Documents. Contractor is responsible for any errors in any submittal, and review or acceptance of a submittal by City is not an assumption of risk or liability by City.

(F) ***Enforcement.*** Any Work performed or any material furnished, installed, fabricated, or used without City's prior acceptance of a required

submittal is performed or provided at Contractor's risk, and Contractor may be required to bear the costs incident thereto, including the cost of removing and replacing such Work or material, repairs to other affected portions of the Work, and the cost of additional time or services required of City, including costs for the Design Professional, Project Manager, or Inspector.

(G) **Excessive RFIs.** An RFI will be considered excessive or unnecessary if the City determines that the explanation or response to the RFI is clearly and unambiguously discernable from the Contract Documents. City's costs to review and respond to excessive or unnecessary RFIs may be deducted from payments otherwise due to Contractor.

2.6 Shop Drawings. When Shop Drawings are required by the Specifications or requested by the Engineer, they must be prepared according to best practices at Contractor's expense. The Shop Drawings must be of a size and scale to clearly show all necessary details. Unless otherwise specified by City, Shop Drawings must be provided to the Engineer for review and acceptance at least 30 days before the Work will be performed. If City requires changes, the corrected Shop Drawings must be resubmitted to the Engineer for review within the time specified by the Engineer. For all Project components requiring Shop Drawings, Contractor will not furnish materials or perform any Work until the Shop Drawings for those components are accepted by City. Contractor is responsible for any errors or omissions in the Shop Drawings, shop fits and field corrections; any deviations from the Contract Documents; and for the results obtained by the use of Shop Drawings. Acceptance of Shop Drawings by City does not relieve Contractor of Contractor's responsibility.

2.7 Access to Work. Contractor must afford prompt and safe access to any Worksite by City and its employees, agents, or consultants authorized by City; and upon request by City, Contractor must promptly arrange for City representatives to visit or inspect manufacturing sites or fabrication facilities for items to be incorporated into the Work.

2.8 Personnel. Contractor and its Subcontractors must employ only competent and skillful personnel to perform the Work. Contractor and its Subcontractor's supervisors, security or safety personnel, and employees who have unescorted access to the Project site must possess proficiency in English sufficient to read, understand, receive, and implement oral or written communications or instructions relating to their respective job functions, including safety and security requirements. Upon written notification from the Engineer, Contractor and its Subcontractors must immediately discharge any personnel who are incompetent, disorderly, disruptive, threatening, abusive, or profane, or otherwise refuse or fail to comply with the requirements of the Contract Documents or Laws, including Laws pertaining to health and safety. Any such

discharged personnel may not be re-employed or permitted on the Project in any capacity without City's prior written consent.

Article 3 - Contract Documents

3.1 Interpretation of Contract Documents.

(A) ***Plans and Specifications.*** The Plans and Specifications included in the Contract Documents are complementary. If Work is shown on one but not on the other, Contractor must perform the Work as though fully described on both, consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. The Plans and Specifications are deemed to include and require everything necessary and reasonably incidental to completion of the Work, whether or not particularly mentioned or shown. Contractor must perform all Work and services and supply all things reasonably related to and inferable from the Contract Documents. In the event of a conflict between the Plans and Specifications, the Specifications will control, unless the Plan(s) at issue are dated later than the Specification(s) at issue. Detailed drawings take precedence over general drawings, and large-scale drawings take precedence over smaller scale drawings. Any arrangement or division of the Plans and Specifications into sections is for convenience and is not intended to limit the Work required by separate trades. A conclusion presented in the Plans or Specifications is only a recommendation. Actual locations and depths must be determined by Contractor's field investigation. Contractor may request access to underlying or background information in City's possession that is necessary for Contractor to form its own conclusions.

(B) ***Duty to Notify and Seek Direction.*** If Contractor becomes aware of a changed condition in the Project, or of any ambiguity, conflict, inconsistency, discrepancy, omission, or error in the Contract Documents, including the Plans or Specifications, Contractor must promptly submit a Request for Information to the Engineer and wait for a response from City before proceeding further with the related Work. The RFI must notify the City of the issue and request clarification, interpretation, or direction. The Engineer's clarification, interpretation, or direction will be final and binding on Contractor. If Contractor proceeds with the related Work before obtaining City's response, Contractor will be responsible for any resulting costs, including the cost of correcting any incorrect or defective Work that results. Timely submission of a clear and complete RFI is essential to avoiding delay. Delay resulting from Contractor's failure to submit a timely and complete RFI to the Engineer is Non-Excusable Delay. If Contractor believes that City's response to an RFI justifies a change to the Contract Price or Contract Time, Contractor must perform the Work as directed, but

may submit a timely Change Order request in accordance with the Contract Documents. (See Article 5 and 6.)

(C) ***Figures and Dimensions.*** Figures control over scaled dimensions.

(D) ***Technical or Trade Terms.*** Any terms that have well-known technical or trade meanings will be interpreted in accordance with those meanings, unless otherwise specifically defined in the Contract Documents.

(E) ***Measurements.*** Contractor must verify all relevant measurements in the Contract Documents and at the Project site before ordering any material or performing any Work, and will be responsible for the correctness of those measurements or for costs that could have been avoided by independently verifying measurements.

(F) ***Compliance with Laws.*** The Contract Documents are intended to comply with Laws and will be interpreted to comply with Laws.

3.2 Order of Precedence. Information included in one Contract Document but not in another will not be considered a conflict or inconsistency. Unless otherwise specified in the Special Conditions, in case of any conflict or inconsistency among the Contract Documents, the following order of precedence will apply, beginning from highest to lowest, with the most recent version taking precedent over an earlier version:

(A) Change Orders;
(B) Addenda;
(C) Contract;
(D) Notice to Proceed;
(E) Appendix B- Federal Contract Requirements (only if used);
(F) Special Conditions;
(G) General Conditions;
(H) Payment and Performance Bonds;
(I) Specifications;
(J) Plans;
(K) Notice of Award
(L) Notice Inviting Bids;
(M) Appendix A – Federal Bidding Requirements (only if used);
(N) Instructions to Bidders;
(O) Contractor's Bid Proposal and attachments;
(P) The City's standard specifications, as applicable; and
(Q) Any generic documents prepared by and on behalf of a third party, that were not prepared specifically for this Project, such as Caltrans Standard Specifications or Caltrans Special Provisions.

3.3 Caltrans Standard Specifications. Any reference to or incorporation of the Standard Specifications of the State of California, Department of Transportation ("Caltrans"), including "Standard Specifications," "Caltrans Specifications," "State Specifications," or "CSS," means the most current edition of Caltrans' Standard Specifications, unless otherwise specified ("Caltrans Standard Specifications"), including the most current amendments as of the date that Contractor's bid was submitted for this Project. The following provisions apply to use of or reference to the Caltrans Standard Specifications or Special Provisions:

(A) ***Limitations.*** None of the "General Provisions" of the Caltrans Standard Specifications, i.e., Sections 1 through 9, applies to these Contract Documents with the exception of any specific provisions, if any, which are expressly stated to apply to these Contract Documents.

(B) ***Conflicts or Inconsistencies.*** If there is a conflict or inconsistency between any provision in the Caltrans Standard Specifications or Special Provisions and a provision of these Contract Documents, as determined by City, the provision in the Contract Documents will govern.

(C) ***Meanings.*** Terms used in the Caltrans Standard Specifications or Special Provisions are to be interpreted as follows:

(1) Any reference to the "Engineer" is deemed to mean the City Engineer.

(2) Any reference to the "Special Provisions" is deemed to mean the Special Conditions, unless the Caltrans Special Provisions are expressly included in the Contract Documents listed in Section 2 of the Contract.

(3) Any reference to the "Department" or "State" is deemed to mean City.

3.4 For Reference Only. Contractor is responsible for the careful review of any document, study, or report provided by the City or appended to the Contract Documents solely for informational purposes and identified as "For Reference Only." Nothing in any document, study, or report so appended and identified is intended to supplement, alter, or void any provision of the Contract Documents. Contractor is advised that City or its representatives may be guided by information or recommendations included in such reference documents, particularly when making determinations as to the acceptability of proposed materials, methods, or changes in the Work. Any record drawings or similar final or accepted drawings or maps that are not part of the Contract Documents are deemed to be For Reference Only. The provisions of the Contract Documents

are not modified by any perceived or actual conflict with provisions in any document that is provided For Reference Only.

3.5 Current Versions. Unless otherwise specified by City, any reference to standard specifications, technical specifications, or any City or state codes or regulations means the latest specification, code or regulation in effect at the time the Contract is signed.

3.6 Conformed Copies. If City prepares a conformed set of the Contract Documents following award of the Contract, it will provide Contractor with two hard copy (paper) sets and one copy of the electronic file in PDF format. It is Contractor's responsibility to ensure that all Subcontractors, including fabricators, are provided with the conformed set of the Contract Documents at Contractor's sole expense.

3.7 Ownership. No portion of the Contract Documents may be used for any purpose other than construction of the Project, without prior written consent from City. Contractor is deemed to have conveyed the copyright in any designs, drawings, specifications, Shop Drawings, or other documents (in paper or electronic form) developed by Contractor for the Project, and City will retain all rights to such works, including the right to possession.

Article 4 - Bonds, Indemnity, and Insurance

4.1 Payment and Performance Bonds. Within ten days following issuance of the Notice of Award, Contractor is required to provide a payment bond and a performance bond, each in the penal sum of not less than 100 percent of the Contract Price, and each executed by Contractor and its surety using the bond forms included with the Contract Documents.

(A) ***Surety.*** Each bond must be issued and executed by a surety admitted in California. If an issuing surety cancels the bond or becomes insolvent, within seven days following written notice from City, Contractor must substitute a surety acceptable to City. If Contractor fails to substitute an acceptable surety within the specified time, City may, at its sole discretion, withhold payment from Contractor until the surety is replaced to City's satisfaction, or terminate the Contract for default.

(B) ***Supplemental Bonds for Increase in Contract Price.*** If the Contract Price increases during construction by five percent or more over the original Contract Price, Contractor must provide supplemental or replacement bonds within ten days of written notice from City pursuant to this Section, covering 100% of the increased Contract Price and using the bond forms included with the Contract Documents.

4.2 Indemnity. To the fullest extent permitted by law, Contractor must indemnify, defend, and hold harmless City, its Council, officers, officials, employees, agents, volunteers, and consultants, (individually, an "Indemnitee," and collectively the "Indemnitees") from and against any and all liability, loss, damage, claims, causes of action, demands, charges, fines, costs, and expenses (including, without limitation, attorney fees, expert witness fees, paralegal fees, and fees and costs of litigation or arbitration) (collectively, "Liability") of every nature arising out of or in connection with the acts or omissions of Contractor, its employees, Subcontractors, representatives, or agents, in bidding or performing the Work or in failing to comply with any obligation of Contractor under the Contract, except such Liability caused by the active negligence, sole negligence, or willful misconduct of an Indemnitee. This indemnity requirement applies to any Liability arising from alleged defects in the content or manner of submission of Contractor's bid for the Contract. Contractor's failure or refusal to timely accept a tender of defense pursuant to this Contract will be deemed a material breach of this Contract. City will timely notify Contractor upon receipt of any third-party claim relating to the Contract, as required by Public Contract Code Section 9201. Contractor waives any right to express or implied indemnity against any Indemnitee. Contractor's indemnity obligations under this Contract will survive the expiration or any early termination of the Contract.

4.3 Insurance. No later than ten days following issuance of the Notice of Award, Contractor must procure and provide proof of the insurance coverage required by this Section in the form of certificates and endorsements acceptable to City. The required insurance must cover the activities of Contractor and its Subcontractors relating to or arising from the performance of the Work, and must remain in full force and effect at all times during the period covered by the Contract through the date of City's acceptance of the Project. The coverages may be arranged under a single policy for the full limits required or by a combination of underlying policies with the balance provided by excess or "umbrella" policies, provided each such policy complies with the requirements set forth herein. All required insurance must be issued by a company licensed to do business in the State of California, and each such insurer must have an A.M. Best's financial strength rating of "A" or better and a financial size rating of "VIII" or better. If Contractor fails to provide any of the required coverage in full compliance with the requirements of the Contract Documents, City may, at its sole discretion, purchase such coverage at Contractor's expense and deduct the cost from payments due to Contractor, or terminate the Contract for default. Contractor further understands that City reserves the right to modify the insurance requirements set forth herein, with thirty (30) days' notice provided to Contractor, at any time as deemed necessary to protect the interests of City. The procurement of the required insurance will not be construed to limit Contractor's liability under this Contract or to fulfill Contractor's indemnification obligations under this Contract.

(A) **Deductibles and Self-Insured Retentions.** Any deductibles or self-insured retentions must be declared to and approved by City. If the City's Risk Manager determines that the deductibles and/or self-insured retentions are unacceptably high, at City's option, Contractor must either reduce or eliminate the deductibles and/or self-insured retentions as they apply to City and all required Additional Insured; or must provide a financial guarantee, to City's satisfaction, guaranteeing payment of losses and related investigation, claim administration, and legal expenses.

(B) **Policies and Limits.** The following insurance policies and limits are required for this Contract unless otherwise specified in the Special Conditions:

(1) **Commercial General Liability Insurance ("CGL").** Contractor shall maintain CGL and must include coverage for liability arising from Contractor's or its Subcontractor's acts or omissions in the performance of the Work against claims and liabilities for personal injury, death, or property damage providing protection in the minimum amount of: (i) two million dollars ($2,000,000.00) combined single limit each occurrence and either a general aggregate limit of four million dollars ($4,000,000.00) or a general aggregate limit of two million dollars ($2,000,000.00) as applied on a "per project" or "per location" basis, or (ii) the maximum amount of such insurance available to Contractor under Contractor's combined insurance policies (including any excess or "umbrella" policies), whichever is greater.

a. CGL policy may not exclude explosion, collapse, underground excavation hazard, or removal of lateral support.

b. CGL policy must include contractor's protected coverage, blanket contractual, and completed operations.

(3) **Workers' Compensation Insurance and Employer's Liability***:* Contractor shall maintain Workers Compensation coverage, as required by law. The policy must comply with the requirements of the California Workers' Compensation Insurance and Safety Act and provide protection in the minimum amount of: (i) One Million Dollars ($1,000,000.00) for any one accident or occurrence, or (ii) the maximum amount of such insurance available to Contractor under Contractor's combined insurance policies (including any excess or "umbrella" policies), whichever is greater. If Contractor is self-insured, Contractor must provide its Certificate of Permission to Self-

Insure, duly authorized by the Department of Industrial Relations.

(4) **Automobile Liability**: Contractor shall maintain Automobile Liability covering all owned, non-owned and hired automobiles (if Contractor does not own automobiles, then Contractor shall maintain Hired/Non-owned Automobile Liability) against claims and liabilities for personal injury, death, or property damage providing protection in the minimum amount of: (i) One Million Dollars ($1,000,000.00) combined single limit, or (ii) the maximum amount of such insurance available to Contractor under Contractor's combined insurance policies (including any excess or "umbrella" policies), whichever is greater.

(5) **Pollution (Environmental) Liability**: Because the performance of Contractor's work or service under this Contract involves hazardous materials, contaminated soil disposal, and/or a risk of accidental release of fuel oil, chemicals or other toxic gases or hazardous materials, Contractor shall procure and maintain Pollution Liability covering Contractor's liability for bodily injury, property damage and environmental damage resulting from pollution and related cleanup costs arising out of the work or services to be performed under this Contract. Coverage shall be provided for both work performed on site, as well as during the transport of hazardous materials. Such coverage shall be in the minimum amount of: (i) Two Million Dollars ($2,000,000.00) for any one accident or occurrence, or (ii) the maximum amount of such insurance available to Contractor under Contractor's combined insurance policies (including any excess or "umbrella" policies), whichever is greater.

(6) **Professional Liability**:

a. If the performance of Contractor's work or service under this Contract involves professional and/or technical services (examples include, but are not limited to, architects, engineers, land surveyors, legal services, and appraisers), Contractor shall procure and maintain either a claims made or occurrence Errors and Omission liability insurance in the minimum amount of: (i) One Million Dollars ($1,000,000.00) each claim, or (ii) the maximum amount of such insurance available to Contractor under Contractor's combined insurance policies (including any excess or "umbrella" policies), whichever is greater. Further, if Contractor maintains a claims-made policy, Contractor shall provide written evidence of such insurance to City for at least five (5)

years after the completion of work performed under this Contract.

b. If the performance of Contractor's work or service under this Contract relates to Information Technology or related services (examples include, but are not limited to computer programmers, hardware engineers, or other systems consultants), Contractor shall procure and maintain a claims made Errors and Omission liability insurance, including Cyber Liability and Data Breach, in the minimum amount of: (i) One Million Dollars ($1,000,000.00) each claim, or (ii) the maximum amount of such insurance available to Contractor under Contractor's combined insurance policies (including any excess or "umbrella" policies), whichever is greater.

(C) **Required Endorsements.** Contractor must provide proof of the following endorsements, listed for each policy for which endorsements are required, as outlined below:

(1) For all Policies except Professional Liability:

a. "Waiver of Subrogation" endorsements providing that the carrier agrees to waive any right of subrogation it may have against the City of Morgan Hill and the City's elected or appointed officials, boards, agencies, officers, agents, employees, and volunteers.

(2) General Liability, Automobile, and Pollution Liability:

a. "Additionally Insured" endorsements naming the City of Morgan Hill, its elected or appointed officials, boards, agencies, officers, agents, employees, and volunteers as additional insureds;

b. "Primary and Non-Contributing" endorsements stating that the policy is primary non-contributing;

(3) General Liability:

a. "Separation of Insureds" endorsements stating that the inclusion of more than one insured will not operate to impair the rights of one insured against another, and the coverages afforded will apply as though separate policies have been issued to each insured.

(D) **Subcontractors.** Contractor must ensure that each Subcontractor is required to maintain the same insurance coverage required under this Section 4.3, with respect to its performance of Work on the Project, including those requirements related to the additional insureds and waiver of subrogation. Contractor must confirm that each Subcontractor has complied with requirements as outlined herein. The insurance requirements for Subcontractors do not replace or limit the Contractor's insurance obligations.

(E) **Certificates**. Contractor must furnish City with copies of all certificates as outlined herein, whether new or modified, promptly upon receipt. In the event of a claim or legal action, CONSULTANT shall promptly furnish CITY of Morgan Hill with copies of all policies outlined herein. No policy subject to Contractor's Contract with City shall be reduced, canceled, allowed to expire, or materially changed except after thirty (30) days' notice by the insurer to City, unless due to non-payment of premiums, in which case ten (10) days written notice must be made to City. Certificates, including renewal certificates, may be mailed electronically to riskmgmt@morganhill.ca.gov or delivered to the Certificate Holder address as follows:

City of Morgan Hill
Attn: Risk Management
17575 Peak Avenue
Morgan Hill, CA 95037

(F) ***Contractor's Responsibilities.*** This Section 4.3 establishes the minimum requirements for Contractor's insurance coverage in relation to this Project, but is not intended to limit Contractor's ability to procure additional or greater coverage. Contractor is responsible for its own risk assessment and needs and is encouraged to consult its insurance provider to determine what coverage it may wish to carry beyond the minimum requirements of this Section. Contractor is solely responsible for the cost of its insurance coverage, including premium payments, deductibles, or self-insured retentions, and no Additional Insured will be responsible or liable for any of the cost of Contractor's insurance coverage.

Article 5 - Contract Time

5.1 Time is of the Essence. Time is of the essence in Contractor's performance and completion of the Work, and Contractor must diligently prosecute the Work and complete it within the Contract Time.

(A) ***General.*** Contractor must commence the Work on the date indicated in the Notice to Proceed, and must fully complete the Work in strict compliance with all requirements of the Contract Documents and within the Contract Time. Contractor may not begin performing the Work before the date specified in the Notice to Proceed.

(B) ***Authorization***. Contractor is not entitled to compensation or credit for any Work performed before the date specified in the Notice to Proceed, with the exception of any schedules, submittals, or other requirements, if any, that must be provided or performed before issuance of the Notice to Proceed

(C) ***Rate of Progress.*** Contractor and its Subcontractors must, at all times, provide workers, materials, and equipment sufficient to maintain the rate of progress necessary to ensure full completion of the Work within the Contract Time. If City determines that Contractor is failing to prosecute the Work at a sufficient rate of progress, City may, in its sole discretion, direct Contractor to provide additional workers, materials, or equipment, or to work additional hours or days without additional cost to City, in order to achieve a rate of progress satisfactory to City. If Contractor fails to comply with City's directive in this regard, City may, at Contractor's expense, separately contract for additional workers, materials, or equipment or use City's own forces to achieve the necessary rate of progress. Alternatively, City may terminate the Contract based on Contractor's default.

5.2 Schedule Requirements. Contractor must prepare all schedules using standard, commercial scheduling software acceptable to Engineer, and must provide the schedules in electronic and paper form as requested by the Engineer. In addition to the general scheduling requirements set forth below, Contractor must also comply with any scheduling requirements included in the Special Conditions or in the Technical Specifications.

(A) ***Baseline (As-Planned) Schedule.*** Within ten calendar days following City's issuance of the Notice to Proceed (or as otherwise specified in the Notice to Proceed), Contractor must submit to City for review and acceptance a baseline as-planned schedule using critical path methodology showing in detail how Contractor plans to perform and fully complete the Work within the Contract Time including labor, equipment, materials and fabricated items. The baseline schedule must show the order of the major items of Work and the dates of start and completion of each item, including when the materials and equipment will be procured. The schedule must also include the work of all trades reflecting anticipated labor or crew hours and equipment loading for the construction activities, and must be sufficiently comprehensive and detailed to enable progress to be monitored on a day-by-day basis. For each activity, the baseline schedule must be dated, provided in the format specified in the Contract

Documents or as required by City, and must include, at a minimum, a description of the activity, the start and completion dates of the activity, and the duration of the activity.

(1) *Specialized Materials Ordering*. Within five calendar days following issuance of the Notice to Proceed, Contractor must order any specialized material or equipment for the Work that is not readily available from material suppliers. Contractor must also retain documentation of the purchase orders date(s).

(B) ***City's Review of Schedules.*** City will review and may note exceptions to the baseline schedule, and to the progress schedules submitted as required below, to assure completion of the Work within the Contract Time. Contractor is solely responsible for resolving any exceptions noted in a schedule and, within seven days, must correct the schedule to address the exceptions. City's review or acceptance of Contractor's schedules will not operate to waive or limit Contractor's duty to complete the Project within the Contract Time, nor to waive or limit City's right to assess liquidated damages for Contractor's unexcused failure to do so.

(C) ***Progress Schedules.*** After City accepts the final baseline schedule with no exceptions, Contractor must submit an updated progress schedule and three week look-ahead schedule, in the format specified by City, for review and acceptance with each application for a progress payment or when otherwise specified by City, until completion of the Work. The updated progress schedule must show: how the actual progress of the Work as constructed to date compares to the baseline schedule; reflect any proposed changes in the construction schedule or method of operations, including to achieve Project milestones within the Contract Time; and identify any actual or potential impacts to the critical path. Contractor must also submit periodic reports to City of any changes in the projected material or equipment delivery dates for the Project.

(1) *Float.* The progress schedule must show early and late completion dates for each task. The number of days between those dates will be designated as the "float." Any float belongs to the Project and may be allocated by the Engineer to best serve timely completion of the Project.

(2) *Failure to Submit Schedule.* Reliable, up-to-date schedules are essential to efficient and cost-effective administration of the Project and timely completion. If Contractor fails to submit a schedule within the time periods specified in this Section, or submits a schedule to which City has noted exceptions that are not corrected, City may withhold up to ten percent from payment(s) otherwise due

to Contractor until the exceptions are resolved, the schedule is corrected and resubmitted, and City has accepted the schedule. In addition, Contractor's failure to comply with the schedule requirements in this Section 5.2 will be deemed a material default and a waiver of any claims for Excusable Delay or loss of productivity arising during any period when Contractor is out of compliance, subject only to the limits of Public Contract Code Section 7102.

(D) ***Recovery Schedule.*** If City determines that the Work is more than one week behind schedule, within seven days following written notice of such determination, Contractor must submit a recovery schedule, showing how Contractor intends to perform and complete the Work within the Contract Time, based on actual progress to date.

(E) ***Effect of Acceptance.*** Contractor and its Subcontractors must perform the Work in accordance with the most current City-accepted schedule unless otherwise directed by City. City's acceptance of a schedule does not operate to extend the time for completion of the Work or any component of the Work, and will not affect City's right to assess liquidated damages for Contractor's unexcused delay in completing the Work within the Contract Time.

(F) ***Posting.*** Contractor must at all times prominently post a copy of the most current City-accepted progress or recovery schedule in its on-site office.

(G) ***Reservation of Rights.*** City reserves the right to direct the sequence in which the Work must be performed or to make changes in the sequence of the Work in order to facilitate the performance of work by City or others, or to facilitate City's use of its property. The Contract Time or Contract Price may be adjusted to the extent such changes in sequence actually increase or decrease Contractor's time or cost to perform the Work.

(H) ***Authorized Working Days and Times.*** Contractor is limited to working Monday through Friday, excluding City of Morgan Hill-observed holidays, during City's normal business hours, except as expressly provided in the Special Conditions, or as authorized in writing by City. City reserves the right to charge Contractor for additional costs incurred by City due to Work performed on days or during hours not expressly authorized in the Contract Documents, including reimbursement of costs incurred for inspection, testing, and construction management services.

5.3 Delay and Extensions of Contract Time.

(A) ***Notice of Delay.*** If Contractor becomes aware of any actual or potential delay affecting the critical path, Contractor must promptly notify the Engineer in writing, regardless of the nature or cause of the delay, so that City has a reasonable opportunity to mitigate or avoid the delay.

(B) ***Excusable Delay.*** The Contract Time may be extended if Contractor encounters "Excusable Delay," which is an unavoidable delay in completing the Work within the Contract Time due to causes completely beyond Contractor's control, and which Contractor could not have avoided or mitigated through reasonable care, planning, foresight, and diligence, provided that Contractor is otherwise fully performing its obligations under the Contract Documents. Grounds for Excusable Delay may include fire, natural disasters, including earthquake or unusually severe weather, acts of terror or vandalism, epidemic, unforeseeable adverse government actions, unforeseeable actions of third parties, encountering unforeseeable hazardous materials, unforeseeable site conditions, or suspension for convenience under Article 13. The Contract Time will not be extended based on circumstances which will not unavoidably delay completing the Work within the Contract Time based on critical path analysis.

(C) ***Weather Delays.*** A "Weather Delay Day" is a Working Day during which Contractor and its forces, including Subcontractors, are unable to perform more than 40% of the critical path Work scheduled for that day due to adverse weather conditions which impair the ability to safely or effectively perform the scheduled critical path Work that day. Adverse weather conditions may include rain, saturated soil, and Project site clean-up required due to adverse weather. Determination of what constitutes critical path Work scheduled for that day will be based on the most current, City-approved schedule. Contractor will be entitled to a non-compensable extension of the Contract Time for each Weather Delay Day in excess of the normal Weather Delay Days within a given month as determined by reliable records, including monthly rainfall averages, for the preceding ten years (or as otherwise specified in the Special Conditions or Specifications).

(1) Contractor must fully comply with the applicable procedures in Articles 5 and 6 of the General Conditions regarding requests to modify the Contract Time.

(2) Contractor will not be entitled to an extension of time for a Weather Delay Day to the extent Contractor is responsible for concurrent delay on that day.

(2) Contractor must take reasonable steps to mitigate the consequences of Weather Delay Days, including prudent workforce

management and protecting the Work, Project Site, materials, and equipment.

(D) ***Non-Excusable Delay***. Delay which Contractor could have avoided or mitigated through reasonable care, planning, foresight and diligence is "Non-Excusable Delay." Contractor is not entitled to an extension of Contract Time or any compensation for Non-Excusable Delay, or for Excusable Delay that is concurrent with Non-Excusable Delay. Non-Excusable Delay includes delay caused by:

(1) weather conditions which are normal for the location of the Project, as determined by reliable records, including monthly rainfall averages, for the preceding ten years;

(2) Contractor's failure to order equipment and materials sufficiently in advance of the time needed for completion of the Work within the Contract Time;

(3) Contractor's failure to provide adequate notification to utility companies or agencies for connections or services necessary for completion of the Work within the Contract Time;

(4) foreseeable conditions which Contractor could have ascertained from reasonably diligent inspection of the Project site or review of the Contract Documents or other information provided to the Contractor;

(5) Contractor's failure, refusal, or financial inability to perform the Work within the Contract Time, including insufficient funds to pay its Subcontractors or suppliers.

(6) performance or non-performance by Contractor's Subcontractors or suppliers;

(7) the time required to respond to excessive RFIs (see Section 2.5(G));

(8) delayed submission of required submittals, or the time required for correction and resubmission of defective submittals;

(9) time required for repair of, re-testing, or re-inspection of defective Work;

(10) enforcement of Laws by City, or outside agencies with jurisdiction over the Work; or

(11) City's exercise or enforcement of any of its rights or Contractor's duties pursuant to the Contract Documents, including correction of defective Work, extra inspections or testing due to non-compliance with Contract requirements, safety compliance, environmental compliance, or rejection and return of defective or deficient submittals.

(E) ***Compensable Delay.*** Pursuant to Public Contract Code Section 7102, in addition to entitlement to an extension of Contract Time, Contractor is entitled to compensation for costs incurred due to delay caused solely by City, when that delay is unreasonable under the circumstances involved and not within the contemplation of the parties ("Compensable Delay"). Contractor is not entitled to an extension of Contract Time or recovery of costs for Compensable Delay that is concurrent with Non-Excusable Delay. Delay due to causes that are beyond the control of either City or Contractor, including Weather Delay Days, discovery of Historic or Archeological Items pursuant to Section 7.18, or the actions or inactions of third parties or other agencies, is not Compensable Delay, and will only entitle Contractor to an extension of time commensurate with the time lost due to such delay.

(F) ***Recoverable Costs.*** Contractor is not entitled to compensation for Excusable Delay unless it is Compensable Delay, as defined above. Contractor is entitled to recover only the actual, direct, reasonable, and substantiated costs ("Recoverable Costs") for each working day that the Compensable Delay prevents Contractor from proceeding with more than 50% of the critical path Work scheduled for that day, based on the most recent progress schedule accepted by City. Recoverable Costs will not include home office overhead or lost profit.

(G) ***Request for Extension of Contract Time or Recoverable Costs.*** A request for an extension of Contract Time or any associated Recoverable Costs must be submitted in writing to City within ten calendar days of the date the delay is first encountered, even if the duration of the delay is not yet known at that time, or any entitlement to the Contract Time extension or to the Recoverable Costs will be deemed waived. In addition to complying with the requirements of this Article 5, the request must be submitted in compliance with the Change Order request procedures in Article 6, below. Strict compliance with these requirements is necessary to ensure that any delay or consequences of delay may be mitigated as soon as possible, and to facilitate cost-efficient administration of the Project and timely performance of the Work. Any request for an extension of Contract Time or Recoverable Costs that does not strictly comply with all of the requirements of Article 5 and Article 6 will be deemed waived.

(1) *Required Contents.* The request must include a detailed description of the cause(s) of the delay, and must also describe the measures that Contractor has taken to mitigate the delay and/or its effects, including efforts to mitigate the cost impact of the delay, such as by workforce management, or by a change in sequencing. If the delay is still ongoing at the time the request is submitted, the request should also include Contractor's plan for continued mitigation of the delay or its effects.

(2) *Delay Days and Costs.* The request must specify the number of days of Excusable Delay claimed, or provide a realistic estimate if the duration of the delay is not yet known. If the Contractor believes it is entitled to Recoverable Costs for Compensable Delay, the request must specify the amount of and basis for the Recoverable Costs that are claimed or provide a realistic estimate if the amount is not yet known. Any estimate of delay duration or cost must be updated in writing and submitted with all required supporting documentation as soon as the actual time and cost is known. The maximum extension of Contract Time will be the number of days, if any, by which an Excusable Delay or a Compensable Delay exceeds any concurrent Non-Excusable Delay. Contractor is entitled to an extension of Contract Time, or compensation for Recoverable Costs, only if, and only to the extent that, such delay will unavoidably delay Final Completion.

(3) *Supporting Documentation.* The request must also include any and all supporting documentation necessary to evidence the delay and its actual impacts, including scheduling and cost impacts, with a time impact analysis using critical path methodology, and demonstrating the unavoidable delay to Final Completion. The time impact analysis must be submitted in a form or format acceptable to City.

(4) *Burden of Proof.* Contractor has the burden of proving that the delay was an Excusable or Compensable Delay, as defined above; Contractor has fully complied with its scheduling obligations in Section 5.2, Schedule Requirements; Contractor has made reasonable efforts to mitigate the delay and its schedule and cost impacts; the delay will unavoidably result in delaying Final Completion, and any Recoverable Costs claimed by Contractor were actually incurred and were reasonable under the circumstances.

(5) *Legal Compliance.* Nothing in this Section 5.3 is intended to require the waiver, alteration, or limitation of the applicability of Public Contract Code Section 7102.

(6) *No Waiver.* Any grant of an extension of Contract Time or compensation for Recoverable Costs due to Compensable Delay will not operate as a waiver of City's right to assess liquidated damages for Non-Excusable Delay.

(7) *Dispute Resolution.* In the event of a dispute over entitlement to an extension of Contract Time or compensation for Recoverable Costs, Contractor may not stop Work pending resolution of the dispute, but must continue to comply with its duty to diligently prosecute the performance and timely completion of the Work. Contractor's sole recourse for an unresolved dispute based on City's rejection of a Change Order request for an extension of Contract Time or compensation for Recoverable Costs is to comply with the dispute resolution provisions set forth in Article 12, below.

5.4 Liquidated Damages. It is expressly understood that if Final Completion is not achieved within the Contract Time, City will suffer damages from the delay that are difficult to determine and accurately specify. Pursuant to Public Contract Code section 7203, if Contractor fails to achieve Final Completion within the Contract Time, City will charge Contractor in the amount specified in the Contract for each day that Final Completion is delayed beyond the Contract Time, as liquidated damages and not as a penalty. Any waiver of accrued liquidated damages, in whole or in part, is subject to approval of the City Council or its authorized delegee.

(A) ***Liquidated Damages.*** Liquidated damages will not be assessed for any Excusable or Compensable Delay, as set forth above.

(B) ***Milestones.*** Liquidated damages may also be separately assessed for failure to meet milestones specified elsewhere in the Contract Documents.

(C) ***Setoff.*** City is entitled to deduct the amount of liquidated damages assessed against any payments otherwise due to Contractor, including progress payments, Final Payment, or unreleased retention. If there are insufficient Contract funds remaining to cover the full amount of liquidated damages assessed, City is entitled to recover the balance from Contractor or its performance bond surety.

(D) ***Occupancy or Use.*** Occupancy or use of the Project in whole or in part prior to Final Completion does not constitute City's acceptance of the Project and will not operate as a waiver of City's right to assess liquidated damages for Contractor's Non-Excusable Delay in achieving Final Completion.

(E) ***Other Remedies.*** City's right to liquidated damages under this Section applies only to damages arising from Contractor's Non-Excusable Delay or failure to complete the Work within the Contract Time. City retains its right to pursue all other remedies under the Contract for other types of damage, including damage to property or persons, costs or diminution in value from defective materials or workmanship, costs to repair or complete the Work, or other liability caused by Contractor.

Article 6 - Contract Modification

6.1 Contract Modification. Subject to the limited exception set forth in subsection (D) below, any change in the Work or the Contract Documents, including the Contract Price or Contract Time, will not be a valid and binding change to the Contract unless it is formalized in a Change Order, including a "no-cost" Change Order or a unilateral Change Order. Changes in Work. City reserves the right to make the Work pursuant to this Article 6 will not operate to release, limit, or abridge Contractor's warranty obligations pursuant to Article 11 or any obligations of Contractor's bond sureties.

(A) ***City-Directed Changes*****.** City may direct changes in the scope or sequence of Work or the requirements of the Contract Documents, without invalidating the Contract. Such changes may include Extra Work as set forth in subsection (C) below, or deletion or modification of portions of the Work. Contractor must promptly comply with City-directed changes in the Work in accordance with the intent of the original Contract Documents, even if Contractor and City have not yet reached agreement as to adjustments to the Contract Price or Contract Time for the change in the Work or for the Extra Work. Contractor is not entitled to extra compensation for cost savings resulting from "value engineering" pursuant to Public Contract Code Section 7101, except to the extent authorized in advance by City in writing, and subject to any applicable procedural requirements for submitting a proposal for value engineering cost savings.

(B) ***Disputes.*** In the event of a dispute over entitlement to or the amount of a change in Contract Time or a change in Contract Price related to extra City-directed change in the Work, Contractor must perform the Work as directed and may not delay its Work or cease Work pending resolution of the dispute, but must continue to comply with its duty to diligently prosecute the performance and timely completion of the Work, including the Work in dispute. Likewise, in the event that City and Contractor dispute whether a portion or portions of the Work are already required by the Contract Documents or constitute Extra Work, or otherwise dispute the interpretation of any portion(s) of the Contract Documents, Contractor must perform the Work as directed and may not

delay its Work or cease Work pending resolution of the dispute, but must continue to comply with its duty to diligently prosecute the performance and timely completion of the Work, including the Work in dispute, as directed by City. If Contractor refuses to perform the Work in dispute, City may, acting in its sole discretion, elect to delete the Work from the Contract and reduce the Contract Price accordingly, and self-perform the Work or direct that the Work be performed by others. Alternatively, City may elect to terminate the Contract for convenience or for cause. Contractor's sole recourse for an unresolved dispute related to changes in the Work or performance of any Extra Work is to comply with the dispute resolution provisions set forth in Article 12, below.

(C) ***Extra Work.*** City may direct Contractor to perform Extra Work related to the Project. Contractor must promptly perform any Extra Work as directed or authorized by City in accordance with the original Contract Documents, even if Contractor and City have not yet reached agreement on adjustments to the Contract Price or Contract Time for such Extra Work. If Contractor believes it is necessary to perform Extra Work due to changed conditions, Contractor must promptly notify the Engineer in writing, specifically identifying the Extra Work and the reason(s) the Contractor believes it is Extra Work. This notification requirement does not constitute a Change Order request pursuant to Section 6.2, below. Contractor must maintain detailed daily records that itemize the cost of each element of Extra Work, and sufficiently distinguish the direct cost of the Extra Work from the cost of other Work performed. For each day that Contractor performs Extra Work, or Work that Contractor contends is Extra Work, Contractor must submit no later than the following Working Day, a daily report of the Extra Work performed that day and the related costs, together with copies of certified payroll, invoices, and other documentation substantiating the costs ("Extra Work Report"). The Engineer will make any adjustments to Contractor's Extra Work Report(s) based on the Engineer's records of the Work. When an Extra Work Report(s) is agreed on and signed by both City and Contractor, the Extra Work Report(s) will become the basis for payment under a duly authorized and signed Change Order. Failure to submit the required documentation by close of business on the next Working Day is deemed a full and complete waiver for any change in the Contract Price or Contract Time for any Extra Work performed that day.

(D) ***Minor Changes and RFIs.*** Minor field changes, including RFI replies from City, that do not affect the Contract Price or Contract Time and that are approved by the Engineer acting within his or her scope of authority, do not require a Change Order. By executing an RFI reply from City, Contractor agrees that it will perform the Work as clarified therein, with no change to the Contract Price or Contract Time.

(E) ***Remedy for Non-Compliance.*** Contactor's failure to promptly comply with a City-directed change is deemed a material breach of the Contract, and in addition to all other remedies available to it, City may, at its sole discretion, hire another contractor or use its own forces to complete the disputed Work at Contractor's sole expense, and may deduct the cost from the Contract Price.

6.2 Contractor Change Order Requests. Contractor must submit a request or proposal for a change in the Work, compensation for Extra Work, or a change in the Contract Price or Contract Time as a written Change Order request or proposal.

(A) ***Time for Submission.*** Any request for a change in the Contract Price or the Contract Time must be submitted in writing to the Engineer within ten calendar days of the date that Contractor first encounters the circumstances, information or conditions giving rise to the Change Order request, even if the total amount of the requested change in the Contract Price or impact on the Contract Time is not yet known at that time. If City requests that Contractor propose the terms of a Change Order, unless otherwise specified in City's request, Contractor must provide the Engineer with a written proposal for the change in the Contract Price or Contract Time within five working days of receiving City's request, in a form satisfactory to the Engineer.

(B) ***Required Contents.*** Any Change Order request or proposal submitted by Contractor must include a complete breakdown of actual or estimated costs and credits, and must itemize labor, materials, equipment, taxes, insurance, subcontract amounts, and if applicable, Extra Work Reports. Any estimated cost must be updated in writing as soon as the actual amount is known.

(C) ***Required Documentation.*** All claimed costs must be fully documented, and any related request for an extension of time or delay-related costs must be included at that time and in compliance with the requirements of Article 5 of the General Conditions. Upon request, Contractor must permit City to inspect its original and unaltered bidding records, subcontract agreements, subcontract change orders, purchase orders, invoices, or receipts associated with the claimed costs.

(D) ***Required Form.*** Contractor must use City's form(s) for submitting all Change Order requests or proposals, unless otherwise specified by City.

(E) ***Certification.*** All Change Order requests must be signed by Contractor and must include the following certification:

"The undersigned Contractor certifies under penalty of perjury that its statements and representations in this Change Order request are true and correct. Contractor warrants that this Change Order request is comprehensive and complete as to the Work or Changes referenced herein, and agrees that any costs, expenses, or time extension requests not included herein are deemed waived."

6.3 Adjustments to Contract Price. The amount of any increase or decrease in the Contract Price will be determined based on one of the following methods listed below, in the order listed with unit pricing taking precedence over the other methods. Markup applies only to City-authorized time and material Work, and does not apply to any other payments to Contractor. For Work items or components that are deleted in their entirety, Contractor will only be entitled to compensation only for those direct, actual, and documented costs (including restocking fees), reasonably incurred before Contractor was notified of the City's intent to delete the Work, with no markup for overhead, profit, or other indirect costs.

(A) ***Unit Pricing.*** Amounts previously provided by Contractor in the form of unit prices, either in a bid schedule or in a post-award schedule of values pursuant to Section 8.1 Schedule of Values, will apply to determine the price for the affected Work, to the extent applicable unit prices have previously been provided for that type of Work. No additional markup for overhead, profit, or other indirect costs. will be added to the calculation.

(B) ***Lump Sum.*** A mutually agreed upon, all-inclusive lump sum price for the affected Work with no additional markup for overhead, profit, or other indirect costs;

(C) ***Time and Materials.*** On a time and materials basis, if and only to the extent compensation on a time and materials basis is expressly authorized by City in advance of Contractor's performance of the Work and subject to any not-to-exceed limit. Time and materials compensation for increased costs or Extra Work (but not decreased costs or deleted Work), will include allowed markup for overhead, profit, and other indirect costs, and which may include a not-to-exceed limit, calculated as the total of the following sums:, the cumulative total of which may not exceed the maximum markup rate of 15%:

(1) All direct labor costs provided by the Contractor, excluding superintendence, project management, or administrative costs plus 15 percent markup;

(2) All direct material costs provided by the Contractor, including sales tax, plus 15 percent markup;

(3) All direct plant and equipment rental costs provided by the Contractor, plus 15 percent markup;

(4) All direct additional subcontract costs plus ten percent markup for Work performed by Subcontractors; and

(5) Increased bond or insurance premium costs computed at 1.5% percent of total of the previous four sums.

6.4 Unilateral Change Order. If the parties dispute the terms of a proposed Change Order, including disputes over the amount of compensation or extension of time that Contractor has requested, , the value of deleted or changed Work, what constitutes Extra Work, or quantities used, City may elect to issue a unilateral Change Order, directing performance of the Work, and authorizing a change in the Contract Price or Contract Time for the amount of compensation or added time that the City believes is merited. Contractor's sole recourse to dispute the terms of a unilateral Change Order is to submit a timely Claim pursuant to Article 12, below.

6.5 Non-Compliance Deemed Waiver. Contractor waives its entitlement to any increase in the Contract Price or Contract Time if Contractor fails to fully comply with the provisions of this Article. Contractor will not be paid for unauthorized Extra Work.

Article 7 - General Construction Provisions

7.1 Permits, Fees, Business License, and Taxes.

(A) ***Permits, Fees, and City Business License.*** Contractor must obtain and pay for all permits, fees, or licenses required to perform the Work, including a City business license. Contractor must cooperate with and provide notifications to all government agencies with jurisdiction over the Project, as may be required. Contractor must provide City with copies of all records of permits and permit applications, payment of required fees, and any licenses required for the Work.

(B) ***Taxes.*** Contractor must pay for all taxes on labor, material and equipment, except Federal Excise Tax to the extent that City is exempt from Federal Excise Tax.

7.2 Temporary Facilities. Contractor must provide, at Contractor's sole expense, any and all temporary facilities for the Project, including an

onsite staging area for materials and equipment, a field office, sanitary facilities, utilities, storage, scaffolds, barricades, walkways, and any other temporary structure required to safely perform the Work along with any incidental utility services. The location of all temporary facilities must be approved by the City prior to installation. Temporary facilities must be safe and adequate for the intended use, and installed and maintained in accordance with Laws and the Contract Documents. Contractor must fence and screen the Project site and, if applicable, any separate Worksites, including the staging area, and its operation must minimize inconvenience to neighboring properties. Additional provisions pertaining to temporary facilities may be included in the Specifications or Special Conditions.

(A) ***Utilities***. Contractor must install and maintain the power, water, sewer and all other utilities required for the Project site, including the piping, wiring, internet and Wi-Fi connections, and any related equipment necessary to maintain the temporary facilities.

(B) ***Removal and Repair.*** Contractor must promptly remove all such temporary facilities when they are no longer needed or upon completion of the Work, whichever comes first. Contractor must promptly repair any damage to City's property or to other property caused by the installation, use, or removal of the temporary facilities, and must promptly restore the property to its original or intended condition.

7.3 Noninterference and Site Management. Contractor must avoid interfering with City's use of its property at or adjacent to the Project site, including use of roadways, entrances, parking areas, walkways, and structures. Contractor must also minimize disruption of access to private property in the Project vicinity. Contractor must coordinate with affected property owners, tenants, and businesses, and maintain some vehicle and pedestrian access to their residences or properties at all times. Temporary access ramps, fencing or other measures must be provided as needed. Before blocking access to a private driveway or parking lot, Contractor must provide effective notice to the affected parties at least 48 hours in advance of the pending closure and allow them to remove vehicles. Private driveways, residences and parking lots must have access to a roadway during non-Work hours.

(A) ***Offsite Acquisition.*** Unless otherwise provided by City, Contractor must acquire, use and dispose of, at its sole expense, any additional Worksites, licenses, easements, and temporary facilities necessary to access and perform the Work.

(B) ***Offsite Staging Area and Field Office.*** If additional space beyond the Project site is needed, such as for the staging area or the field office,

Contractor may need to make arrangements with the nearby property owner(s) to secure the space. Before using or occupying any property owned by a third party, Contractor must provide City with a copy of the necessary license agreement, easement, or other written authorization from the property owner, together with a written release from the property owner holding City harmless from any related liability, in a form acceptable to the City Attorney.

(C) ***Traffic Management.*** Contractor must provide traffic management and traffic controls as specified in the Contract Documents, as required by Laws, and as otherwise required to ensure the public and worker safety, and to avoid interference with public or private operations or the normal flow of vehicular, bicycle, or pedestrian traffic.

7.4 Signs. No signs may be displayed on or about City's property, except signage which is required by Laws or by the Contract Documents, without City's prior written approval as to size, design, and location.

7.5 Project Site and Nearby Property Protections.

(A) ***General.*** Contractor is responsible at all times, on a 24-hour basis and at its sole cost for protecting the Work, the Project site, and the materials and equipment to be incorporated into the Work until the City has accepted the Project, excluding any exceptions to acceptance, if any. Except as specifically authorized by City, Contractor must confine its operations to the area of the Project site indicated in the Plans and Specifications. Contractor is liable for any damage caused by Contractor or its Subcontractors to the Work, City's property, the property of adjacent or nearby property owners and the work or personal property of other contractors working for City, including damage related to Contractor's failure to adequately secure the Work or any Worksite.

(1) Subject to City's approval, Contractor will provide and install safeguards to protect the Work; any Worksite, including the Project site; City's real or personal property and the real or personal property of adjacent or nearby property owners, including plant and tree protections.

(2) City wastewater systems may not be interrupted. If the Work disrupts existing sewer facilities, Contractor must immediately notify City and establish a plan, subject to City's approval, to convey the sewage in closed conduits back into the sanitary sewer system. Sewage must not be permitted to flow in trenches or be covered by backfill.

(3) Contractor must remove with due care, and store at City's request, any objects or material from the Project site that City will salvage or reuse at another location.

(4) If directed by Engineer, Contractor must promptly repair or replace any property damage, as specified by the Engineer. However, acting in its sole discretion, City may elect to have the property damage remedied otherwise, and may deduct the cost to repair or replace the damaged property from payment otherwise due to Contractor.

(5) Contractor will not permit any structure or infrastructure to be loaded in a manner that will damage or endanger the integrity of the structure or infrastructure.

(B) ***Securing Project Site.*** After completion of Work each day, Contractor must secure the Project site and, to the extent feasible, make the area reasonably accessible to the public unless City approves otherwise. All excess materials and equipment not protected by approved traffic control devices must be relocated to the staging area or demobilized. Trench spoils must be hauled off the Project site daily and open excavations must be protected with steel plates. Contractor and Subcontractor personnel may not occupy or use the Project site for any purpose during non-Work hours, except as may be provided in the Contract Documents or pursuant to prior written authorization from City.

(C) ***Unforeseen Conditions.*** If Contractor encounters facilities, utilities, or other unknown conditions not shown on or reasonably inferable from the Plans or apparent from inspection of the Project site, Contractor must immediately notify the City and promptly and submit a Request for Information to obtain further directions from the Engineer. Contractor must avoid taking any action which could cause damage to the facilities or utilities pending further direction from Engineer. If Engineer's subsequent direction to Contractor affects Contractor's cost or time to perform the Work, Contractor may submit a Change Order request as set forth in Article 6, above.

(D) ***Support; Adjacent Properties.*** Contractor must provide, install, and maintain all shoring, bracing, and underpinning necessary to provide support to City's property and adjacent properties and improvements thereon. Contractor must provide notifications to adjacent property owners as may be required by Laws. See also Section 7.15 Trenching of Five Feet or More.

(E) ***Notification of Property Damage.*** Contractor must immediately notify the City of damage to any real or personal property resulting from

Work on the Project. Contractor must immediately provide a written report to City of any such property damage in excess of $500 (based on estimated cost to repair or replace) within 24 hours of the occurrence. The written report must include: (1) the location and nature of the damage, and the owner of the property, if known; (2) the name and address of each employee of Contractor or any Subcontractor involved in the damage; (3) a detailed description of the incident, including precise location, time, and names and contact information for known witnesses; and (4) a police or first responder report, if applicable. If Contractor is required to file an accident report with another government agency, Contractor will provide a copy of the report to City.

7.6 Materials and Equipment.

(A) ***General.*** Unless otherwise specified, all materials and equipment required for the Work must be new, free from defects, and of the best grade for the intended purpose, and furnished in sufficient quantities to ensure the proper and expeditious performance of the Work. . Contractor must employ measures to preserve the specified quality and fitness of the materials and equipment. Unless otherwise specified, all materials and equipment required for the Work are deemed to include all components required for complete installation and intended operation, and must be installed in accordance with the manufacturer's recommendations or instructions. Contractor is responsible for all shipping, handling, and storage costs associated with the materials and equipment required for the Work. Contractor is responsible for providing security and protecting the Work and all of the required materials, supplies, tools and equipment at Contractor's sole cost until City has formally accepted the Project as set forth in Section 11.1, Final Completion. Contractor will not assign, sell, mortgage, or hypothecate any materials or equipment for the Project, or remove any materials or equipment that have been installed or delivered.

(B) ***City-Provided.*** If the Work includes installation of materials or equipment to be provided by City, Contractor is solely responsible for the proper examination, handling, storage, and installation in accordance with the Contract Documents. Contractor must notify City of any defects discovered in City-provided materials or equipment sufficiently in advance of scheduled use or installation to afford adequate time to procure replacement materials or equipment as needed. Contractor is solely responsible for any loss of or damage to such items which occurs while the items are in Contractor's custody and control, the cost of which may be offset from the Contract Price and deducted from any payment(s) due to Contractor.

(C) ***Intellectual Property Rights.*** Contractor must, at its sole expense, obtain any authorization or license required for use of patented

or copyright-protected materials, equipment, devices or processes that are incorporated into the Work. Contractor's indemnity obligations in Article 4 apply to any claimed violation of intellectual property rights in violation of this provision.

7.7 Substitutions.

(A) ***"Or Equal."*** Any Specification designating a material, product, or thing (collectively "item") or service by specific brand or trade name, followed by the words "or equal," is intended only to indicate the quality and type of item or service desired, and Contractor may request use of any equal item or service. Unless otherwise stated in the Specifications, any reference to a specific brand or trade name for an item that is used solely for the purpose of describing the type of item desired, will be deemed to be followed by the words "or equal." A substitution will only be approved if it is a true "equal" item in every aspect of design, function, and quality, as determined by City, including dimensions, weight, maintenance requirements, durability, fit with other elements, and schedule impacts.

(B) ***Request for Substitution.*** A post-award request for substitution of an item or service must be submitted in writing to the Engineer for approval in advance, within the applicable time period provided in the Contract Documents. If no time period is specified, the substitution request may be submitted any time within 35 days after the date of award of the Contract, or sufficiently in advance of the time needed to avoid delay of the Work, whichever is earlier.

(C) ***Substantiation.*** Any available data substantiating the proposed substitute as an equal item or service must be submitted with the written request for substitution. Contractor's failure to timely provide all necessary substantiation, including any required test results as soon as they are available, is grounds for rejection of the proposed substitution, without further review.

(D) ***Burden of Proving Equality.*** Contractor has the burden of proving the equality of the proposed substitution. City has sole discretion to determine whether a proposed substitution at Contractor's sole cost is equal, and City's determination is final.

(E) ***Approval or Rejection.*** If the proposed substitution is approved, Contractor is solely responsible for any additional costs or time associated with the substituted item or service. If the proposed substitution is rejected, Contractor must, without delay, install the item or use the service as specified by the City.

(F) ***Contractor's Obligations.*** City's approval of a proposed substitution will not relieve Contractor from any of its obligations under the Contract Documents. In the event Contractor makes an unauthorized substitution, Contractor will be solely responsible for all resulting cost impacts, including the cost of removal and replacement and the impact to other design elements.

7.8 Testing and Inspection.

(A) ***General.*** All materials, equipment, and workmanship used in the Work are subject to inspection and testing by City at all times and locations during construction and/or fabrication and at any Worksite, including at shops and yards as well as at the Project site. All manufacturers' application or installation instructions must be provided to the Inspector at least ten days prior to the first such application or installation. Contractor must, at all times, make the Work available for testing or inspection. Neither City's inspection or testing of Work, nor its failure to do so, operate to waive or limit Contractor's duty to complete the Work in accordance with the Contract Documents.

(B) ***Scheduling and Notification.*** Contractor must cooperate with City in coordinating the inspections and testing. Contractor must submit samples of materials, at Contractor's expense, and schedule all tests required by the Contract Documents in time to avoid any delay to the progress of the Work. Contractor must notify the Engineer no later than noon of the Working Day before any inspection or testing and must provide timely notice to the other necessary parties as specified in the Contract Documents. If Contractor schedules an inspection or test beyond regular Work hours, or on a Saturday, Sunday, or recognized City holiday, Contractor must notify the Engineer at least two Working Days in advance for approval. If approved, Contractor must reimburse City for the cost of the overtime inspection or testing. Such costs, including the City's hourly costs for required personnel, may be deducted from payments otherwise due to Contractor.

(C) ***Responsibility for Costs.*** City will bear the initial cost of inspection and testing to be performed by independent testing consultants retained by City, subject to the following exceptions:

(1) Contractor will be responsible for the costs of any subsequent tests which are required to substantiate compliance with the Contract Documents, and any associated remediation costs.

(2) Contractor will be responsible for inspection costs, at City's hourly rates, for inspection time lost because the Work is not ready, or Contractor fails to appear for a scheduled inspection.

(3) If any portion of the Work that is subject to inspection or testing is covered or concealed by Contractor prior to the inspection or testing, Contractor will bear the cost of making that portion of the Work available for the inspection or testing required by the Contract Documents, and any associated repair or remediation costs.

(3) Contractor is responsible for properly shoring all compaction test sites deeper than five feet below grade, as required under Section 7.15 below.

(4) Any Work or material that is defective or fails to comply with the requirements of the Contract Documents must be promptly repaired, removed, replaced, or corrected by Contractor, at Contractor's sole expense, even if that Work or material was previously inspected or included in a progress payment

(D) ***Contractor's Obligations.*** Contractor is solely responsible for any delay occasioned by remediation of defective or of noncompliant Work or material. Inspection of the Work does not in any way relieve Contractor of its obligations to perform the Work as specified. Any Work done without the required inspection(s) will also be subject to rejection by City.

(E) ***Distant Locations.*** If required off-site testing or inspection must be conducted at a location more than 100 miles from the Project site, Contractor is solely responsible for the additional travel costs required for testing and/or inspection at such locations.

(F) ***Final Inspection.*** The provisions of this Section 7.8 also apply to final inspection under Article 11, Completion and Warranty Provisions.

7.9 Project Site Conditions and Maintenance. Contractor must at all times, on a 24-hour basis and at its sole cost, maintain the Project site and staging and storage areas in clean, neat, and sanitary condition and in compliance with all Laws pertaining to safety, air quality, and dust control. Adequate toilets must be provided, and properly maintained and serviced for all workers on the Project site, located in a suitably secluded area, subject to City's prior approval. Contractor must also, on a daily basis and at its sole cost, remove and properly dispose of the debris and waste materials from the Project site.

(A) ***Air Emissions Control.*** Contractor must not discharge smoke or other air contaminants into the atmosphere in violation of any Laws.

(B) ***Dust and Debris.*** Contractor must minimize and confine dust and debris resulting from the Work. Contractor must abate dust nuisance by

cleaning, sweeping, and immediately sprinkling with water excavated areas of dirt or other materials prone to cause dust, and within one hour after the Engineer notifies Contractor that an airborne nuisance exists. The Engineer may direct that Contractor provide an approved water-spraying truck for this purpose. If water is used for dust control, Contractor will only use the minimum necessary. Contractor must take all necessary steps to keep wastewater out of streets, gutters, or storm drains. See Section 7.19, Environmental Control. If City determines that the dust control is not adequate, City may have the work done by others and deduct the cost from the Contract Price. Contractor will immediately remove any excess excavated material from the Project site and any dirt deposited on public streets.

(C) ***Clean up.*** Before discontinuing Work in an area, Contractor must clean the area and remove all rubbish debris and waste along with the construction equipment, tools, machinery, waste and surplus materials. Contractor must, at all times, minimize and confine dust and debris resulting from construction activities.

(1) Except as otherwise specified, all excess Project materials, and the materials removed from existing improvements on the Project site with no salvage value or intended reuse by City, will be Contractor's property.

(2) Hauling trucks and other vehicles leaving the Project site must be cleaned of exterior mud or dirt before traveling on City streets. Materials and loose debris must be delivered and loaded to prevent dropping materials or debris. Contractor must immediately remove spillage from hauling on any publicly traveled way. Streets affected by Work on the Project must be kept clean by street sweeping.

(D) ***Disposal.*** Contractor must dispose of all Project debris and waste materials in a safe and legal manner. Contractor may not burn or bury waste materials on the Project site. Contractor will not allow any dirt, refuse, excavated material, surplus concrete or mortar, or any associated washings, to be disposed of onto streets, into manholes or into the storm drain system.

(E) ***Completion.*** At the completion of the Work, Contractor must remove from the Project site all of its equipment, tools, surplus materials, waste materials and debris., presenting a clean and neat appearance. Before demobilizing from the Project site, Contractor must ensure that all surfaces are cleaned, sealed, waxed, or finished as applicable, and that all marks, stains, paint splatters, and the like have been properly removed from the completed Work and the surrounding areas. Contractor must ensure that all parts of the construction are properly joined with the

previously existing and adjacent improvements and conditions. Contractor must provide all cutting, fitting and patching needed to accomplish that requirement. Contractor must also repair or replace all existing improvements that are damaged or removed during the Work, both on and off the Project site, including curbs, sidewalks, driveways, fences, signs, utilities, street surfaces and structures. Repairs and replacements must be at least equal to the previously existing improvements, and the condition, finish and dimensions must match the previously existing improvements. Contractor must restore to original condition all property or items that are not designated for alteration under the Contract Documents and leave each Worksite clean and ready for occupancy or use by City.

(F) ***Non-Compliance.*** If Contractor fails to commence compliance with its maintenance and cleanup obligations within two business days following written notification from any City or its representative clean up order, City may, acting in its sole discretion, elect to suspend the Work until the condition(s) is corrected with no increase in the Contract Time or Contract Price, or undertake appropriate cleanup measures without further notice and the cost will be deducted from any amounts due or to become due to Contractor.

7.10 Instructions and Manuals. Contractor must provide to City three copies each of all instructions and manuals required by the Contract Documents, unless otherwise specified. These must be complete as to drawings, details, parts lists, performance data, and other information that may be required for City to easily maintain and service the materials and equipment installed for this Project.

(A) ***Submittal Requirements.*** All manufacturers' application or installation instructions must be provided to the City at least ten days prior to the first such application. The instructions and manuals, along with any required guarantees, must be delivered to City for review.

(B) ***Training.*** Contractor or its Subcontractors must train City's personnel in the operation and maintenance of any complex equipment or systems as a condition precedent to Final Completion, if required in the Contract Documents.

7.11 As-built Drawings. Contractor and its Subcontractors must prepare and maintain at the Project site a detailed, complete, and accurate as-built set of the Plans which will be used solely for the purpose of recording changes made in any portion of the original Plans in order to create accurate record drawings at the end of the Project.

(A) ***Duty to Update.*** The as-built drawings must be updated as changes occur, on a daily basis if necessary. City may withhold the

estimated cost for City to have the as-built drawings prepared from payments otherwise due to the Contractor, until the as-built drawings are brought up to date to the satisfaction of City. Actual locations to scale must be identified on the as-built drawings for all runs of mechanical and electrical work, including all site utilities, installed underground, in walls, floors, or otherwise concealed. Deviations from the original Plans must be shown in detail. The exact location of all main runs, whether piping, conduit, ductwork, or drain lines, must be shown by dimension and elevation. The location of all buried pipelines, appurtenances, or other improvements must be represented by coordinates and by the horizontal distance from visible above-ground improvements.

(B) ***Final Completion.*** Contractor must verify that all changes in the Work are depicted in the as-built drawings and must deliver the complete set of as-built drawings to City for review and acceptance as a condition precedent to Final Completion and Final Payment.

7.12 Existing Utilities.

(A) General. The Work may be performed in developed, urban areas with existing utilities, both above and below ground, including utilities identified in the Contract Documents or in other informational documents or records. Contractor must take due care to locate identified or reasonably identifiable utilities before proceeding with trenching, excavation, or any other activity that could damage or disrupt existing utilities. This may include excavation with small equipment, potholing, or hand excavation, and, if practical, using white paint or other suitable markings to delineate the area to be excavated. Except as otherwise provided herein, Contractor will be responsible for costs resulting from damage to identified or reasonably identifiable utilities due to Contractor's negligence or failure to comply with the Contract Documents, including the requirements in this Article 7.

(B) ***Unidentified Utilities.*** Pursuant to Government Code Section 4215, if, during the performance of the Work, Contractor discovers utility facilities not identified by City in the Contract Documents, Contractor must immediately provide written notice to City and the utility. City assumes responsibility for the timely removal, relocation, or protection of existing main or trunkline utility facilities located on the Project site, if those utilities are not identified in the Contract Documents. Contractor will be compensated in accordance with the provisions of the Contract Documents for the costs of locating, repairing damage not due to Contractor's failure to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Plans or Specifications with reasonable accuracy, and for equipment on the Project necessarily idled during such work. Contractor will not be assessed liquidated

damages for delay in completion of the Work, to the extent such delay was caused by City's failure to provide for removal or relocation of the utility facilities.

7.13 Notice of Excavation. Contractor must comply with all applicable requirements in Government Code Sections 4216 through 4216.5, which are incorporated herein. Government Code Section 4216.2, requires that except in an emergency, Contractor must contact the appropriate regional notification center, or Underground Services Alert, at least two working days, but not more than fourteen calendar days before starting any excavation if the excavation will be conducted in an area that is known, or reasonably should be known, to contain subsurface installations. Contractor may not begin excavation until it has obtained and submitted to Engineer an inquiry identification number from Underground Services Alert.

7.14 Trenching and Excavations of Four Feet or More. As required by Public Contract Code Section 7104, if the Work includes digging trenches or other excavations that extend deeper than four feet below the surface, the provisions in this Section apply to the Work and the Project.

(A) ***Duty to Notify.*** Contractor must promptly, and before the following conditions are disturbed, provide written notice to City if Contractor finds any of the following conditions:

(1) Material that Contractor believes may be a hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with the provisions of existing Laws;

(2) Subsurface or latent physical conditions at the Project site differing from those indicated by information about the Project site made available to bidders prior to the deadline for submitting bids; or

(3) Unknown physical conditions at the Project site of any unusual nature, materially different from those ordinarily encountered and generally recognized as inherent in work of the character required by the Contract Documents.

(B) ***City Investigation.*** City will promptly investigate the conditions and if City finds that the conditions materially differ from those indicated, apparent, or reasonably inferred from information about the Project site made available to bidders, or do involve hazardous waste, and cause a decrease or increase in Contractor's cost of, or the time required for, performance of any part of the Work, City will issue a Change Order.

(C) ***Disputes.*** In the event that a dispute arises between City and Contractor regarding any of the conditions specified in subsection (B) above, or the terms of a Change Order issued by the City, Contractor will not be excused from completing the Work within the Contract Time, but must proceed with all Work to be performed under the Contract. Contractor will retain any and all rights provided either by the Contract or by Laws which pertain to the resolution of disputes between Contractor and City.

7.15 Trenching of Five Feet or More. As required by Labor Code Section 6705, if the Contract Price exceeds $25,000.00 and the Work includes the excavation of any trench or trenches of five feet or more in depth, a detailed plan must be submitted to City for acceptance in advance of the excavation. The detailed plan must show the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation. If the plan varies from the shoring system standards, it must be prepared by a California registered civil or structural engineer. Use of a shoring, sloping, or protective system less effective than that required by the Construction Safety Orders is prohibited.

7.16 New Utility Connections. Except as otherwise specified, City will pay connection charges and meter costs for new permanent utilities required by the Contract Documents, if any. Contractor must notify City sufficiently in advance of the time needed to request service from each utility provider so that connections and services are initiated in accordance with the Project schedule.

7.17 Lines and Grades. Contractor is required to use any benchmark provided by the Engineer. Unless otherwise specified in the Contract Documents, Contractor must provide all lines and grades required to execute the Work. Contractor must also provide, preserve, and replace if necessary, all construction stakes required for the Project. All stakes or marks must be set by a California licensed surveyor or a California registered civil engineer. Contractor must notify the Engineer of any discrepancies found between Contractor's staking and grading and information provided by the Contract Documents. Upon completion, all Work must conform to the lines, elevations, and grades shown in the Plans, including any changes directed by a Change Order.

7.18 Historic or Archeological Items.

(A) ***Contractor's Obligations.*** Contractor must ensure that all persons performing Work at the Project site are required to immediately notify the Project Manager, upon discovery of any potential historic or

archeological items, including historic or prehistoric ruins, a burial ground, archaeological or vertebrate paleontological site, including fossilized footprints or other archeological, paleontological or historical feature on the Project site (collectively, "Historic or Archeological Items").

(B) ***Discovery; Cessation of Work.*** Upon discovery of any potential Historic or Archeological Items, Work must be stopped within an 85-foot radius of the find and may not resume until authorized in writing by City. If required by City, Contractor must assist in protecting or recovering the Historic or Archeological Items, with any such assistance to be compensated as Extra Work on a time and materials basis under Article 6, Contract Modification. At City's discretion, a suspension of Work required due to discovery of Historic or Archeological Items may be treated as Excusable Delay pursuant to Article 5 or as a suspension for convenience under Article 13.

7.19 Environmental Control. Contractor must not pollute any drainage course or its tributary inlets with fuels, oils, bitumens, acids, insecticides, herbicides or other harmful materials. Contractor must prevent the release of any hazardous material or hazardous waste into the soil or groundwater, and prevent the unlawful discharge of pollutants into City's storm drain system and watercourses as required below. Contractor and its Subcontractors must at all times in the performance of the Work comply with all Laws concerning pollution of waterways.

(A) ***Stormwater Permit.*** Contractor must comply with all applicable conditions of the State Water Resources Control Board National Pollutant Discharge Elimination System General Permit for Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction Activity ("Stormwater Permit").

(B) ***Contractor's Obligations.*** If required for the Work, a copy of the Stormwater Permit is on file in City's principal administrative offices, and Contractor must comply with the same without adjustment of the Contract Price or the Contract Time. Contractor must timely and completely submit required reports and monitoring information required by the conditions of the Stormwater Permit. Contractor must also comply with all other Laws governing discharge of stormwater, including applicable municipal stormwater management programs.

7.20 Noise Control. Contractor must comply with all applicable noise control Laws. Noise control requirements apply to all equipment used for the Work or related to the Work, including trucks, transit mixers or transient equipment that may or may not be owned by Contractor.

7.21 Mined Materials. Pursuant to the Surface Mining and Reclamation Act of 1975, Public Resources Code Section 2710 *et seq*., any purchase of mined materials, such as construction aggregate, sand, gravel, crushed stone, road base, fill materials, and any other mineral materials must originate from a surface mining operation included on the AB 3098 List, which is available online at: ftp://ftp.consrv.ca.gov/pub/omr/AB3098%20List/AB3908List.pdf.

Article 8 - Payment

8.1 Schedule of Values. Prior to submitting its first application for payment, Contractor must prepare and submit to the Project Manager a schedule of values apportioned to the various divisions and phases of the Work, including mobilization and demobilization. If a Bid Schedule was submitted with Contractor's bid, the amounts in the schedule of values must be consistent with the Bid Schedule. Each line item contained in the schedule of values must be assigned a value such that the total of all items equals the Contract Price. The items must be sufficiently detailed to enable accurate evaluation of the percentage of completion claimed in each application for payment, and the assigned value consistent with any itemized or unit pricing submitted with Contractor's bid.

(A) ***Measurements for Unit Price Work.*** Materials and items of Work to be paid for on the basis of unit pricing will be measured according to the methods specified in the Contract Documents.

(B) ***Deleted or Reduced Work.*** Contractor will not be compensated for Work that City has deleted or reduced in scope, except for any labor, material or equipment costs for such Work that Contractor reasonably incurred before Contractor learned that the Work could be deleted or reduced. Contractor will only be compensated for those actual, direct and documented costs incurred, and will not be entitled to any mark up for overhead or lost profits.

8.2 Progress Payments. Following the last day of each month, or as otherwise required by the Special Conditions or Specifications, Contractor will submit to Project Manager a monthly application for payment for Work performed during the preceding month based on the estimated value of the Work performed during that preceding month.

(A) ***Application for Payment.*** Each application for payment must be itemized to include labor, materials, and equipment incorporated into the Work, and materials and equipment delivered to the Project site, as well as authorized and approved Change Orders. Each payment application must be supported by the unit prices submitted with Contractor's Bid

Schedule and/or schedule of values and any other substantiating data required by the Contract Documents. **Each application for payment shall be accompanied by completed "Contract Balance Form," a copy of which is provided at the end of Article 8.**

(B) ***Payment of Undisputed Amounts.*** City will pay the undisputed amount due within thirty days after Contractor has submitted a complete and accurate payment application, subject to Public Contract Code Section 20104.50. City will deduct a percentage from each progress payment as retention, as set forth in Section 8.5, below, and may withhold additional amounts as set forth in Section 8.3, below.

8.3 Adjustment of Payment Application. City may adjust or reject the amount requested in a payment application, including application for Final Payment, in whole or in part, if the amount requested is disputed or unsubstantiated. Contractor will be notified in writing of the basis for the modification to the amount requested. City may also deduct or withhold from payment otherwise due based upon any of the circumstances and amounts listed below. Sums withheld from payment otherwise due will be released when the basis for that withholding has been remedied and no longer exists.

(A) For Contractor's unexcused failure to perform the Work as required by the Contract Documents, including correction or completion of punch list items. City may withhold or deduct an amount based on the City's estimated cost to correct or complete the Work.

(B) For loss or damage caused by Contractor or its Subcontractors arising out of or relating to performance of the Work, or any failure to protect the Project site, City may deduct an amount based on the estimated cost to repair or replace.

(C) For Contractor's failure to pay its Subcontractors and suppliers when payment is due. City may withhold an amount equal to the total of past due payments and may opt to pay that amount separately via joint check pursuant to Section 8.6(B), Joint Checks.

(D) For Contractor's failure to timely correct rejected, nonconforming, or defective Work. City may withhold or deduct an amount based on the City's estimated cost to correct or complete the Work.

(E) For any unreleased stop notice, City may withhold 125% of the amount claimed.

(F) For Contractor's failure to submit any required schedule or schedule update in the manner and within the time specified in the

Contract Documents, City may withhold an amount equal to five percent of the total amount requested until Contractor complies with its schedule submittal obligations.

(G) For Contractor's failure to maintain or submit as-built documents in the manner and within the time specified in the Contract Documents; City may withhold or deduct an amount based on the City's cost to prepare the as-builts.

(H) Work performed without Shop Drawings, that have been accepted by the City when accepted Shop Drawings are required before proceeding with the Work. City may deduct an amount based on the estimated costs to correct unsatisfactory Work or diminution in value.

(I) For fines, payments, or penalties assessed under the Labor Code, City may deduct from payments due to Contractor as required by Laws and as directed by the Division of Labor Standards Enforcement.

(J) For any other costs or charges that may be withheld or deducted from payments to Contractor, as provided in the Contract Documents, including liquidated damages, City may withhold or deduct such amounts from payment otherwise due to Contractor.

8.4 Early Occupancy. Neither City's payment of progress payments nor its partial or full use or occupancy of the Project constitutes acceptance of any part of the Work.

8.5 Retention. City will retain five percent of the full amount due on each progress payment (i.e., the amount due before any withholding or deductions pursuant to Section 8.3, Adjustment to Payment Application), or the percentage stated in the Notice Inviting Bids, whichever is greater, as retention to ensure full and satisfactory performance of the Work. Contractor is not entitled to any reduction in the rate of withholding at any time, nor to release of any retention before 35 days following City's acceptance of the Project.

(A) ***Substitution of Securities.*** As provided by Public Contract Code Section 22300, Contractor may request in writing that it be allowed, at its sole expense, to substitute securities for the retention withheld by City. Any escrow agreement entered into pursuant to this provision must fully comply with Public Contract Code Section 22300, and will be subject to approval as to form by City's legal counsel. If City exercises its right to draw upon such securities in the event of default pursuant to section (7) of the statutory Escrow Agreement for Security Deposits in Lieu of Retention, pursuant to subdivision (f) of Public Contract Code Section 22300 ("Escrow Agreement"), and if Contractor disputes that it is in default, its

sole remedy is to comply with the dispute resolution procedures in Article 12 and the provisions therein. It is agreed that for purposes of this paragraph, an event of default includes City's rights pursuant to these Contract Documents to withhold or deduct sums from retention, including withholding or deduction for liquidated damages, incomplete or defective Work, stop payment notices, or backcharges. It is further agreed that if any individual authorized to give or receive written notice on behalf of a party pursuant to section (10) of the Escrow Agreement are unavailable to give or receive notice on behalf of that party due to separation from employment, retirement, death, or other circumstances, the successor or delegee of the named individual is deemed to be the individual authorized to give or receive notice pursuant to section (10) of the Escrow Agreement.

(B) ***Release of Undisputed Retention.*** All undisputed retention, less any amounts that may be assessed as liquidated damages, retained for stop notices, or otherwise withheld pursuant to Section 8.3 Adjustment of Payment Application will be released as Final Payment to Contractor no sooner than 35 days following recordation of the notice of completion, and no later than 60 days following acceptance of the Project by City's governing body or authorized designee pursuant to Section 11.1(C) Acceptance, or, if the Project has not been accepted, no later than 60 days after the Project is otherwise considered complete pursuant to Public Contract Code Section 7107(c).

8.6 Payment to Subcontractors and Suppliers. Each month, Contractor must promptly pay each Subcontractor and supplier the value of the portion of labor, materials, and equipment incorporated into the Work or delivered to the Project site by the Subcontractor or supplier during the preceding month. Such payments must be made in accordance with the requirements of Laws pertaining to such payments, and those of the Contract Documents and applicable subcontract or supplier contract.

(A) ***Withholding for Stop Notice.*** Pursuant to Civil Code Section 9358, City will withhold 125% of the amount claimed by an unreleased stop notice, a portion of which may be retained by City for the costs incurred in handling the stop notice claim, including attorneys' fees and costs, as authorized by law.

(B) ***Joint Checks.*** City reserves the right, acting in its sole discretion, to issue joint checks made payable to Contractor and a Subcontractor or supplier, if City determines this is necessary to ensure fair and timely payment to Subcontractor or supplier who has provide services or goods for the Project. . As a condition to release of payment by a joint check, the joint check payees may be required to execute a joint check agreement in a form provided or approved by the City Attorney's Office. The joint check

payees will be jointly and severally responsible for the allocation and disbursement of funds paid by joint check. Payment by joint check will not be construed to create a contractual relationship between City and a Subcontractor or supplier of any tier beyond the scope of the joint check agreement.

8.7 Final Payment. Contractor's application for Final Payment must comply with the requirements for submitting an application for a progress payment as stated in Section 8.2, above. Corrections to previous progress payments, including adjustments to estimated quantities for unit priced items, may be included in the Final Payment. If Contractor fails to submit a timely application for Final Payment, City reserves the right to unilaterally process and issue Final Payment without an application from Contractor in order to close out the Project. For the purposes of determining the deadline for Claim submission pursuant to Article 12, the date of Final Payment is deemed to be the date that City acts to release undisputed retention as final payment to Contractor, or otherwise provides written notice to Contractor of Final Payment. . or that no undisputed funds remain available for Final Payment due to offsetting withholdings or deductions pursuant to Section 8.3, Adjustment of Payment Application. If the amount due from Contractor to City exceeds the amount of Final Payment, City retains the right to recover the balance from Contractor or its sureties.

8.8 Release of Claims. City may, at any time, require that payment of the undisputed portion of any progress payment or Final Payment be contingent upon Contractor furnishing City with a written waiver and release of all claims against City arising from or related to the portion of Work covered by those undisputed amounts, subject to the limitations of Public Contract Code Section 7100. Any disputed amounts may be specifically excluded from the release.

8.9 Warranty of Title. Contractor warrants that title to all work, materials, or equipment incorporated into the Work and included in a request for payment will pass over to City free of any claims, liens, or encumbrances upon payment to Contractor.

CONTRACT BALANCE FORM

Note: A detailed invoice MUST be attached to this Contract Balance Form.

CONTRACTOR NAME: _____ DATE: _____

MAILING ADDRESS: _____ TELEPHONE NO.: _____

_____ FAX NO.: _____

_____ PROJECT NO.: _____

INVOICE NO.: _____

1. ORIGINAL CONTRACT AMOUNT: $_____

2. APPROVED CHANGE ORDERS TOTAL: $_____

3. REVISED CONTRACT AMOUNT: (1+2) $_____

4. PREVIOUS BALANCE PAID: $_____

5. REMAINING BALANCE: (3-4) $_____

6. CURRENT PROGRESS PAYMENT DUE: $_____
   (before retention)

7. 5% RETENTION FROM WORK DONE: (-)$_____

8. CURRENT BALANCE DUE: (6-7) $_____

9. REMAINING BALANCE OF REVISED CONTRACT AMOUNT: (5-8) $_____
   (including retention)

Article 9 - Labor Provisions

9.1 Discrimination Prohibited. Discrimination against any prospective or present employee engaged in the Work on grounds of race, color, ancestry, national origin, ethnicity, religion, sex, sexual orientation, age, disability, or marital status is strictly prohibited. Contractor and its Subcontractors are required to comply with all applicable Laws prohibiting discrimination, including the California Fair Employment and Housing Act (Government Code Sections 12900 *et seq.*), Government Code Section 11135, and Labor Code Sections 1735, 1777.5, 1777.6, and 3077.5.

9.2 Labor Code Requirements.

(A) ***Eight Hour Day.*** Pursuant to Labor Code Section 1810, eight hours of labor constitute a legal day's work under this Contract.

(B) ***Penalty.*** Pursuant to Labor Code Section 1813, Contractor will forfeit to City as a penalty, the sum of $25.00 for each day during which a worker employed by Contractor or any Subcontractor is required or permitted to work more than eight hours in any one calendar day or more than 40 hours per calendar week, except if such workers are paid overtime under Labor Code Section 1815.

(C) ***Apprentices.*** Contractor is responsible for compliance with the requirements governing employment and payment of apprentices, as set forth in Labor Code Section 1777.5, which is fully incorporated by reference.

(D) ***Notices.*** Pursuant to Labor Code Section 1771.4, Contractor is required to post all job site notices prescribed by Laws.

9.3 Prevailing Wages. Each worker performing Work under this Contract that is covered under Labor Code Sections 1720 or 1720.9, including cleanup at the Project site, must be paid at a rate not less than the prevailing wage as defined in Sections 1771 and 1774 of the Labor Code. The prevailing wage rates are available online at http://www.dir.ca.gov/dlsr. Contractor must post a copy of the applicable prevailing rates at the Project site.

(A) ***Penalties.*** Pursuant to Labor Code Section 1775, Contractor and any Subcontractor will forfeit to City as a penalty up to $200.00 for each calendar day, or portion a day, for each worker paid less than the applicable prevailing wage rate. Contractor must also pay each worker the difference between the applicable prevailing wage rate and the amount actually paid to that worker.

(B) ***Federal Requirements.*** If this Project is subject to federal prevailing wage requirements in addition to California prevailing wage requirements, Contractor and its Subcontractors are required to pay the higher of the currently applicable state or federal prevailing wage rates.

9.4 Payroll Records. Contractor must comply with the provisions of Labor Code Sections 1776 and 1812 and all implementing regulations, which are fully incorporated by this reference, including requirements for electronic submission of payroll records to the DIR.

(A) ***Contractor and Subcontractor Obligations***. Contractor and each Subcontractor must keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed in connection with the Work. Each payroll record must contain or be verified by a written declaration that it is made under penalty of perjury, stating both of the following:

(1) The information contained in the payroll record is true and correct.

(2) Contractor or Subcontractor has complied with the requirements of Labor Code Sections 1771, 1811, and 1815 for any Work performed by its employees on the Project.

(B) ***Certified Record.*** A certified copy of an employee's payroll record must be made available for inspection or furnished to the employee or his or her authorized representative on request, to City, or to the Division of Labor Standards Enforcement, to the Division of Apprenticeship Standards of the DIR, and as further required by the Labor Code.

(C) ***Enforcement.*** Upon notice of noncompliance with Labor Code Section 1776, Contractor or Subcontractor has ten days in which to comply with the requirements of this section. If Contractor or Subcontractor fails to do so within the ten-day period, Contractor or Subcontractor will forfeit a penalty of $100.00 per day, or portion a day, for each worker for whom compliance is required, until strict compliance is achieved. Upon request by the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement, these penalties will be withheld from payments then due to Contractor.

9.5 Labor Compliance. Pursuant to Labor Code Section 1771.4, the Contract for this Project is subject to compliance monitoring and enforcement by the DIR.

9.6 Wage Theft Prevention. Compliance with Wage and Hour Laws: Contractor, and any subcontractor it employs to complete work under this Agreement, shall comply with all applicable federal, state and local wage and hour laws. Applicable laws may include, but are not limited to, the Federal Fair Labor Standards Act and the California Labor Code.

Final Judgments, Decisions, and Orders: For purposes of this Section, a "final judgment, decision, or order" refers to one for which all appeals have been exhausted or the time to appeal has expired. Relevant investigatory government agencies include: the federal Department of Labor, the California Division of Labor Standards Enforcement, or any other governmental entity or division tasked with the investigation and enforcement of wage and hour laws.

Prior Judgments against Contractor and/or its Subcontractors: BY SIGNING THIS AGREEMENT, CONTRACTOR AFFIRMS THAT IT HAS DISCLOSED ANY FINAL JUDGMENTS, DECISIONS OR ORDERS FROM A COURT OR INVESTIGATORY GOVERNMENT AGENCY FINDING – IN THE FIVE (5) YEARS PRIOR TO EXECUTING THIS AGREEMENT – THAT CONTRACTOR OR ITS SUBCONTRACTOR(S) HAS VIOLATED ANY APPLICABLE WAGE AND HOUR LAWS. CONTRACTOR FURTHER AFFIRMS THAT IT OR ITS SUBCONTRACTOR(S) HAS SATISFIED AND COMPLIED WITH – OR HAS REACHED AGREEMENT WITH THE CITY REGARDING THE MANNER IN WHICH IT WILL SATISFY – ANY SUCH JUDGMENTS, DECISIONS OR ORDERS.

Judgments or Decisions During Term of Contract: If at any time during the term of this Agreement, a court or investigatory government agency issues a final judgment, decision or order finding that Contractor or an subcontractor it employs to perform work under this Agreement has violated any applicable wage and hour law, or Contractor learns of such a judgment, decision, or order that was not previously disclosed, Contractor shall inform the City Attorney, no more than fifteen (15) days after the judgment, decision or order becomes final or of learning of the final judgment, decision or order. Contractor and its subcontractors shall promptly satisfy and comply with any such judgment, decision, or order, and shall provide the City Attorney with documentary evidence of compliance with the final judgment, decision or order within five (5) days of satisfying the final judgment, decision or order. The City reserves the right to require Contractor to enter into an agreement with the City regarding the manner in which any such final judgment, decision, or order will be satisfied.

City's Right to Withhold Payment: Where Contractor or any subcontractor it employs to perform work under this Agreement has been found in

violation of any applicable wage and hour law by a final judgment, decision or order of a court or government agency, the City reserves the right to withhold payment to Contractor until such judgment, decision or order has been satisfied in full.

Material Breach: Failure to comply with any part of this Section constitutes a material breach of this Agreement. Such breach may serve as a basis for immediate termination of this Agreement and/or any other remedies available under this Agreement and/or law.

Notice to City Related to Wage Theft Prevention: Notice provided to the City Attorney as required under this Section shall be addressed to: City Attorney, City of Morgan Hill, 17575 Peak Avenue, Morgan Hill, CA 95037. The Notice provisions of this Section are separate from any other notice provisions in this Agreement and, accordingly, only notice provided to the above address satisfies the notice requirements in this Section.

Article 10 - Safety Provisions

10.1 Safety Precautions and Programs. Contractor and its Subcontractors are fully responsible for safety precautions and programs, and for the safety of persons and property in the performance of the Work. Contractor and its Subcontractors must at all times comply with all applicable health and safety Laws and seek to avoid injury, loss, or damage to persons or property by taking reasonable steps to protect its employees and other persons at any Worksite, materials and equipment stored on or off site, and property at or adjacent to any Worksite.

(A) ***Reporting Requirements.*** Contractor must immediately notify the City of any death, serious injury or illness resulting from Work on the Project. Contractor must immediately provide a written report to City of each recordable accident or injury occurring at any Worksite within 24 hours of the occurrence. The written report must include: (1) the name and address of the injured or deceased person; (2) the name and address of each employee of Contractor or of any Subcontractor involved in the incident; (3) a detailed description of the incident, including precise location, time, and names and contact information for known witnesses; and (4) a police or first responder report, if applicable. If Contractor is required to file an accident report with a government agency, Contractor will provide a copy of the report to City.

(B) ***Legal Compliance.*** Contractor's safety program must comply with the applicable legal and regulatory requirements. Contractor must provide City with copies of all notices required by Laws.

(C) ***Contractor's Obligations.*** Any damage or loss caused by Contractor arising from the Work which is not insured under property insurance must be promptly remedied by Contractor.

(D) ***Remedies.*** If City determines, in its sole discretion, that any part of the Work or Project site is unsafe, City may, without assuming responsibility for Contractor's safety program, require Contractor or its Subcontractor to cease performance of the Work or to take corrective measures to City's satisfaction. If Contractor fails to promptly take the required corrective measures, City may perform them and deduct the cost from the Contract Price. Contractor agrees it is not entitled to submit a Claim for damages, for an increase in Contract Price, or for a change in Contract Time based on Contractor's compliance with City's request for corrective measures pursuant to this provision.

10.2 Hazardous Materials. Unless otherwise specified in the Contract Documents, this Contract does not include the removal, handling, or disturbance of any asbestos or other Hazardous Materials. If Contractor encounters materials on the Project site that Contractor reasonably believes to be asbestos or other Hazardous Materials, and the asbestos or other Hazardous Materials have not been rendered harmless, Contractor may continue Work in unaffected areas reasonably believed to be safe, but must immediately cease work on the area affected and report the condition to City. No asbestos, asbestos-containing products or other Hazardous Materials may be used in performance of the Work.

10.3 Material Safety. Contractor is solely responsible for complying with Section 5194 of Title 8 of the California Code of Regulations, including by providing information to Contractor's employees about any hazardous chemicals to which they may be exposed in the course of the Work. A hazard communication program and other forms of warning and training about such exposure must be used. Contractor must also maintain Safety Data Sheets ("SDS") at the Project site, as required by Law, for materials or substances used or consumed in the performance of the Work. The SDS will be accessible and available to Contractor's employees, Subcontractors, and City.

(A) ***Contractor Obligations.*** Contractor is solely responsible for the proper delivery, handling, use, storage, removal, and disposal of all materials brought to the Project site and/or used in the performance of the Work. Contractor must notify the Engineer if a specified product or material cannot be used safely.

(B) ***Labeling.*** Contractor must ensure proper labeling on any material brought onto the Project site so that any persons working with or in the vicinity of the material may be informed as to the identity of the material,

any potential hazards, and requirements for proper handling, protections, and disposal.

10.4 Hazardous Condition. Contractor is solely responsible for determining whether a hazardous condition exists or is created during the course of the Work, involving a risk of bodily harm to any person or risk of damage to any property. If a hazardous condition exists or is created, Contractor must take all precautions necessary to address the condition and ensure that the Work progresses safely under the circumstances. Hazardous conditions may result from, but are not limited to, use of specified materials or equipment, the Work location, the Project site condition, the method of construction, or the way any Work must be performed.

10.5 Emergencies. In an emergency affecting the safety or protection of persons, Work, or property at or adjacent to any Worksite, Contractor must take reasonable and prompt actions to prevent damage, injury, or loss, without prior authorization from the City if, under the circumstances, there is inadequate time to seek prior authorization from the City.

Article 11 - Completion and Warranty Provisions

11.1 Final Completion.

(A) ***Final Inspection and Punch List.*** When the Work required by this Contract is fully performed, Contractor must provide written notification to City requesting final inspection. The Engineer will schedule the date and time for final inspection, which must include Contractor's primary representative for the Project and its superintendent. Based on that inspection, City will prepare a punch list of any items that are incomplete, missing, defective, incorrectly installed, or otherwise not compliant with the Contract Documents The punch list to Contractor will specify the time by which all of the punch list items must be completed or corrected. The punch list may include City's estimated cost to complete each punch list item if Contractor fails to do so within the specified time. The omission of any non-compliant item from a punch list will not relieve Contractor from fulfilling all requirements of the Contract Documents. Contractor's failure to complete any punch list item within the time specified in the punch list will not waive or abridge its warranty obligations for any such items that must be completed by the City or by a third party retained by the City due to Contractor's failure to timely complete any such outstanding item.

(B) ***Requirements for Final Completion.*** Final Completion will be achieved upon completion or correction of all punch list items, as verified by City's further inspection, and upon satisfaction of all other Contract requirements, including any commissioning required under the Contract

Documents, and submission of all final submittals, including instructions and manuals as required under Section 7.10, and complete, final as-built drawings as required under Section 7.11, all to City's satisfaction.

(C) ***Acceptance.*** The Project will be considered accepted upon City Council action during a public meeting to accept the Project, unless the Engineer is authorized to accept the Project, in which case the Project will be considered accepted upon the date of the Engineer's issuance of a written notice of acceptance. In order to avoid delay of Project close out, the City may elect, acting in its sole discretion, to accept the Project as complete subject to exceptions for punch list items that are not completed within the time specified in the punch list.

(D) ***Final Payment and Release of Retention.*** Final Payment and release of retention, less any sums withheld pursuant to the provisions of the Contract Documents, will not be made sooner than 35 days after recordation of the notice of completion. If Contractor fails to complete all of the punch list items within the specified time, City may withhold up to 150% of City's estimated cost to complete each of the remaining items from Final Payment and may use the withheld retention to pay for the costs to self-perform the outstanding items or to retain a third party to complete any such outstanding punch list item.

11.2 Warranty.

(A) ***General.*** Contractor warrants that all materials and equipment will be new unless otherwise specified, of good quality, in conformance with the Contract Documents, and free from defective workmanship and materials. Contractor further warrants that the Work will be free from material defects not intrinsic in the design or materials required in the Contract Documents. Contractor warrants that materials or items incorporated into the Work comply with the requirements and standards in the Contract Documents, including compliance with Laws, and that any Hazardous Materials encountered or used were handled as required by Laws. At City's request, Contractor must furnish satisfactory evidence of the quality and type of materials and equipment furnished. Contractor's warranty does not extend to damage caused by normal wear and tear, or improper use or maintenance.

(B) ***Warranty Period.*** Contractor's warranty must guarantee its Work for a period of one year from the date of Project acceptance (the "Warranty Period"), except when a longer guarantee is provided by a supplier or manufacturer or is required by the Specifications or Special Conditions. Contractor must obtain from its Subcontractors, suppliers and manufacturers any special or extended warranties required by the Contract Documents.

(C) ***Warranty Documents.*** As a condition precedent to Final Completion, Contractor must supply City with all warranty and guarantee documents relevant to equipment and materials incorporated into the Work and guaranteed by their suppliers or manufacturers.

(D) ***Subcontractors.*** The warranty obligations in the Contract Documents apply to Work performed by Contractor and its Subcontractors, and Contractor expressly agrees to be co-guarantor of such Work.

(E) ***Contractor's Obligations.*** Upon written notice from City to Contractor of any defect in the Work discovered during the Warranty Period, Contractor or its responsible Subcontractor must promptly correct the defective Work at its own cost. Contractor's obligation to correct defects discovered during the Warranty Period will continue past the expiration of the Warranty Period as to any defects in Work for which Contractor was notified prior to expiration of the Warranty Period. Work performed during the Warranty Period ("Warranty Work") will be subject to the warranty provisions in this Section 11.2 for a one-year period that begins upon completion of such Warranty Work to City's satisfaction.

(F) ***City's Remedies.*** If Contractor or its responsible Subcontractor fails to correct defective Work within ten days following notice by City, or sooner, if required by the circumstances, Contractor expressly agrees that City may correct the defects to conform with the Contract Documents at Contractor's sole expense. Contractor must reimburse City for its costs in accordance with subsection (H) below.

(G) ***Emergency Repairs.*** In cases of emergency where any delay in correcting defective Work could cause harm, loss or damage, City may immediately correct the defects to conform with the Contract Documents at Contractor's sole expense. Contractor or its surety must reimburse City for its costs in accordance with subsection (H), below.

(H) ***Reimbursement.*** Contractor must reimburse City for its costs to repair under subsections (F) or (G), above, within 30 days following City's submission of a demand for payment pursuant to this provision. If City is required to initiate legal action to compel Contractor's compliance with this provision, and City is the prevailing party in such action, Contractor and its surety are solely responsible for all of City's attorney's fees and legal costs expended to enforce Contractor's warranty obligations herein in addition to any and all costs City incurs to correct the defective Work.

11.3 Use Prior to Final Completion. City reserves the right to occupy or make use of the Project, or any portions of the Project, prior to Final

Completion if City has determined that the Project or portion of it is in a condition suitable for the proposed occupation or use, and that it is in its best interest to occupy or make use of the Project, or any portions of it, prior to Final Completion. City will notify Contractor in writing of its intent to occupy or make use of the Project or any portions of the Project, pursuant to this provision.

(A) ***Non-Waiver.*** Occupation or use of the Project, in whole or in part, prior to Final Completion will not operate as acceptance of the Work or any portion of it, nor will it operate as a waiver of any of City's rights or Contractor's duties pursuant to these Contract Documents, and will not affect nor bear on the determination of the time of substantial completion with respect to any statute of repose pertaining to the time for filing an action for construction defect.

(B) ***City's Responsibility.*** City will be responsible for the cost of maintenance and repairs due to normal wear and tear with respect to those portions of the Project that are being occupied or used before Final Completion. The Contract Price or the Contract Time may be adjusted pursuant to the applicable provisions of these Contract Documents if, and only to the extent that, any occupation or use under this Section actually adds to Contractor's cost or time to complete the Work within the Contract Time.

11.4 Substantial Completion. For purposes of determining "substantial completion" with respect to any statute of repose pertaining to the time for filing an action for construction defect, "substantial completion" is deemed to mean the last date that Contractor or any Subcontractor performs Work on the Project prior to City acceptance of the Project, except for warranty work performed under this Article.

Article 12 - Dispute Resolution

12.1 Claims. This Article applies to and provides the exclusive procedures for any Claim arising from or related to the Contract or performance of the Work.

(A) ***Definition.*** "Claim" means a separate demand by Contractor, submitted in writing by registered or certified mail with return receipt requested, for a change in the Contract Time, including a time extension or relief from liquidated damages, or a change in the Contract Price when the demand has previously been submitted to City in accordance with the requirements of the Contract Documents, and which has been rejected or disputed by City, in whole or in part. A Claim may also include that portion of a unilateral Change Order that is disputed by the Contractor.

(B) ***Limitations.*** A Claim may only include the portion of a previously rejected demand that remains in dispute between Contractor and City. With the exception of any dispute regarding the amount of money actually paid to Contractor as Final Payment, Contractor is not entitled to submit a Claim demanding a change in the Contract Time or the Contract Price, which has not previously been submitted to City in full compliance with Article 5 and Article 6, and subsequently rejected in whole or in part by City.

(C) ***Scope of Article.*** This Article is intended to provide the exclusive procedures for submission and resolution of Claims of any amount, and applies in addition to the provisions of Public Contract Code Section 9204 and Sections 20104 *et seq.*, which are incorporated herein by this reference.

(D) ***No Work Delay.*** Notwithstanding the submission of a Claim or any other dispute between the parties related to the Project or the Contract Documents, Contractor must perform the Work and may not delay or cease Work pending resolution of a Claim or other dispute, but must continue to diligently prosecute the performance and timely completion of the Work, including the Work pertaining to a Claim or other dispute.

(E) ***Informal Resolution.*** Contractor will make a good faith effort to informally resolve a dispute before initiating a Claim, preferably by face-to-face meeting between authorized representatives of Contractor and City.

12.2 Claims Submission. The following requirements apply to any Claim subject to this Article:

(A) ***Substantiation.*** The Claim must be submitted to City in writing, clearly identified as a "Claim" submitted pursuant to this Article 12, and must include all of the documents necessary to substantiate the Claim including the Change Order request that was rejected in whole or in part, and a copy of City's written rejection that is in dispute. The Claim must clearly identify and describe the dispute, including relevant references to applicable portions of the Contract Documents, and a chronology of relevant events. Any Claim for additional payment must include a complete, itemized breakdown of all known or estimated labor, materials, taxes, insurance, and subcontract, or other costs. Substantiating documentation such as payroll records, receipts, invoices, or the like, must be submitted in support of each component of claimed cost. Any Claim for an extension of time or delay costs must be substantiated with a schedule analysis and narrative depicting and explaining claimed time impacts. Contractor understands that submission of a Claim which has no basis in fact or which Contractor knows to be false may violate the False Claims Act (Government Code Section 12650 et seq.).

(B) ***Claim Format and Content.*** A Claim must be submitted in the following format:

(1) Provide a cover letter, specifically identifying the submission as a “Claim” submitted under this Article 12 and specifying the requested remedy (e.g., amount of proposed change to Contract Price and/or change to Contract Time).

(2) Provide a summary of each Claim, including underlying facts and the basis for entitlement, and identify each specific demand at issue, , including the specific Change Order request (by number and submittal date),and the date of City's rejection of that demand, in whole or in part.

(3) Provide a detailed explanation of each issue in dispute. For multiple issues included within a single Claim or for multiple Claims submitted concurrently, separately number and identify each individual issue or Claim and include the following for each separate issue or Claim:

(a) A succinct statement of the matter in dispute, including Contractor’s position and the basis for that position;

(b) Identify and attach all documents that substantiate the Claim, including relevant provisions of the Contract Documents, RFIs, calculations, and schedule analysis (see subsection (A), Substantiation above); and

(c) A chronology of relevant events; and

(d) Analysis and basis for claimed changes to Contract Price, Contract Time, or any other remedy requested.

(4) Provide a summary of issues and corresponding claimed damages. If, by the time of the Claim submission deadline (below), the precise amount of the requested change in the Contract Price or Contract Time is not yet known, Contractor must provide a good faith estimate, including the basis for that estimate, and must identify the date by which it is anticipated that the Claim will be updated to provide final amounts.

(5) Include the following certification, executed by Contractor’s authorized representative:

"The undersigned Contractor certifies under penalty of perjury that its statements and representations in this Claim submittal are true and correct. Contractor warrants that this Claim submittal is comprehensive and complete as to the matters in dispute, and agrees that any costs, expenses, or delay not included herein are deemed waived.

(C) ***Submission Deadlines.***

(1) A Claim disputing rejection of a request for a change in the Contract Time or Contract Price must be submitted within 15 days following the date that City notified Contractor in writing that a request for a change in the Contract Time or Contract Price, duly submitted in compliance with Article 5 and Article 6, has been rejected in whole or in part. A Claim disputing the terms of a unilateral Change Order must be submitted within 15 days following the date of issuance of the unilateral Change Order. These Claim deadlines apply even if Contractor cannot yet quantify the total amount of any requested change in the Contract Time or Contract Price. If the Contractor cannot quantify those amounts, it must submit an estimate of the amounts claimed pending final determination of the requested remedy by Contractor.

(2) With the exception of any dispute regarding the amount of Final Payment, any Claim must be filed on or before the date of Final Payment, or will be deemed waived.

(3) A Claim disputing the amount of Final Payment must be submitted within 15 days of the effective date of Final Payment, under Section 8.7, Final Payment, above.

(4) Strict compliance with these Claim submission deadlines is necessary to ensure that any dispute may be mitigated as soon as possible, and to facilitate cost-efficient administration of the Project. Any Claim that is not submitted within the specified deadlines will be deemed waived by Contractor.

12.3 City's Response. City will respond within 45 days of receipt of the Claim with a written statement identifying which portion(s) of the Claim are disputed, unless the 45-day period is extended by mutual agreement of City and Contractor or as otherwise allowed under Public Contract Code Section 9204. However, if City determines that the Claim is not adequately substantiated pursuant to Section 12.2(A), Substantiation, City may first request, in writing, within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses to the Claim that City may have against the Claim.

(A) ***Additional Information.*** If additional information is thereafter required, it may be requested and provided upon mutual agreement of City and Contractor. If Contractor's Claim is based on estimated amounts, Contractor has a continuing duty to update its Claim as soon as possible with information on actual amounts in order to facilitate prompt and fair resolution of the Claim.

(B) ***Non-Waiver.*** Any failure by City to respond within the times specified above will not be construed as acceptance of the Claim in whole or in part, or as a waiver of any provision of these Contract Documents.

12.4 Meet and Confer. If Contractor disputes City's written response, or City fails to respond within the specified time, within 15 days of receipt of City's response, or within 15 days of City's failure to respond within the applicable 45-day time period, respectively, Contractor may notify City of the dispute in writing sent by registered or certified mail, return receipt requested and demand an informal conference to meet and confer for settlement of the issues in dispute. If Contractor fails to dispute City's response, in writing, within the specified time, Contractor's Claim will be deemed waived.

(A) ***Schedule Meet and Confer.*** Upon receipt of the demand to meet and confer, City will schedule the meet and confer conference to be held within 30 days, or later if needed to ensure the mutual availability of each of the individuals that each party requires to represent its interests at the meet and confer conference.

(B) ***Location for Meet and Confer.*** The meet and confer conference will be scheduled at a location at or near City's principal office.

(C) ***Written Statement After Meet and Confer.*** Within ten working days after the meet and confer has concluded, City will issue a written statement identifying which portion(s) of the Claim remain in dispute, if any.

(D) ***Submission to Mediation.*** If the Claim or any portion remains in dispute following the meet and confer conference, within ten working days after the City issues the written statement identifying any portion(s) of the Claim remaining in dispute, the Contractor may identify in writing disputed portion(s) of the Claim, which will be submitted for mediation, as set forth below.

12.5 Mediation and Government Code Claims.

(A) ***Mediation.*** Within ten working days after the City issues the written statement identifying any portion(s) of the Claim remaining in dispute**,** following the meet and confer, , City and Contractor will mutually agree to a mediator, as provided under Public Contract Code Section 9204. Mediation will be scheduled to ensure the mutual availability of the selected mediator and all of the individuals that each party requires to represent its interests. If there are multiple Claims in dispute, the parties may agree to schedule the mediation to address all outstanding Claims at the same time. The parties will share the costs of the mediator and mediation fees equally, but each party is otherwise solely and separately responsible for its own costs to prepare for and participate in the mediation, including costs for its legal counsel or any other consultants.

(B) ***Government Code Claims***.

(1) Timely presentation of a Government Code Claim is a condition precedent to filing any legal action based on or arising from the Contract. Compliance with the Claim submission requirements in this Article 12 is a condition precedent to filing a Government Code Claim.

(2) The time for filing a Government Code Claim will be tolled from the time Contractor submits its written Claim pursuant to Section 12.2, above, until the time that Claim is denied in whole or in part at the conclusion of the meet and confer process, including any period of time used by the meet and confer process. However, if the Claim is submitted to mediation, the time for filing a Government Code Claim will be tolled until conclusion of the mediation, including any continuations, if the Claim is not fully resolved by mutual agreement of the parties during the mediation or any continuation of the mediation.

12.6 Tort Claims. This Article does not apply to tort claims and nothing in this Article is intended nor will be construed to change the time periods for filing tort-based Government Code Claims.

12.7 Arbitration. It is expressly agreed, under Code of Civil Procedure Section 1296, that in any arbitration to resolve a dispute relating to this Contract, the arbitrator's award must be supported by law and substantial evidence.

12.8 Burden of Proof and Limitations. Contractor bears the burden of proving entitlement to and the amount of any claimed damages. Contractor is not entitled to damages calculated on a total cost basis, but must prove actual damages. Contractor is not entitled to speculative, special, or consequential damages, including home office overhead or

any form of overhead not directly incurred at the Project site or any other Worksite; lost profits; loss of productivity; lost opportunity to work on other projects; diminished bonding capacity; increased cost of financing for the Project; extended capital costs; non-availability of labor, material or equipment due to delays; or any other indirect loss arising from the Contract. The Eichleay Formula or similar formula will not be used for any recovery under the Contract. The City will not be directly liable to any Subcontractor or supplier.

12.9 Legal Proceedings. In any legal proceeding that involves enforcement of any requirements of the Contract Documents, the finder of fact will receive detailed instructions on the meaning and operation of the Contract Documents, including conditions, limitations of liability, remedies, claim procedures, and other provisions bearing on the defenses and theories of liability. Detailed findings of fact will be requested to verify enforcement of the Contract Documents. All of the City's remedies under the Contract Documents will be construed as cumulative, and not exclusive, and the City reserves all rights to all remedies available under law or equity as to any dispute arising from or relating to the Contract Documents or performance of the Work.

12.10 Other Disputes. The procedures in this Article 12 will apply to any and all disputes or legal actions, in addition to Claims, arising from or related to this Contract, including disputes regarding suspension or early termination of the Contract, unless and only to the extent that compliance with a procedural requirement is expressly and specifically waived by City. Nothing in this Article is intended to delay suspension or termination under Article 13.

Article 13 - Suspension and Termination

13.1 Suspension for Cause. In addition to all other remedies available to City, if Contractor fails to perform or correct Work in accordance with the Contract Documents, including non-compliance with applicable environmental or health and safety Laws, City may immediately order the Work, or any portion of it, suspended until the circumstances giving rise to the suspension have been eliminated to City’s satisfaction.

(A) ***Notice of Suspension***. Upon receipt of City’s written notice to suspend the Work, in whole or in part, except as otherwise specified in the notice of suspension, Contractor and its Subcontractors must promptly stop Work as specified in the notice of suspension; comply with directions for cleaning and securing the Worksite; and protect the completed and in-progress Work and materials. Contractor is solely responsible for any

damages or loss resulting from its failure to adequately secure and protect the Project.

(B) ***Resumption of Work.*** Upon receipt of the City's written notice to resume the suspended Work, in whole or in part, except as otherwise specified in the notice to resume, Contractor and its Subcontractors must promptly re-mobilize and resume the Work as specified; and within ten days from the date of the notice to resume, Contractor must submit a recovery schedule, prepared in accordance with the Contract Documents, showing how Contractor will complete the Work within the Contract Time.

(C) ***Failure to Comply.*** Contractor will not be entitled to an increase in Contract Time or Contract Price for a suspension occasioned by Contractor's failure to comply with the Contract Documents.

(D) ***No Duty to Suspend.*** City's right to suspend the Work will not give rise to a duty to suspend the Work, and City's failure to suspend the Work will not constitute a defense to Contractor's failure to comply with the requirements of the Contract Documents.

13.2 Suspension for Convenience. City reserves the right to suspend, delay, or interrupt the performance of the Work in whole or in part, for a period of time determined to be appropriate for City's convenience. Upon notice by City pursuant to this provision, Contractor must immediately suspend, delay, or interrupt the Work and secure the Project site as directed by City, except for taking measures to protect completed or in progress Work as directed in the suspension notice, and subject to the provisions of Section 13.1(A) and (B), above. If Contractor submits a timely request for a Change Order in compliance with Articles 5 and 6, the Contract Price and the Contract Time will be equitably adjusted by Change Order pursuant to Articles 5 and 6 to reflect the cost and delay impact occasioned by such suspension for convenience except to the extent that any such impacts were caused by Contractor's failure to comply with the Contract Documents or the terms of the suspension notice or notice to resume. However, Contract Time will only be extended if the suspension causes or will cause unavoidable delay in Final Completion. If Contractor disputes the terms of a Change Order issued for such equitable adjustment due to suspension for convenience, its sole recourse is to comply with the Claim procedures in Article 12.

13.3 Termination for Default. City may declare that Contractor is in default of the Contract for a material breach of or inability to fully, promptly, or satisfactorily perform its obligations under the Contract

(A) ***Default.*** Events giving rise to a declaration of default include Contractor's refusal or failure to supply sufficient skilled workers, proper

materials, or equipment to perform the Work within the Contract Time; Contractor's refusal or failure to make prompt payment to its employees, Subcontractors, or suppliers or to correct defective Work or damage; Contractor's failure to comply with the Laws, or orders of any public agency with jurisdiction over the Project; evidence of Contractor's bankruptcy, insolvency, or lack of financial capacity to complete the Work as required within the Contract Time; suspension, revocation, or expiration and nonrenewal of Contractor's license or DIR registration; dissolution, liquidation, reorganization, or other major change in Contractor's organization, ownership, structure or existence as a business entity; unauthorized assignment of Contractor's rights or duties under the Contract; or any material breach of the Contract requirements.

(B) ***Notice of Default and Opportunity to Cure.*** Upon City's declaration that Contractor is in default, due to a material breach of the Contract Documents, if City determines that the default is curable, City will afford Contractor the opportunity to cure the default within ten days of City's notice of default, or within a period of time reasonably necessary for such cure, including a shorter period of time if applicable.

(C) ***Termination.*** If Contractor fails to cure the default or fails to expediently take steps reasonably calculated to cure the default within the time period specified in the notice of default, City may issue written notice to Contractor and its performance bond surety of City's termination of the Contract for default.

(D) ***Waiver.*** Time being of the essence in the performance of the Work, if Contractor's surety fails to arrange for completion of the Work in accordance with the Performance Bond, within seven calendar days from the date of the notice of termination, pursuant to Paragraph (C), City may immediately make arrangements for the completion of the Work through use of its own forces, by hiring a replacement contractor, or by any other means that City determines advisable under the circumstances. Contractor and its surety will be jointly and severally liable for any additional cost incurred by City to complete the Work following termination, where "additional cost" means all cost in excess of the cost City would have incurred if Contactor had timely completed Work without the default and termination. In addition, City will have the right to immediate possession and use of any materials, supplies, and equipment procured for the Project and located at the Project site or any Worksite on City property for the purposes of completing the remaining Work.

(E) ***Compensation.*** Within 30 days of receipt of updated as-builts, all warranties, manuals, instructions, or other required documents for Work installed to date, and delivery to City of all equipment and materials for the Project for which Contractor has already been compensated, Contractor

will be compensated for the Work satisfactorily performed in compliance with the Contract Documents up to the effective date of the termination pursuant to the terms of Article 8, Payment, subject to City's rights to withhold or deduct sums from payment otherwise due pursuant to Section 8.3, and excluding any costs Contractor incurs as a result of the termination, including any cancellation or restocking charges or fees due to third parties. If Contractor disputes the amount of compensation determined by City, its sole recourse is to comply with the Claim Procedures in Article 12, by submitting a Claim no later than 30 days following notice from City of the total compensation to be paid by City.

(F) ***Wrongful Termination.*** If Contractor disputes the termination, its sole recourse is to comply with the Claim procedures in Article 12. If a court of competent jurisdiction or an arbitrator later determines that the termination for default was wrongful, the termination will be deemed to be a termination for convenience, and Contractor's damages will be strictly limited to the compensation provided for termination for convenience, under Section 13.4, below. Contractor waives any claim for any other damages for wrongful termination including special or consequential damages, lost opportunity costs or lost profits, and any award of damages is subject to Section 12.8, Burden of Proof and Limitations.

13.4 Termination for Convenience. City reserves the right, acting in its sole discretion, to terminate all or part of the Contract for convenience upon written notice to Contractor.

(A) ***Compensation to Contractor.*** In the event of City's termination for convenience, Contractor waives any claim for damages, including for loss of anticipated profits from the Project. The following will constitute full and fair compensation to Contractor, and Contractor will not be entitled to any additional claim or compensation.

(1) Completed Work. The value of its Work satisfactorily performed as of the date notice of termination is received, based on Contractor's schedule of values and unpaid costs for items delivered to the Project site that were fabricated for incorporation in the Work;

(2) ***Demobilization.*** Demobilization costs specified in the schedule of values, or if demobilizations cost were not provided in a schedule of values pursuant to Section 8.1, then based on actual, reasonable, and fully documented demobilization costs; and

(3) ***Termination Markup.*** Five percent of the total value of the Work performed as of the date of notice of termination including reasonable, actual, and documented costs to comply with the

direction in the notice of termination for convenience, and demobilization costs, which is deemed to cover all overhead and profit to date.

(B) ***Disputes.*** If Contractor disputes the amount of compensation determined by City pursuant to paragraph (A), above, its sole recourse is to comply with the Claim procedures in Article 12, by submitting a Claim no later than 30 days following notice from City of total compensation to be paid by City.

13.5 Actions Upon Termination for Default or Convenience. The following provisions apply to any termination under this Article, whether for default or convenience, and whether in whole or in part.

(A) ***General.*** Upon termination City may immediately enter upon and take possession of the Project and the Work and all tools, equipment, appliances, materials, and supplies procured or fabricated for the Project. Contractor will transfer title to and deliver all completed Work and all Work in progress to City.

(B) ***Submittals.*** Unless otherwise specified in the notice of termination, Contractor must immediately submit to City all designs, drawings, as-built drawings, Project records, contracts with vendors and Subcontractors, manufacturer warranties, manuals, and other such submittals or Work-related documents required under the terms of the Contract Documents, including incomplete documents or drafts.

(C) ***Close Out Requirements.*** Except as otherwise specified in the notice of termination, Contractor must comply with all of the following:

(1) Immediately stop the Work, except for any Work that must be completed pursuant to the notice of termination and comply with City's instructions for cessation of labor and securing the Project and any other Worksite(s).

(2) Comply with City's instructions to protect the completed Work and materials, using best efforts to minimize further costs.

(3) Contractor must not place further orders or enter into new subcontracts for materials, equipment, services or facilities, except as may be necessary to complete any portion of the Work that is not terminated.

(4) As directed in the notice, Contractor must assign to City or cancel existing subcontracts that relate to performance of the terminated Work, subject to any prior rights, if any, of the surety for

Contractor's performance bond, and settle all outstanding liabilities and claims, subject to City's approval.

(5) As directed in the notice, Contractor must use its best efforts to sell any materials, supplies, or equipment intended solely for the terminated Work in a manner and at market rate prices acceptable to City.

(D) ***Payment Upon Termination.*** Upon completion of all termination obligations, as specified herein and in the notice of termination, Contractor will submit its request for Final Payment, including any amounts due following termination pursuant to this Article 13. Payment will be made in accordance to the provisions of Article 8, based on the portion of the Work satisfactorily completed, including the close out requirements, and consistent with the previously submitted schedule of values and unit pricing, including demobilization costs. Adjustments to Final Payment may include deductions for the cost of materials, supplies, or equipment retained by Contractor; payments received for sale of any such materials, supplies, or equipment, less re-stocking fees charged; and as otherwise specified in Section 8.3, Adjustment of Payment Application.

(E) ***Continuing Obligations.*** Regardless of any Contract termination, Contractor's obligations for portions of the Work already performed will continue and the provisions of the Contract Documents will remain in effect as to any claim, indemnity obligation, warranties, guarantees, submittals of as-built drawings, instructions, or manuals, record maintenance, or other such rights and obligations arising prior to the termination date.

Article 14 - Miscellaneous Provisions

14.1 Assignment of Unfair Business Practice Claims. Under Public Contract Code Section 7103.5, Contractor and its Subcontractors agree to assign to City all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the Contract or any subcontract. This assignment will be effective at the time City tenders Final Payment to Contractor, without further acknowledgement by the parties.

14.2 Provisions Deemed Inserted. Every provision of law required to be inserted in the Contract Documents is deemed to be inserted, and the Contract Documents will be construed and enforced as though such

provision has been included. If it is discovered that through mistake or otherwise that any required provision was not inserted, or not correctly inserted, the Contract Documents will be deemed amended accordingly.

14.3 Waiver. City's waiver of a breach, failure of any condition, or any right or remedy contained in or granted by the provisions of the Contract Documents will not be effective unless it is in writing and signed by City. City's waiver of any breach, failure, right, or remedy will not be deemed a waiver of any other breach, failure, right, or remedy, whether or not similar, nor will any waiver constitute a continuing waiver unless specified in writing by City.

14.4 Titles, Headings, and Groupings. The titles and headings used and the groupings of provisions in the Contract Documents are for convenience only and may not be used in the construction or interpretation of the Contract Documents or relied upon for any other purpose.

14.5 Statutory and Regulatory References. With respect to any amendments to any statutes or regulations referenced in these Contract Documents, the reference is deemed to be the version in effect on the date that that bids were due.

14.6 Survival. The provisions that survive termination or expiration of this Contract include Contract Section 11, Notice, and subsections 12.1, 12.2, 12.3, 12.4, 12.5, and 12.6, of Section 12, General Provisions; and the following provisions in these General Conditions: Section 2.2(J), Contractor's Records, Section 2.3(C), Termination, Section 3.7, Ownership, Section 4.2, Indemnity, Article 12, Dispute Resolution, and Section 11.2, Warranty.

END OF GENERAL CONDITIONS

SPECIAL CONDITIONS

FISHER BASIN EXPANSION PROJECT

1.0 Shop Drawings. Whenever Shop Drawings are required by the Contract Documents or by the Engineer, Contractor must submit five (5) prints of each shop drawing to the Engineer.

(A) If three (3) prints of the drawing are returned to Contractor marked "NO EXCEPTIONS TAKEN," further revision of the drawings will not be required. If one (1) print of the drawing is returned to Contractor marked "REVISE AND RESUBMIT," Contractor must revise the drawing and resubmit five (5) copies of the revised drawing to the Engineer. City reserves the right to withhold payment due Contractor to cover additional costs of the Engineer's review beyond the second submission.

(B) Fabrication of an item may not commence before the Engineer has reviewed the pertinent shop drawings and returned copies to Contractor marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED."

(C) Revisions indicated on shop drawings are deemed necessary to meet the existing requirements of the Contract Documents and may not be taken as the basis of claims for extra Work. Contractor is not entitled to claim for damages or extension of time due to any delay resulting from making the required revisions to shop drawings. The Engineer's review of the shop drawings does not relieve Contractor of responsibility for any errors or omissions contained in the shop drawings nor will such review operate to waive or modify any provision contained in the Contract Documents.

2.0 *Waste Water.* City will provide water required for performance of the Work. Contractor is responsible for the appropriate disposal of waste water in coordination with City personnel. Contractor must provide a backflow preventer on all point of connections to City's Water System. All backflow preventers must be checked and approved by City's Public Works Water Division. Contractor must provide a deposit (refundable) and make necessary arrangements to pick up a hydrant meter at City's Public Works Office. At the completion of the Project, if the hydrant meter is not returned promptly or if it is damaged, Contractor shall forfeit its deposit.

3.0 *Equipment.* Contractor must provide and use equipment and plants suitable to produce the quality of Work and materials required by the Contract Documents. Contractor may be required to remove equipment which the Engineer deems unsuitable for the Work. Contractor must ensure that equipment

is operated by trained, experienced operators, and at a speed or rate of production not to exceed that recommended by the manufacturer. Any vehicles used to haul materials over existing streets and highways must be equipped with pneumatic tires.

4.0 ***Lines and Grades.*** The Engineer will set the stakes or marks necessary to establish the lines and grades required for the completion of the Work in accordance with the Contract Documents. Contractor must give at least two (2) working days' notice to the Engineer of the need for setting any lines and grades.

(A) ***Measurements.*** Distances and measurements are given and will be made in a horizontal plane. Grades are given from the top of stakes or nail unless otherwise noted. Three (3) consecutive points shown on the same rate of slope must be used in common in order to detect any variation from a straight grade. Any variation from a straight grade, straight slope or line, must be reported to the Engineer. If such discrepancy is not reported to the Engineer, Contractor is responsible for any error in the finished work.

(B) ***Stakes.*** Contractor must preserve all stakes and points set for lines, grades or measurements of the Work in their proper places until authorized by the Engineer to remove them. All expense incurred by replacing stakes that have been removed without proper authority may be deducted from any payment due to Contractor.

5.0 Disposal of Materials Outside of Street Right-of-Way. Unless otherwise specified in the Specifications or Special Conditions, Contractor is solely responsible for disposing of materials outside the street right-of-way and for all associated costs. Before disposing materials outside the street right-of-way, Contractor must 1) obtain a written release from the property owner releasing City from any and all responsibility in connection with the disposal of material on that property; and 2) obtain permission from the Engineer to dispose of the material at the permitted location.

6.0 Emergency Contact. Prior to the commencement of Work on the Project, Contractor must provide contact information to the Engineer for the person designated by Contractor to respond to any emergency that arises on the Worksite during the course of the Project. That person will be responsible for responding to the Worksite within thirty (30) minutes following notification of an emergency by City's Police or Fire Department, regardless of the time of day.

7.0 Right-of-Way. City will provide the right-of-way for performance of the Work. Contractor is solely responsible for any additional area required outside of the designated the right-of-way, unless otherwise provided in the Contract Documents.

(A) ***Environmental Control.*** Contractor must not pollute any drainage course or its tributary inlets with fuels, oils, bitumens, acids, insecticides, herbicides or other harmful materials. Contractor and its subcontractors shall at all times in the performance of the Work comply with all applicable federal, state, and local laws and regulations concerning pollution of waterways.

8.0 Authorized Work Days and Hours.

(A) ***Authorized Work Days.*** Except as expressly authorized in writing by City, Contractor is limited to performing Work on the Project on the following days of the week, excluding holidays observed by City:

Monday to Friday

(B) ***Authorized Work Hours.*** Except as expressly authorized in writing by City, Contractor is limited to performing Work on the Project during the following hours:

7am to 5pm

9.0 ***Pre-Construction Conference.*** City will designate a date and time for a pre-construction conference with Contractor following Contract execution. Project administration procedures and coordination between City and Contractor will be discussed, and Contractor must present City with the following information or documents at the meeting for City's review and acceptance before the Work commences:

9.1 Name, 24-hour contact information, and qualifications of the proposed on-site superintendent;

9.2 List of all key Project personnel and their complete contact information, including email addresses and telephone numbers during regular hours and after hours;

9.3 Staging plans that identify the sequence of the Work, including any phases and alternative sequences or phases, with the goal of minimizing the impacts on residents, businesses and other operations in the Project vicinity;

9.4 If required, traffic control plans associated with the staging plans that are signed and stamped by a licensed traffic engineer;

9.5 Draft baseline schedule for the Work as required under Section 5.2, to be finalized within ten days after City issues the Notice to Proceed;

9.6 Breakdown of lump sum bid items, to be used for determining the value of Work completed for future progress payments to Contractor;

9.7 Schedule with list of Project submittals that require City review, and list of the proposed material suppliers;

9.8 Plan for coordination with affected utility owner(s) and compliance with any related permit requirements;

9.9 Videotape and photographs recording the conditions throughout the pre-construction Project site, showing the existing improvements and current condition of the curbs, gutters, sidewalks, signs, landscaping, streetlights, structures near the Project such as building faces, canopies, shades and fences, and any other features within the Project area limits;

9.10 If requested by City, Contractor's cash flow projections; and

9.11 Any other documents specified in the Special Conditions or Notice of Award.

10.0 Weather Delay Days. This provision is intended to supplement the requirements of General Conditions Section 5.2 on Schedule Requirements and Section 5.3 on Delays and Extensions of Contract Time.

(A) ***Weather Delay Day***. A Weather Delay Day is a Working Day during which Contractor and its forces, including Subcontractors, are unable to perform more than forty percent (40%) of the critical path Work scheduled for that day due to adverse weather conditions which impair the ability to safely or effectively perform the scheduled critical path Work that day. Adverse weather conditions may include rain, saturated soil, and Worksite clean-up required due to adverse weather. Determination of what constitutes critical path Work scheduled for that day will be based on the most current, City-approved schedule.

(B) ***Normal Weather Delay Days.*** Based on historic records for the Project location, Contractor's schedule should assume the following number of normal Weather Delay Days for each month:

Month	# Normal Weather Delay Days
January	11
February	11
March	10
April	6
May	4
June	2
July	1
August	1
September	1
October	4
November	7
December	10

Weather Delay Days which do not occur during a given month based on the number of days allocated for that month (above) do not carry over to another month.

11.0 Close Out Requirements. Contractor's close out requirements include the following, if applicable:

11.1 Contractor must replace, with thermoplastic, any existing striping within and adjacent to the Project site that is damaged during the Work. Partially damaged striping must be replaced in its entirety.

11.2 Contractor must replace any survey monuments that are damaged or removed during the Work, with a Record of Survey filed by a licensed land surveyor as required by California law.

11.3 Before removing any traffic control or street signs on the Project site, Contractor must take photographs showing their original locations. Upon completion of each phase of construction, Contractor must temporarily reset the signs at those locations. Contractor must then replace the signs permanently upon completion of the Work and the cost of their removal and replacement must be included in the Bid Proposal.

11.4 Contractor must maintain any rural mailboxes on the Project site and relocate them to their permanent locations as soon as possible in the course of the Work, to the satisfaction of the affected property owners and the postal service.

12.0 Value Engineering. The Contractor may be entitled to additional compensation for cost reduction changes made pursuant to a value engineering proposal submitted by the Contractor, subject to the limitations of Public Contract Code Section 7107, and in strict compliance with this Section __. Contractor will not be entitled to any such additional compensation unless all of the following requirements have been met:

12.1 The Contractor must submit a written proposal for changes to the Plans or Specifications for the Project, in which it:

(A) Identifies the written proposal as a proposal for cost reduction changes with reference to this section;

(B) Clearly and specifically identifies the proposed cost reduction changes by describing in detail each of the changes proposed with specific references to each of the Specifications and Plans involved in the proposed changes, and providing proposed revised Specifications and Plans as applicable; and

(C) Estimates the net amount of the cost reduction and provides the basis for that estimate.

12.2 The proposed changes have been identified and developed solely by the Contractor, and not, in whole or in part, by the City.

12.3 The City accepts the proposed changes in whole or in part in a writing signed by the Engineer. The Contractor will only be entitled to additional compensation for those changes specifically accepted by the City. The Engineer will determine the net savings in construction costs from any such changes that are both accepted and implemented by the City. Contractor will not be entitled to more than 50% of the net savings as determined by the Engineer, acting in his or her sole discretion.

END OF SPECIAL CONDITIONS

TECHNICAL SPECIFICATIONS FOR

CONSTRUCTION OF

FISHER BASIN EXPANSION PROJECT
MORGAN HILL, CALIFORNIA
ENGINEERING AND UTILITIES DEPARTMENT

PREPARED BY

HANNA & BRUNETTI
7651 Eigleberry Street
Gilroy, CA 95020

FOR USE WITH:
CITY OF MORGAN HILL - LATEST DESIGN STANDARDS AND STANDARD DETAILS
AND
CALIFORNIA DEPARTMENT OF TRANSPORTATION - STANDARD SPECIFICATIONS DATED MAY 2018, AND STANDARD PLANS DATED MAY 2018, unless noted otherwise

May 2021

The special provisions contained herein have been prepared by or under the direction of the following Registered Persons.

Approval Date: 5/24/21

Amanda Joy Musy-Verdel
RCE 69728
Hanna & Brunetti

REGISTERED PROFESSIONAL ENGINEER
AMANDA JOY MUSY-VERDEL
No. 69278
CIVIL
STATE OF CALIFORNIA

TECHNICAL SPECIFICATIONS

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GENERAL CONSTRUCTION

COOPERATION
Comply with Section 7-1.14, "Cooperation," of the Standard Specifications. Utility Coordination:
In the event PG&E, AT&T, or Cable TV utilities are found in Fisher Basin that are not shown on the plans, Contractor shall coordinate and cooperate with forces from PG&E, AT&T, or Cable TV and City of Morgan Hill regarding installation and relocation of their facilities, including activation and deactivation of the utilities.

Contractor shall also coordinate and cooperate with forces from private improvement projects along this project's boundary regarding grading, filling, excavation, connections to storm drains, drainage onto project site, removal and/or installation of fences or other facilities, including activation and deactivation of the utilities.

Contractor shall also coordinate and cooperate with forces from private improvement projects along this project's northern, eastern, and southern boundary regarding ingress and egress through the private improvement project.

TS-1 MOBILIZATION

Mobilization shall conform to the provisions in Section 11, "Mobilization," of the Standard Specifications and these Technical Specifications, except for measurement and payment.

MEASUREMENT AND PAYMENT
The contract lump sum price paid for Mobilization includes full compensation for furnishing all labor, materials, tools, equipment and incidentals for Mobilization and all other related costs therefor, including, but not limited to, bonding and insurance costs for prime and subcontractors, equipment delivery and setup, installation of sanitation facilities, construction fencing, removal of all equipment, final site cleanup and all other related mobilization costs as specified in the Standard Specifications.

TS-2 MAINTAINING TRAFFIC

Maintaining traffic shall conform to the provisions in Sections 7-1.03, "Public Convenience," Section 7-1.04, "Public Safety," and Section 12, "Temporary Traffic Control," of the Standard Specifications and these Technical Specifications.

Contractor shall prepare site specific traffic control plans, sign and stamped by a traffic engineer (TE) and shall be approved by the City prior to commencing with work. Traffic Control Plan is required for all locations the construction equipment or vehicles enter or exit on/off public streets, and for all work involving traffic control on public streets.

Any Flagging, signs, and temporary traffic control devices furnished, installed, maintained, and removed when no longer required shall conform to the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these Technical Specifications.

The Contractor shall ensure that existing services provided by utility purveyors within the project area are not disrupted at any time throughout the course of the construction period.

MEASUREMENT AND PAYMENT
The contract lump sum price paid for Maintain Traffic and preparing and implementing TCP's includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in providing Maintain Traffic, including traffic control via flaggers, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the City Engineer.

TS-3 CLEARING AND GRUBBING

Clearing and grubbing shall conform to the provisions in Section 17-2, "Clearing and Grubbing," of the Standard Specifications and these Technical Specifications.

Vegetation and materials to be removed shall be removed, cleared, and grubbed only within the project limits as shown on the plans.

Tree Removal – All Trees and vegetation within the limits of the excavation of Fisher Basin are to be removed. Trees shall be removed in their entirety, including stumps and root system, to a depth of 3 feet below finished grade.

Materials Removal – Facilities to be removed as shown on the plans include, but are not limited to 24" storm drain pipe, rip- rap, and trash/other non-earthen materials within the Basin.

Items removed shall become property of the Contractor and shall be disposed of outside the Project Limits in conformance to the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way", of the Standard Specifications.

MEASUREMENT AND PAYMENT

The contract lump sum price paid for Clearing and Grubbing includes full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all work involved in providing Clearing and Grubbing, including removal and disposal of vegetation, trees, pipe, trash and other non-earthen materials within the limits of the basin and excavation of Fisher Basin, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the City Engineer.

TS-4 EARTHWORK

Earthwork shall conform to the provisions in Section 19, "Earthwork," of the Standard Specifications and these Technical Specifications.

Construction, showing and bracing of excavations shall comply with the current CAL-OSHA safety standards and City of Morgan Hill requirements. The stability and safety of excavations, braced and unbraced, is the responsibility of the Contractor.

Trench excavations adjacent to existing or proposed foundations shall be above an imaginary plane having an inclination of 1 1/2:1 (horizontal: vertical) extending down from the bottom edge of the foundations.

MEASUREMENT AND PAYMENT

The contract price paid per cubic yard for Fisher Basin Grading and Excavation includes full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in providing Detention Basin Grading and Excavation, including grading and excavation for concrete structures, soil off-haul, disposal, scarifying and compacting the material, and relocating and grading of all the resulting material, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

TS-5 ROCK RIP-RAP

This work includes placing granular material for rock rip-rap, as shown on the plans and as specified in these Technical Specifications. Comply with specifications for rock slope protection under Section 72-2 "Rock Slope Protection," of the Standard Specifications.

CONSTRUCTION

Section 72-2.03 "Placing," of the Standard Specifications does not apply to rock rip-rap.

Granular material may be placed by dumping. After dumping, spread granular material with a bulldozer or other suitable equipment. During spreading activity, do not crack, shove or displace granular material.

MEASUREMENT AND PAYMENT
The contract price paid per cubic yard for Rock Rip-Rap includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in installing Rock Rip-Rap, complete in place, including geosynthetic fabric, excavation and backfilling footing trenches, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the City Engineer.

TS-6 MAINTAINING DRAINAGE
This work includes maintaining drainage within the limits of the work and excavation area of Fisher Basin. Drainage from Existing Storm Drainage facilities including but not limited to Storm Drain Pipe and surface runoff into Fisher Basin shall be maintained.

MAINTENANCE
Maintain drainage facilities to allow storm water flows and provide storm water pollution protection. Remove sediment deposits, trash, and debris from any temporary drainage maintenance facilities as needed or when directed by the City Engineer.

If removed sediment is deposited within project limits, it must be stabilized and not subject to erosion by wind or water. Trash and debris must be removed and disposed of as specified in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

MEASUREMENT AND PAYMENT
The contract lump sum price paid for Maintaining Drainage within the limits of the work and excavation area of Fisher Basin, includes full compensation for furnishing all labor, material, tools, equipment, and incidentals, and for doing all work involved in Maintaining Drainage, including removal and disposal of all the resulting material, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

TS-7 EROSION CONTROL
This work includes providing Erosion Control in and adjacent to the work and access limits of the Fisher Basin Expansion project, including but not limited to Street Sweeping, placing, and maintaining Storm Drain Inlet Protections, Fiber Rolls, Concrete Washouts (if required), Stabilized Construction Entrance/Exit, and Hydroseeding.

STREET SWEEPING GENERAL
Street sweeping must be done at job site entrance and exit locations:
During clearing and grubbing activities
During earthwork activities
During any trenching activities
When vehicles are entering and leaving
After soil disturbing activities
After observing offsite tracking of material

HYDROSEED GENERAL
Hydroseed will be required for all areas of graded and/or exposed earth in Fisher Basin.

MEASUREMENT AND PAYMENT
The contract lump sum price LS paid for Erosion Control includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved in Erosion Control, including disposal of collected material, as shown on the plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the City Engineer.

TS-8 STORM WATER POLUTION PREVENTION
This work includes implementing and providing Storm Water Pollution Prevention (SWPPP) as shown in Appendix A.

MEASUREMENT AND PAYMENT
The contract lump sum price LS paid for SWPPP includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved in SWPPP, including disposal of collected material, as shown on the plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the City Engineer.

TS-9 SUPPLEMENTAL WORK
Supplemental scope of work and price shall be agreed to prior to authorization and shall be paid out of this bid item.

MEASUREMENT AND PAYMENT
The work shall include any new or unforeseen work not specified for in the Plans and Specifications. The lump sum dollar amount listed in the bid schedule for Supplemental Work shall be included in each bidder's proposal. Supplemental work shall be performed only upon direct written authorization from the Engineer. Agreed price may be used as an alternate method of payment, if directed by the Engineer.

[Copy onto letterhead]

Sent via _____

[Date]

[Contractor name]
[Contractor address]
[Contractor email]

Re: **NOTICE OF AWARD**
_____ Project

Dear _____:

The City of Morgan Hill ("City") is pleased to inform you that _____ ("Contractor") has been awarded the Contract for the above-referenced Project ("Project"), for the Contract Price of $_____, based on your Bid Proposal submitted on _____, 20__.

A copy of the Contract is enclosed. Contractor must execute _____ copies of the enclosed Contract and return them to my attention, accompanied by the required Payment Bond, Performance Bond, and insurance certificates and endorsements, no later than ten days from the date of this Notice of Award.

Failure to return the executed Contract and required bonds and insurance documentation within the specified time could result in forfeiture of Contractor's bid security.

Please acknowledge receipt of this Notice of Award by signing the attached Acknowledgement of Notice of Award, as indicated, and transmitting the Acknowledgement to my office at: _____ *[insert email address]*. Please do not hesitate to contact me if you have any questions in this regard.

Sincerely,

[name, title]

Enclosure

Acknowledgement of Notice of Award

On behalf of _____ (“Contractor”), I acknowledge receipt of the Notice of Award for the _____ Project:

s/_____

Name: _____

Title: _____

Date: _____

[Copy onto letterhead]

Sent via _____

[date]

[Contractor name]
[Contractor address]
[Contractor email]

Re: **NOTICE TO PROCEED**
_____ Project

Dear _____:

By this letter _____ ("Contractor") is notified to proceed with its Work for the above-referenced Project ("Project"), as required by the Contract Documents. Contractor should start the Work on or before _____, 20__ ("Start Date"), and must achieve Final Completion within _____ calendar days from the Start Date.

[Optional: Contractor and its first-tier Subcontractors must attend a mandatory pre-construction conference on <date> at <time> at <address/location>. The following document(s) must be submitted to the Project Manager at _____ <email address>, no later than <_____, 20__>: _____ <list required documents, e.g., baseline schedule, subcontracts, submittal schedule, schedule of values, etc.>]

A copy of the fully executed Contract is enclosed for your files.

Please acknowledge receipt of this Notice to Proceed by signing the attached Acknowledgement of Notice to Proceed, as indicated, and transmitting the Acknowledgement to my office via email at: _____ *[insert email address]*. Please do not hesitate to contact me if you have any questions in this regard.

Sincerely,

[name, title]

Enclosure

Acknowledgement of Notice to Proceed

On behalf of _____ (“Contractor”), I acknowledge receipt of the Notice to Proceed for the _____ Project:

s/_____

Name: _____

Title: _____

Date: _____

Recording Requested By:
The City of _____

When Recorded Mail To:
_____ <name, title>
_____ <street address>
_____ <city, state and zip>

EXEMPT FROM RECORDING FEES PER
GOVERNMENT CODE §§ 6103, 27383

SPACE ABOVE THIS LINE IS FOR RECORDER'S USE

NOTICE OF COMPLETION
Civil Code §§ 8182, 8184, 9204, and 9208

NOTICE IS HEREBY GIVEN THAT:

1. The undersigned is the agent of the owner of the Project described below.

2. Owner's full name is _____ ("City")

3. City's address is _____

4. The nature of City's interest in the Project is:
__ Fee Ownership __ Lessee __ Other:_____

5. Construction work on the Project performed on City's behalf is generally described as follows:
<_____
_____>.

6. The name of the original Contractor for the Project is: <_____>.

7. The Project was accepted as complete on: <_____, 20__>.

8. The Project is located at: <_____>.

Verification: In signing this document, I, the undersigned, declare under penalty of perjury under the laws of the State of California that I have read this notice, and I know and understand the contents of this notice, and that the facts stated in this notice are true and correct.

_____ _____
Date and Place Signature

_____
Name and Title

EXEMPT FROM NOTARY ACKNOWLEDGMENT REQUIREMENTS PER GOVERNMENT CODE § 27287 AND CIVIL CODE § 9208

STORMWATER POLLUTION PREVENTION PLAN

for

Fisher Basin
City of Morgan Hill

RISK LEVEL 2

Legally Responsible Person (LRP):

Charlie Ha
Supervising Civil Engineer
City of Morgan Hill
Ph. 408-778-6480

Project Address:

Fisher Basin
City of Morgan Hill

SWPPP Prepared by:

Hanna & Brunetti
7651 Eigleberry Street
Gilroy, CA 95020
Amanda Musy-Verdel, QSD/P #00282
408 842-2173

SWPPP Preparation Date

December 2020

Estimated Project Dates:

Start of Construction	**5/15/2021**	Completion of Construction	**10/15/2021**

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Qualified SWPPP Developer

Approval and Certification of the Stormwater Pollution Prevention Plan

Project Name:	*Fisher Basin*
Project Number/ID	*HB JN 20048*

"This Stormwater Pollution Prevention Plan and Attachments were prepared under my direction to meet the requirements of the California Construction General Permit (SWRCB Orders No. 2009-009-DWQ as amended by Order 2010-0014-DWQ). I certify that I am a Qualified SWPPP Developer in good standing as of the date signed below."

Amanda Mu	5/3/21
QSD Signature	*Date*
Amanda Musy-Verdel	#00282
QSD Name	*QSD Certificate Number*
Principal	(408) 842-2173
Title and Affiliation	*Telephone Number*
amanda@hannabrunetti.com	
Email	

Legally Responsible Person

Approval and Certification of the Stormwater Pollution Prevention Plan

Project Name: *Fisher Basin*

Project Number/ID HB JN *20048*

"I certify under penalty of law that this document and all Attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Charlie Ha

Legally Responsible Person

Charlie Ha

Signature of Legally Responsible Person or Approved Signatory

5-3-2021

Date

CHARLIE HA

Name of Legally Responsible Person or Approved Signatory

408-778-6480

Telephone Number

Amendment Log

Project Name: *Fisher Basin.*

Project Number/ID *HB JN 20048*

Amendment No.	Date	Brief Description of Amendment, include section and page number	Prepared and Approved By
			Name: QSD#
			Name: QSD#
			Name: QSD#
			Name: QSD#
			Name: QSD#
			Name: QSD#
			Name: QSD#
			Name: QSD#
			Name: QSD#

Section 1 SWPPP Requirements

1.1 INTRODUCTION

The Fisher Basin project is a wetland that comprises approximately 8.05 acres and is located northeast of the intersection of Monterey Road and Old Monterey Road in Morgan Hill, California. The property is owned and being developed by the City of Morgan Hill. The project location is shown on the Site Map in Appendix B.

This Stormwater Pollution Prevention Plan (SWPPP) is designed to comply with California's General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit) Order No. 2009-0009-DWQ as amended by Order No. 2010-0014-DWQ (NPDES No. CAS000002) issued by the State Water Resources Control Board (State Water Board). This SWPPP has been prepared following the SWPPP Template provided on the California Stormwater Quality Association Stormwater *Best Management Practice Handbook Portal: Construction* (CASQA, 2010). In accordance with the General Permit, Section XIV, this SWPPP is designed to address the following:

- Pollutants and their sources, including sources of sediment associated with construction, construction site erosion and other activities associated with construction activity are controlled;
- Where not otherwise required to be under a Regional Water Quality Control Board (Regional Water Board) permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated;
- Site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology/Best Control Technology (BAT/BCT) standard;

Calculations and design details as well as BMP controls for are complete and correct, Appendix A.

1.2 PERMIT REGISTRATION DOCUMENTS

Required Permit Registration Documents (PRDs) shall be submitted to the State Water Board via the Stormwater Multi Application and Report Tracking System (SMARTS) by the Legally Responsible Person (LRP), or authorized personnel (i.e., Approved Signatory) under the direction of the LRP. The project-specific PRDs include:

1. Notice of Intent (NOI);
2. Risk Assessment (Construction Site Sediment and Receiving Water Risk Determination);
3. Site Map;
4. Annual Fee;
5. Signed Certification Statement (LRP Certification is provided electronically with SMARTS PRD submittal); and
6. SWPPP.

Site Maps can be found in Appendix B. A copy of the submitted PRDs shall also be kept in Appendix C along with the Waste Discharge Identification (WDID) confirmation.

1.3 SWPPP AVAILABILITY AND IMPLEMENTATION

The discharger shall make the SWPPP available at the construction site during working hours (see Section 7.5 of CSMP for working hours) while construction is occurring and shall be made available upon request by a State or Municipal inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio/telephone. (CGP Section XIV.C)

The SWPPP shall be implemented concurrently with the start of ground disturbing activities.

1.4 SWPPP AMENDMENTS

The SWPPP should be revised when:

- If there is a General Permit violation.
- When there is a reduction or increase in total disturbed acreage (General Permit Section II Part C).
- BMPs do not meet the objectives of reducing or eliminating pollutants in stormwater discharges.

Additionally, the SWPPP shall be amended when:

- There is a change in construction or operations which may affect the discharge of pollutants to surface waters, groundwater(s), or a municipal separate storm sewer system (MS4);
- When there is a change in the project duration that changes the project's risk level; or
- When deemed necessary by the QSD. The QSD has determined that the changes listed in Table 1.1 can be field determined by the QSP. All other changes shall be made by the QSD as formal amendments to the SWPPP.

The following items shall be included in each amendment:

- Who requested the amendment;
- The location of proposed change;
- The reason for change;
- The original BMP proposed, if any; and
- The new BMP proposed.

Amendment shall be logged at the front of the SWPPP and certification kept in Appendix D. The SWPPP text shall be revised replaced, and/or hand annotated as necessary to properly convey the amendment. SWPPP amendments must be made by a QSD. The following changes have been designated by the QSD as "to be field determined" and constitute minor changes that the QSP may implement based on field conditions.

Table 1.1 List of Changes to be Field Determined

Candidate changes for field location or determination by QSP[(1)]	Check changes that can be field located or field determined by QSP
Increase quantity of an Erosion or Sediment Control Measure	X
Relocate/Add stockpiles or stored materials	X
Relocate or add toilets	X
Relocate vehicle storage and/or fueling locations	X
Relocate areas for waste storage	X
Relocate water storage and/or water transfer location	X
Changes to access points (entrance/exits)	X
Change type of Erosion or Sediment Control Measure	X
Changes to location of erosion or sediment control	X
Minor changes to schedule or phases	X
Changes in construction materials	X
(1) Any field changes not identified for field location or field determination by QSP must be approved by QSD	

1.5 RETENTION OF RECORDS

Paper or electronic records of documents required by this SWPPP shall be retained for a minimum of three years from the date generated or date submitted, whichever is later, for the following items:

- Visual Monitoring Report
- Field measurements and lab analyses
- COCs
- Other Documents related to monitoring.

These records shall be available at the Site until construction is complete. Records assisting in the determination of compliance with the General Permit shall be made available within a reasonable time, to the Regional Water Board, State Water Board or U.S. Environmental Protection Agency (EPA) upon request. Requests by the Regional Water Board for retention of records for a period longer than three years shall be adhered to.

1.6 REQUIRED NON-COMPLIANCE REPORTING

If a discharge violation occurs the QSP shall immediately notify the LRP and the LRP shall file a violation report electronically to the Regional Water Board within 30 days of identification of non-compliance using SMARTS. Corrective measures will be implemented immediately following the discharge or written notice of non-compliance from the Regional Water Board. Discharges and corrective actions will be documented on the NAL/NEL Exceedance Site Evaluation Report Form in CSMP Attachment 3 "Example Forms."

The report to the LRP and to the Regional Water Board will contain the following items:

- The date, time, location, nature of operation and type of unauthorized discharge.
- The cause or nature of the notice or order.
- The control measures (BMPs) deployed before the discharge event, or prior to receiving notice or order.

The date of deployment and type of control measures (BMPs) deployed after the discharge event, or after receiving the notice or order, including additional measures installed or planned to reduce or prevent re-occurrence.

Reporting requirements for Numeric Action Levels (NALs) exceedances are discussed in Section 7.7.2.7.

1.7 ANNUAL REPORT

The General Permit requires that permittees prepare, certify, and electronically submit an Annual Report no later than September 1st of each year. Reporting requirements are identified in Section XVI of the General Permit. Annual reports will be filed in SMARTS and in accordance with information required by the on-line forms.

1.8 CHANGES TO PERMIT COVERAGE

The General Permit allows for the reduction or increase of the total acreage covered under the General Permit when: a portion of the project is complete and/or conditions for termination of coverage have been met; when ownership of a portion of the project is purchased by a different entity; or when new acreage is added to the project.

Modified PRDs shall be filed electronically within 30 days of a reduction or increase in total disturbed area if a change in permit covered acreage is to be sought. The SWPPP shall be modified appropriately, shall be logged at the front of the SWPPP and cetrification of SWPPP amendments are to be kept in Appendix D. Updated PRDs submitted electronically via SMARTS can be found in Appendix E.

1.9 NOTICE OF TERMINATION

A Notice of Termination (NOT) must be submitted electronically by the LRP via SMARTS to terminate coverage under the General Permit. The NOT must include a final Site Map and representative photographs of the project site that demonstrate final stabilization has been achieved. The NOT shall be submitted within 90 days of completion of construction. The Regional Water Board will consider a construction site complete when the conditions of the General Permit, Section II.D have been met.

Section 2 Project Information

2.1 PROJECT AND SITE DESCRIPTION

2.1.1 Site Description

The Fisher Basin project site is a wetland that comprises approximately 8.05 acres and is located northeast of the intersection of Monterey Road and Old Monterey Road in Morgan Hill, CA. The project is located at 37.1414 Latitude and -121.6618 Longitude and is identified on the Site Map in Appendix B.

2.1.2 Existing Conditions

As of the initial date of this SWPPP, the project site is currently a wetland. The improvements consist of excavating 10 feet which would result in removing existing brush, shrubs, and trees within the basin excavation area. The development area is designed to increase the existing basin's capacity.

2.1.3 Existing Drainage

The project site is within the perimeter of the existing basin. The surface drainage at the site will be retained in the pond. In the event of a large storm, the overflowing storm water shall flow to Fisher Creek. Existing site topography, drainage patterns, and stormwater conveyance systems are shown on grading plans in appendix B.

2.1.4 Geology and Groundwater

The geotechnical report prepared by Kleinfelder (dated April, 2020) summarizes the soils as follows: "Soil lithology comprised primarily of interbedded clay, sands and gravel. Borings B-1, B-2, B-3, B-4, B-5, B-7, and B-8 were terminated at 20 feet bgs due to refusal. Boring B-6 which was terminated at 28 feet bgs. Groundwater was not detected in any of the borings. At boring B-4, a temporary well casing was installed to assess groundwater recharge or seepage overnight. Water was not detected."

2.1.5 Project Description

Project grading will occur on approximately 3.59 acres of the project, which comprises approximately 45% of the total area. The limits of grading are shown on pages in Appendix B.

2.1.6 Developed Condition

Post construction surface drainage will be directed to the existing retention ponds in the Madrone Business Park development.

Post construction drainage patterns and conveyance systems are presented on sheet in Appendix B.

Table 2.1 Construction Site Estimates

Construction site area	3.59	acres
Percent impervious before construction	0	%
Runoff coefficient before construction	0.30	
Percent impervious after construction	0	%
Runoff coefficient after construction	0.30	

2.2 PERMITS AND GOVERNING DOCUMENTS

In addition to the General Permit, the following documents have been taken into account while preparing this SWPPP

- Regional Water Board requirements
- Basin Plan requirements

2.3 STORMWATER RUN-ON FROM OFFSITE AREAS

There is no anticipated offsite run-on to this construction site because all adjacent properties have stormwater management practices in place.

2.4 FINDINGS OF THE CONSTRUCTION SITE SEDIMENT AND RECEIVING WATER RISK DETERMINATION

A construction site risk assessment has been performed for the project and the resultant risk level is Risk Level 2.

The risk level was determined through the use of the RUSLE method, as described through SMARTS. The risk level is based on project duration, location, proximity to impaired receiving waters and soil conditions. A copy of the Risk Level determination submitted on SMARTS with the PRDs is included in Appendix C.

Table 2.2 and Table 2.3 summarize the sediment and receiving water risk factors and document the sources of information used to derive the factors.

Table 2.2 Summary of Sediment Risk

RUSLE Factor	**Value**	**Method for establishing value**
R	2.4	EPA Erosivity Factor Calculator
K	0.2	Populated on SMARTs
LS	0.68	Populated on SMARTs
Total Predicted Sediment Loss (tons/acre)		

Table 2.2 Summary of Sediment Risk

RUSLE Factor	Value	Method for establishing value	
Overall Sediment Risk Low Sediment Risk < 15 tons/ acre Medium Sediment Risk >= 15 and < 75 tons/acre High Sediment Risk >= 75 tons/acre			☒ **Low** ☐ **Medium** ☐ **High**

Runoff from the project site discharges the Fisher Creek.

Table 2.3 Summary of Receiving Water Risk

Receiving Water Name	303(d) Listed for Sediment Related Pollutant(1)	TMDL for Sediment Related Pollutant(1)	Beneficial Uses of COLD, SPAWN, and MIGRATORY(1)
Coyote Creek	☐ Yes ☒ No	☒ Yes ☐ No	☒ Yes ☐ No
Overall Receiving Water Risk			☐ **Low** ☒ **High**
(1) If yes is selected for any option the Receiving Water Risk is High			

Risk Level 2 sites are subject to both the narrative effluent limitations and numeric effluent standards. The narrative effluent limitations require stormwater discharges associated with construction activity to minimize or prevent pollutants in stormwater and authorized non-stormwater through the use of controls, structures and best management practices. Discharges from Risk Level 2 site are subject to NALs for pH and turbidity shown in Table 2-4. This SWPPP has been prepared to address Risk Level 2 requirements (General Permit Attachment D).

Table 2.4 Numeric Action Levels

Parameter	Unit	Numeric Action Level Daily Average
pH	pH units	Lower NAL = 6.5 Upper NAL = 8.5
Turbidity	NTU	250 NTU

2.5 CONSTRUCTION SCHEDULE

The site sediment risk was determined based on construction taking place between February 1, 2020 and February 28, 2021. Modification or extension of the schedule (start and end dates) may affect risk determination and permit requirements. The LRP shall contact the QSD if the schedule changes during construction to address potential impact to the SWPPP. The estimated schedule for planned work can be found in Appendix F.

2.6 POTENTIAL CONSTRUCTION ACTIVITY AND POLLUTANT SOURCES

Appendix G includes a list of construction activities and associated materials that are anticipated to be used onsite. These activities and associated materials will or could potentially contribute pollutants, other than sediment, to stormwater runoff.

The anticipated activities and associated pollutants were used in Section 3 to select the Best Management Practices for the project. Location of anticipated pollutants and associated BMPs are show on the Site Map in Appendix B.

For sampling requirements for non-visible pollutants associated with construction activity please refer to Section 7.7.1. For a full and complete list of onsite pollutants, refer to the Material Safety Data Sheets (MSDS), which are retained onsite at the construction trailer.

2.7 IDENTIFICATION OF NON-STORMWATER DISCHARGES

Non-stormwater discharges consist of discharges which do not originate from precipitation events. The General Permit provides allowances for specified non-stormwater discharges that do not cause erosion or carry other pollutants.

Non-stormwater discharges into storm drainage systems or waterways, which are not authorized under the General Permit and listed in the SWPPP, or authorized under a separate NPDES permit, are prohibited.

Non-stormwater discharges that are authorized from this project site include the following:

- Irrigation water
- Dust Control
- Non-stormwater discharges must meet the following conditions to be authorized:
    - Discharge does not cause or contribute to a water quality standard violation;

- Discharge does not violate other provision of the General Permit;
- Discharge is not prohibited by the applicable Basin Plan;
- The SWPPP includes appropriate BMPs are implemented to prevent or reduce contact of the non-stormwater discharge with construction materials or equipment;
- The discharge does not contain toxic pollutants in toxic amounts or other significant quantities of pollutants;
- The discharge meets applicable NELs and NALs;
- The discharger samples and reports the sampling information in the annual report.

These authorized non-stormwater discharges will be managed with the stormwater and non-stormwater BMPs described in Section 3 of this SWPPP and will be minimized by the QSP.

Activities at this site that may result in unauthorized non-stormwater discharges include:

- Vehicle and equipment cleaning, fueling and maintenance operations
- Vehicle and equipment wash water, including concrete washout water
- Slurries from concrete cutting and coring operations, PCC grinding or AC grinding operations
- Slurries from concrete or mortar mixing operations
- Slurries from drilling or boring operations
- Blast residue from high pressure washing of structures or surfaces
- Wash water from cleaning painting equipment
- Runoff from dust control applications of water or dust palliatives
- Sanitary and septic wastes
- Chemical leaks and/or spills of any kind

Steps will be taken, including the implementation of appropriate BMPs, to ensure that unauthorized discharges are eliminated, controlled, disposed, or treated on-site.

Discharges of construction materials and wastes, such as fuel or paint, resulting from dumping, spills, or direct contact with rainwater or stormwater runoff, are also prohibited.

2.8 REQUIRED SITE MAP INFORMATION

The construction project's Site Map(s) showing the project location, surface water boundaries, geographic features, construction site perimeter and general topography and other requirements identified in Attachment B of the General Permit is located in Appendix B. Table 2.6 identifies Map or Sheet Nos. where required elements are illustrated.

Table 2.6 Required Map Information

Included on Map/Plan Sheet No. (1)	Required Element
Cover Sheet	The project's surrounding area (vicinity)
Grading Plan	Site layout
Grading Plan	Construction site boundaries
Hydraulic Exhibit	Drainage areas
Grading Plan	Utility Plan
ECP	Sampling locations
Grading Plan	Areas of soil disturbance (temporary or permanent)
Grading Plan	Active areas of soil disturbance (cut or fill)
ECP	Locations of runoff BMPs
ECP	Locations of erosion control BMPs
ECP	Locations of sediment control BMPs
N/A	ATS location (if applicable)
N/A	Locations of sensitive habitats, watercourses, or other features which are not to be disturbed
Grading Plan	Locations of all post construction BMPs
ECP	Waste storage areas
ECP	Vehicle storage areas
ECP	Material storage areas
ECP	Entrance and Exits
N/A	Fueling Locations

Notes: (1) Indicate maps or drawings that information is included on (e.g., Vicinity Map, Site Map, Drainage Plans, Grading Plans, Progress Maps, etc.)

Section 3 Best Management Practices

3.1 SCHEDULE FOR BMP IMPLEMENTATION

Table 3.1 BMP Implementation Schedule

	BMP	Implementation	Duration
Erosion Control	EC-1, Scheduling	Prior to Construction	Entirety of Project
	EC-2, Preservation of Existing Vegetation	Start of Construction	Entirety of Project
	EC- 4 Hydroseed	Prior to start of forecasted rain event	Entirety of project
	EC-6 Straw Mulch	Prior to start of forecasted rain event	Entirety of project
	EC-7 Geotextiles and Mats	Prior to start of forecasted rain event	Entirety of project
	EC-8 Wood Mulch	Prior to start of forecasted rain event/use for permanent erosion control with landscaping	Entirety of project
	EC-15 Soil Preparation – Roughening	Start of construction	Entirety of project
	EC-16 Non-Vegetated Stabilization	After grading/stripping of site	Entirety of project
	WE-1 Wind Erosion Control	Start of grading	Entirety of project
Sediment Control	SE-1 Silt Fence	Start of grading	Entirety of project
	SE-3 Sediment Trap	Start of grading	Entirety of project
	SE-5 Fiber Rolls	Start of grading	Entirety of project
	SE-7 Street Sweeping and Vacuuming	Start of construction and throughout the project as needed	Entirety of project
	SE-10 Storm Drain Inlet Protection	Prior to start of forecasted rain	Entirety of project
	SE-14 Biofilter Bags	Prior to start of forecasted rain	Entirety of project

Table 3.1 BMP Implementation Schedule

	BMP	Implementation	Duration
Tracking Control	TC-1 Stabilized Construction Entrance	Start of Construction	Entirety of project
Wind Erosion	WE-1 Wind Erosion Control	Start of Construction	Entirety of project

3.2 EROSION AND SEDIMENT CONTROL

Erosion and sediment controls are required by the General Permit to provide effective reduction or elimination of sediment related pollutants in stormwater discharges and authorized non-stormwater discharges from the Site. Applicable BMPs are identified in this section for erosion control, sediment control, tracking control, and wind erosion control.

Erosion and Sediment Control Worksheet				
General Permit BMP Requirements	**Applicable to Project?**	**CGP Pg #**	**Associated CASQA BMPs**	**Selected BMPs**
BMP Requirements for Erosion and Sediment Control (Attachment C, D, & E parts D and E)				
Implement effective wind erosion control.	yes	Pg 5 of Att. C, D & E	WE-1	WE-1
Provide effective soil cover for inactive areas and finished slopes, open space, utility backfill, and completed lots.	yes	Pg 5 of Att. C, D & E	EC-5 EC-16	EC-16
Limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, the QSD shall consider the use of plastic materials resistant to solar degradation.	Yes	Pg 5 of Att. C, D & E	WM-3	WM-3
Establish and maintain effective perimeter controls and stabilize construction entrances and exits to sufficiently control erosion and sediment discharges from the site.	yes	Pg 5 of Att. C, D & E	SE-1 ,SE-5 SE-7, TC-1 TC-2, TC-3 WM-3	SE-1 ,SE-5 SE-7, TC-1 WM-3
On sites where sediment basins are to be used, at a minimum, design sediment basins according to the method	yes	Pg 5 of Att. C, D & E	SE-02	SE-2

Erosion and Sediment Control Worksheet				
General Permit BMP Requirements	**Applicable to Project?**	**CGP Pg #**	**Associated CASQA BMPs**	**Selected BMPs**
provided in *Stormwater BMP Handbook Portal: Construction*.				
Implement appropriate erosion control BMPs (runoff control and soil stabilization) in conjunction with sediment control BMPs for areas under active[4] construction.	yes	Pg 5 of Att. C, D & E	EC-1, EC-2 EC-5, EC-9 EC-10, EC-16 SE-1, SE-4 SE-5,	EC-1, EC-2 EC-16, SE-1 ,SE-5
Apply linear sediment controls along the toe of the slope; face of the slope; and at the grade breaks of exposed slopes to comply with sheet flow lengths in accordance with General Permit.	yes	Pg 5 of Att. D & E	SE-1 ,SE-5 SE-7	SE-1 ,SE-5, SE-7
Ensure that construction activity traffic to and from the project is limited to entrances and exits that employ effective controls to prevent offsite tracking of sediment.	yes	Pg 6 of Att. D & E	TC-1 TC-2 TC-3 SE-7	TC-1, SE-7
Ensure that storm drain inlets and perimeter controls, runoff control BMPs, and pollutant controls at entrances and exits (e.g. tire wash-off locations) are maintained and protected from activities that reduce their effectiveness.	yes	Pg 6 of Att. D & E	All BMPs	All BMPs
Inspect on a daily basis immediate access roads. At a minimum daily (when necessary) and prior to a rain event. The LRP shall remove sediment or other construction activity-related materials that are deposited on the roads (by vacuuming or sweeping).	RL 2 and 3 only	Pg 6 of Att. D & E	TC-1 TC-2 TC-3 SE-7	TC-1 SE-7
The Regional Water Board may require implementation of additional site-specific sediment control requirements if the implementation of the other requirements in this section is not adequately protecting the receiving waters.	N/A	Pg 5 Att. C Pg 6 Att. D & E	N/A	
BMP Requirements for Run-on and Runoff Controls (Attachment C, D, & E parts F)				
Effectively manage run-on, runoff within the site and runoff that discharge off the site.	yes	Pg 5 Att. C Pg 6 Att. D & E		SE-10, EC-10
Run-on from off-site shall be directed away from disturbed areas or shall collectively be in compliance with the effluent limitation in the CGP.	n/a	Pg 5 Att. C Pg 6 Att. D & E		

Erosion and Sediment Control Worksheet				
General Permit BMP Requirements	**Applicable to Project?**	**CGP Pg #**	**Associated CASQA BMPs**	**Selected BMPs**
BMP Requirements for Air Deposition (Attachment C, D, & E parts B.6)				
Control the air deposition of site materials and from site operations. Such particulates can include, but are not limited to, sediment, nutrients, trash, metals, bacteria, oil and grease and organics.	yes	Pg 4 of Att. C, D & E	WE-1	WE-1

3.2.1 Erosion Control

Erosion control, also referred to as soil stabilization, consists of source control measures that are designed to prevent soil particles from detaching and becoming transported in stormwater runoff. Erosion control BMPs protect the soil surface by covering and/or binding soil particles.

This construction project will implement the following practices to provide effective temporary and final erosion control during construction:

1. Preserve existing vegetation where required and when feasible.
2. The area of soil disturbing operations shall be controlled such that the Contractor is able to implement erosion control BMPs quickly and effectively.
3. Stabilize non-active areas within 14 days of cessation of construction activities or sooner if stipulated by local requirements.
4. Control erosion in concentrated flow paths by applying erosion control blankets, check dams, erosion control seeding or alternate methods.
5. Prior to the completion of construction, apply permanent erosion control to remaining disturbed soil areas.

Sufficient erosion control materials shall be maintained onsite to allow implementation in conformance with this SWPPP.

The following temporary erosion control BMP selection table indicates the BMPs that shall be implemented to control erosion on the construction site. Fact Sheets for temporary erosion control BMPs are provided in Appendix H.

Table 3.2 Temporary Erosion Control BMPs

CASQA Fact Sheet	BMP Name	Meets a Minimum Requirement[1]	BMP Used		If not used, state reason
			YES	NO	
EC-1	Scheduling	✓	**X**		
EC-2	Preservation of Existing Vegetation	✓	X		
EC-3	Hydraulic Mulch	✓[2]		X	Used if other measures prove inadequate
EC-4	Hydroseed	✓[2]	X		
EC-5	Soil Binders	✓[2]		X	Used if other measures prove inadequate
EC-6	Straw Mulch	✓[2]		X	Used if other measures prove inadequate
EC-7	Geotextiles and Mats	✓[2]	X		
EC-8	Wood Mulching	✓[2]	X		
EC-9	Earth Dike and Drainage Swales	✓[3]	X		
EC-10	Velocity Dissipation Devices		X		
EC-11	Slope Drains			X	No drainage slopes
EC-12	Stream Bank Stabilization			X	No Streams
EC-14	Compost Blankets	✓[2]		X	
EC-15	Soil Preparation-Roughening		X		
EC-16	Non-Vegetated Stabilization	✓[2]	X		
WE-1	Wind Erosion Control	✓	X		
Alternate BMPs Used:					**If used, state reason:**

[1] Applicability to a specific project shall be determined by the QSD.
[2] The QSD shall ensure implementation of one of the minimum measures listed or a combination thereof to achieve and maintain the Risk Level requirements.
[3] Run-on from offsite shall be directed away from all disturbed areas, diversion of offsite flows may require design/analysis by a licensed civil engineer and/or additional environmental permitting

These temporary erosion control BMPs shall be implemented in conformance with the following guidelines and as outlined in the BMP Factsheets provided in Appendix H. If there is a conflict between documents, the Site Map will prevail over narrative in the body of the SWPPP or guidance in the BMP Fact Sheets. Site specific details in the Site Map prevail over standard details included in the Site Map. The narrative in the body of the SWPPP prevails over guidance in the BMP Fact Sheets.

Scheduling

Entirety of project the QSD and QSP shall:

- Monitor weather using NOAA reports to track conditions and alert crews to the onset of rainfall events (through REAPs) and windy conditions.
- Disturbed soils areas will be stabilized, as required by this SWPPP and the General Construction Permit, with temporary soils stabilization or with permanent erosion control as soon as possible after grading (14 days maximum) or construction is complete.

During forecasted rain events:

- Disturbed soils areas will be stabilized with temporary or permanent soils stabilization before forecasted rain events
- Disturbed soils area that are substantially complete with be stabilized with permanent soil stabilization and vegetation.
- Prior to forecasted storm events, temporary soils stabilization BMPs will be deployed and inspected.

During the non-rainy season:

The project schedule will sequence construction activities with the installation of both soils stabilization and sediment control measures. The construction schedule will be arranged as much as practicable to leave existing vegetation undisturbed until immediately prior to grading.

Preservation of Existing Vegetation

Existing vegetation and landscaping shall be preserved in areas within the site where no construction activity is currently occurring.

Hydroseed

Hydroseeding shall be used to stabilize sites that are not disturbed and not planned for construction through the rainy season. Hydroseeding shall occur prior to the forecasted rain event.

Straw Mulch

Straw mulch will be used throughout the disturbed areas adjacent to excavations and on shallow slopes surrounding the site. Straw mulch will be allowed during the rainy season. Contractor will remove the straw mulch at the end of the rainy season.

Geotextiles and Mats

Geotextiles and Mats shall be used, if needed, to cover the rough graded lots during the rainy season to prevent soils lots.

Wood Mulching

Wood mulching shall be used in permanent landscaping to prevent soil dislodging.

Soil Preparation-Roughening

Soil Preparation/Roughening involves assessment and preparation of surface soils for BMP installation. This can include soil testing (for seed base, soil characteristics, or nutrients), as well as roughening surface soils by mechanical methods (including sheepsfoot rolling, track walking, scarifying, stair stepping, and imprinting) to prepare soil for additional BMPs, or to break up sheet flow. Soil Preparation can also involve tilling topsoil to prepare a seed bed and/or incorporation of soil amendments, to enhance vegetative establishment.

Non-Vegetated Stabilization

Non-vegetated stabilization shall be used when vegetation cannot be established prior to the onset of rain.

Wind Erosion Control

Wind erosion control shall be used year round on all stock piles and disturbed areas that are susceptible to wind erosion.

3.2.2 Sediment Controls

Sediment controls are temporary or permanent structural measures that are intended to complement the selected erosion control measures and reduce sediment discharges from active construction areas. Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water.

Sufficient quantities of temporary sediment control materials shall be maintained on-site throughout the duration of the project. Allowing for implementation of temporary sediment controls in the event of predicted rain and for rapid response do to failures or emergencies, in conformance with other General Permit requirements and as described in this SWPPP.

The following sediment control BMP selection table indicates the BMPs that shall be implemented to control sediment on the construction site. Fact Sheets for temporary sediment control BMPs are provided in Appendix H.

Table 3.3 Temporary Sediment Control BMPs

CASQA Fact Sheet	BMP Name	Meets a Minimum Requirement[1]	BMP used		If not used, state reason
			YES	NO	
SE-1	Silt Fence	✓[2] [3]	**X**		
SE-2	Sediment Basin		X		
SE-3	Sediment Trap		X		
SE-4	Check Dams			X	
SE-5	Fiber Rolls	✓[2][3]	X		
SE-6	Gravel Bag Berm	✓[3]	X		
SE-7	Street Sweeping	✓	X		
SE-8	Sandbag Barrier		X		
SE-9	Straw Bale Barrier			X	Using fiber rolls
SE-10	Storm Drain Inlet Protection	✓ RL2&3	X		
SE-11	ATS			X	
SE-12	Temporary Silt Dike		X		
SE-13	Compost Sock and Berm	✓[3]		X	Using fiber rolls
SE-14	Biofilter Bags	✓[3]	X		
TC-1	Stabilized Construction Entrance and Exit	✓	X		
TC-2	Stabilized Construction Roadway			X	Using stabilized entry/exit
TC-3	Entrance Outlet Tire Wash			X	Using stabilized entry/exit
Alternate BMPs Used:					**If used, state reason:**

[1] Applicability to a specific project shall be determined by the QSD

[2] The QSD shall ensure implementation of one of the minimum measures listed or a combination thereof to achieve and maintain the Risk Level requirements

[3]Risk Level 2 &3 shall provide linear sediment control along toe of slope, face of slope, and at the grade breaks of exposed slope

These temporary sediment control BMPs shall be implemented in conformance with the following guidelines and in accordance with the BMP Fact Sheets provided in Appendix H. If there is a conflict between documents, the Site Map will prevail over narrative in the body of the SWPPP or guidance in the BMP Fact Sheets. Site specific details in the Site Map prevail over standard details included in the Site Map. The narrative in the body of the SWPPP prevails over guidance in the BMP Fact Sheets.

Silt Fence

Silt fence shall be used around the perimeter of the site to prevent run on down cut slopes.

Check Dams

Check dams will be installed on the drainage swales directing stormwater into the biotreatment ponds on-site.

Fiber Rolls

Fiber rolls will be installed per project plans along the toe, top, face and at grade breaks of exposed and erodible slopes to shorten the slope length and spread runoff as sheet flow per the detail. Fiber rolls shall also be installed around the project site and stockpiles.

Street Sweeping

Street sweeping shall be used to remove tracked soils particles from paved roads. Street sweeping shall be completed at the end of every business day during construction if soil particles are tracked on the pavement.

Storm Drain Inlet Protection

Storm drain inlet protection shall be deployed to reduce the amount of sediment from storm water runoff discharging from the site prior to entering the storm drainage system. Storm drain inlet protection will be used at all operation inlets on site and off site as shown on the plan.

Biofilter Bags

Biofilter bags are a short-term BMP that can be rapidly deployed, maintained, and replaced. Biofilter bags can be an effective short-term solution to place in developed rills to prevent further erosion until permanent measures can be established or in lieu of fiber rolls.

Stabilized Construction Entrance and Exit

Shall be used at the entrance to the back of the lots for vertical construction.

3.3 NON-STORMWATER CONTROLS AND WASTE AND MATERIALS MANAGEMENT

Non-Stormwater, Construction Materials & Waste Management Worksheet				
BMP Requirements	**Applicable to Project?**	**CGP Pg#**	**Associated CASQA BMPs**	**BMP selected for SWPPP**
BMP Requirements for Waste Management (Attachment C, D and E part B.2)				
Prevent disposal of rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system.	yes	Pg 2, Att. C, D & E	NS-1, NS-3 NS-8, NS-12 NS-13	NS-1, NS-3, NS-12 NS-13
Ensure the containment of sanitation facilities (e.g., portable toilets) to prevent discharges of pollutants to the stormwater drainage system or receiving water.	yes	Pg 2, Att. C, D & E	WM-9	WM-9
Clean or replace sanitation facilities and inspecting them regularly for leaks and spills.	yes	Pg 2, Att. C, D & E	WM-9	WM-9
Cover waste disposal containers at the end of every business day and during a rain event.	yes	Pg 2, Att. C, D & E	WM-1 , M-2 WM-4 , M-5 WM-6, WM-7 WM-10	WM-1 , WM-2 WM-4 , WM-5 WM-6, WM-7 WM-10
Prevent discharges from waste disposal containers to the stormwater drainage system or receiving water.	yes	Pg 2, Att. C, D & E	WM-1, WM-2 WM-4, WM-5 WM-6, WM-7 WM-9, WM-10	WM-1, WM-2 WM-4, WM-5 WM-6, WM-7 WM-9, WM-10
Contain and securely protect stockpiled waste material from wind and rain at all times unless actively being used.	yes	Pg 2, Att. C, D & E	WM-3	WM-3
Implement procedures that effectively address hazardous and non-hazardous spills.	yes	Pg 2, Att. C, D & E	WM-4	WM-4
Develop a spill response and implementation element of the SWPPP prior to commencement of construction activities. The SWPPP shall require that: Equipment and materials for cleanup of spills shall be available onsite and that spills and leaks shall be cleaned up immediately and disposed of properly; and appropriate spill response personnel are assigned and trained.	yes	Pg 2, Att. C, D & E	WM-4	WM-4

Non-Stormwater, Construction Materials & Waste Management Worksheet				
BMP Requirements	**Applicable to Project?**	**CGP Pg#**	**Associated CASQA BMPs**	**BMP selected for SWPPP**
Ensure the containment of concrete washout areas and other washout areas that may contain additional pollutants so there is no discharge into the underlying soil and onto the surrounding areas.	yes	Pg 3, Att. C, D & E	WM-8	WM-8
BMP Requirements for Construction Material (Attachment C, D, and E part B.1)				
Conduct an inventory of the products used and/or expected to be used and the end products that are produced and/or expected to be produced.	yes	Pg 1, Att. C, D & E		
Cover and berm loose stockpiled construction materials that are not actively being used (i.e. soil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.).	yes	Pg 1, Att. C, D & E	WM-3	WM-3
Store chemicals in watertight containers (with appropriate secondary containment to prevent spillage or leakage) or in a storage shed (completely enclosed).	yes	Pg 2, Att. C, D & E	WM-1, WM-2 WM-4, WM-6	WM-1, WM-2 WM-4, WM-6
Minimize exposure of construction materials to precipitation.	yes	Pg 2, Att. C, D & E	WM-1, WM-2 WM-4, WM-5 WM-6, WM-7 WM-10	WM-1, WM-2 WM-4, WM-5 WM-6, WM-7 WM-10
Implement BMPs to prevent the off-site tracking of loose construction and landscape materials.	yes	Pg 2, Att. C, D & E	TC-1 TC-2 TC-3	TC-1
BMP Requirements for Vehicle Storage and Maintenance (Attachment C, D and E, part B.3)				
Prevent oil, grease, or fuel from leaking into the ground, storm drains or surface waters.	yes	Pg 3, Att. C, D & E	NS-9 NS-10	NS-9 NS-10
Place equipment or vehicles, which are to be fueled, maintained and stored in a designated area fitted with appropriate BMPs.	yes	Pg 2, Att. C, D & E	WM-2, WM-4 NS-9, NS-10	WM-2, WM-4 NS-9, NS-10
Clean leaks immediately and disposing of leaked materials properly.	yes	Pg 2, Att. C, D & E	WM-4	WM-4
BMP Requirements to Control Non-Stormwater Discharges (Attachment C, D and E part C)				
Implement measures to control non-stormwater discharges during construction.	yes	Pg 4, Att. C, D & E	NS-3, NS-8 NS-9, NS-10	NS-3, NS-8

Non-Stormwater, Construction Materials & Waste Management Worksheet				
BMP Requirements	**Applicable to Project?**	**CGP Pg#**	**Associated CASQA BMPs**	**BMP selected for SWPPP**
			NS-12, NS-13 TC-1, TC-2 TC-3	NS-9, NS-10 NS-12, NS-13 TC-1,
Wash vehicles in such a manner as to prevent non-stormwater discharges to surface waters or MS4 drainage systems.	No	Pg 4, Att. C, D & E	NS-8	Washing of vehicles shall take place off site
Clean streets in such a manner as to prevent non-stormwater discharges from reaching surface water or MS4 drainage systems.	yes	Pg 4, Att. C, D & E	TC-1, TC-2 TC-3, SE-7	TC-1, SE-7

3.3.1 Non-Stormwater Controls

Non-stormwater discharges into storm drainage systems or waterways, which are not authorized under the General Permit, are prohibited. Non-stormwater discharges for which a separate NPDES permit is required by the local Regional Water Board are prohibited unless coverage under the separate NPDES permit has been obtained for the discharge. The selection of non-stormwater BMPs is based on the list of construction activities with a potential for non-stormwater discharges identified in Section 2.7 of this SWPPP.

The following non-stormwater control BMP selection table indicates the BMPs that shall be implemented to control sediment on the construction site. Fact Sheets for temporary non-stormwater control BMPs are provided in Appendix H.

Table 3.4 Temporary Non-Stormwater BMPs

CASQA Fact Sheet	BMP Name	Meets a Minimum Requirement[(1)]	BMP used		If not used, state reason
			YES	NO	
NS-1	Water Conservation Practices	✓	X		
NS-2	Dewatering Operation			X	All storm water to existing basins
NS-3	Paving and Grinding Operation		X		
NS-4	Temporary Stream Crossing			X	No stream
NS-5	Clear Water Diversion			X	All storm water to existing basins
NS-6	Illicit Connection- Illegal Discharge Connection	✓	X		
NS-7	Potable Water Irrigation Discharge Detection		X		
NS-8	Vehicle and Equipment Cleaning	✓		X	Not onsite
NS-9	Vehicle and Equipment Fueling	✓	X		
NS-10	Vehicle and Equipment Maintenance	✓		X	Not onsite
NS-11	Pile Driving Operation			X	Not part of project
NS-12	Concrete Curing		X		
NS-13	Concrete Finishing		X		
NS-14	Material and Equipment Use Over Water			X	Not applicable
NS-15	Demolition Removal Adjacent to Water			X	Not applicable
NS-16	Temporary Batch Plants			X	Not applicable
Alternate BMPs Used:			**If used, state reason:**		
[(1)] Applicability to a specific project shall be determined by the QSD					

Non-stormwater BMPs shall be implemented in conformance with the following guidelines and in accordance with the BMP Fact Sheets provided in Appendix H. If there is a conflict between documents, the Site Map will prevail over narrative in the body of the SWPPP or guidance in the BMP Fact Sheets. Site specific details in the Site Map prevail over standard details included in the Site Map. The narrative in the body of the SWPPP prevails over guidance in the BMP Fact Sheets.

Water Conservation Practices

Care shall be taken to conserve water to avoid erosion and transporting pollutants offsite. These practices can reduce or eliminate non-storm water discharges.

Paving and Grinding Operation

Paving and grinding operations will be implemented to prevent or reduce runoff pollution, properly disposing of water, and training employees and subcontractors. These procedures are implemented where paving, surfacing, resurfacing, or saw cutting may pollute stormwater runoff or discharge to the storm drain system or watercourses. Paving during the wet season will be avoided when feasible.

Illicit Connection- Illegal Discharge Connection

The construction contractors will inspect the site regularly to recognize illicit connections or illegally dumped or discharged materials and report incidents.

Concrete Curing

Proper procedures will be followed to reduce or eliminate the contamination of stormwater runoff during concrete curing. Over spray of curing compounds will be avoided and the drift of chemical cure will be minimized as much as possible by applying the curing compound close to the concrete surface.

Concrete Finishing

Proper procedures will be followed to minimize the impact that concrete finishing methods may have on stormwater and non-stormwater discharges. Water from high pressure water blasting operations will be collected and properly disposed. Contaminated water from blasting operations will be collected.

3.3.2 Materials Management and Waste Management

Materials management control practices consist of implementing procedural and structural BMPs for handling, storing and using construction materials to prevent the release of those materials into stormwater discharges. The amount and type of construction materials to be utilized at the Site will depend upon the type of construction and the length of the construction period. The materials may be used continuously, such as fuel for vehicles and equipment, or the materials may be used for a discrete period, such as soil binders for temporary stabilization.

Waste management consist of implementing procedural and structural BMPs for handling, storing and ensuring proper disposal of wastes to prevent the release of those wastes into stormwater discharges.

Materials and waste management pollution control BMPs shall be implemented to minimize stormwater contact with construction materials, wastes and service areas; and to prevent

materials and wastes from being discharged off-site. The primary mechanisms for stormwater contact that shall be addressed include:

- Direct contact with precipitation
- Contact with stormwater run-on and runoff
- Wind dispersion of loose materials
- Direct discharge to the storm drain system through spills or dumping
- Extended contact with some materials and wastes, such as asphalt cold mix and treated wood products, which can leach pollutants into stormwater.

A list of construction activities is provided in Section 2.6. The following Materials and Waste Management BMP selection table indicates the BMPs that shall be implemented to handle materials and control construction site wastes associated with these construction activities. Fact Sheets for Materials and Waste Management BMPs are provided in Appendix H.

Table 3.5 Temporary Materials Management BMPs

CASQA Fact Sheet	BMP Name	Meets a Minimum Requirement[(1)]	BMP used		If not used, state reason
			YES	NO	
WM-01	Material Delivery and Storage	✓	X		
WM-02	Material Use	✓	X		
WM-03	Stockpile Management	✓	X		
WM-04	Spill Preservation and Control	✓	X		
WM-05	Solid Waste Management	✓	X		
WM-06	Hazardous Waste Management	✓	X		
WM-07	Contaminated Soil Management			X	Site part of prior development
WM-08	Concrete Waste Management	✓	X		
WM-09	Sanitary-Septic Waste Management	✓	X		
WM-10	Liquid Waste Management		X		
Alternate BMPs Used:				**If used, state reason:**	

[(1)] Applicability to a specific project shall be determined by the QSD.

Material management BMPs shall be implemented in conformance with the following guidelines and in accordance with the BMP Fact Sheets provided in Appendix H. If there is a conflict between documents, the Site Map will prevail over narrative in the body of the SWPPP or guidance in the BMP Fact Sheets. Site specific details in the Site Map prevail over standard details included in the Site Map. The narrative in the body of the SWPPP prevails over guidance in the BMP Fact Sheets.

Material Delivery and Storage

The discharge of pollutants form material delivery and storage to the stormwater system or water courses will be prevented or reduced by minimizing the storage of hazardous materials onsite, storing materials in a designated area, installing secondary containment, covering and containing materials, conducting regular inspections, and training employee and subcontractors.

Material Use

The discharge of pollutants to the storm drain system or watercourses from material use will be prevented or reduced by using alternative products minimizing hazardous material use onsite, and training employees and subcontractors.

Stockpile Management

Stockpile practices and procedures will be followed to reduce or eliminate air and stormwater pollution from stockpiles of soil and paving materials. All stockpiles will be protected from stormwater run-on using a temporary perimeter sediment barrier. All stockpiles will be covered to prevent wind erosion.

Spill Preservation and Control

The discharge of pollutants to drainage system of watercourses form leaks and spills will be prevented or reduced to reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

Solid Waste Management

Solid waste will be loaded directly into trucks for offsite disposal. Construction debris and litter from the project will be removed and kept away from drain inlets or drainage systems.

Hazardous Waste Management

The discharge of pollutants to stormwater from hazardous waste will be prevented or reduced through proper material use, waste disposal, and training of employees and subcontractors.

Concrete Waste Management

The discharge of pollutants to stormwater from concrete waste will be prevented or reduced through proper material use, waste disposal, and training of employees and subcontractors.

Sanitary-Septic Waste Management

The discharge of pollutants to stormwater from sanitary and septic waste will be prevented or reduced through providing convenient, well maintained facilities, and arranging for regular service and disposal.

Liquid Waste Management

Liquid waste management will be implemented to prevent discharge of pollutants to the storm drain system or to watercourses as a result of the creation collection, and disposal of non-hazardous liquid waste.

3.4 POST CONSTRUCTION STORMWATER MANAGEMENT MEASURES

Post construction BMPs are permanent measures installed during construction, designed to reduce or eliminate pollutant discharges from the site after construction is completed.

This site is located in an area subject to a Phase I or Phase II Municipal Separate Storm Sewer System (MS4) permit approved Stormwater Management Plan. ☒ Yes ☐ No

Post construction runoff reduction requirements have been satisfied through the MS4 program, this project is exempt from provision XIII A of the General Permit.

The following source control post construction BMPs to comply with General Permit Section XIII.B and local requirements have been identified for the site:

- Biotreatment Pond

A plan for the post construction funding and maintenance of these BMPs has been developed to address at minimum five years following construction. The post construction BMPs that are described above shall be funded and maintained by the LRP. If required, post construction funding and maintenance will be submitted with the NOT.

Section 4 BMP Inspection, and Maintenance, and Rain Event Action Plans

4.1 BMP INSPECTION AND MAINTENANCE

The General Permit requires routine weekly inspections of BMPs, along with inspections before, during, and after qualifying rain events. A BMP inspection checklist must be filled out for inspections and maintained on-site with the SWPPP. The inspection checklist includes the necessary information covered in Section 7.6. A blank inspection checklist can be found in Appendix I. Completed checklists shall be kept in CSMP Attachment 2 "Monitoring Records.

BMPs shall be maintained regularly to ensure proper and effective functionality. If necessary, corrective actions shall be implemented within 72 hours of identified deficiencies and associated amendments to the SWPPP shall be prepared by the QSD.

Specific details for maintenance, inspection, and repair of Construction Site BMPs can be found in the BMP Factsheets in Appendix H.

4.2 RAIN EVENT ACTION PLANS

The Rain Event Action Plans (REAP) is written document designed to be used as a planning tool by the QSP to protect exposed portions of project sites and to ensure that the discharger has adequate materials, staff, and time to implement erosion and sediment control measures. These measures are intended to reduce the amount of sediment and other pollutants that could be generated during the rain event. It is the responsibility of the QSP to be aware of precipitation forecast and to obtain and print copies of forecasted precipitation from NOAA's National Weather Service Forecast Office.

The SWPPP includes REAP templates but the QSP will need to customize them for each rain event. Site-specific REAP templates for each applicable project phase can be found in Appendix J. The QSP shall maintain a paper copy of completed REAPs in compliance with the record retention requirements Section 1.5 of this SWPPP. Completed REAPs shall be maintained in Appendix J.

The QSP will develop an event specific REAP 48 hours in advance of a precipitation event forecast to have a 50% or greater chance of producing precipitation in the project area. The REAP will be onsite and be implemented 24 hours in advance of any the predicted precipitation event.

At minimum the REAP will include the following site and phase-specific information:

1. Site Address;
2. Calculated Risk Level (2 or 3);
3. Site Stormwater Manager Information including the name, company and 24-hour emergency telephone number;
4. Erosion and Sediment Control Provider information including the name, company and 24-hour emergency telephone number;

5. Stormwater Sampling Agent information including the name, company, and 24-hour emergency telephone number;
6. Activities associated with each construction phase;
7. Trades active on the construction site during each construction phase;
8. Trade contractor information; and
9. Recommended actions for each project phase.

Section 5 Training

The following text should be modified accordingly

Appendix L identifies the QSPs for the project. To promote stormwater management awareness specific for this project, periodic training of job-site personnel shall be included as part of routine project meetings (e.g. daily/weekly tailgate safety meetings), or task specific trainings as needed.

The QSP shall be responsible for providing this information at the meetings, and subsequently completing the training logs shown in Appendix K, which identifies the site-specific stormwater topics covered as well as the names of site personnel who attended the meeting. Tasks may be delegated to trained employees by the QSP provided adequate supervision and oversight is provided. Training shall correspond to the specific task delegated including: SWPPP implementation; BMP inspection and maintenance; and record keeping.

Documentation of training activities (formal and informal) is retained in SWPPP Appendix K.

Section 6 Responsible Parties and Operators

6.1 RESPONSIBLE PARTIES

Approved Signatories who are responsible for SWPPP implementation and have authority to sign permit-related documents are listed below. Written authorizations from the LRP for these individuals are provided in Appendix L. The Approved Signatories assigned to this project are:

Name	Title	Phone Number
Charlie Ha	Supervising Civil Engineer	408-778-6480

QSPs identified for the project are identified in Appendix L. The QSP shall have primary responsibility and significant authority for the implementation, maintenance and inspection/monitoring of SWPPP requirements. The QSP will be available at all times throughout the duration of the project. Duties of the QSP include but are not limited to:

- Implementing all elements of the General Permit and SWPPP, including but not limited to:
  - Ensuring all BMPs are implemented, inspected, and properly maintained;
  - Performing non-stormwater and stormwater visual observations and inspections;
  - Performing non-stormwater and storm sampling and analysis, as required;
  - Performing routine inspections and observations;
  - Implementing non-stormwater management, and materials and waste management activities such as: monitoring discharges; general Site clean-up; vehicle and equipment cleaning, fueling and maintenance; spill control; ensuring that no materials other than stormwater are discharged in quantities which will have an adverse effect on receiving waters or storm drain systems; etc.;
- The QSP may delegate these inspections and activities to an appropriately trained employee, but shall ensure adequacy and adequate deployment.
- Ensuring elimination of unauthorized discharges.
- The QSPs shall be assigned authority by the LRP to mobilize crews in order to make immediate repairs to the control measures.
- Coordinate with the Contractor(s) to assure all of the necessary corrections/repairs are made immediately and that the project complies with the SWPPP, the General Permit and approved plans at all times.
- Notifying the LRP or Authorized Signatory immediately of off-site discharges or other non-compliance events.

6.2 CONTRACTOR LIST

Contractor

Name: TBD

Title:

Company:

Address:

Phone Number:

Number (24/7):

Section 7 Construction Site Monitoring Program

7.1 Purpose

This Construction Site Monitoring Program was developed to address the following objectives:

1. To demonstrate that the site is in compliance with the Discharge Prohibitions and Numeric Action Levels (NALs)of the Construction General Permit;
2. To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives;
3. To determine whether immediate corrective actions, additional Best Management Practices (BMP) implementation, or SWPPP revisions are necessary to reduce pollutants in stormwater discharges and authorized non-stormwater discharges;
4. To determine whether BMPs included in the SWPPP and REAP are effective in preventing or reducing pollutants in stormwater discharges and authorized non-stormwater discharges.

7.2 Applicability of Permit Requirements

This project has been determined to be a Risk Level 2 project. The General Permit identifies the following types of monitoring as being applicable for a Risk Level 2 project.

Risk Level 2

- Visual inspections of Best Management Practices (BMPs);
- Visual monitoring of the site related to qualifying storm events;
- Visual monitoring of the site for non-stormwater discharges;
- Sampling and analysis of construction site runoff for pH and turbidity;
- Sampling and analysis of construction site runoff for non-visible pollutants when applicable; and
- Sampling and analysis of non-stormwater discharges when applicable.

7.3. Weather and Rain Event Tracking

Visual monitoring and inspections requirements of the General Permit are triggered by a qualifying rain event. The General Permit defines a qualifying rain event as any event that produces ½ inch of precipitation. A minimum of 48 hours of dry weather will be used to distinguish between separate qualifying storm events.

7.3.1 Weather Tracking

The QSP should daily consult the National Oceanographic and Atmospheric Administration (NOAA) for the weather forecasts. These forecasts can be obtained at http://www.srh.noaa.gov/. Weather reports should be printed and maintained with the SWPPP in CSMP Attachment 1 "Weather Reports".

7.3.2 Rain Gauges

The QSP shall install 1 rain gauge(s) on the project site. Locate the gauge in an open area away from obstructions such as trees or overhangs. Mount the gauge on a post at a height of 3 to 5 feet with the gauge extending several inches beyond the post. Make sure that the top of the gauge is level. Make sure the post is not in an area where rainwater can indirectly splash from sheds, equipment, trailers, etc.

The rain gauge(s) shall be read daily during normal site scheduled hours. The rain gauge should be read at approximately the same time every day and the date and time of each reading recorded. Log rain gauge readings in CSMP Attachment 1 "Weather Records". Follow the rain gauge instructions to obtain accurate measurements.

Once the rain gauge reading has been recorded, accumulated rain shall be emptied and the gauge reset. 37.1414 Latitude and -121.6618

For comparison with the site rain gauge, the nearest appropriate governmental rain gauge(s) is located at Corralitos, CA (CTOC1) Latitude 37.1414, Longitude -121.6618.

7.4 Monitoring Locations

Monitoring locations are shown on the Site Maps in Appendix B. Monitoring locations are described in the Sections 7.6 and 7.7.

Whenever changes in the construction site might affect the appropriateness of sampling locations, the sampling locations shall be revised accordingly. All such revisions shall be implemented as soon as feasible and the SWPPP amended. Temporary changes that result in a one-time additional sampling location do not require a SWPPP amendment.

7.5 Safety and Monitoring Exemptions

This project is not required to collect samples or conduct visual observations (inspections) under the following conditions:

- During dangerous weather conditions such as flooding and electrical storms.
- Outside of scheduled site business hours.

Scheduled site business hours are 8 to 5, Monday through Friday.

If monitoring (visual monitoring or sample collection) of the site is unsafe because of the dangerous conditions noted above then the QSP shall document the conditions for why an exception to performing the monitoring was necessary. The exemption documentation shall be filed in CSMP Attachment 2 “Monitoring Records”.

7.6 Visual Monitoring

Visual monitoring includes observations and inspections. Inspections of BMPs are required to identify and record BMPs that need maintenance to operate effectively, that have failed, or that could fail to operate as intended. Visual observations of the site are required to observe storm water drainage areas to identify any spills, leaks, or uncontrolled pollutant sources.

Table 7.1 identifies the required frequency of visual observations and inspections. Inspections and observations will be conducted at the locations identified in Section 7.6.3.

Table 7.1 Summary of Visual Monitoring and Inspections

Type of Inspection	Frequency
Routine Inspections	
BMP Inspections	Weekly[1]
BMP Inspections – Tracking Control	Daily
Non-Stormwater Discharge Observations	Quarterly during daylight hours
Rain Event Triggered Inspections	
Site Inspections Prior to a Qualifying Event	Within 48 hours of a qualifying event [2]
BMP Inspections During an Extended Storm Event	Every 24-hour period of a rainevent[2]
Site Inspections Following a Qualifying Event	Within 48 hours of a qualifying event[2]

[1] Most BMPs must be inspected weekly; those identified below must be inspected more frequently.

[2] Inspections are only required during scheduled site operating hours. Note however, these inspections are required daily regardless of the amount of precipitation.

7.6.1 Routine Observations and Inspections

Routine site inspections and visual monitoring are necessary to ensure that the project is in compliance with the requirements of the Construction General Permit.

7.6.1.1 Routine BMP Inspections

Inspections of BMPs are conducted to identify and record:

- BMPs that are properly installed;
- BMPs that need maintenance to operate effectively;
- BMPs that have failed; or
- BMPs that could fail to operate as intended.

7.6.1.2 Non-Stormwater Discharge Observations

Each drainage area will be inspected for the presence of or indications of prior unauthorized and authorized non-stormwater discharges. Inspections will record:

- Presence or evidence of any non-stormwater discharge (authorized or unauthorized);
- Pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.); and
- Source of discharge.

7.6.2 Rain-Event Triggered Observations and Inspections

Visual observations of the site and inspections of BMPs are required prior to a qualifying rain event; following a qualifying rain event, and every 24-hour period during a qualifying rain event. Pre-rain inspections will be conducted after consulting NOAA and determining that a precipitation event with a 50% or greater probability of precipitation has been predicted.

7.6.2.1 Visual Observations Prior to a Forecasted Qualifying Rain Event

Within 48-hours prior to a qualifying event a stormwater visual monitoring site inspection will include observations of the following locations:

- Stormwater drainage areas to identify any spills, leaks, or uncontrolled pollutant sources;
- BMPs to identify if they have been properly implemented;
- Any stormwater storage and containment areas to detect leaks and ensure maintenance of adequate freeboard.

Consistent with guidance from the State Water Resources Control Board, pre-rain BMP inspections and visual monitoring will be triggered by a NOAA forecast that indicates a probability of precipitation of 50% or more in the project area.

7.6.2.2 BMP Inspections During an Extended Storm Event

During an extended rain event BMP inspections will be conducted to identify and record:

- BMPs that are properly installed;
- BMPs that need maintenance to operate effectively;
- BMPs that have failed; or
- BMPs that could fail to operate as intended.

If the construction site is not accessible during the rain event, the visual inspections shall be performed at all relevant outfalls, discharge points, downstream locations. The inspections should record any projected maintenance activities.

7.6.2.3 Visual Observations Following a Qualifying Rain Event

Within 48 hours following a qualifying rain event (0.5 inches of rain) a stormwater visual monitoring site inspection is required to observe:

- Stormwater drainage areas to identify any spills, leaks, or uncontrolled pollutant sources;
- BMPs to identify if they have been properly designed, implemented, and effective;
- Need for additional BMPs;
- Any stormwater storage and containment areas to detect leaks and ensure maintenance of adequate freeboard; and
- Discharge of stored or contained rain water.

7.6.3 Visual Monitoring Procedures

Visual monitoring shall be conducted by the QSP or staff trained by and under the supervision of the QSP.

The name(s) and contact number(s) of the site visual monitoring personnel are listed below and their training qualifications are provided in Appendix K.

Assigned inspector: Amanda Musy-Verdel Contact phone: (408) 842-2173

Alternate inspector: Contact phone:

Stormwater observations shall be documented on the *Visual Inspection Field Log Sheet* (see CSMP Attachment 3 "Example Forms"). BMP inspections shall be documented on the site specific BMP inspection checklist. Any photographs used to document observations will be referenced on stormwater site inspection report and maintained with the Monitoring Records in Attachment 2.

The QSP shall within 2 days of the inspection submit copies of the completed inspection report to the LRP.

The completed reports will be kept in CSMP Attachment 2 "Monitoring Records".

7.6.4 Visual Monitoring Follow-Up and Reporting

Correction of deficiencies identified by the observations or inspections, including required repairs or maintenance of BMPs, shall be initiated and completed as soon as possible.

If identified deficiencies require design changes, including additional BMPs, the implementation of changes will be initiated within 72 hours of identification and be completed as soon as possible. When design changes to BMPs are required, the SWPPP shall be amended to reflect the changes.

Deficiencies identified in site inspection reports and correction of deficiencies will be tracked on the *Inspection Field Log Sheet* or *BMP Inspection Report* and shall be submitted to the QSP and shall be kept in CSMP Attachment 2 "Monitoring Records".

The QSP shall within 1 days of the inspection submit copies of the completed *Inspection Field Log Sheet* or *BMP Inspection Report* with the corrective actions to Don Macleod or his authorized representative.

Results of visual monitoring must be summarized and reported in the Annual Report.

7.6.5 Visual Monitoring Locations

The inspections and observations identified in Sections 7.6.1 and 7.6.2 will be conducted at the locations identified in this section.

BMP locations are shown on the Site Maps in SWPPP Appendix A.

Drainage area(s) are shown on the Site Maps in Appendix B and Table 7.2 identifies each drainage area by location.

Table 7.2 Site Drainage Areas

Location No.	Location
SCM1	TBD

Site stormwater discharge location(s) are shown on the Site Maps in Appendix B and Table 7.4 identifies each stormwater discharge location.

Table 7.4 Site Stormwater Discharge Locations

Location No.	Location
SCM1	TBD

7.7 Water Quality Sampling and Analysis

7.7.1 Sampling and Analysis Plan for Non-Visible Pollutants in Stormwater Runoff Discharges

This Sampling and Analysis Plan for Non-Visible Pollutants describes the sampling and analysis strategy and schedule for monitoring non-visible pollutants in stormwater runoff discharges from the project site.

Sampling for non-visible pollutants will be conducted when (1) a breach, leakage, malfunction, or spill is observed; and (2) the leak or spill has not been cleaned up prior to the rain event; and (3) there is the potential for discharge of non-visible pollutants to surface waters or drainage system.

The following construction materials, wastes, or activities, as identified in Section 2.6, are potential sources of non-visible pollutants to stormwater discharges from the project. Storage, use, and operational locations are shown on the Site Maps in Appendix B.

- Vehicle Storage Area
- Concrete Washout

The following existing site features, as identified in Section 2.6, are potential sources of non-visible pollutants to stormwater discharges from the project. Locations of existing site features contaminated with non-visible pollutants are shown on the Site Maps in Appendix B.

- None

The following soil amendments have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil and will be used on the project site. Locations of soil amendment application are shown on the Site Maps in Appendix B.

- None

The project has the potential to receive stormwater run-on from the following locations with the potential to contribute non-visible pollutants to stormwater discharges from the project. Locations of such run-on to the project site are shown on the Site Maps in Appendix B.

- None

7.7.1.1 Sampling Schedule

Samples for the potential non-visible pollutant(s) and a sufficiently large unaffected background sample shall be collected during the first two hours of discharge from rain events that result in a sufficient discharge for sample collection. Samples shall be collected during the site's scheduled hours and shall be collected regardless of the time of year and phase of the construction.

Collection of discharge samples for non-visible pollutant monitoring will be triggered when any of the following conditions are observed during site inspections conducted prior to or during a rain event.

- Materials or wastes containing potential non-visible pollutants are not stored under watertight conditions. Watertight conditions are defined as (1) storage in a watertight container, (2) storage under a watertight roof or within a building, or (3) protected by temporary cover and containment that prevents stormwater contact and runoff from the storage area.
- Materials or wastes containing potential non-visible pollutants are stored under watertight conditions, but (1) a breach, malfunction, leakage, or spill is observed, (2) the leak or spill is not cleaned up prior to the rain event, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm drain system.
- A construction activity, including but not limited to those in Section 2.6, with the potential to contribute non-visible pollutants (1) was occurring during or within 24 hours prior to the rain event, (2) BMPs were observed to be breached, malfunctioning, or improperly implemented, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm drain system.
- Soil amendments that have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil have been applied, and there is the potential for discharge of non-visible pollutants to surface waters or a storm drain system.
- Stormwater runoff from an area contaminated by historical usage of the site has been observed to combine with stormwater runoff from the site, and there is the potential for discharge of non-visible pollutants to surface waters or a storm drain system.

7.7.1.2 Sampling Locations

Sampling locations are based on proximity to planned non-visible pollutant storage, occurrence or use; accessibility for sampling, and personnel safety. Planned non-visible pollutant sampling locations are shown on the Site Maps in Appendix B and include the locations identified in Table 7.6.

TBD sampling location(s) on the project site and the contractor's yard have been identified for the collection of samples of runoff from planned material and waste storage areas and areas where non-visible pollutant producing construction activities are planned.

Table 7.6 Non-Visible Pollutant Sample Locations – Contractors' Yard

Sample Location Number	Sample Location Description	Sample Location Latitude and Longitude (Decimal Degrees)
TBD	TBD	TBD

If a stormwater visual monitoring site inspection conducted prior to or during a storm event identifies the presence of a material storage, waste storage, or operations area with spills or the potential for the discharge of non-visible pollutants to surface waters or a storm drain system that is at a location not listed above and has not been identified on the Site Maps, sampling locations will be selected by the QSP using the same rationale as that used to identify planned locations. Non-visible pollutant sampling locations shall be identified by the QSP on the pre-rain event inspection form and/or a Rain Event Action Plan prior to a forecasted qualifying rain event.

7.7.1.3 Monitoring Preparation

Non-visible pollutant samples will be collected by the QSP.

An adequate stock of monitoring supplies and equipment for monitoring non-visible pollutants will be available on the project site prior to a sampling event. Monitoring supplies and equipment will be stored in a cool temperature environment that will not come into contact with rain or direct sunlight. Sampling personnel will be available to collect samples in accordance with the sampling schedule. Supplies maintained at the project site will include, but are not limited to, clean powder-free nitrile gloves, sample collection equipment, coolers, appropriate number and volume of sample bottles, identification labels, re-sealable storage bags, paper towels, personal rain gear, ice, and *Effluent Sampling Field Log Sheets* and Chain of Custody (CoC) forms, which are provided in CSMP Attachment 3 "Example Forms".

7.7.1.4 Analytical Constituents

Table 7.11 lists the specific sources and types of potential non-visible pollutants on the project site and the water quality indicator constituent(s) for that pollutant.

Table 7.11 Common Non-Visible Pollutants and Water Quality Indicator Constituents Worksheet	
General Work Activity/Potential Pollutants	**Water Quality Indicators of Potential Constituents** (Review product literature and Material Safety Data Sheets to confirm potential constituents)
Adhesives	COD, Phenols, SVOCs
Asphalt Work	VOCs
Cleaning	
Acids	pH
Bleaches	Residual chlorine
TSP	Phosphate
Solvents	VOCs, SVOCs
Detergents	MBAS
Concrete / Masonry Work	
Sealant (Methyl methacrylate)	SVOC
Curing compounds	VOCs, SVOCs, pH
Ash, slag, sand	pH, Al, Ca, Va, Zn
Drywall	Cu, Al, General Minerals
Framing / Carpentry	
Treated Wood	Cu, Cr, As, Zn
Particle board	Formaldehyde
Untreated wood	BOD
Grading / Earthworks	
Gypsum / Lime amendments	pH
Contaminated Soil	Constituents specific to known contaminants, check with Laboratory
Heating, Ventilation, Air Conditioning	Freon
Insulation	Al, Zn
Landscaping	
Pesticides/Herbicides	Product dependent, see label and check with Laboratory

Table 7.11 Common Non-Visible Pollutants and Water Quality Indicator Constituents Worksheet	
General Work Activity/Potential Pollutants	**Water Quality Indicators of Potential Constituents** (Review product literature and Material Safety Data Sheets to confirm potential constituents)
Fertilizers	TKN, NO_3, BOD, COD, DOC, Sulfate, NH_3, Phosphate, Potassium
Aluminum sulfate	Al, TDS, Sulfate
Liquid Waste	Constituents specific to materials, check with Laboratory
Painting	
Resins	COD, SVOCs
Thinners	COD, VOCs
Paint strippers	VOCs, SVOCs, metals
Lacquers, varnishes, enamels	COD, VOCs, SVOCs
Sealants	COD
Adhesives	Phenols, SVOCs
Planting / Vegetation Management	
Vegetation stockpiles	BOD
Fertilizers	TKN, NO_3, BOD, COD, DOC, sulfate, NH_3, Phosphate, Potassium
Pesticides/Herbicides	Product dependent, see label and check with Laboratory
Plumbing	
Solder, flux, pipe fitting	Cu, Pb, Sn, Zn
Pools and Fountains	Residual chlorine, Cu, chloramines
Removal of existing structures	Zn, VOCs, PCBs (see also other applicable activity categories, e.g., grading, painting)
Roofing	Cu, Pb, VOCs
Sanitary Waste Sewer line breaks and Portable Toilets (using clear fluid – blue fluid is visible if discharged)	BOD, Total/Fecal coliform
Soil Preparation / Amendments/Dust Control	
Polymer/Co-polymers	TKN, NO_3, BOD, COD, DOC, Sulfate, Ni
Lignin sulfate	TDS, alkalinity

Table 7.11 Common Non-Visible Pollutants and Water Quality Indicator Constituents Worksheet	
General Work Activity/Potential Pollutants	**Water Quality Indicators of Potential Constituents** (Review product literature and Material Safety Data Sheets to confirm potential constituents)
Psyllium	COD, TOC
Guar/Plant Gums	COD, TOC, Ni
Solid Waste (leakage)	BOD
Utility Line Testing and Flushing	Residual chlorine, chloramines
Vehicle and Equipment Use	
Batteries	Sulfuric acid; Pb, pH

Adapted from *Attachment S, Caltrans SWPPP/WPCP Preparation Manual, February 2003*, and *CASQA Construction BMP Handbook*, 2003

7.7.1.5 *Sample Collection*

Samples of discharge shall be collected at the designated non-visible pollutant sampling locations shown on the Site Maps in Appendix B or in the locations determined by observed breaches, malfunctions, leakages, spills, operational areas, soil amendment application areas, and historical site usage areas that triggered the sampling event.

Grab samples shall be collected and preserved in accordance with the methods identified in the Table, "Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants" provided in Section 7.7.1.6. Only the QSP, or personnel trained in water quality sampling under the direction of the QSP shall collect samples.

Sample collection and handling requirements are described in Section 7.7.7.

7.7.1.6 Sample Analysis

Samples shall be analyzed using the analytical methods identified in the Table 7.12.

Samples will be analyzed by:

Laboratory Name:	Bolsa Analytical
Street Address:	2337 Technology Pkwy
City, State Zip:	Hollister, CA 95023-2544
Telephone Number:	(831) 637-4590
ELAP Certification Number:	1326

Samples will be delivered to the laboratory by:

Driven by Contractor ☒ Yes ☐ No

Picked up by Laboratory Courier	☐ Yes	☐ No
Shipped	☐ Yes	☐ No

Table 7.12 Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants

Constituent	Analytical Method	Minimum Sample Volume	Sample Containers	Sample Preservation	Reporting Limit	Maximum Holding Time
Notes:						

7.7.1.7 Data Evaluation and Reporting

The QSP shall complete an evaluation of the water quality sample analytical results.

Runoff/downgradient results shall be compared with the associated upgradient/unaffected results and any associated run-on results. Should the runoff/downgradient sample show an increased level of the tested analyte relative to the unaffected background sample, which cannot be explained by run-on results, the BMPs, site conditions, and surrounding influences shall be assessed to determine the probable cause for the increase.

As determined by the site and data evaluation, appropriate BMPs shall be repaired or modified to mitigate discharges of non-visible pollutant concentrations. Any revisions to the BMPs shall be recorded as an amendment to the SWPPP.

The General Permit prohibits the storm water discharges that contain hazardous substances equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4. The results of any non-stormwater discharge results that indicate the presence of a hazardous substance in excess of established reportable quantities shall be immediately reported to the Regional Water Board and other agencies as required by 40 C.F.R. §§ 117.3 and 302.4.

Results of non-visible pollutant monitoring shall be reported in the Annual Report.

7.7.2 Sampling and Analysis Plan for pH and Turbidity in Stormwater Runoff Discharges

Sampling and analysis of runoff for pH and turbidity is required for this project. This Sampling and Analysis Plan describes the strategy for monitoring turbidity and pH levels of stormwater runoff discharges from the project site and run-on that may contribute to an exceedance of a Numeric Action Level (NAL).

Samples for turbidity will be collected from all drainage areas with disturbed soil areas and samples for pH will be collected from all drainage areas with a high risk of pH discharge.

7.7.2.1 Sampling Schedule

Stormwater runoff samples shall be collected for turbidity from all qualifying rain events that result in a discharge from the project site. At minimum, turbidity samples will be collected from each site discharge location draining a disturbed area. A minimum of three samples will be collected per day of discharge during a qualifying event. Samples should be representative of the total discharge from the project each day of discharge during the qualifying event. Typically representative samples will be spaced in time throughout the daily discharge event.

Stormwater runoff samples shall be collected for pH from all qualifying rain events that result in a discharge from the project site. At minimum, pH samples will be collected from each site discharge location during project phases and drainage areas with a high risk of pH discharge. A minimum of three samples will be collected per day of discharge during a qualifying event. Samples should be representative of the total discharge from the location each day of discharge during the qualifying event. Typically representative samples will be spaced in time throughout the daily discharge event.

Stored or collected water from a qualifying storm event when discharged shall be tested for turbidity and pH (when applicable). Stored or collected water from a qualifying event may be

sampled at the point it is released from the storage or containment area or at the site discharge location.

Run-on samples shall be collected whenever the QSP identifies that run-on has the potential to contribute to an exceedance of a NAL.

7.7.2.2 Sampling Locations

Sampling locations are based on the site runoff discharge locations and locations where run-on enters the site; accessibility for sampling; and personnel safety. Planned pH and turbidity sampling locations are shown on the Site Maps in Appendix B and include the locations identified in Table 7.13 and Table 7-14.

2 sampling location(s) on the project site and the contractor's yard have been identified for the collection of runoff samples. Table 7.13 also provides an estimate of the site's area that drains to each location.

Table 7.13 Turbidity and pH Runoff Sample Locations

Sample Location Number	Sample Location	Estimate of Site (%)
SCM 1	TBD	
SCM 2	TBD	

7.7.2.3 Monitoring Preparation

Turbidity and pH samples will be collected and analyzed by:

Contractor ☐ Yes ☐ No

Consultant ☒ Yes ☐ No

Laboratory ☐ Yes ☐ No

7.7.2.4 Field Parameters

Samples shall be analyzed for the constituents indicated in the table below "Sample Collection, and Analysis for Monitoring Turbidity and pH."

Table 7.15 Sample Collection and Analysis for Monitoring Turbidity and pH

Parameter	Test Method	Minimum Sample Volume[(1)]	Sample Collection Container Type	Detection Limit (minimum)
Turbidity	Field meter/probe with calibrated portable instrument	500 mL	Polypropylene or Glass (Do not collect in meter sample cells)	1 NTU
pH	Field meter/probe with calibrated portable instrument or calibrated pH test kit	100 mL	Polypropylene	0.2 pH units

Notes: [1] Minimum sample volume recommended. Specific volume requirements will vary by instrument; check instrument manufacturer instructions.

L – Liter
mL – Milliliter
NTU – Nephelometric Turbidity Unit

7.7.2.5 Sample Collection

Samples of discharge shall be collected at the designated runoff and run-on sampling locations shown on the Site Maps in Appendix B. Run-on samples shall be collected within close proximity of the point of run-on to the project.

Only personnel trained in water quality sampling and field measurements working under the direction of the QSP shall collect samples.

Sample collection and handling requirements are described in Section 7.7.7.

7.7.2.6 Field Measurements

Samples collected for field analysis, collection, analysis and equipment calibration shall be in accordance with the field instrument manufacturer's specifications.

Immediately following collection, samples for field analysis shall be tested in accordance with the field instrument manufacturer's instructions and results recorded on the *Effluent Sampling Field Log Sheet*.

The field instrument(s) listed in Table 7.16 will be used to analyze the following constituents:

Table 7.16 Field Instruments

Field Instrument (Manufacturer and Model)	Constituent
TBD	pH
TBD	Turbidity

The manufacturers' instructions are included in CSMP Attachment 4 "Field Meter Instructions". Field sampling staff shall review the instructions prior to each sampling event and follow the instructions in completing measurement of the samples.

- The instrument(s) shall be maintained in accordance with manufacturer's instructions.
- The instrument(s) shall be calibrated before each sampling and analysis event.
- Maintenance and calibration records shall be maintained with the SWPPP.

The QSP may authorize alternate equipment provided that the equipment meets the Construction General Permit's requirements and the manufacturers' instructions for calibration and use are added to CSMP Attachment 4 "Field Meter Instructions".

7.7.2.7 Data Evaluation and Reporting

Immediately upon completing the measurements for the sampling event, provide the *Effluent Sampling Field Log Sheets* to the QSP for evaluation.

Numeric Action Levels

This project is subject to NALs for pH and turbidity (Table 7.17). Compliance with the NAL for pH and turbidity is based on a weighted daily average. Upon receiving the field log sheets, the QSP shall immediately calculate the weighted arithmetic average of the pH and turbidity samples to determine if the NALs, shown in the table below, have been exceeded.

Table 7.17 Numeric Action Levels

Parameter	Unit	Daily Average
pH	pH units	Lower NAL = 6.5 Upper NAL = 8.5
Turbidity	NTU	250 NTU

The QSP shall within 2 days of the sample collection submit copies of the completed *Effluent Sampling Field Log Sheets* to Don Macleod.

In the event that the pH or turbidity NAL is exceeded, the QSP shall immediately notify Don Macleod and investigate the cause of the exceedance and identify corrective actions.

Exceedances of NALs shall be electronically reported to the State Water Board by Don Macleod through the SMARTs system within 10 days of the conclusion of the storm event. If requested by the Regional Board, a NAL Exceedance report will be submitted. The NAL Exceedance Report must contain the following information:

- Analytical method(s), method reporting unit(s), and MDL(s) of each parameter;
- Date, place, time of sampling, visual observation, and/or measurements, including precipitation; and
- Description of the current BMPs associated with the sample that exceeded the NAL and the proposed corrective actions taken.

7.7.3 Additional Monitoring Following an NEL Exceedance

This project is not subject to Receiving Water Monitoring.

7.7.5 Sampling and Analysis Plan for Other Pollutants Required by the Regional Water Board

The Regional Water Board has not specified monitoring for additional pollutants.

7.7.6 Training of Sampling Personnel

Sampling personnel shall be trained to collect, maintain, and ship samples in accordance with the Surface Water Ambient Monitoring program (SWAMP) 2008 Quality Assurance Program Plan (QAPrP). Training records of designated contractor sampling personnel are provided in Appendix K.

The stormwater sampler(s) and alternate(s) have received the following stormwater sampling training:

Name	Training
Amanda Musy-Verdel	QSP Course

The stormwater sampler(s) and alternates have the following stormwater sampling experience:

Name	Experience

7.7.7 Sample Collection and Handling

7.7.7.1 Sample Collection

Samples shall be collected at the designated sampling locations shown on the Site Maps and listed in the preceding sections. Samples shall be collected, maintained and shipped in accordance with the SWAMP 2008 Quality Assurance Program Plan (QAPrP).

Grab samples shall be collected and preserved in accordance with the methods identified in preceding sections.

To maintain sample integrity and prevent cross-contamination, sample collection personnel shall follow the protocols below.

- Collect samples (for laboratory analysis) only in analytical laboratory-provided sample containers;
- Wear clean, powder-free nitrile gloves when collecting samples;
- Change gloves whenever something not known to be clean has been touched;
- Change gloves between sites;

- Decontaminate all equipment (e.g. bucket, tubing) prior to sample collection using a trisodium phosphate water wash, distilled water rinse, and final rinse with distilled water. (Dispose of wash and rinse water appropriately, i.e., do not discharge to storm drain or receiving water). Do not decontaminate laboratory provided sample containers;
- Do not smoke during sampling events;
- Never sample near a running vehicle;
- Do not park vehicles in the immediate sample collection area (even non-running vehicles);
- Do not eat or drink during sample collection; and
- Do not breathe, sneeze, or cough in the direction of an open sample container.

The most important aspect of grab sampling is to collect a sample that represents the entire runoff stream. Typically, samples are collected by dipping the collection container in the runoff flow paths and streams as noted below.

i. For small streams and flow paths, simply dip the bottle facing upstream until full.
ii. For larger stream that can be safely accessed, collect a sample in the middle of the flow stream by directly dipping the mouth of the bottle. Once again making sure that the opening of the bottle is facing upstream as to avoid any contamination by the sampler.
iii. For larger streams that cannot be safely waded, pole-samplers may be needed to safely access the representative flow.
iv. Avoid collecting samples from ponded, sluggish or stagnant water.
v. Avoid collecting samples directly downstream from a bridge as the samples can be affected by the bridge structure or runoff from the road surface.

Note, that depending upon the specific analytical test, some containers may contain preservatives. These containers should **never** be dipped into the stream, but filled indirectly from the collection container.

7.7.7.2 Sample Handling

Turbidity and pH measurements must be conducted immediately. Do not store turbidity or pH samples for later measurement.

Samples for laboratory analysis must be handled as follows. Immediately following sample collection:

- Cap sample containers;
- Complete sample container labels;
- Sealed containers in a re-sealable storage bag;
- Place sample containers into an ice-chilled cooler;
- Document sample information on the *Effluent Sampling Field Log Sheet*; and
- Complete the CoC.

All samples for laboratory analysis must be maintained between 0-6 degrees Celsius during delivery to the laboratory. Samples must be kept on ice, or refrigerated, from sample collection through delivery to the laboratory. Place samples to be shipped inside coolers with ice. Make sure the sample bottles are well packaged to prevent breakage and secure cooler lids with packaging tape.

Ship samples that will be laboratory analyzed to the analytical laboratory right away. Hold times are measured from the time the sample is collected to the time the sample is analyzed. The General Permit requires that samples be received by the analytical laboratory within 48 hours of the physical sampling (unless required sooner by the analytical laboratory).

Laboratory Name:	Bolsa Analytical
Address:	2337 Technology Parkway #K
City, State Zip:	Hollister, CA 95023-2544
Telephone Number:	(831) 637-4590
Point of Contact:	

7.7.7.3 Sample Documentation Procedures

All original data documented on sample bottle identification labels, *Effluent Sampling Field Log Sheet*, and CoCs shall be recorded using waterproof ink. These shall be considered accountable documents. If an error is made on an accountable document, the individual shall make corrections by lining through the error and entering the correct information. The erroneous information shall not be obliterated. All corrections shall be initialed and dated.

Duplicate samples shall be identified consistent with the numbering system for other samples to prevent the laboratory from identifying duplicate samples. Duplicate samples shall be identified in the Effluent Sampling Field Log Sheet.

Sample documentation procedures include the following:

Sample Bottle Identification Labels: Sampling personnel shall attach an identification label to each sample bottle. Sample identification shall uniquely identify each sample location.

Field Log Sheets: Sampling personnel shall complete the *Effluent Sampling Field Log Sheet* and *Receiving Water Sampling Field Log Sheet* for each sampling event, as appropriate.

Chain of Custody: Sampling personnel shall complete the CoC for each sampling event for which samples are collected for laboratory analysis. The sampler will sign the CoC when the sample(s) is turned over to the testing laboratory or courier.

7.8 Active Treatment System Monitoring

An Active Treatment System (ATS) will be deployed on the site?

☐ Yes ☒ No

This project does not require a project specific Sampling and Analysis Plan for an ATS because deployment of an ATS is not planned.

7.9 Bioassessment Monitoring

This project is not subject to bioassessment monitoring because it is not a Risk Level 3 project.

7.10 Watershed Monitoring Option

This project is not participating in a watershed monitoring option.

7.11 Quality Assurance and Quality Control

An effective Quality Assurance and Quality Control (QA/QC) plan shall be implemented as part of the CSMP to ensure that analytical data can be used with confidence. QA/QC procedures to be initiated include the following:

- Field logs;
- Clean sampling techniques;
- CoCs;
- QA/QC Samples; and
- Data verification.

Each of these procedures is discussed in more detail in the following sections.

7.11.1 Field Logs

The purpose of field logs is to record sampling information and field observations during monitoring that may explain any uncharacteristic analytical results. Sampling information to be included in the field log include the date and time of water quality sample collection, sampling personnel, sample container identification numbers, and types of samples that were collected. Field observations should be noted in the field log for any abnormalities at the sampling location (color, odor, BMPs, etc.). Field measurements for pH and turbidity should also be recorded in the field log. A Visual Inspection Field Log, an Effluent Sampling Field Log Sheet are included in CSMP Attachment 3 "Example Forms".

7.11.2 Clean Sampling Techniques

Clean sampling techniques involve the use of certified clean containers for sample collection and clean powder-free nitrile gloves during sample collection and handling. As discussed in Section 7.7.7, adoption of a clean sampling approach will minimize the chance of field contamination and questionable data results.

7.11.3 Chain of Custody

The sample CoC is an important documentation step that tracks samples from collection through analysis to ensure the validity of the sample. Sample CoC procedures include the following:

- Proper labeling of samples;
- Use of CoC forms for all samples; and
- Prompt sample delivery to the analytical laboratory.

Analytical laboratories usually provide CoC forms to be filled out for sample containers. An example CoC is included in CSMP Attachment 3 "Example Forms".

7.11.4 QA/QC Samples

QA/QC samples provide an indication of the accuracy and precision of the sample collection; sample handling; field measurements; and analytical laboratory methods. The following types of QA/QC will be conducted for this project:

☒ Field Duplicates at a frequency of 5% or 1 sample per sampling event
(Required for all sampling plans with field measurements or laboratory analysis)

7.11.4.1 Field Duplicates

Field duplicates provide verification of laboratory or field analysis and sample collection. Duplicate samples shall be collected, handled, and analyzed using the same protocols as primary samples. The sample location where field duplicates are collected shall be randomly selected from the discharge locations. Duplicate samples shall be collected immediately after the primary sample has been collected. Duplicate samples must be collected in the same manner and as close in time as possible to the original sample. Duplicate samples shall not influence any evaluations or conclusion.

7.11.4.2 Equipment Blanks

Equipment blanks provide verification that equipment has not introduced a pollutant into the sample. Equipment blanks are typically collected when:

- New equipment is used;
- Equipment that has been cleaned after use at a contaminated site;
- Equipment that is not dedicated for surface water sampling is used; or
- Whenever a new lot of filters is used when sampling metals.

7.11.4.3 Field Blanks

Field blanks assess potential sample contamination levels that occur during field sampling activities. De-ionized water field blanks are taken to the field, transferred to the appropriate container, and treated the same as the corresponding sample type during the course of a sampling event.

7.11.4.4 Travel Blanks

Travel blanks assess the potential for cross-contamination of volatile constituents between sample containers during shipment from the field to the laboratory. De-ionized water blanks are taken along for the trip and held unopened in the same cooler with the VOC samples.

7.11.5 Data Verification

After results are received from the analytical laboratory, the QSP shall verify the data to ensure that it is complete, accurate, and the appropriate QA/QC requirements were met. Data must be verified as soon as the data reports are received. Data verification shall include:

- Check the CoC and laboratory reports.
  Make sure all requested analyses were performed and all samples are accounted for in the reports.
- Check laboratory reports to make sure hold times were met and that the reporting levels meet or are lower than the reporting levels agreed to in the contract.
- Check data for outlier values and follow up with the laboratory.
  Occasionally typographical errors, unit reporting errors, or incomplete results are reported and should be easily detected. These errors need to be identified, clarified, and corrected quickly by the laboratory. The QSP should especially note data that is an order of magnitude or more different than similar locations, or is inconsistent with previous data from the same location.

- Check laboratory QA/QC results.
  EPA establishes QA/QC checks and acceptable criteria for laboratory analyses. These data are typically reported along with the sample results. The QSP shall evaluate the reported QA/QC data to check for contamination (method, field, and equipment blanks), precision (laboratory matrix spike duplicates), and accuracy (matrix spikes and laboratory control samples). When QA/QC checks are outside acceptable ranges, the laboratory must flag the data, and usually provides an explanation of the potential impact to the sample results.
- Check the data set for outlier values and, accordingly, confirm results and re-analyze samples where appropriate.
  Sample re-analysis should only be undertaken when it appears that some part of the QA/QC resulted in a value out of the accepted range. Sample results may not be discounted unless the analytical laboratory identifies the required QA/QC criteria were not met and confirms this in writing.

Field data including inspections and observations must be verified as soon as the field logs are received, typically at the end of the sampling event. Field data verification shall include:

- Check field logs to make sure all required measurements were completed and appropriately documented;
- Check reported values that appear out of the typical range or inconsistent; Follow-up immediately to identify potential reporting or equipment problems, if appropriate, recalibrate equipment after sampling;
- Verify equipment calibrations;
- Review observations noted on the field logs; and
- Review notations of any errors and actions taken to correct the equipment or recording errors.

7.12 Records Retention

All records of stormwater monitoring information and copies of reports (including Annual Reports) must be retained for a period of at least three years from date of submittal or longer if required by the Regional Water Board.

Results of visual monitoring, field measurements, and laboratory analyses must be kept in the SWPPP along with CoCs, and other documentation related to the monitoring.

Records are to be kept onsite while construction is ongoing. Records to be retained include:

- The date, place, and time of inspections, sampling, visual observations, and/or measurements, including precipitation;
- The individual(s) who performed the inspections, sampling, visual observation, and/or field measurements;
- The date and approximate time of field measurements and laboratory analyses;
- The individual(s) who performed the laboratory analyses;
- A summary of all analytical results, the method detection limits and reporting limits, and the analytical techniques or methods used;
- Rain gauge readings from site inspections;
- QA/QC records and results;

- Calibration records;
- Visual observation and sample collection exemption records;
- The records of any corrective actions and follow-up activities that resulted from analytical results, visual observations, or inspections; and
- NAL Exceedance Reports.

CSMP Attachment 1: Weather Reports

CSMP Attachment 2: Monitoring Records

CSMP Attachment 3: Example Forms

Rain Gauge Log Sheet				
Construction Site Name:				
WDID #:				
Date (mm/dd/yy)	Time (24-hr)	Initials	Rainfall Depth (Inches)	Notes:

Risk Level 1, 2, 3 ***Visual Inspection Field Log Sheet***						
Date and Time of Inspection:				Report Date:		
Inspection Type:	☐ Weekly	☐ Before predicted rain	☐ During rain event	☐ Following qualifying rain event	☐ Contained stormwater release	☐ Quarterly non-stormwater
Site Information						
Construction Site Name:						
Construction stage and completed activities:					Approximate area of exposed site:	
Weather and Observations						
Date Rain Predicted to Occur:				Predicted % chance of rain:		
Estimate storm beginning: _____ (date and time)		Estimate storm duration:_____ (hours)		Estimate time since last storm: _____ (days or hours)	Rain gauge reading:_____ (inches)	
Observations: If yes identify location						
Odors	Yes ☐ No ☐					
Floating material	Yes ☐ No ☐					
Suspended Material	Yes ☐ No ☐					
Sheen	Yes ☐ No ☐					
Discolorations	Yes ☐ No ☐					
Turbidity	Yes ☐ No ☐					
Site Inspections						
Outfalls or BMPs Evaluated			**Deficiencies Noted**			
(add additional sheets or attached detailed BMP Inspection Checklists)						
Photos Taken:	Yes ☐	No ☐	Photo Reference IDs:			
Corrective Actions Identified (note if SWPPP/REAP change is needed)						
Inspector Information						
Inspector Name:				Inspector Title:		

Signature:	Date:

Risk Level 2
Effluent Sampling Field Log Sheets

Construction Site Name:	Date:	Time Start:
Sampler:		

Sampling Event Type:	☐ Stormwater	☐ Non-stormwater	☐ Non-visible pollutant

Field Meter Calibration

pH Meter ID No./Desc.: Calibration Date/Time:	Turbidity Meter ID No./Desc.: Calibration Date/Time:

Field pH and Turbidity Measurements

Discharge Location Description	pH	Turbidity	Time

Grab Samples Collected

Discharge Location Description	Sample Type	Time

Additional Sampling Notes:

Time End:

Risk Level 3 ***Effluent Sampling Field Log Sheets***				
Construction Site Name:		Date:		Time Start:
Sampler:				
Sampling Event Type:	☐ Stormwater	☐ Non-stormwater	☐ Non-visible pollutant	☐ Post NEL Exceedance

Field Meter Calibration	
pH Meter ID No./Desc.: Calibration Date/Time:	Turbidity Meter ID No./Desc.: Calibration Date/Time:

Field pH and Turbidity Measurements			
Discharge Location Description	pH	Turbidity	Time

Grab Samples Collected			
Discharge Location Description	SSC	Other (specify)	Time

Additional Sampling Notes:
Time End:

Risk Level 3 ***Receiving Water Sampling Field Log Sheets***		
Construction Site Name:	Date:	Time Start:
Sampler:		
Receiving Water Description and Observations		
Receiving Water Name/ID:		
Observations:		
Odors	Yes ☐ No ☐	
Floating material	Yes ☐ No ☐	
Suspended Material	Yes ☐ No ☐	
Sheen	Yes ☐ No ☐	
Discolorations	Yes ☐ No ☐	
Turbidity	Yes ☐ No ☐	
Field Meter Calibration		
pH Meter ID No./Desc.: Calibration Date/Time:		Turbidity Meter ID No./Desc.: Calibration Date/Time:

Field pH and Turbidity Measurements and SSC Grab Sample			
Upstream Location			
Type	Result	Time	Notes
pH			
Turbidity			
SSC	Collected Yes ☐ No ☐		
Downstream Location			
Type	Result	Time	Notes
pH			
Turbidity			
SSC	Collected Yes ☐ No ☐		
Additional Sampling Notes:			
Time End:			

NAL or NEL Exceedance Evaluation Summary Report	**Page __ of __**
Project Name	
Project WDID	
Project Location	
Date of Exceedance	
Type of Exceedance	**NAL Daily Average ☐ pH ☐ Turbidity** **NEL Daily Average ☐ pH ☐ Turbidity** **☐ Other (specify) _____**
Measurement or Analytical Method	**☐ Field meter** **(Sensitivity: _____)** **☐ Lab method (specify) _____** **(Reporting Limit: _____)** **(MDL: _____)**
Calculated Daily Average	**☐ pH _ pH units** **☐ Turbidity __ NTU**
Rain Gauge Measurement	**_____ inches**
Compliance Storm Event	**_____ inches (5-year, 24-hour event)**
Visual Observations on Day of Exceedance	

NAL or NEL Exceedance Evaluation Summary Report	**Page __ of __**
Description of BMPs in Place at Time of Event	
Initial Assessment of Cause	
Corrective Actions Taken (deployed after exceedance)	
Additional Corrective Actions Proposed	
Report Completed By	_____ **(Print Name, Title)**
Signature	_____

CHAIN-OF-CUSTODY **DATE:** **Lab ID:**

DESTINATION LAB: ATTN: **ADDRESS:** **Office Phone:** **Cell Phone:**							REQUESTED ANALYSIS				Notes:
SAMPLED BY:											
Contact:											
Project Name											
Client Sample ID	**Sample Date**	**Sample Time**	**Sample Matrix**	**Container #**	**Container Type**	**Container Pres.**					

SENDER COMMENTS:	**RELINQUISHED BY**	
	Signature:	
	Print:	
	Company:	
	Date:	TIME:
LABORATORY COMMENTS:	**RECEIVED BY**	
	Signature:	
	Print:	
	Company:	
	Date:	TIME:

CSMP Attachment 4: Field Meter Instructions

CSMP Attachment 5: Supplemental Information

Section 8 References

Project Plans and Specifications prepared by Hanna & Brunetti and approved by the City of Gilroy.

State Water Resources Control Board (2009). Order 2009-0009-DWQ, NPDES General Permit No. CAS000002: National Pollutant Discharges Elimination System (NPDES) California General Permit for Storm Water Discharge Associated with Construction and Land Disturbing Activities. Available on-line at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml.

State Water Resources Control Board (2010). Order 2010-0014-DWQ, NPDES General Permit No. CAS000002: National Pollutant Discharges Elimination System (NPDES) California General Permit for Storm Water Discharge Associated with Construction and Land Disturbing Activities. Available on-line at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml.

State Water Resources Control Board (2012). Order 2012-0006-DWQ, NPDES General Permit No. CAS000002: National Pollutant Discharges Elimination System (NPDES) California General Permit for Storm Water Discharge Associated with Construction and Land Disturbing Activities. Available on-line at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml.

CASQA 2009, *Stormwater BMP Handbook Portal: Construction*, November 2009, www.casqa.org

Appendix A: Calculations

National Pollutant Discharge Elimination System (NPDES)

Rainfall Erosivity Factor Calculator for Small Construction Sites

EPA's stormwater regulations allow NPDES permitting authorities to waive NPDES permitting requirements for stormwater discharges from small construction sites if:

- the construction site disturbs less than five acres, and
- the rainfall erosivity factor ("R" in the revised universal soil loss equation, or RUSLE) value is less than five during the period of construction activity.

If your small construction project is located in an area where EPA is the permitting authority and your R factor is less than five, you qualify for a low erosivity waiver (LEW) from NPDES stormwater permitting. If your small construction project does not qualify for a waiver, then NPDES stormwater permit coverage is required. Follow the steps below to calculate your R-Factor.

LEW certifications are submitted through the NPDES eReporting Tool or "CGP-NeT". Several states that are authorized to implement the NPDES permitting program also accept LEWs. Check with your state NPDES permitting authority for more information.

- Submit your LEW through EPA's eReporting Tool
- List of states, Indian country, and territories where EPA is the permitting authority
- Construction Rainfall Erosivity Waiver Fact Sheet
- Appendix C of the 2017 CGP – Small Construction Waivers and Instructions

The R-factor calculation can also be integrated directly into custom applications using the R-Factor web service.

For questions or comments, email EPA's CGP staff at cgp@epa.gov.

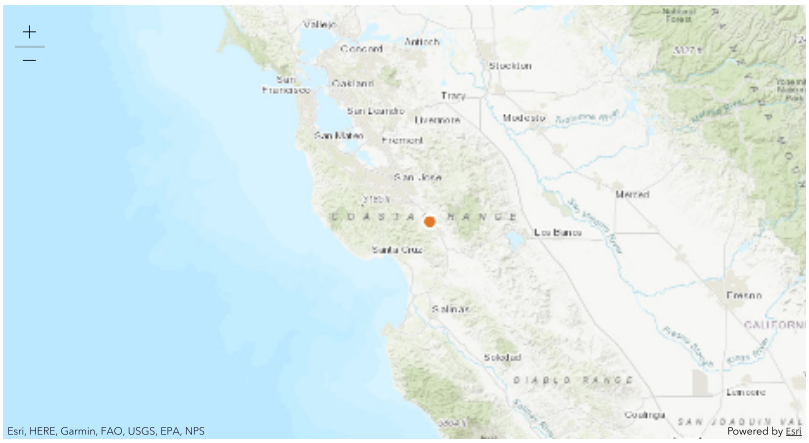
● Select the estimated start and end dates of construction by clicking the boxes and using the dropdown calendar.

The period of construction activity begins at initial earth disturbance and ends with final stabilization.

Start Date: 05/15/2021 **End Date:** 10/15/2021

● Locate your small construction project using the search box below or by clicking on the map.

Location: 37.14136,-121.66182 **Search**



● Click the "Calculate R Factor" button below to calculate an R Factor for your small construction project.

Calculate R Factor

Facility Information

Start Date: 05/15/2021	**Latitude:** 37.1414
End Date: 10/15/2021	**Longitude:** -121.6618

Calculation Results

Rainfall erosivity factor (R Factor) = **2.4**

A rainfall erosivity factor of less than 5.0 has been calculated for your site and period of construction. If you are located in an area where EPA is the permitting authority, you can submit a LEW through EPA's NPDES eReporting Tool (NeT). Otherwise, contact your state permitting authority to determine if you are eligible for a waiver from NPDES permitting requirements.

If you submitted a LEW through EPA's NeT and your construction activity ultimately extends past the project completion date you specified above, you must recalculate the R factor using the original start date and a new project completion date. If the recalculated R factor is still less than 5.0, you must submit a modification to your LEW through NeT before the end of the original construction period. If the new R factor is 5.0 or greater, you must submit a Notice of Intent (NOI) instead to be covered by the Construction General Permit (CGP) before the original project completion date.

Appendix A

Water Boards Storm Water Multiple Application & Report Tracking System

Help Logout

You are logged-in as: **Amanda Wilson**
If this account does not belong to you, please log out.

Navigate To:

Risk

The application is organized into different tabs. Please complete all applicable tabs before submitting the form. If you want to complete the application at a later time, please click on "Save & Exit".

WDID/App ID:	- 534279	**Owner:**	Morgan Hill City	**Certified Date:**	
Status:	Not Submitted		17575 Peaks Ave Morgan Hill CA 95037	**Processed Date:**	
Order No:	2009-0009-DWQ	**Site:**	Fisher Basin	**NOT Effective Date:**	
Permit Type:	Construction - Waiver		Monterey Road Morgan Hill CA 95037	**Previous ID:**	-

Owner Info | Developer Info | Site Info | Risk | Addl. Site Info | Attachments | Certification | Reports | Inspections | Print | Status History | Linked Users | COIs

SEDIMENT RISK FACTOR WORKSHEET **Instructions: Enter R,K and LS factor values. System will calculate watershed erosion estimates and site sediment risk factor** **A. Sediment Risk**	
A) R Factor Value: (What's this?)	2.4 * Erosivity Calculator
B) K Factor Value (weighted average, by area, for all site soils) (What's this?) ***If not using the SWRCB map(Populate K Factor) upload your analysis on the Attachment Tab prior to submitting to the SWRCB.	0.2 * Populate K Factor
C) LS Factor (weighted average, by area, for all slopes) (What's this?) ***If not using the SWRCB map(Populate LS Factor) upload your analysis on the Attachment Tab prior to submitting to the SWRCB.	0.68 * Populate LS Factor
Watershed Erosion Estimate (=R*K*LS) in tons/acre	0.32
Site Sediment Risk Factor Low Sediment Risk: < 15 tons/acre Medium Sediment Risk: >/= 15 and <75 tons/acre High Sediment Risk: >/= 75 tons/acre	Low

RECEIVING WATER (RW) RISK FACTOR WORKSHEET

A. Watershed Characteristics

A.1.(a) Does the disturbed area discharge directly or indirectly to a 303(d) listed waterbody impaired by sediment? OR A.1.(b) Is the disturbed area located within a sub-watershed draining to a 303(d) listed waterbody impaired by sediment? OR A.2. Is the disturbed area located within a planning watershed draining to a waterbody with designated beneficial uses of COLD, SPAWN AND MIGRATORY?	Populate Receiving Water Risk Select * Yes = High, No = Low Statewide Map of High Receiving Water Risk Watersheds	

C. Combined Risk Level Matrix

		Sediment Risk: Low	Sediment Risk: Medium	Sediment Risk: High
Receiving Water Risk	Low	Level1	Level2	
	High		Level2	Level3

Project Sediment Risk:	Low
Project Receiving Water Risk:	
Project Combined Risk:	

Save & Exit | Save & Continue

Fields marked with * are mandatory fields.

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No site run-on will be intermixed with construction run-off.

Appendix B: Site Maps

Excavation & Grading Plan

for

Fisher Basin Expansion

Monterey Road - APN 726-25-028

in the

City of Morgan Hill

CITY OF MORGAN HILL GENERAL NOTES:

1. TEMPORARY BENCH MARK – BASED ON A CITY APPROVED BENCHMARK AS SHOWN ON THESE PLANS.
2. ALL EXISTING ELEVATIONS SHALL BE FIELD VERIFIED BY CONTRACTOR UNLESS OTHERWISE NOTED.
3. DELETED.
4. CONTRACTOR SHALL NOT DESTROY EXISTING PERMANENT SURVEY MONUMENTS.
5. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF THE CITY OF MORGAN HILL STANDARD DETAILS FOR CONSTRUCTION WHICH ARE HEREBY MADE A PART OF THESE PLANS. DEVIATIONS FROM THE STANDARD DETAILS MUST BE APPROVED BY THE CITY ENGINEER.
6. CONTRACTOR SHALL ARRANGE FOR A PRE-CONSTRUCTION MEETING WITH THE PROJECT ENGINEER AND CITY ENGINEER (MUNICIPAL CODE 17.32.250B) PRIOR TO COMMENCING ANY CONSTRUCTION. AN ENCROACHMENT PERMIT SHALL BE OBTAINED FROM THE PUBLIC WORKS DEPARTMENT UPON COMPLETION OF SAID MEETING AND PRIOR TO CONSTRUCTION OF ANY IMPROVEMENTS WITHIN AN EXISTING OR OFFERED FOR DEDICATION RIGHT-OF-WAY, PUBLIC UTILITY EASEMENT OR PUBLIC SERVICE EASEMENT.
7. A GRADING PERMIT NOT REQUIRED. CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS DEPARTMENT 48 HOURS PRIOR TO COMMENCEMENT OF ANY WORK PHASE. AT THAT TIME AN "INSPECTION REQUEST FORM" SHALL BE COMPLETED TO ENSURE PROPER SCHEDULING OF AN INSPECTION WITH THE CITY ENGINEER'S REPRESENTATIVE.
8. CONTRACTOR SHALL PRESERVE ALL SURROUNDING PROPERTY BY CONFINING OPERATIONS TO WITHIN THE "LIMITS OF WORK". CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS FOR ALL ADJOINING RESIDENTS, PLACES OF BUSINESS, AND PROPERTIES AT ALL TIMES AND IN A SAFE MANNER. CONTRACTOR SHALL MAKE PROPER NOTIFICATION AT LEAST 48 HOURS IN ADVANCE OF ANY INTERRUPTION IN ACCESS OR SERVICE TO THE ABOVE PROPERTY OWNERS AS WELL AS TO THE CITY ENGINEER'S REPRESENTATIVE.
9. CONTRACTOR SHALL ONLY USE EQUIPMENT PROVIDED WITH A SPARK ARRESTOR DEVICE TO REDUCE A POTENTIAL FIRE HAZARD.
10. DELETED.
11. OFF-SITE WATER & DUST CONTROL:
    CONTRACTOR SHALL PROVIDE A WATER TRUCK ONSITE AT ALL TIMES. CONTRACTOR WILL BE ALLOWED TO DRAW WATER FROM THE CITY OF MORGAN HILL WATER DISTRIBUTION SYSTEM ONLY AFTER OBTAINING A HYDRANT METER FROM THE PUBLIC WORKS DEPARTMENT AND AN INSPECTION OF THE WATER TRUCK FOR A PROPER BACKFLOW DEVICE OR "AIR-GAP" FILLING PIPE. CONTRACTOR SHALL KEEP DOWN DUST FROM CONSTRUCTION ACTIVITY TO THE MAXIMUM EXTENT POSSIBLE. CONTRACTOR SHALL CLEAN ALL EXISTING STREETS, CURBS, GUTTERS, AND SIDEWALKS AFFECTED BY THE PROJECT AT THE END OF EACH WORKING DAY.
12. MATERIAL STORAGE:
    NO MATERIAL SHALL BE STORED NEAR THE EDGE OF PAVEMENT, TRAVELED WAY, SIDEWALK, DRIVEWAY, OR SHOULDER LINE WHICH MAY CREATE A HAZARD FOR VEHICULAR AND PEDESTRIAN TRAFFIC.
13. TRAFFIC CONTROL:
    CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR APPROVAL TO THE PUBLIC WORKS DEPARTMENT A MINIMUM OF 5 DAYS PRIOR TO ANY WORK WITHIN AN EXISTING PUBLIC STREET. THE PLAN SHALL BE SIGNED BY A LICENSED TRAFFIC ENGINEER WHEN IT INVOLVES AN ARTERIAL STREET. CONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC CONTROL IN ACCORDANCE WITH THE LATEST EDITION OF "MUTCD", WHILE WORKING WITHIN THE PUBLIC RIGHT-OF WAY. TWO TRAFFIC LANES (10' MIN.) SHALL BE OPEN TO VEHICULAR TRAFFIC DURING ALL HOURS, WEEKENDS, AND HOLIDAYS. ONE LANE ONE WAY TRAFFIC, MAY BE PERMITTED UNDER THE CONTROL OF NOT LESS THAN 2 (TWO) COMPETENT FLAGMEN DURING CONSTRUCTION OPERATIONS. STREET CLOSURES AND DETOURS SHALL ONLY TAKE PLACE UPON CITY ENGINEER APPROVAL AND POLICE DEPARTMENT COORDINATION.
14. TRENCH EXCAVATION:
    CONTRACTOR SHALL EXERCISE DILIGENCE IN REVIEWING THE APPROVED SOILS REPORT AND OTHER AVAILABLE RESOURCES TO FAMILIARIZE HIMSELF/HERSELF WITH THE SOIL CONDITIONS TO BE ENCOUNTERED IN THE COURSE OF WORK IDENTIFIED IN THESE PLANS. CONTRACTOR SHALL NOT CAUSE DAMAGE TO ADJACENT TREES OR EXISTING STRUCTURES ABOVE OR BELOW GRADE DURING TRENCH EXCAVATION. ALL ROCKS, BOULDERS, AND LARGE STONES ENCOUNTERED SHALL BE REMOVED TO PROVIDE A CLEARANCE OF 6 INCHES AROUND THE PIPE. THE TRENCH BOTTOM SHALL BE REFILLED TO GRADE WITH SAND, PEA GRAVEL, OR OTHER APPROVED GRANULAR MATERIAL. CLEAN 1/4" OR 3/4" PEA GRAVEL SHALL BE USED IN AREAS OF MOIST CONDITION, OR WHERE THE SOIL HAS A HISTORY OF SUBSURFACE WATER. IF THE BOTTOM OF THE TRENCH IS FOUND TO CONSIST OF WET OR UNSTABLE MATERIAL INCAPABLE OF PROPERLY SUPPORTING THE PIPE, THE MATERIAL SHALL BE REMOVED TO A MINIMUM DEPTH OF 12 INCHES BELOW THE UNSTABLE LAYER FOR THE FULL WIDTH OF THE TRENCH AND REPLACED WITH APPROVED GRANULAR MATERIAL. TRENCH EXCAVATION MATERIAL DEPOSITED ADJACENT TO THE TRENCH SHALL BE PLACED AND LOCATED TO PREVENT SPILLAGE INTO THE OPEN TRENCH.
15. TRENCH SAFETY:
    IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL NECESSARY TRENCH SAFETY MEASURES FOR EXCAVATIONS. ALL TRENCH SAFETY MEASURES SHALL BE IN ACCORDANCE WITH THE LATEST CAL-OSHA GUIDELINES. CONTRACTOR SHALL PROVIDE EVIDENCE OF A CAL-OSHA TRENCHING PERMIT AT THE PRECONSTRUCTION MEETING.
16. EXCAVATIONS WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE BACKFILLED, COMPACTED, AND TEMPORARILY PAVED WITH COLD MIX "CUT BACK" TYPE A.C. TO ALLOW FOR VEHICULAR AND PEDESTRIAN TRAFFIC PRIOR TO 4:00 P.M. THE USE OF TRENCH PLATES IS ALLOWED, PROVIDED THE CONTRACTOR COVERS ALL EDGES OF THE PLATES WITH COLD MIX MATERIAL. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ON A DAILY BASIS, INCLUDING WEEKENDS, THE AMOUNT OF MATERIAL NECESSARY TO MAINTAIN THE TRENCH SURFACE FLUSH WITH THE EXISTING STREET OR SIDEWALK. IN ADDITION, THE CONTRACTOR SHALL RESPOND TO AND CORRECT SHIFTING TRENCH PLATES REGARDLESS OF THE TIME OF DAY. IF CONTRACTOR FAILS TO CORRECT SINKING BACKFILL MATERIAL OR SHIFTING TRENCH PLATES IN A TIMELY MANNER, CITY SHALL RESERVE THE RIGHT TO CORRECT THE PROBLEM AND BACK CHARGE THE CONTRACTOR.
17. JOINING EXISTING PAVEMENT:
    EXISTING PAVEMENT WHICH IS TO BE JOINED BY NEW PAVEMENT SHALL BE SAW CUT VERTICAL TO PROVIDE STRAIGHT, TRUE AND NEAT JOINTS. OVERLAPPING OF EXISTING PAVEMENT WITHOUT SAW CUTTING OR GRINDING SHALL NOT BE PERMITTED. THE VERTICAL EDGES SHALL BE TACKED PRIOR TO PAVING. TERMINALS OF ALL SURFACING INDICATED ON THE PLANS SHALL JOIN ANY EXISTING SURFACE IN A SMOOTH BUTT JOINT. CONFORM PAVING BY METHOD OF ABRASIVE GRINDING WILL BE ALLOWED UPON APPROVAL OF THE CITY ENGINEER.

BACKFILL & COMPACTION:

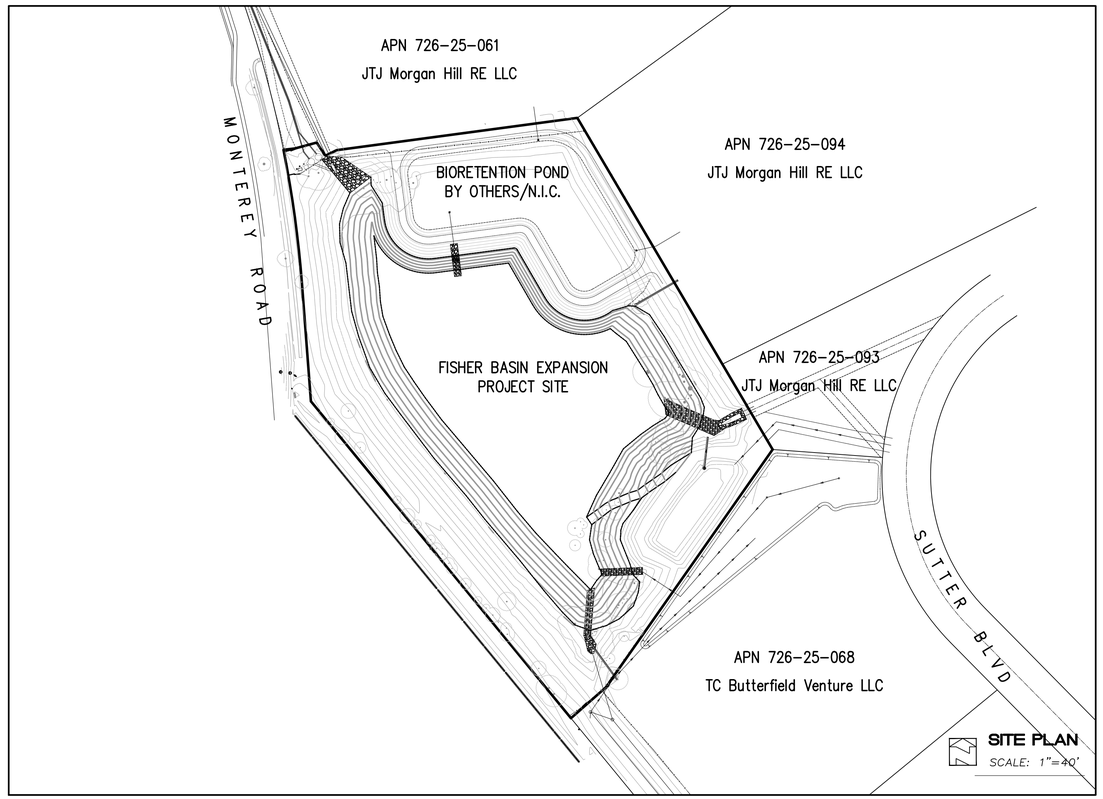
27. BACKFILL MATERIAL SHALL BE HAND PLACED AND COMPACTED UP TO AT LEAST 6" ABOVE THE PIPE. WHEN USING NATIVE SOIL AS TRENCH BACKFILL, THE MINIMUM SAND COVER SHALL BE 12".
28. JETTING AND/OR FLOODING OF TRENCH BACKFILL MATERIAL WILL BE PERMITTED ONLY IF APPROVED BY THE SOILS ENGINEER AND CITY ENGINEER.
29. ANY EXCESS EXCAVATION MATERIAL MAY BE DEPOSITED ONSITE IN AREAS AND AT DEPTHS DESIGNATED BY THE OWNER, AND WITH APPROVAL OF THE CITY ENGINEER.
30. THE MINIMUM RELATIVE COMPACTION FOR TRENCH BACKFILL, SUBGRADE AND BASE MATERIAL SHALL BE 90% THROUGHOUT THE PROJECT. UNLESS RECOMMENDED OTHERWISE IN THE SOILS REPORT AND APPROVED BY THE CITY ENGINEER.
31. IF TRENCH BACKFILL MATERIAL IS 100% SAND, THE CITY SHALL CONDUCT COMPACTION TESTS OF THE LIFTS SPECIFIED. IF THE TRENCH BACKFILL MATERIAL IS NATIVE SOIL, CONTRACTOR SHALL PROVIDE COMPACTION TEST RESULTS OF THE LIFTS SPECIFIED IN THE SOILS REPORT TO THE CITY ENGINEER FROM A CERTIFIED TESTING LABORATORY AT CONTRACTOR'S EXPENSE.
32. ANY AGGREGATE BASE THAT BECOMES CONTAMINATED DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED WITH UNCONTAMINATED BASE.
33. EROSION AND SEDIMENT CONTROL:
    EROSION CONTROL AN EROSION CONTROL PLAN SHALL BE REQUIRED PRIOR TO ANY PHYSICAL DEVELOPMENT OF A PROPERTY PLANNED BETWEEN SEPTEMBER 15TH AND MAY 1ST. SAID PLAN SHALL MEET THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE CALIFORNIA STORMWATER QUALITY ASSOCIATION (CASQA) FOR STORMWATER BEST MANAGEMENT PRACTICES (BMP's). CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING THE REQUIRED EROSION CONTROL MEASURES.
34. CURB INLET STENCILING:
    ALL CURB INLETS SHALL HAVE THERMOPLASTIC STENCILING: "NO DUMPING, FLOWS TO CREEK/RIVER".
35. ELECTROLIERS:
    ALL ELECTROLIERS SHALL BE INSTALLED BY THE DEVELOPER. SEE ELECTRICAL SECTION OF THE STANDARD DETAILS. ELECTROLIERS SHALL BE BETA LED. A DIVISION OF RUDD LIGHTING OR APPROVED EQUAL (30 LED @ RESIDENTIAL; 50 LED @ COLLECTOR; 80 LED @ ARTERIALS; AT LOCATIONS SHOWN ON THESE PLANS).

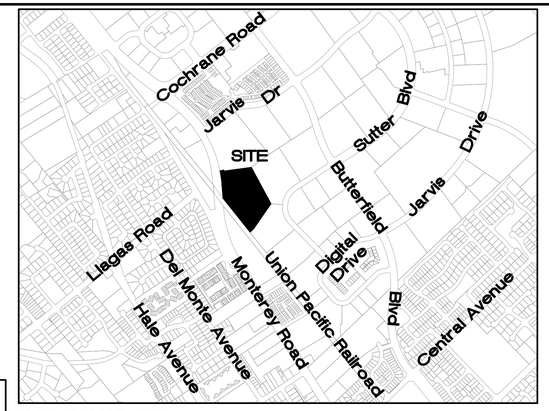
SITE THIRD PARTY STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
INSPECTIONS AND COMPLIANCE AS REQUIRED BY THE CITY OF MORGAN HILL
STORMWATER MANAGEMENT PLAN (SWMP)
FOR CROSSING AT MONTEREY
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FOR STORM WATER DISCHARGES
ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE ACTIVITIES
WDID # ----------

A. PRIOR TO ANY GRADING ACTIVITY, CONTRACTOR SHALL OBTAIN THE SERVICES OF A QUALIFIED THIRD PARTY SWPPP INSPECTOR.
   1) Developer shall provide contact information of site's Third Party SWPPP Inspector (TPSI) to Public Works Engineering.
   2) Public Works Engineering shall go over the requirements of inspections with the TPSI.
   3) Public Works Engineering shall coordinate with TPSI in maintaining an inspection log of all SWPPP Inspections and their respective sites.

B. SITE SWPPP INSPECTIONS VIA THIRD PARTY SWPPP INSPECTOR
   1) Project shall have the site inspected by a qualified* (R.C.E., CPESC, CPSWQ, CESSWI, CISEC, etc.) Third Party SWPPP Inspector (TPSI) *Third Party SWPPP Inspectors must hold certification of Qualified SWPPP Practitioner (QSP) or a Qualified SWPPP Development (QSD) issued by the State Water Resources Control Board.
   2) SWPPP Inspections shall occur 48 hours prior to and following a forecasted rain event.
   3) SWPPP Inspections shall occur WEEKLY during the rainy season (September 15th – May 1st)
   4) SWPPP Inspections shall occur BI-WEEKLY during the non-rainy season.
   5) Per each of the inspection conditions 2, 3, or 4, the TPSI shall certify in writing to the Building and Public Works Department if the site is in compliance/non-compliance with the NPDES General Permit for Stormwater, site SWPPP Manual, and Water Pollution Control Drawings (see attached Inspection Check List). NPDES SWPPP Inspectors shall forward onsite and offsite information/certification to the Building (onsite, private property issues) and Public Works (offsite, public right-of-way issues) inspectors respectively.
   6) Prior to rain events, BMPs not in compliance will need to be corrected immediately.
   7) Illicit discharges per the NPDES General Permit, non-compliance of tracking control, and inlet protection within the public right of way shall be address immediately.
   8) Other non-compliance issues need to be addressed within a 24 hour period.
   9) Non-compliance issues which have been corrected shall be verified by TPSI by a follow up inspection.

C. CITY OVERSIGHT OF INSPECTORS
   1) City Inspectors and Engineers shall recieve site inspection information/certification from the TPSI per items B.2, B.3, and/or B.4.
   2) City Inspectors/Engineers shall coordinate with TPSI to address any outstanding items within the required time frame.
   3) Sites that are not able to address non-conformance shall be denied further Building or Public Works inspections or required to stop work until non-compliance issues shall be corrected.





VICINITY MAP
NO SCALE

FLOODZONE STATEMENT

FLOOD NOTE: BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS IN ZONE X.

ZONE X:
0.2% ANNUAL CHANCE FLOOD HAZARD, AREAS OF 1% ANNAUL CHANCE FLOOD WITH AVERAGE DEPTH LESS THAN ONE FOOT OR WITH DRAINAGE AREAS OF LESS THAN ONE SQUARE MILE – ZONE X

COMMUNITY – CITY OF MORGAN HILL
COMMUNITY PANEL NO. – 06085C443H
EFFECTIVE DATE OF MAY 18, 2009

BASIS OF BEARINGS

THE BEARINGS ON THESE PLANS ARE BASED ON THE FOUND MONUMENTS ALONG THE CENTERLINE "DIGITAL DRIVE" WITH A BEARING OF NORTH 45° 23' 54" EAST, AS FILED IN THE PARCEL MAP IN BOOK 732 OF MAPS, PAGES 16-19 ON SEPTEMBER 27th, 2000, SANTA CLARA COUNTY RECORDS.

BENCHMARK

SANTA CLARA VALLEY WATER DISTRICT
BENCHMARK ID: BM1067
ELEVATION: NAVD 88 – 353.25 FEET
DESCRIPTION:
USCGS BRASS DISK "R19", AT RAILROAD TRACKS FOR UNION PACIFIC RAILROAD (UPRR); 300 SOUTHEAST FROM COCHRAN ROAD ALONG OLD MONTEREY ROAD; OPPOSITE TO ADDRESS 18515 OLD MONTEREY ROAD; DISK IS ON TOP OF 1.7 FEET WIDE BY 8.5 FEET LONG CONCRETE HEADWALL ON NORTHWESTERLY SIDE OF TRACKS AND OVER 2 FEET DIAMETER STEEL PIPE CULVERT; 9.5 FEET SOUTHWESTERLY FROM THE MOST SOUTHWESTERLY RAIL FOR RAILROAD TRACKS; 37.5 FEET NORTHEASTERLY FROM TELEPHONE POLE NO. GT109368. CITY OF MORGAN HILL.

PROJECT SUMMARY

1. GROSS AREA: 350,736 S.F. / 8.05 ACRES
2. ASSESSOR'S PARCEL NUMBER: 726-25-028
3. EXISTING LAND USE – VACANT
4. EXISTING ZONING – OPEN SPACE (OS)

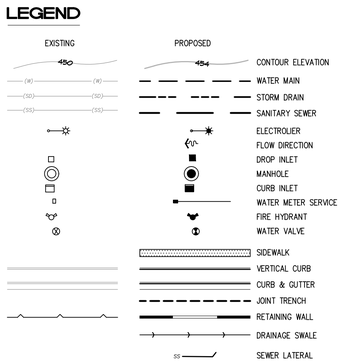
GRADING QUANTITIES

SEE SHEET 4

ABBREVIATIONS

AC	ASPHALT CONCRETE	ER	END OF RETURN	P.S.S.E.	PRIVATE SANITARY SEWER EASEMENT
AB	AGGREGATE BASE	ESMT	EASEMENT	P.U.E.	PUBLIC UTILITY EASEMENT
AD	AREA DRAIN	(E)	EXISTING	PVI	POINT OF VERTICAL INTERSECTION
AGG	AGGREGATE	EX.	EXISTING	PVC	POLYVINYL CHLORIDE PIPE
BC	BEGINNING OF CURVE	FF	FINISH FLOOR	R	RADIUS
BLDG	BUILDING	FG	FINISH GRADE	RCP	REINFORCED CONCRETE PIPE
BOC	BACK OF CURB	FH	FIRE HYDRANT	R/W	RIGHT OF WAY
BO	BLOW OFF		FLOWLINE	RWL	RAINWATER LEADER
BOT	BOTTOM	FOC	FACE OF CURB	S	SLOPE
BOW	BACK OF WALK		GAS LINE	SD	STORM DRAIN PIPE
BW	BOTTOM OF WALL	GM	GAS METER	SS	SANITARY SEWER PIPE
BWF	BARBWIRE FENCE	GB	GRADE BREAK	STM	STORM DRAIN MANHOLE
CATV	CABLE TELEVISION	GUY	GUY WIRE FOR POLE	SS MH	SANITARY SEWER MANHOLE
CB	CATCH BASIN	GV	GATE VALVE	SP	SERVICE POLE
C&G	CURB & GUTTER	HDPE	HIGH DENSITY POLYETHYLENE	STD	STANDARD
CI	CURB INLET	HMA	HOT MIX ASPHALT	SQ	SQUARE
CL	CENTERLINE	HP	HIGH POINT	SW	SIDEWALK
CMP	CORRUGATED METAL PIPE	INV	INVERT OF PIPE	T	TELEPHONE LINE
CMU	CONCRETE MASONRY UNIT	IP	IRON PIPE	TBM	TEMPORARY BENCHMARK
CO	CLEAN OUT	JP	JOINT POLE	TC	TOP OF CURB
CONC	CONCRETE	JT	JOINT TRENCH	TCM	TREATMENT CONTROL MEASURES
CONST	CONSTRUCTION	LF	LINEAR FEET	TFC	TOP FACE OF CURB
DDCV	DOUBLE DETECTOR CHECK VALVE ASSEMBLY	LP	LOW POINT	TG	TOP OF GRATE
		MAX	MAXIMUM	TOB	TOP OF BANK
DI	DROP INLET	MIN	MINIMUM	TOE	TOE OF BANK
DIP	DUCTILE IRON PIPE	N.I.C.	NOT IN CONTRACT	TW	TOP OF WALL
DMA	DRAINAGE MANAGEMENT AREA	(N)	NEW	TYP	TYPICAL
DS	DOWNSPOUT	OHU	OVERHEAD UTILITY	W	WATER LINE
DWY	DRIVEWAY	PB	PULL BOX	WM	WATER METER
E	ELECTRIC LINE	PCC	PORTLAND CONCRETE CEMENT	WV	WATER VALVE
EC	END OF CURVE	PL	PROPERTY LINE		
EG	EXISTING GRADE	PRC	POINT REVERSE CURVE		
ELEV	ELEVATION	P.S.E.	PUBLIC SERVICE EASEMENT		
EP	EDGE OF PAVEMENT	P.S.D.E.	PRIVATE STORM DRAIN EASEMENT		

LEGEND



PRELIMINARY PLANS
NOT FOR CONSTRUCTION

DEVELOPER/OWNER

CITY OF MORGAN HILL
17575 PEAK AVENUE
MORGAN HILL, CA 95037

CIVIL ENGINEER

HANNA – BRUNETTI
7651 EIGLEBERRY STREET
GILROY, CA 95020

OFFICE: 408 842-2173
EMAIL: ENGINEERING@HANNABRUNETTI.COM

date: _____20
Hanna – Brunetti

Amanda Joy Musy-Verdel
R.C.E. # 69,278
expires: 6/30/

REGISTERED PROFESSIONAL ENGINEER
AMANDA JOY MUSY-VERDEL
NO. 69278
EXP. 6-30-
CIVIL
STATE OF CALIFORNIA

SHEET INDEX

1	COVER SHEET
2	PROJECT NOTES
3	EXISTING TOPOGRAPHIC SURVEY
4	EXCAVATION & GRADING PLAN
5	SECTIONS & DETAILS
6	SOIL BORINGS
7	EROSION CONTROL & ACCESS
8	EROSION CONTROL NOTES & DETAILS

Cover Sheet
Fisher Basin Expansion - apn 726-25-028

DRAWN: TM | DESIGN: AMV | HOR: | JOB NUMBER: 20048
CHECKED | DATE | VERT: | DATE
APPROVED | DATE | SCOTT ANGUS, CITY ENGINEER RCE 28679 EXP. 6/30/22

Revisions

NO.	DESCRIPTION	DATE	BY

FILE NUMBER:
PRINT DATE:
SHEET NUMBER: 1 OF 8

City of Morgan Hill
Public Works Department
100 Edes Ct. Morgan Hill, CA 95037 (408)776-7337, Fax (408)779-6282

HB JOB NO. 20048

PROJECT NOTES

1. ALL WORK AND MATERIALS SHALL BE IN CONFORMANCE WITH THE FOLLOWING:
   A. STANDARD SPECIFICATIONS AND STANDARD DETAILS, LATEST EDITION, OF THE CITY OF MORGAN HILL.
   B. THESE PLANS AND SPECIFICATIONS AS APPROVED FOR CONSTRUCTION BY THE CITY OF MORGAN HILL, ENGINEERING AND UTILITIES DEPARTMENT.
2. CONTRACTOR SHALL SECURE AND COMPLY WITH CITY PERMIT REQUIREMENTS. CONTRACTOR SHALL NOTIFY THE CITY 2 WORKING DAYS PRIOR TO THE INTENTION TO COMMENCE WORK. (PUBLIC WORKS DEPARTMENT PHONE 408-776-7333).
3. CONTRACTOR SHALL SUPPLY ALL EQUIPMENT, LABOR AND MATERIALS NECESSARY TO PERFORM THE WORK SHOWN ON THIS PLAN. CONTRACTOR SHALL USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHOD NEEDED FOR PROPER PERFORMANCE OF THE WORK.
4. CONTRACTOR SHALL COORDINATE ALL WORK, INCLUDING SUB-CONTRACTORS' WORK, SO AS TO ELIMINATE CONFLICTS AND WORK TOWARDS THE GENERAL GOOD AND COMPLETION OF THE ENTIRE PROJECT.
5. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. THE CONTRACTOR IS CAUTIONED THAT ONLY EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATION AND DEPTHS OF SUCH UNDERGROUND UTILITIES. HOWEVER, NEITHER THE CITY, NOT THE CONSULTANT CAN ASSUME RESPONSIBILITIES FOR THE COMPLETENESS OR ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES, NOR FOR THE EXISTENCE OF OTHER BURIED OBJECTS OR UTILITIES WHICH ARE NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR IS HEREBY NOTIFIED THAT, PRIOR TO COMMENCING CONSTRUCTION, HE IS RESPONSIBLE FOR CONTACTING THE UTILITY COMPANIES INVOLVED AND REQUESTING A VISUAL VERIFICATION OF THE LOCATIONS OF THEIR UNDERGROUND FACILITIES.
6. THE UTILITY COMPANIES ARE MEMBERS OF THE UNDERGROUND SERVICE ALERT ONE CALL PROGRAM. THE CONTRACTOR OR ANY SUB-CONTRACTOR FOR THIS CONTRACT SHALL NOTIFY MEMBER OF THE U.S.A. 2 WORKING DAYS IN ADVANCE OF PERFORMING EXCAVATION WORK BY CALLING THE TOLL-FREE NUMBER 800-227-2600. EXCAVATION IS DEFINED AS BEING 18 OR MORE INCHES IN DEPTH BELOW THE EXISTING GROUND.
7. THE CONTRACTOR SHALL REMOVE ALL OBSTRUCTIONS, BOTH ABOVE GROUND AND UNDERGROUND, EXCEPT AS NOTED IN ITEM 5 ABOVE, AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
8. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ANY CURRENTLY APPLICABLE SAFETY LAW OF ANY JURISDICTIONAL BODY. FOR INFORMATION REGARDING THIS PROVISION, THE CONTRACTOR IS DIRECTED TO CONTACT THE STATE OF CALIFORNIA, DIVISION OF OCCUPATIONAL SAFETY AND HEALTH, SAN JOSE, CA. PHONE (408) 452-7288. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BARRICADES, SAFETY DEVICES, AND CONTROL OF TRAFFIC WITHIN THE CONSTRUCTION AREA. FOR ALL TRENCH EXCAVATION FIVE (5) FEET OR MORE IN DEPTH, THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE DIVISION OF OCCUPATIONAL SAFETY AND HEALTH, 2010 N. FIRST STREET, SUITE 401, SAN JOSE, CA 95131, PRIOR TO BEGINNING ANY EXCAVATION. A COPY OF THIS PERMIT SHALL BE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS AND OTHER SURVEY MARKERS DURING CONSTRUCTION. ALL SUCH MONUMENTS OR MARKERS DAMAGED OR DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
10. WHERE THE FIRM OF HANNA & BRUNETTI DOES NOT PROVIDE CONSTRUCTION STAKES, SAID FIRM WILL ASSUME NO RESPONSIBILITY WHATSOEVER FOR IMPROVEMENTS CONSTRUCTED THEREFROM.
11. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL, AND THE CITY HARMLESS FROM ANY AND ALL LIABILITY, REAL AND ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL, OR THE CITY.
12. THE CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL. ALL WARNING AND TRAFFIC CONTROL SIGNS, AND LOCATIONS FOR THE SIGNS SHALL BE IN ACCORDANCE WITH MUTCD REQUIREMENTS AND APPROVED BY THE CITY ENGINEER.
13. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB, AND SHALL NOTIFY HANNA & BRUNETTI OF ANY VARIATION FROM THE DIMENSIONS AND CONDITIONS SHOWN. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS BEFORE PROCEEDING WITH ANY FABRICATION.
14. ANY DISCREPANCIES OR OMISSIONS FOUND IN THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE CITY ENGINEER AND THE DESIGN ENGINEER IMMEDIATELY. THE DESIGN ENGINEER WILL CLARIFY DISCREPANCIES OR OMISSIONS, IN WRITING, WITHIN A REASONABLE TIME.
15. THE SITE IS AN AREA OF ARCHEOLOGICAL PROBABILITY. IN THE EVENT THAT ARCHEOLOGICAL OR HISTORICAL TRACES ARE ENCOUNTERED DURING GRADING, THE WORK SHALL BE STOPPED, THE COMMUNITY DEVELOPMENT DEPARTMENT SHALL BE CONTACTED, AND AN ARCHEOLOGIST SHALL BE RETAINED AT THE CITY'S EXPENSE TO EXAMINE THE FIND AND TO MAKE THE APPROPRIATE RECOMMENDATIONS. (PLNG)

NO UNDERGROUND UTILITY OR STORM DRAIN FACILITIES ARE ANTICIPATED ON THIS PROJECT. IN THE EVENT UNDERGROUND UTILITY OR STORM DRAIN WORK IS REQUIRED, THE WORK SHALL CONFORM TO THE FOLLOWING:

UNDERGROUND NOTES (GENERAL)

1. CONTRACTOR SHALL EXPOSE AND VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES, INCLUDING STORM DRAINS, SANITARY SEWERS AND WATER LINES, BEFORE ORDERING MATERIALS AND/OR CONSTRUCTING NEW FACILITIES.
2. ALL MANHOLES AND VALVE BOXES TO BE SET FLUSH WITH FINISHED GRADE, UNLESS OTHERWISE NOTED.
3. ALL TRENCHES AND EXCAVATIONS SHALL BE CONSTRUCTED IN STRICT COMPLIANCE WITH THE APPLICABLE SECTIONS OF CALIFORNIA AND FEDERAL O.S.H.A. REQUIREMENTS AND OTHER APPLICABLE SAFETY ORDINANCES. CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR TRENCH SHORING DESIGN AND INSTALLATION. SEE PROJECT NOTES, NOTE 8. (THIS SHEET)
4. PIPE MATERIALS AND INSTALLATION PROCEDURE SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS AND THE MANUFACTURER'S RECOMMENDATIONS.
5. SHOULD ANY WATER SYSTEM MAINS OR SERVICES BE DAMAGED BY THE CONTRACTOR, THE WATER SYSTEM SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE CITY OF MORGAN HILL. THE CITY OF MORGAN HILL SHALL BE PROMPTLY NOTIFIED AND REPAIRS SHALL BE MADE AS DESIGNATED BY THE CITY OF MORGAN HILL AT THE CONTRACTOR'S EXPENSE.
6. TRENCHES SHALL BE BACKFILLED WITH COMPACTED SAND BACKFILL MATERIAL IN ACCORDANCE WITH CITY STANDARD DETAILS U2, U-3, U-4 A SAMPLE ANALYSIS BY A GEOTECHNICAL ENGINEER OR A CERTIFICATE OF COMPLIANCE FROM THE MATERIAL SUPPLIER SHALL BE SUBMITTED FOUR (4) DAYS BEFORE INTENDED USE, FOR APPROVAL BY THE CITY ENGINEER. BACKFILL WITHIN THE TRENCHES SHALL BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 95% BASED UPON THE ASTM TEST DESIGNATIONS D1557, D1556 AND D2992.

STORM DRAIN

1. DRAINAGE PIPE SHALL BE AS SHOWN ON THE PLANS AND PER SD-1.
2. STORM DRAIN MANHOLES SHALL BE CONSTRUCTED TO THE CITY STANDARD SPECIFICATIONS AND STANDARD DETAIL - SD-1.
3. CATCH BASINS SHALL BE CONSTRUCTED TO THE CITY STANDARD SPECIFICATIONS AND STANDARD DETAILS - SD-5 & SD-6.
4. STORM DRAIN PIPE SHALL BE AS FOLLOWS: REINFORCED CONCRETE PIPE (RCP) SHALL BE CLASS IV AND SHALL MEET CALTRANS STANDARD SPECIFICATIONS, SECTION 65-1.06 REQUIREMENTS FOR RUBBER GASKETED JOINTS.

GRADING AND PAVING NOTES

1. ALL WORK SHALL BE IN CONFORMANCE WITH THE FOLLOWING:
   A. APPLICABLE SECTIONS OF THE CALTRANS STANDARD SPECIFICATIONS, LATEST EDITION.
   B. STANDARD SPECIFICATIONS AND STANDARD DETAILS, LATEST EDITION OF THE CITY OF MORGAN HILL
2. CONTRACTOR SHALL NOTIFY THE CITY 2 WORKING DAYS BEFORE STARTING GRADING WORK.
3. WORK SHALL CONSIST OF ALL EARTHWORK RELATED TO THE PROJECT; ALL CLEARING, GRUBBING, STRIPPING, ROUGH GRADING, DISPOSAL, PREPARATION OF FOUNDATION AND MATERIALS FOR RECEIVING FILLS, EXCAVATION, IMPORT AND/OR EXPORT OF FILL, PROCESSING, PLACEMENT AND COMPACTION OF FILL MATERIALS, PLACEMENT OF RIP RAP, AND ALL SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING AND PAVING TO CONFORM TO THE LINES, GRADES, AND SLOPES, AS SHOWN ON THESE PLANS.
4. SITE CONDITIONS: THE CONTRACTOR SHALL VISIT THE SITE, EXAMINE AND NOTE ALL CONDITIONS AS TO THE CHARACTER AND EXTENT OF WORK INVOLVED.
5. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS OR CERTIFICATES AS REQUIRED BY THE CITY.
6. ALL EARTHWORK UNDER ACCESS ROAD & SIDE SLOPES SHALL BE CONSTRUCTED PER THE GRADING SPECIFICATIONS OF CALTRANS STANDARDS. ALL SOIL SHALL BE COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION, AS REQUIRED BY THE ASTM TEST DESIGNATIONS D1557, D1556, AND D2992, EXCEPT THE PAVEMENT SUB-GRADE. THE UPPER 8" LAYER OF SUBGRADE SHALL BE COMPACTED TO 90% RELATIVE COMPACTION, THE EXACT DEPTH SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND/OR AS SHOWN ON THESE PLANS. SUBEXCAVATION BELOW EXISTING GRADE SHALL BE REQUIRED WITHIN AREAS WHICH ARE TO SUPPORT BUILDINGS FOUNDATIONS, CONCRETE SLABS ON GRADE, PAVEMENTS OR STRUCTURAL FILL.
7. IN THE EVENT UTILITIES ARE FOUND OR NEEDED - BACKFILL FOR UNDERGROUND UTILITIES PLACED ON THE SITE SHALL CONSIST OF CLEAN, IMPORTED SAND MATERIAL (MINIMUM S.E.= 30) TO A MINIMUM OF 12 INCHES OVER THE CONDUIT, UNLESS SHOWN OTHERWISE ON THE PLAN. BACKFILL FOR UNDERGROUND UTILITIES PLACED IN EXISTING PUBLIC STREETS SHALL BE PER CITY STD. DRAWINGS U-3 AND U-4. A SAMPLE SHALL BE SUBMITTED FOUR (4) DAYS BEFORE INTENDED USE, FOR REVIEW BY THE ENGINEER. BACKFILL WITHIN THE UTILITY TRENCHES SHALL BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 90% OR 95% DEPENDING UPON THE LOCATION AND BASED UPON THE ASTM TEST DESIGNATIONS D1557, D1556 AND D2992.
8. AT ALL TIMES DURING CONSTRUCTION AND UNTIL FINAL COMPLETION, THE CONTRACTOR, WHEN HE OR HIS SUBCONTRACTORS ARE OPERATING EQUIPMENT ON THE SITE, SHALL PREVENT THE FORMATION OF AN AIRBORNE DUST NUISANCE BY WATERING AND/OR TREATING THE SITE OF THE WORK IN SUCH A MANNER THAT WILL CONFINE DUST PARTICLES TO THE IMMEDIATE SURFACE OF THE WORK. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE DONE BY THE DUST FROM HIS OR HER SUBCONTRACTOR'S ACTIVITIES IN PERFORMING THE WORK UNDER THIS CONTRACT. THE PRICES FOR THE VARIOUS ITEMS OF WORK SHALL COVER THIS DUST CONTROL.

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	BY

Revisions

Work Accepted: Inspector:

As-Built Corrections

By: _____ Date: _____

DRAWN TM | DESIGN AM | HOR
CHECKED | DATE | VERT
APPROVED | DATE | AS BUILT
SCOTT C. CREER - CITY ENGINEER
R.C.E. # 58879 EXP. 6/2021 | JOB NUMBER 20048

CITY OF MORGAN HILL

City of Morgan Hill
Public Works Department
17575 Peak Avenue, Morgan Hill - California - 95037
(408) 776-6480 - fax (408) 779-7236

Supervised by:
Amanda Joy Musy-Verdel
Registered Civil Engineer
RCE no. 69278
Exp. date: _____
signature date

REGISTERED PROFESSIONAL ENGINEER * AMANDA JOY MUSY-VERDEL * NO. 69278 EXP. 6-30- CIVIL * STATE OF CALIFORNIA *

HANNA-BRUNETTI EST. 1910
CIVIL ENGINEERS • LAND SURVEYORS
CONSTRUCTION MANAGERS
7651 EIGLEBERRY STREET • GILROY • 95020 • CALIFORNIA
OFFICE (408) 842-2173 • FAX (408) 842-3662
EMAIL: ENGINEERING @ HANNABRUNETTI.COM

PROJECT NOTES
FISHER BASIN EXPANSION - apn 726-25-028

City File no.
PRINT DATE
SHEET NUMBER 2 OF 8

HB JOB NO. 20048

BIORETENTION POND A – NOTE:
GRADING AND IMPROVEMENTS ALONG NORTHERN AND EASTERN BOUNDARY ARE PER CITY MORGAN HILL FILE #2020–007 (R.J.A. JOB NO. 142002).
THESE IMPROVEMENTS INCLUDING GRADING, STORM DRAINS, FENCING ALONG NORTH AND EASTERLY BOUNDARY AND BIORETENTION POND A (BIORETENTION POND A IS WITHIN FISHER BASIN) MAY BE EXISTING OR UNDER CONSTRUCTION (SHOWN AS N.I.C.)
CONTRACTOR TO CONFORM ALONG TOW SLOPE (ELEV 344.75±) FOR EXCAVATION OF FISHER BASIN PER THESE PLANS.
CONTRACTOR TO COORDINATE AND COOPERATE WITH WORK/CONTRACTOR ALONG BOUNDARY AND OF BIORETENTION POND A CONSTRUCTION WITHIN FISHER BASIN.

BIORETENTION POND A (N.I.C.)
BIORETENTION AREA MEDIA 35,430 SF
EXISTING PER #2020–007 AND
BIORETENTION POND A – NOTE

18" SD S=0.005 (N.I.C.)
BUBBLER INLET GR 351.0 INV 345.86 (N.I.C.)
18" SD S=0.005 (N.I.C.)
BUBBLER INLET GR 351.0 INV 347.12 (N.I.C.)
EXISTING 24" CMP SD
EXISTING RIP–RAP
EXISTING 84" SD TO REMAIN
APPROXIMATE LIMITS OF CONCRETE OUTFALL AND RIP–RAP TO REMAIN
EXISTING 24" SD TO REMAIN
OFFSITE PROPOSED BIORETENTION POND (N.I.C.)
CONSTRUCTION ACCESS
NOTE:
GRADING & IMPROVEMENTS ALONG SOUTHERN BOUNDARY ARE PER CITY MORGAN HILL FILE #2020–0016 (R.J.A. JOB NO. 147002). IMPROVEMENTS MAY BE EXISTING OR UNDER CONSTRUCTION. CONTRACTOR TO COORDINATE AND COOPERATE WITH WORK (SHOWN AS N.I.C.) ALONG BOUNDARY.
FM DISCHARGE (N.I.C.)
EXISTING 24" SD TO REMAIN
EXISTING BUBBLE–UP MANHOLE TO REMAIN
EXISTING BIORETENTION POND TO REMAIN
PROPOSED 8" FM (N.I.C.)
PROPOSED (N.I.C.) 18" SD AND OUTFALL PER NOTE OUTFALL INVERT 346.0
18" SD
EXISTING 24" CMP SD
EXISTING RIP–RAP TO REMAIN
EXISTING 18" CMP SD TO REMAIN
SD LIFT STA (N.I.C)
EX 18" SD
24" SD (N.I.C.)
N48° 32' 01"E 63.37'
N39° 22' 00"W 572.81
N82° 21' 58"E 339.26
S30° 29' 11"E 537.86
N35° 10' 07"W 405.48
TOE OF SLOPE 350 (N.I.C.)
10' AT ELEV 355.0 (N.I.C.)
2:1 SLOPE (N.I.C.)
TOW OF SLOPE (N.I.C.)
344.75±
BASIN OVERFLOW INLET GR 351.0 INV 346.20 OUT (N.I.C.)
24" SD S=0.12 (N.I.C.)
24" OUTFALL INVERT 345.0 AND RIP RAP (N.I.C.)
APPROXIMATE LIMITS CONCRETE INLET AND RIP-RAP
EXISTING 48" CONCRETE STORM DRAIN
N63° 43' 51"E 17.85
S33° 07' 30"E 22.00
TWO 14" FORCE MAIN
N74° 58' 59"E 31.57'
N83° 18' 01"E 16.00
APPROXIMATE LOCATION OF TWO EXISTING 56" SQUARE DROP INLETS TO PUMP STATION
TWO 30" EXISTING INLET PIPES FOR PUMP STATION
EXISTING PUMP STATION
MONTEREY ROAD
L=190.35' R=1575.00' D=06°55'26"
SOUTHERN PACIFIC TRANSPORTATION COMPANY
PRELIMINARY PLANS
NOT FOR CONSTRUCTION

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

NO.	DESCRIPTION	DATE	BY
	p:\proj\ Revisions		

Work Accepted: Inspector:
As–Built Corrections
By: _____ Date: _____

DRAWN	TM	DESIGN	AM
CHECKED		DATE	
APPROVED		DATE	

HOR
VERT
AS BUILT
JOB NUMBER 20048

SCOTT C. CREER – CITY ENGINEER
R.C.E. # 58879 EXP. 6/2021

CITY OF MORGAN HILL
City of Morgan Hill
Public Works Department
17575 Peak Avenue, Morgan Hill - California - 95037
(408) 776-6480 - fax (408) 779-7236

Supervised by:
Amanda Joy Musy–Verdel
Registered Civil Engineer
RCE no. 69278
Exp. date: _____
signature date

REGISTERED PROFESSIONAL ENGINEER – AMANDA JOY MUSY–VERDEL – NO. 69278 – EXP. 6–30 – CIVIL – STATE OF CALIFORNIA

HANNA-BRUNETTI EST. 1910
CIVIL ENGINEERS • LAND SURVEYORS
CONSTRUCTION MANAGERS
7651 EIGLEBERRY STREET • GILROY • 95020 • CALIFORNIA
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Existing Topographic Survey
Fisher Basin Expansion -apn 726-25-028

City File no.
PRINT DATE
SHEET NUMBER 3 OF 8

HB JOB NO. 20048

BIORETENTION POND A – NOTE:

GRADING AND IMPROVEMENTS ALONG NORTHERN AND EASTERN BOUNDARY ARE PER CITY MORGAN HILL FILE #2020–007 (R.J.A. JOB NO. 142002).
THESE IMPROVEMENTS INCLUDING GRADING, STORM DRAINS, FENCING ALONG NORTH AND EASTERLY BOUNDARY AND BIORETENTION POND A (BIORETENTION POND A IS WITHIN FISHER BASIN) MAY BE EXISTING OR UNDER CONSTRUCTION (SHOWN AS N.I.C.)
CONTRACTOR TO CONFORM ALONG TOW SLOPE (ELEV 344.75±) FOR EXCAVATION OF FISHER BASIN PER THESE PLANS.
CONTRACTOR TO COORDINATE AND COOPERATE WITH WORK/CONTRACTOR ALONG BOUNDARY AND OF BIORETENTION POND A CONSTRUCTION WITHIN FISHER BASIN.

BIORETENTION POND A (N.I.C.)

BIORETENTION AREA MEDIA 35,430 SF
EXISTING PER #2020–007 AND
BIORETENTION POND A – NOTE

NOTE:

EXISTING BRUSH, SHRUBS & TREES WITHIN BASIN EXCAVATION AREA TO BE REMOVED.

EXCAVATION & GRADING QUANTITIES

CUT ±44,727 C.Y.
FILL ±756 C.Y.

POND BOTTOM 344.75±
PROPOSED LOWERING 10 FEET
PROPOSED POND BOTTOM 334.75

CONSTRUCTION NOTES

1. CONTRACTOR SHALL PROVIDE/MAINTAIN EXISTING DRAINAGE FLOWS DURING CONSTRUCTION
2. RIP–RAP TO EXTEND 5 FEET FROM TOE OF SLOPE
3. CONSTRUCT RIP–RAP PER SECTION TR–TR

APPROXIMATE LOCATION OF BORE HOLE PER KLEINFELDER TECHNICAL MEMORANDUM DATED 4/1/2020, AND SHEET 6 OF THESE PLANS

NOTE:

GRADING & IMPROVEMENTS ALONG SOUTHERN BOUNDARY ARE PER CITY MORGAN HILL FILE #2020–0016 (R.J.A. JOB NO. 147002). IMPROVEMENTS MAY BE EXISTING OR UNDER CONSTRUCTION. CONTRACTOR TO COORDINATE AND COOPERATE WITH WORK (SHOWN AS N.I.C.) ALONG BOUNDARY.

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

NO.	DESCRIPTION	DATE	BY
	Revisions		

Work Accepted: Inspector:
As–Built Corrections
By: Date:

DRAWN TM | DESIGN AM | HOR
CHECKED | DATE | VERT
APPROVED | DATE | AS BUILT
SCOTT C. CREER – CITY ENGINEER
R.C.E. # 58879 EXP. 6/2021
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Exp. date:
signature date

REGISTERED PROFESSIONAL ENGINEER – AMANDA JOY MUSY–VERDEL – NO. 69278 – EXP. 6–30– CIVIL – STATE OF CALIFORNIA

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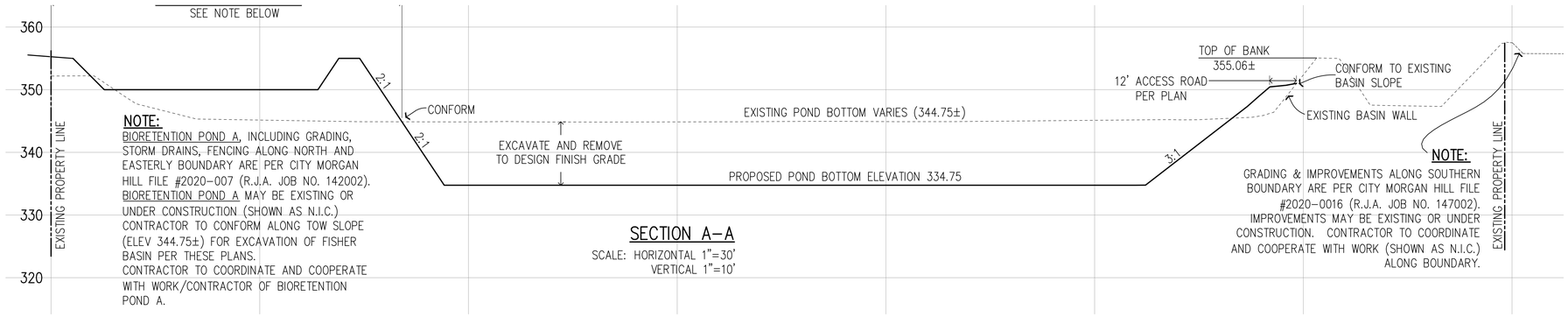
Excavation & Grading Plan
Fisher Basin Expansion - apn 726-25-028

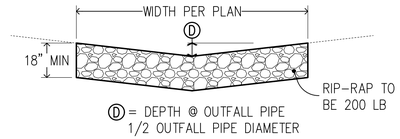
City File no.
PRINT DATE
SHEET NUMBER 4 OF 8

HB JOB NO. 20048



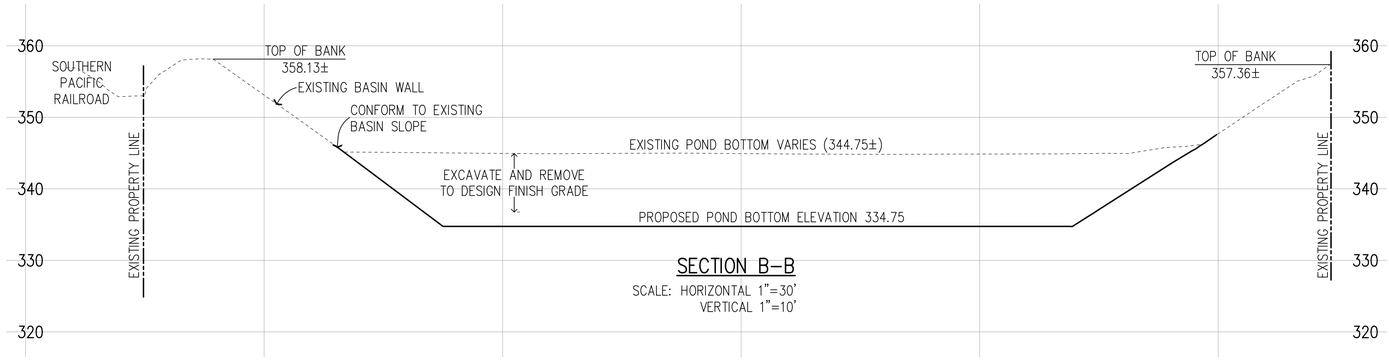
SECTION A-A

SCALE: HORIZONTAL 1"=30'
VERTICAL 1"=10'



TYPICAL ROCK RIP-RAP SECTION TR-TR

NOT TO SCALE



SECTION B-B

SCALE: HORIZONTAL 1"=30'
VERTICAL 1"=10'

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

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As-Built Corrections
By: _____ Date: _____

DRAWN AM | DESIGN TM | HOR
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R.C.E. # 58879 EXP. 6/2021 | JOB NUMBER

City of Morgan Hill
Public Works Department
17575 Peak Avenue, Morgan Hill - California - 95037
(408) 776-6480 - fax (408) 779-7236
CITY OF MORGAN HILL

Supervised by:
Amanda Joy Musy-Verdel
Registered Civil Engineer
RCE no. 69278
Exp. date: _____
signature date

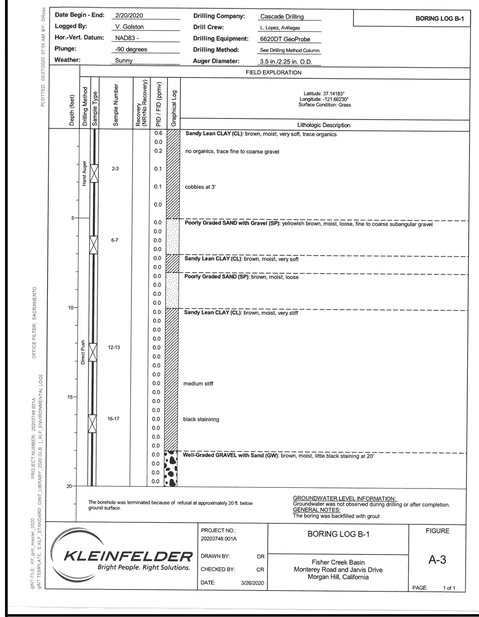
REGISTERED PROFESSIONAL ENGINEER
AMANDA JOY MUSY-VERDEL
NO. 69278
EXP. 6-30-
CIVIL
STATE OF CALIFORNIA

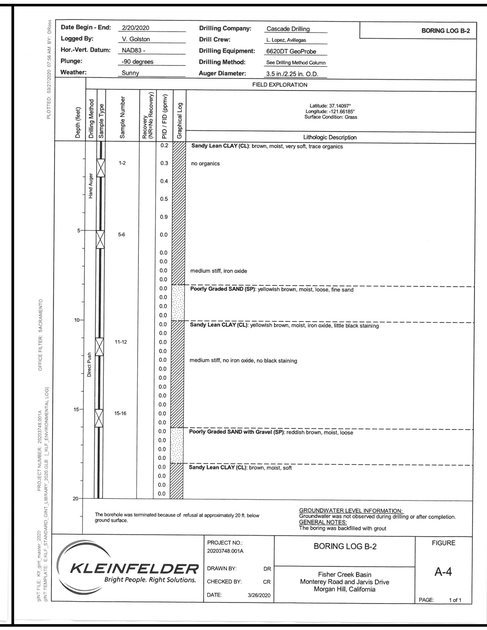
HANNA-BRUNETTI
EST. 1910
CIVIL ENGINEERS • LAND SURVEYORS
CONSTRUCTION MANAGERS
7651 EIGLEBERRY STREET • GILROY • 95020 • CALIFORNIA
OFFICE (408) 842-2173 • FAX (408) 842-3662
EMAIL: ENGINEERING @ HANNABRUNETTI.COM

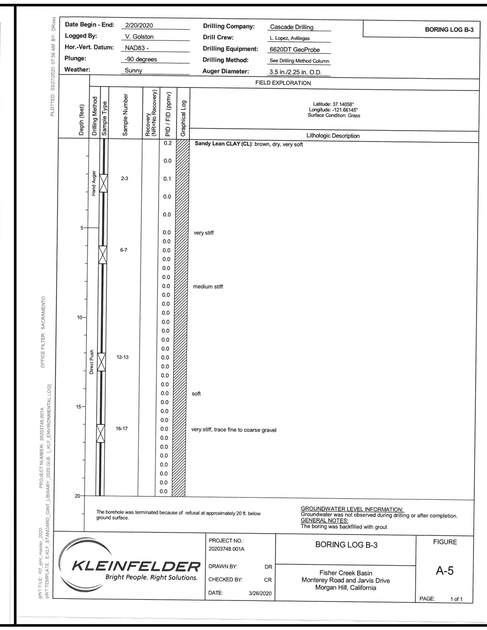
Sections & Details
Fisher Basin Expansion - apn 726-25-028

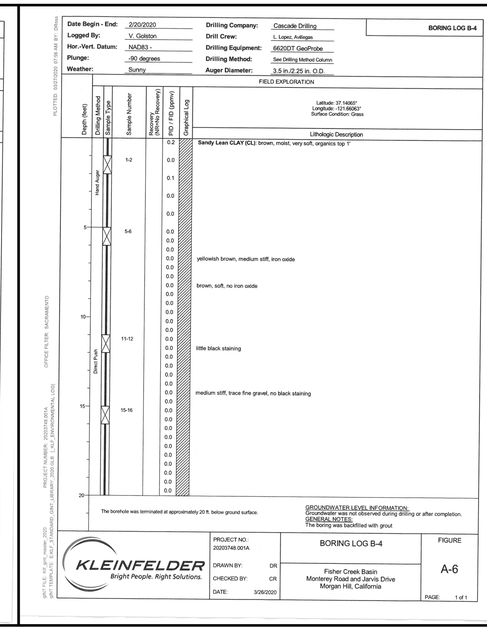
City File no.
PRINT DATE
SHEET NUMBER 5 OF 8

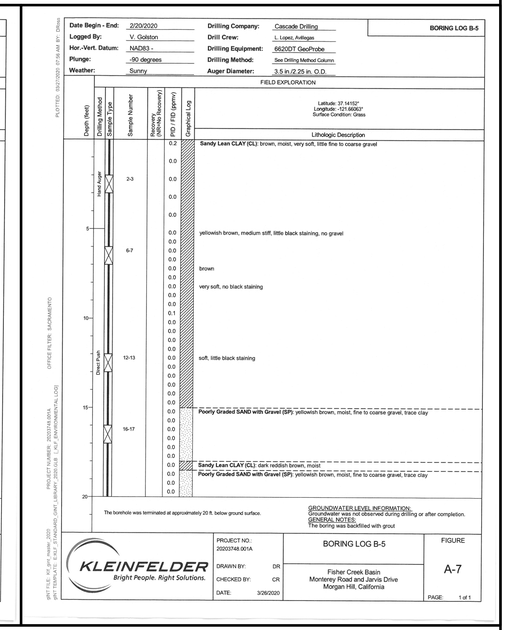
HB JOB NO. 20048

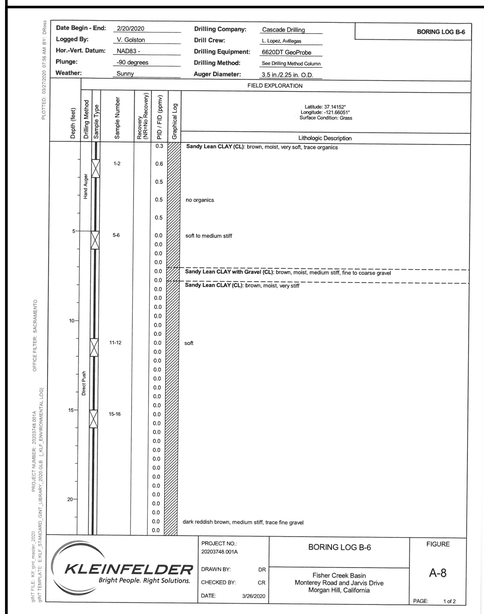


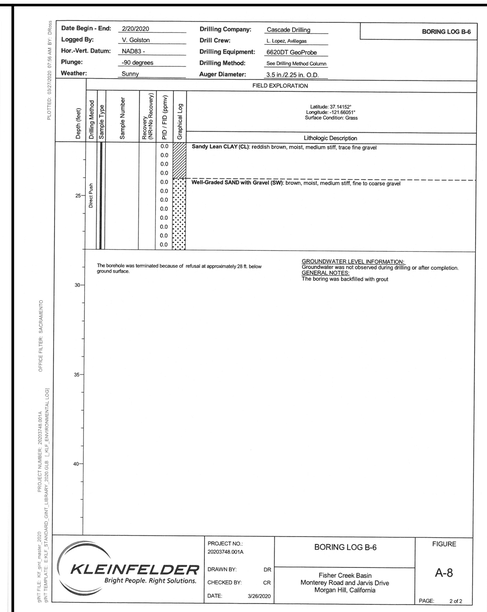


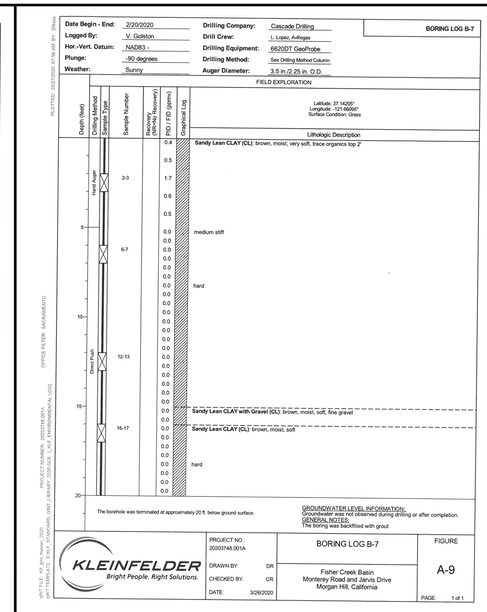


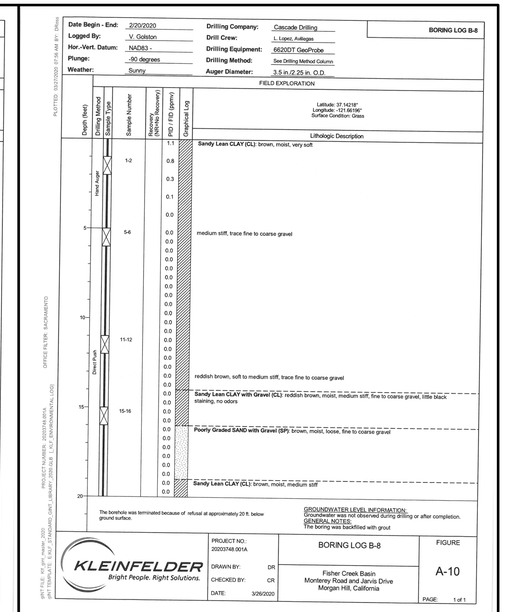












THIS SHEET HAS THE SOIL BORINGS FROM KLEINFELDER TECHNICAL MEMORANDUM (TM) DATED AP 1, 2020 FILE 20203748.001A

THE APPROXIMATE LOCATIONS OF THE BORINGS ARE SHOWN ON SHEET 4 OF THIS PLAN SET.

PER PAGE 1 OF TM:
BORINGS B-1, B-2,B-3,B-4,B-5,B-7 AND B-8 WERE TERMINATED AT 20 FT BGS DUE TO REFUSAL IN WELL GRADED GRAVEL TO SANDY LEAN CLAY. B-6 WAS TERMINATED AT 28 FT BGS. THE COMPLETE TM IS AVAILABLE FROM THE CITY OF MORGAN HILL

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	BY
	Revisions		

Work Accepted: Inspector:

As-Built Corrections

By: Date:

DRAWN TM | DESIGN AM | HOR
CHECKED | DATE | VERT
APPROVED | DATE | AS BUILT
JOB NUMBER

SCOTT C. CREER – CITY ENGINEER
R.C.E. # 58879 EXP. 6/2021

City of Morgan Hill
Public Works Department
17575 Peak Avenue, Morgan Hill - California - 95037
(408) 776-6480 - fax (408) 779-7236

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REGISTERED PROFESSIONAL ENGINEER – AMANDA JOY MUSY-VERDEL – NO. 69278 – EXP. 6–30– Civil – STATE OF CALIFORNIA

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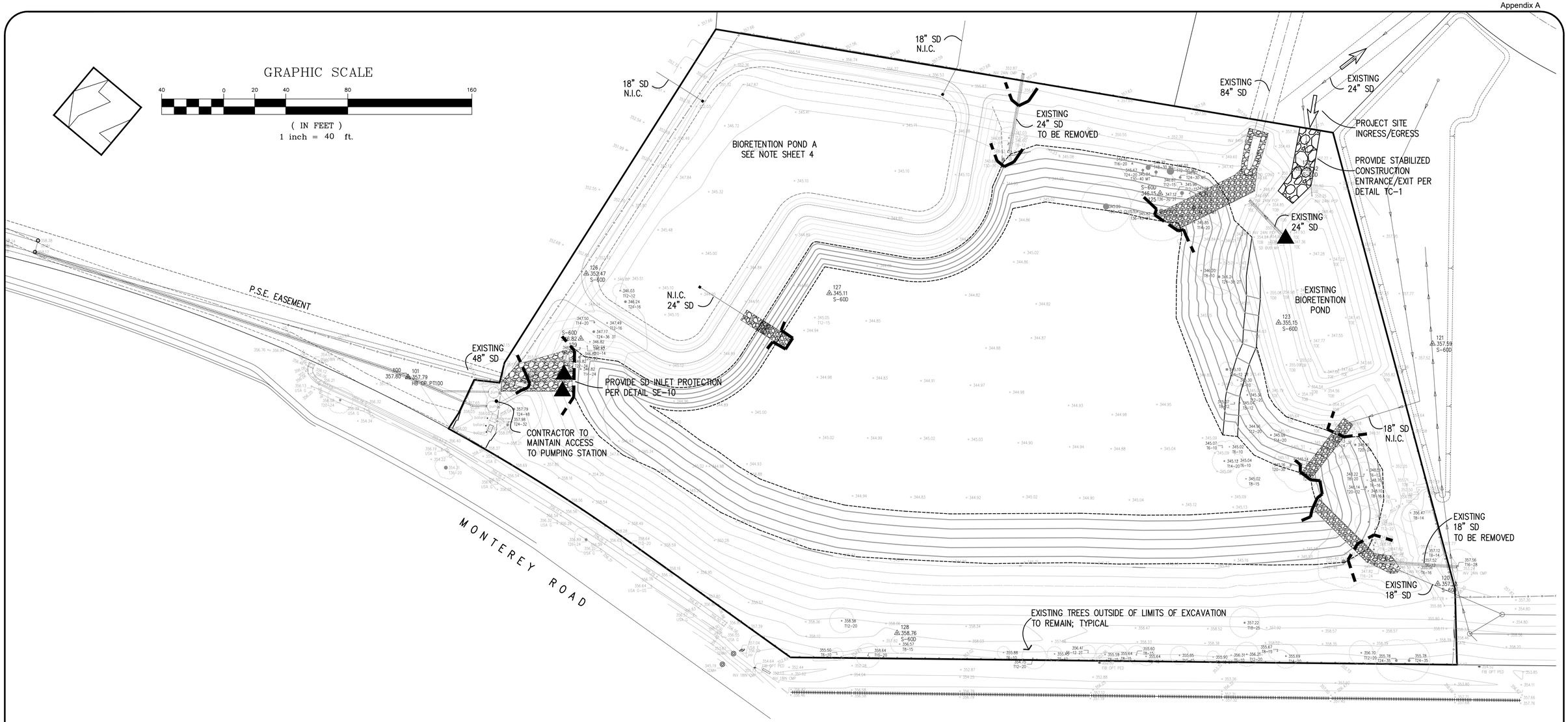
Soils Borings
Fisher Basin Expansion - apn 726-25-028

City File no.
PRINT DATE
SHEET NUMBER 6 OF 8

HB JOB NO. 20048



LEGEND

PROVIDE CONSTRUCTION ENTRANCE/EXIT PER DETAIL TC-1

FIBER ROLL BARRIER PER DETAIL SE-5 AROUND PERIMETER OF PROJECT AREA

STORM DRAIN INLET PROTECTION PER DETAIL SE-10

PROVIDE SLOPE SAND BAG INLET PROTECTION PER DETAIL SE-10

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	BY
	Revisions		

Work Accepted: Inspector:

As-Built Corrections
By: Date:

DRAWN AM | DESIGN TM | HOR
CHECKED | DATE | VERT
APPROVED | DATE | AS BUILT
Scott C Creer
SCOTT C. CREER – CITY ENGINEER
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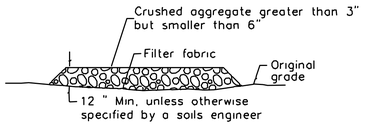
Erosion and Project Access Plan
Fisher Basin Expansion - apn 726-25-028

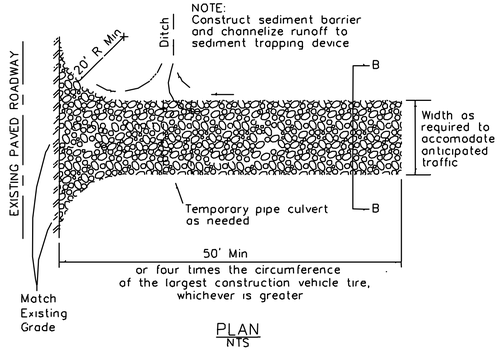
City File no.
PRINT DATE
SHEET NUMBER 7 OF 8

HB JOB NO. 20048

Stabilized Construction Entrance/Exit TC-1

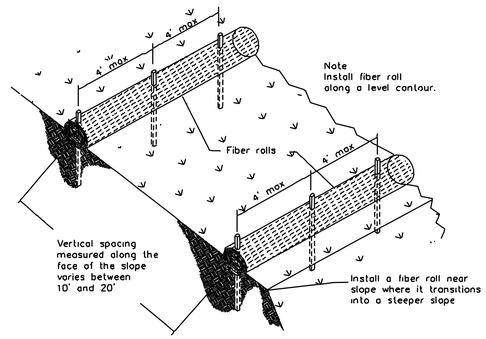


SECTION B–B
NTS

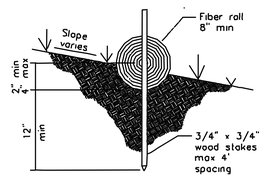


PLAN
NTS

SE-5 Fiber Rolls

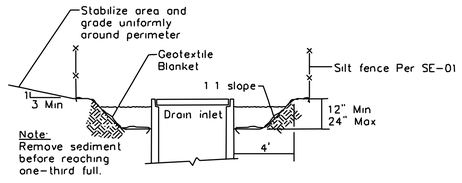


TYPICAL FIBER ROLL INSTALLATION
NTS

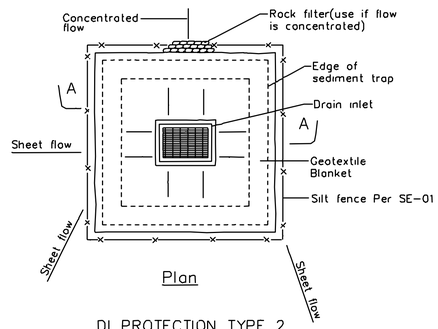


ENTRENCHMENT DETAIL
N.T.S.

Storm Drain Inlet Protection SE-10



Section A–A

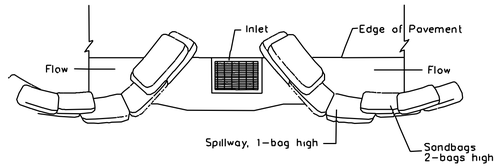


Plan

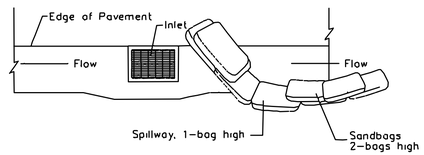
DI PROTECTION TYPE 2
NOT TO SCALE

Notes
1 For use in cleared and grubbed and in graded areas
2. Shape basin so that longest inflow area faces longest length of trap.
3 For concentrated flows, shape basin in 2 1 ratio with length oriented towards direction of flow.

SE-10 Storm Drain Inlet Protection



TYPICAL PROTECTION FOR INLET ON SUMP



TYPICAL PROTECTION FOR INLET ON GRADE

NOTES:
1. Intended for short-term use
2 Use to inhibit non-storm water flow
3. Allow for proper maintenance and cleanup
4 Bags must be removed after adjacent operation is completed
5 Not applicable in areas with high silts and clays without filter fabric.

DI PROTECTION TYPE 3
NOT TO SCALE

EROSION CONTROL NOTES

1. EROSION CONTROL MEASURES SHALL BE EFFECTIVE FOR CONSTRUCTION DURING THE RAINY SEASON; SEPTEMBER 15 THROUGH MAY 15.
2. NO STORM WATER RUNOFF SHALL BE ALLOWED TO DRAIN INTO THE EXISTING AND/OR PROPOSED UNDERGROUND STORM SYSTEM UNTIL SUITABLE EROSION CONTROL MEASURES ARE FULLY IMPLEMENTED. NO STORM WATER RUNOFF SHALL BE ALLOWED TO ENTER THE STORM DRAIN SYSTEM THAT IS NOT CLEAR, AND FREE OF SILTS.
3. A FIBER ROLL BARRIER PER "DETAIL SE-5" SHALL BE INSTALL ALONG THE PERIMETER OF THE PROJECT SITE. THE LOCATION OF THE FIBER ROLL ALONG THE PERIMETER SHALL BE ADJUSTED TO ELIMINATE SEDIMENT LADEN RUNOFF FROM LEAVING THE SITE. A FIBER ROLL SHALL ALSO BE REQUIRED AROUND THE PERIMETER OF ANY STOCKPILE OR OTHER SITE OF BARE, LOOSE EARTH.
4. ALL STORM DRAIN MANHOLES, CATCH BASINS, AND/OR DROP INLETS THAT ARE TO ACCEPT STORM WATER SHALL HAVE INLET PROTECTION MEASURES PER DETAIL SE-10. STORM WATER RUNOFF SHALL BE DIRECTED TO THESE INLETS ONLY. STORM DRAIN CATCH BASINS THAT ARE NOT COMPLETE, SHALL BE BLOCKED OFF COMPLETELY.
5. THE NAME, ADDRESS, AND 24 HOUR TELEPHONE NUMBER OF THE PERSON RESPONSIBLE FOR THE IMPLEMENTATION OF THE EROSION CONTROL PLAN SHALL BE PROVIDED TO THE CITY.
6. PRIOR TO GRADING, AN ENTRANCE SHALL BE CONSTRUCTED, CONSISTING OF A MINIMUM OF 50 LF OF DRAIN ROCK, 3" IN DIAMETER, PLACED OVER MIRAFI 500X (OR EQUAL) PER DETAIL TC-1. THE ENTRANCE SHALL CONFORM TO "CONSTRUCTION ENTRANCE DETAIL TC-1". THERE SHALL BE ONLY ONE ENTRANCE/EXIT POINT TO THE SITE DURING THE RAINY SEASON. THE LOCATION SHALL BE AS SHOWN ON THESE PLANS, OR AT A LOCATION APPROVED BY THE CITY.
7. ALL AREAS OF BARE, TURNED OR DISTURBED EARTH SHALL BE STABILIZED BY USE OF HYDROSEED PER THE TABLE BELOW. ALL STOCKPILES, AND/OR BORROW AREAS SHALL BE PROTECTED WITH APPROPRIATE EROSION CONTROL MEASURES SUCH AS A PERIMETER SILT FENCE, AND OTHER METHODS TO PREVENT ANY EROSION OR SILTS MIGRATION. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED. CHANGES TO THE EROSION CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS, BUT ONLY WITH THE APPROVAL OF, OR AT THE DIRECTION OF THE COUNTY INSPECTOR. THE STORM DRAIN SYSTEM SHALL MAINTAIN A FORM OF DRAIN INLET PROTECTION UNTIL COUNTY ACCEPTS THE FINAL STREET IMPROVEMENTS. THE DRAIN INLET PROTECTION SHALL BE MAINTAINED, EFFECTIVE AND SUBJECT TO COUNTY INSPECTOR'S APPROVAL.
8. ALL PAVED STREET, AND AREAS ADJACENT TO THE SITE SHALL BE KEPT CLEAR OF EARTH MATERIALS AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO ELIMINATE SEDIMENT LADEN RUNOFF FROM ENTERING THE STORM DRAIN SYSTEM.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT AND REPAIR ALL EROSION CONTROL FACILITIES AT THE END OF EACH DAY DURING THE RAINY SEASON. ANY DAMAGED STRUCTURAL MEASURES ARE TO BE REPAIRED BY END OF THE DAY. TRAPPED SEDIMENT IN "SD INLETS" (AND OTHER EROSION CONTROL MEASURES) SHALL BE REMOVED TO MAINTAIN TRAP EFFIIENCY. REMOVED SEDIMENT SHALL BE DISPOSED BY SPREADING ON SITE, WHERE IT WILL NOT MIGRATE.
10. IT IS THE RESPOSIBILITY OF THE CONTRACTOR TO PREVENT THE FORMATION OF AIRBORNE DUST NUISANCE AND SHALL BE RESPOSIBILE FOR ANY DAMAGE RESULTING FROM A FAILURE TO DO SO.
11. ALL DRAIN SWALES SHALL BE PER DETAIL EC-9.
12. INCOMPLETE GRADING SHALL NOT BE ALLOWED. CONTRATOR SHALL MAINATIN A DRAIN PATH AS SHOWN ON THIS PLAN. SAID DRAIN PATH SHALL BE MAINTAINED LINED DRAIN SWALES, AND INLET PROTECTION AT A MINIMUM. IF PONDING DOES OCCUR ON THE SITE AFTER GRADING, THE WATER MUST BE FREE AND CLEAR OF SEDIMENT PRIOR TO DISCHARGE TO THE STORM DRAIN SYSTEM. THIS REQUIREMENT MAY NECESSITATE THE USE OF NATURAL AND/OR MECHANICAL DESILTING METHODS, SUBJECT TO APPROVAL BY THE COUNTY INSPECTOR.
13. IF THESE EROSION CONTROL MEASURE PROVE INADEQUATE, STRAW MULCH, TACKIFIER, AND ADDITIONAL HYDROSEEDING MAY BE REQUIRED.

HYDROSEED TABLE

ITEM	LBS/ACRE
COMMON BARLEY	45
ANNUAL RYEGRASS	45
CRIMSON CLOVER	10
FERTILIZER 7-2-3	400
FIBER MULCH	2000
TACKIFIER	100

14. ALL GRADING WORK BETWEEN SEPTEMBER 15th AND MAY 15th IS AT THE DISCRETION OF THE CITY INSPECTOR.
15. PROVIDE SHRUBS AND/OR TREES REQUIRED ON SLOPES GREATER THAN 15 FEET IN VERTICAL HEIGHT.
16. THE OWNER/OWNER'S CONTRACTOR, AGENT, AND/OR ENGINEER SHALL INSTALL AND MAINTAIN THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL THE ESTABLISHMENT OF PERMANENT STABILIZATION AND SEDIMENT CONTROL WITHIN THE SANTA CLARA COUNTY MAINTAINED ROAD RIGHT OF WAY AND ANY PORTION OF THE SITE WHERE STORM WATER RUN-OFF IS DIRECTLY FLOWING INTO THE SANTA CLARA COUNTY MAINTAINED ROAD RIGHT OF WAY BEST MANAGEMENT PRACTICES (BMP'S) TO PREVENT CONSTRUCTION MATERIALS, EXCAVATED MATERIALS, WASTE MATERIALS, AND SEDIMENT CAUSED BY EROSION FROM CONSTRUCTION ACTIVITIES ENTERING THE STORM DRAIN SYSTEM, WATERWAYS, AND ROADWAY INFRASTRUCTURE. BMP'S SHALL INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING PRACTICES APPLICABLE TO THE PUBLIC ROAD AND EXPRESSWAY FACILITIES:
    A) REDUCTION OF POLLUTANTS IN STORM WATER DISCHARGES FROM THE CONSTRUCTION SITE AND THE CONTRACTOR'S MATERIAL AND EQUIPMENT LAYDOWN/STAGING AREAS.
    B) PREVENTION OF TRACKING OF MUD, DIRT AND CONSTRUCTION MATERIALS ONTO PUBLIC ROAD RIGHT OF WAY.
    C) PREVENTION OF DISCHARGE OF WATER RUNOFF DURING DRY AND WET WEATHER CONDITIONS ONTO PUBLIC ROAD RIGHT OF WAY
17. THE OWNER/OWNER'S CONTRACTOR, AGENT, AND/OR ENGINEER SHALL ENSURE THAT ALL TEMPORARY CONSTRUCTION FACILITIES, INCLUDING BUT NOT LIMITED TO CONSTRUCTION MATERIALS, DELIVERIES, HAZARDOUS AND NON-HAZARDOUS MATERIAL STORAGE, EQUIPMENT, TOOLS, PORTABLE TOILETS, CONCRETE WASHOUT, GARBAGE CONTAINERS, LAYDOWN YARDS, SECONDARY CONTAINMENT AREAS, ETC. ARE LOCATED OUTSIDE THE CITY RIGHT OF WAY AND ANY PORTION OF THE SITE WHERE STORM WATER RUN-OFF IS DIRECTLY FLOWING INTO THE CITY RIGHT OF WAY SHALL HAVE SEASONALLY APPROPRIATE BMP'S INSTALLED AND MAINTAINED AT ALL TIMES.

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	BY

Revisions

Work Accepted: Inspector:

As–Built Corrections
By: Date:

DRAWN AM | DESIGN TM | HOR
CHECKED | DATE | VERT
APPROVED | DATE | AS BUILT
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SCOTT C. CREER – CITY ENGINEER
R.C.E. # 58879 EXP. 6/2021

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Erosion Control Notes & Details
Fisher Basin Expansion - apn 726-25-028

City File no.
PRINT DATE
SHEET NUMBER 8 OF 8

HB JOB NO. 20048

Appendix C: Permit Registration Documents

Permit Registration Documents included in this Appendix

Y/N	Permit Registration Document
	Notice of Intent
	Risk Assessment
	Certification
	Post Construction Water Balance
	Copy of Annual Fee Receipt
	ATS Design Documents
	Site Map, see Appendix B

Appendix D: SWPPP Amendment Certifications

SWPPP Amendment No. _____

Project Name: *Fisher Basin*

Project Number: HB JN 20048

Qualified SWPPP Developer's Certification of the
Stormwater Pollution Prevention Plan Amendment

"This Stormwater Pollution Prevention Plan and attachments were prepared under my direction to meet the requirements of the California Construction General Permit (SWRCB Order No. 2009-009-DWQ as amended by 2010-0014-DWQ). I certify that I am a Qualified SWPPP Developer in good standing as of the date signed below."

QSD's Signature	Date
Amanda Musy-Verdel	#00282
QSD Name	QSD Certificate Number
Principal	(408) 842-2173
Title and Affiliation	Telephone
7651 Eigleberry Street, Gilroy, CA 95020	amanda@hannabrunetti.com
Address	Email

Appendix E: Submitted Changes to PRDs

Log of Updated PRDs

The General Permit allows for the reduction or increase of the total acreage covered under the General Permit when a portion of the project is complete and/or conditions for termination of coverage have been met; when ownership of a portion of the project is purchased by a different entity; or when new acreage is added to the project.

Modified PRDs shall be filed electronically within 30 days of a reduction or increase in total disturbed area if a change in permit covered acreage is to be sought. The SWPPP shall be modified appropriately, with revisions and amendments recorded in Appendix C. Updated PRDs submitted electronically via SMARTS can be found in this Appendix.

This appendix includes all of the following updated PRDs (check all that apply):

☐ Revised Notice of Intent (NOI);

☐ Revised Site Map;

☐ Revised Risk Assessment;

☐ New landowner's information (name, address, phone number, email address); and

☐ New signed certification statement.

Legally Responsible Person

Signature of Legally Responsible Person or Approved Signatory

Date

Name of Legally Responsible Person or Approved Signatory

Telephone Number

Appendix F: Construction Schedule

To be provided by Contractor.

Appendix G: Construction Activities, Materials Used, and Associated Pollutants

Table G.1 Construction Activities and Associated Pollutants

Phase	Activity	Associated Materials or Pollutants	Pollutant Category(1)
Grading and Land Development	Removal of existing structures	• Demolition of asphalt, concrete, masonry, framing, roofing, metal structures.	Metals, Oil and Grease, Synthetic Organics
	Sanitary waste	• Portable toilets • Disturbance of existing sewer lines.	Nutrients
	Solid waste	• Litter, trash and debris • Vegetation	Gross Pollutants
	Vehicle and equipment use	• Equipment operation • Equipment maintenance • Equipment washing • Equipment fueling	Oil and Grease
Streets and Utilities Phase	Adhesives	• Adhesives, glues, resins, epoxy synthetics, PVC cement • Caulks, sealers, putty, sealing agents and • Coal tars (naphtha, pitch)	Oil and Grease, Synthetic Organics[1]
	Asphalt paving/curbs	• Hot and cold mix asphalt	Oil and Grease
	Liquid waste	• Wash waters • Irrigation line testing/flushing	Metals, Synthetic Organics
	Plumbing	• Solder (lead, tin), flux (zinc chloride), pipe fitting • Galvanized metal in nails, fences, and electric wiring	Metals, Synthetic Organics
	Sanitary waste	• Portable toilets Disturbance of existing sewer lines.	Nutrients
	Solid waste	• Litter, trash and debris • Vegetation	Gross Pollutants
	Utility line testing and flushing	• Hydrostatic test water • Pipe flushing	Synthetic Organics
	Vehicle and equipment use	• Equipment operation • Equipment maintenance • Equipment washing • Equipment fueling	Oil and Grease
Vertical Construction Phase	Adhesives	• Adhesives, glues, resins, epoxy synthetics, PVC cement • Caulks, sealers, putty, sealing agents and • Coal tars (naphtha, pitch)	Oil and Grease, Synthetic Organics[1]
	Cleaners	• Polishes (metal, ceramic, tile) • Etching agents	Metals, Synthetic Organics

Table G.1 Construction Activities and Associated Pollutants

Phase	Activity	Associated Materials or Pollutants	Pollutant Category[(1)]
		• Cleaners, ammonia, lye, caustic sodas, bleaching agents and chromate salts	
	Concrete / Masonry	• Cement and brick dust • Colored chalks • Concrete curing compounds • Glazing compounds • Surfaces cleaners • Saw cut slurries • Tile cutting	Metals, Synthetic Organics
	Drywall	• Saw cutting drywall	Metals
	Framing/Carpentry	• Sawdust, particle board dust, and treated woods • Saw cut slurries	Metals, Synthetic Organics
	Heating, Ventilation, Air Conditioning	• Demolition or construction of air condition and heating systems	Metals, Synthetic Organics
	Insulation	• Demolition or construction involving insulation, venting systems	Metals, Synthetic Organics
	Painting	• Paint thinners, acetone, methyl ethyl ketone, stripper paints, lacquers, varnish, enamels, turpentine, gum spirit, solvents, dyes, stripping pigments and sanding	Metals, Synthetic Organics
	Plumbing	• Solder (lead, tin), flux (zinc chloride), pipe fitting • Galvanized metal in nails, fences, and electric wiring	Metals, Synthetic Organics
	Roofing	• Flashing • Saw cut slurries (tile cutting) • Shingle scrap and debris	Metals, Oil and Grease, Synthetic Organics
	Sanitary waste	• Portable toilets • Disturbance of existing sewer lines.	Nutrients
	Solid waste	• Litter, trash and debris • Vegetation	Gross Pollutants
Landscaping and Site Stabilization Phase	Liquid waste	• Wash waters • Irrigation line testing/flushing	Metals, Synthetic Organics
	Planting / Vegetation Management	• Vegetation control (pesticides/herbicides) • Planting • Plant maintenance • Vegetation removal	Nutrients, Metals, Synthetic Organics
	Pools/fountains	• Chlorinated water	Synthetic Organics
	Sanitary waste	• Portable toilets	Nutrients

Table G.1 Construction Activities and Associated Pollutants

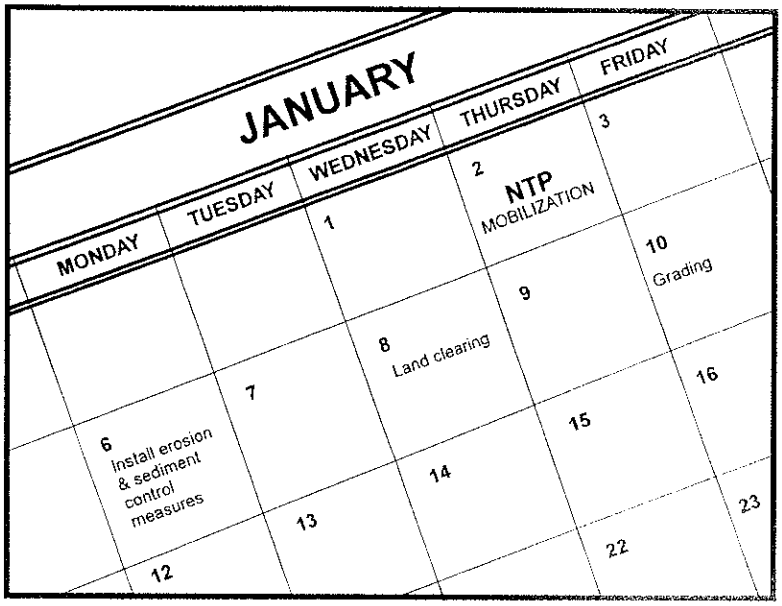
Phase	Activity	Associated Materials or Pollutants	Pollutant Category[(1)]
		• Disturbance of existing sewer lines.	
	Soil preparation/amendments	• Use of soil additives/amendments	Nutrients
	Solid waste	• Litter, trash and debris • Vegetation	Gross Pollutants

(1) Categories per CASQA BMP Handbook (i.e., Sediment, Nutrients, Bacteria and Viruses, Oil and Grease, Metals, Synthetic Organics, Pesticides, Gross Pollutants, and Vector Production)

Appendix H: CASQA Stormwater BMP Handbook Portal: Construction Fact Sheets

Scheduling

EC-1



Categories

EC	Erosion Control	☑
SE	Sediment Control	☒
TC	Tracking Control	☒
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Scheduling is the development of a written plan that includes sequencing of construction activities and the implementation of BMPs such as erosion control and sediment control while taking local climate (rainfall, wind, etc.) into consideration. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Suitable Applications

Proper sequencing of construction activities to reduce erosion potential should be incorporated into the schedule of every construction project especially during rainy season. Use of other, more costly yet less effective, erosion and sediment control BMPs may often be reduced through proper construction sequencing.

Limitations

- Environmental constraints such as nesting season prohibitions reduce the full capabilities of this BMP.

Implementation

- Avoid rainy periods. Schedule major grading operations during dry months when practical. Allow enough time before rainfall begins to stabilize the soil with vegetation or physical means or to install sediment trapping devices.
- Plan the project and develop a schedule showing each phase

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Scheduling EC-1

of construction. Clearly show how the rainy season relates to soil disturbing and re-stabilization activities. Incorporate the construction schedule into the SWPPP.

- Include on the schedule, details on the rainy season implementation and deployment of:
  - Erosion control BMPs
  - Sediment control BMPs
  - Tracking control BMPs
  - Wind erosion control BMPs
  - Non-stormwater BMPs
  - Waste management and materials pollution control BMPs
- Include dates for activities that may require non-stormwater discharges such as dewatering, sawcutting, grinding, drilling, boring, crushing, blasting, painting, hydro-demolition, mortar mixing, pavement cleaning, etc.
- Work out the sequencing and timetable for the start and completion of each item such as site clearing and grubbing, grading, excavation, paving, foundation pouring utilities installation, etc., to minimize the active construction area during the rainy season.
  - Sequence trenching activities so that most open portions are closed before new trenching begins.
  - Incorporate staged seeding and re-vegetation of graded slopes as work progresses.
  - Schedule establishment of permanent vegetation during appropriate planting time for specified vegetation.
- Non-active areas should be stabilized as soon as practical after the cessation of soil disturbing activities or one day prior to the onset of precipitation.
- Monitor the weather forecast for rainfall.
- When rainfall is predicted, adjust the construction schedule to allow the implementation of soil stabilization and sediment treatment controls on all disturbed areas prior to the onset of rain.
- Be prepared year round to deploy erosion control and sediment control BMPs. Erosion may be caused during dry seasons by un-seasonal rainfall, wind, and vehicle tracking. Keep the site stabilized year round, and retain and maintain rainy season sediment trapping devices in operational condition.
- Apply permanent erosion control to areas deemed substantially complete during the project's defined seeding window.

Costs

Construction scheduling to reduce erosion may increase other construction costs due to reduced economies of scale in performing site grading. The cost effectiveness of scheduling techniques should be compared with the other less effective erosion and sedimentation controls to achieve a cost effective balance.

Scheduling EC-1

Inspection and Maintenance

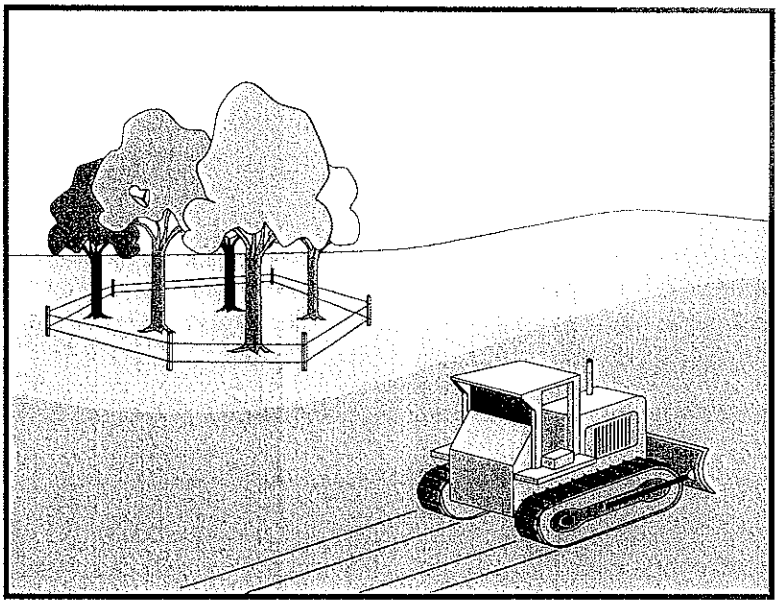
- Verify that work is progressing in accordance with the schedule. If progress deviates, take corrective actions.
- Amend the schedule when changes are warranted.
- Amend the schedule prior to the rainy season to show updated information on the deployment and implementation of construction site BMPs.

References

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities Developing Pollution Prevention Plans and Best Management Practices (EPA 832-R-92-005), U.S. Environmental Protection Agency, Office of Water, September 1992.

Preservation Of Existing Vegetation EC-2



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Carefully planned preservation of existing vegetation minimizes the potential of removing or injuring existing trees, vines, shrubs, and grasses that protect soil from erosion.

Suitable Applications

Preservation of existing vegetation is suitable for use on most projects. Large project sites often provide the greatest opportunity for use of this BMP. Suitable applications include the following:

- Areas within the site where no construction activity occurs, or occurs at a later date. This BMP is especially suitable to multi year projects where grading can be phased.
- Areas where natural vegetation exists and is designated for preservation. Such areas often include steep slopes, watercourse, and building sites in wooded areas.
- Areas where local, state, and federal government require preservation, such as vernal pools, wetlands, marshes, certain oak trees, etc. These areas are usually designated on the plans, or in the specifications, permits, or environmental documents.
- Where vegetation designated for ultimate removal can be temporarily preserved and be utilized for erosion control and sediment control.

Limitations

- Requires forward planning by the owner/developer,

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Preservation Of Existing Vegetation EC-2

contractor, and design staff.

- Limited opportunities for use when project plans do not incorporate existing vegetation into the site design.
- For sites with diverse topography, it is often difficult and expensive to save existing trees while grading the site satisfactory for the planned development.

Implementation

The best way to prevent erosion is to not disturb the land. In order to reduce the impacts of new development and redevelopment, projects may be designed to avoid disturbing land in sensitive areas of the site (e.g., natural watercourses, steep slopes), and to incorporate unique or desirable existing vegetation into the site's landscaping plan. Clearly marking and leaving a buffer area around these unique areas during construction will help to preserve these areas as well as take advantage of natural erosion prevention and sediment trapping.

Existing vegetation to be preserved on the site must be protected from mechanical and other injury while the land is being developed. The purpose of protecting existing vegetation is to ensure the survival of desirable vegetation for shade, beautification, and erosion control. Mature vegetation has extensive root systems that help to hold soil in place, thus reducing erosion. In addition, vegetation helps keep soil from drying rapidly and becoming susceptible to erosion. To effectively save existing vegetation, no disturbances of any kind should be allowed within a defined area around the vegetation. For trees, no construction activity should occur within the drip line of the tree.

Timing

- Provide for preservation of existing vegetation prior to the commencement of clearing and grubbing operations or other soil disturbing activities in areas where no construction activity is planned or will occur at a later date.

Design and Layout

- Mark areas to be preserved with temporary fencing. Include sufficient setback to protect roots.
  - Orange colored plastic mesh fencing works well.
  - Use appropriate fence posts and adequate post spacing and depth to completely support the fence in an upright position.
- Locate temporary roadways, stockpiles, and layout areas to avoid stands of trees, shrubs, and grass.
- Consider the impact of grade changes to existing vegetation and the root zone.
- Maintain existing irrigation systems where feasible. Temporary irrigation may be required.
- Instruct employees and subcontractors to honor protective devices. Prohibit heavy equipment, vehicular traffic, or storage of construction materials within the protected area.

Preservation Of Existing Vegetation EC-2

Costs

There is little cost associated with preserving existing vegetation if properly planned during the project design, and these costs may be offset by aesthetic benefits that enhance property values. During construction, the cost for preserving existing vegetation will likely be less than the cost of applying erosion and sediment controls to the disturbed area. Replacing vegetation inadvertently destroyed during construction can be extremely expensive, sometimes in excess of $10,000 per tree.

Inspection and Maintenance

During construction, the limits of disturbance should remain clearly marked at all times. Irrigation or maintenance of existing vegetation should be described in the landscaping plan. If damage to protected trees still occurs, maintenance guidelines described below should be followed:

- Verify that protective measures remain in place. Restore damaged protection measures immediately.
- Serious tree injuries shall be attended to by an arborist.
- Damage to the crown, trunk, or root system of a retained tree shall be repaired immediately.
- Trench as far from tree trunks as possible, usually outside of the tree drip line or canopy. Curve trenches around trees to avoid large roots or root concentrations. If roots are encountered, consider tunneling under them. When trenching or tunneling near or under trees to be retained, place tunnels at least 18 in. below the ground surface, and not below the tree center to minimize impact on the roots.
- Do not leave tree roots exposed to air. Cover exposed roots with soil as soon as possible. If soil covering is not practical, protect exposed roots with wet burlap or peat moss until the tunnel or trench is ready for backfill.
- Cleanly remove the ends of damaged roots with a smooth cut.
- Fill trenches and tunnels as soon as possible. Careful filling and tamping will eliminate air spaces in the soil, which can damage roots.
- If bark damage occurs, cut back all loosened bark into the undamaged area, with the cut tapered at the top and bottom and drainage provided at the base of the wood. Limit cutting the undamaged area as much as possible.
- Aerate soil that has been compacted over a trees root zone by punching holes 12 in. deep with an iron bar, and moving the bar back and forth until the soil is loosened. Place holes 18 in. apart throughout the area of compacted soil under the tree crown.
- Fertilization
  - Fertilize stressed or damaged broadleaf trees to aid recovery.
  - Fertilize trees in the late fall or early spring.

Preservation Of Existing Vegetation EC-2

- Apply fertilizer to the soil over the feeder roots and in accordance with label instructions, but never closer than 3 ft to the trunk. Increase the fertilized area by one-fourth of the crown area for conifers that have extended root systems.

- Retain protective measures until all other construction activity is complete to avoid damage during site cleanup and stabilization.

References

County of Sacramento Tree Preservation Ordinance, September 1981.

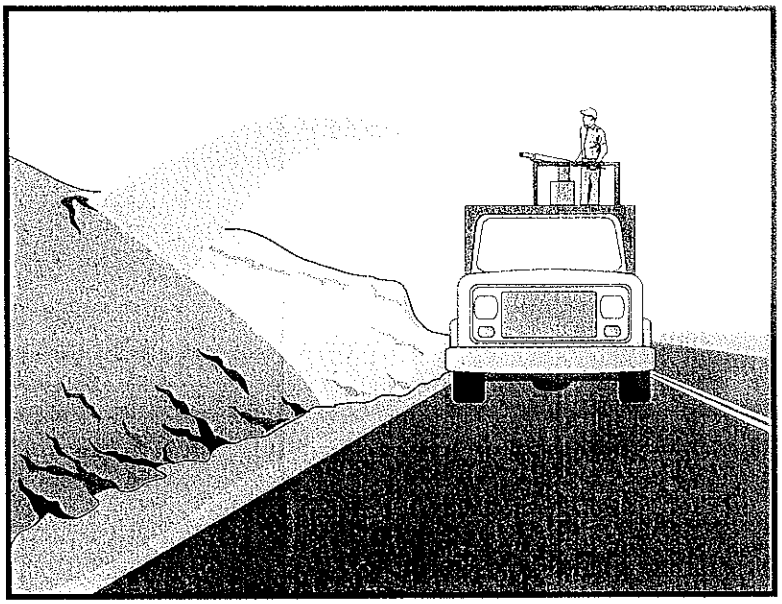
Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Water Quality Management Plan for The Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Hydraulic Mulch

EC-3



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-4 Hydroseeding

EC-5 Soil Binders

EC-6 Straw Mulch

EC-7 Geotextiles and Mats

EC-8 Wood Mulching

EC-14 Compost Blanket

EC-16 Non-Vegetative Stabilization

Description and Purpose

Hydraulic Mulch consists of various types of fibrous materials mixed with water and sprayed onto the soil surface in slurry form to provide a layer of temporary protection from wind and water erosion.

Suitable Applications

Hydraulic mulch as a temporary, stand alone, erosion control BMP is suitable for disturbed areas that require temporary protection from wind and water erosion until permanent soil stabilization activities commence. Examples include:

- Rough-graded areas that will remain inactive for longer than permit-required thresholds (e.g., 14 days) or otherwise require stabilization to minimize erosion or prevent sediment discharges.
- Soil stockpiles.
- Slopes with exposed soil between existing vegetation such as trees or shrubs.
- Slopes planted with live, container-grown vegetation or plugs.
- Slopes burned by wildfire.

Hydraulic mulch can also be applied to augment other erosion control BMPs such as:

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Hydraulic Mulch EC-3

- In conjunction with straw mulch (see EC-6 Straw Mulch) where the rate of hydraulic mulch is reduced to 100-500 lbs per acre and the slurry is applied over the straw as a tackifying agent to hold the straw in place.
- Supplemental application of soil amendments, such as fertilizer, lime, gypsum, soil bio-stimulants or compost.

Limitations

In general, hydraulic mulch is not limited by slope length, gradient or soil type. However, the following limitations typically apply:

- Most hydraulic mulch applications, particularly bonded fiber matrices (BFMs), require at least 24 hours to dry before rainfall occurs.
- Temporary applications (i.e., without a vegetative component) may require a second application in order to remain effective for an entire rainy season.
- Treatment areas must be accessible to hydraulic mulching equipment.
- Availability of water sources in remote areas for mixing and application.
- As a stand-alone temporary BMP, hydraulic mulches may need to be re-applied to maintain their erosion control effectiveness, typically after 6-12 months depending on the type of mulch used.
- Availability of hydraulic mulching equipment may be limited just prior to the rainy season and prior to storms due to high demand.
- Cellulose fiber mulches alone may not perform well on steep slopes or in course soils.

Implementation

- Where feasible, it is preferable to prepare soil surfaces prior to application by roughening embankments and fill areas with a crimping or punching type roller or by track walking.
- The majority of hydraulic mulch applications do not necessarily require surface/soil preparation (See EC-15 Soil Preparation) although in almost every case where re-vegetation is included as part of the practice, soil preparation can be beneficial. One of the advantages of hydraulic mulch over other erosion control methods is that it can be applied in areas where soil preparation is precluded by site conditions, such as steep slopes, rocky soils, or inaccessibility.
- Avoid mulch over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.
- Hydraulic mulching is generally performed utilizing specialized machines that have a large water-holding/mixing tank and some form of mechanical agitation or other recirculation method to keep water, mulch and soil amendments in suspension. The mixed hydraulic slurry can be applied from a tower sprayer on top of the machine or by extending a hose to areas remote from the machine.

Hydraulic Mulch EC-3

- Where possible apply hydraulic mulch from multiple directions to adequately cover the soil. Application from a single direction can result in shadowing, uneven coverage and failure of the BMP.
- Hydraulic mulch can also include a vegetative component, such as seed, rhizomes, or stolons (see EC-4 Hydraulic Seed).
- Typical hydraulic mulch application rates range from 2,000 pounds per acre for standard mulches (SMs) to 3,500 pounds per acre for BFMs. However, the required amount of hydraulic mulch to provide adequate coverage of exposed topsoil may appear to exceed the standard rates when the roughness of the soil surface is changed due to soil preparation methods (see EC-15 Soil Preparation) or by slope gradient.
- Other factors such as existing soil moisture and soil texture can have a profound effect on the amount of hydraulic mulch required (i.e. application rate) applied to achieve an erosion-resistant covering.
- Avoid use of mulch without a tackifier component, especially on slopes.
- Mulches used in the hydraulic mulch slurry can include:
  - Cellulose fiber
  - Thermally-processed wood fibers
  - Cotton
  - Synthetics
  - Compost (see EC-14, Compost Blanket)
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Categories of Hydraulic Mulches

Standard Hydraulic Mulch (SM)

Standard hydraulic mulches are generally applied at a rate of 2,000 pounds per acre and are manufactured containing around 5% tackifier (i.e. soil binder), usually a plant-derived guar or psyllium type. Most standard mulches are green in color derived from food-color based dyes.

Hydraulic Matrices (HM) and Stabilized Fiber Matrices (SFM)

Hydraulic matrices and stabilized fiber matrices are slurries which contain increased levels of tackifiers/soil binders; usually 10% or more by weight. HMs and SFMs have improved performance compared to a standard hydraulic mulch (SM) because of the additional percentage of tackifier and because of their higher application rates, typically 2,500 – 4,000 pounds per acre. Hydraulic matrices can include a mixture of fibers, for example, a 50/50 blend of paper and wood fiber. In the case of an SFM, the tackifier/soil binder is specified as a polyacrylamide (PAM).

Hydraulic Mulch EC-3

Bonded Fiber Matrix (BFM)

Bonded fiber matrices (BFMs) are hydraulically-applied systems of fibers, adhesives (typically guar based) and chemical cross-links. Upon drying, the slurry forms an erosion-resistant blanket that prevents soil erosion and promotes vegetation establishment. The cross-linked adhesive in the BFM should be biodegradable and should not dissolve or disperse upon re-wetting. BFMs are typically applied at rates from 3,000 to 4,000 lbs/acre based on the manufacturer's recommendation. BFMs should not be applied immediately before, during or immediately after rainfall or if the soil is saturated. Depending on the product, BFMs typically require 12 to 24 hours to dry and become effective.

Mechanically-Bonded Fiber Matrices (MBFM)

Mechanically-bonded fiber matrices (MBFMs) are hydraulically applied systems similar to BFM that use crimped synthetic fibers and PAM and are typically applied to a slope at a higher application rate than a standard BFM.

Hydraulic Compost Matrix (HCM)

Hydraulic compost matrix (HCM) is a field-derived practice whereby finely graded or sifted compost is introduced into the hydraulic mulch slurry. A guar-type tackifier can be added for steeper slope applications as well as any specified seed mixtures. A HCM can help to accelerate seed germination and growth. HCMs are particularly useful as an in-fill for three-dimensional re-vegetation geocomposites, such as turf reinforcement mats (TRM) (see EC-7 Geotextiles and Mats).

Costs

Average installed costs for hydraulic mulch categories are is provided in Table 1, below.

Table 1
HYDRAULIC MULCH BMPs
INSTALLED COSTS

BMP	Installed Cost/Acre
Standard Hydraulic Mulching (SM)	$1,700 - $3,600 per acre
Hydraulic Matrices (HM) and Stabilized Fiber Matrices	
Guar-based	$2,000 - $4,000 per acre
PAM-based	$2,500 - $5,610 per acre
Bonded Fiber Matrix (BFM)	$3,900 - $6,900 per acre
Mechanically Bonded Fiber Matrix (MBFM)	$4,500 - $6,000 per acre
Hydraulic Compost Matrix (HCM)	$3,000 - $3,500 per acre

Source: Caltrans Soil Stabilization BMP Research for Erosion and Sediment Controls, July 2007

Inspection and Maintenance

- Maintain an unbroken, temporary mulched ground cover throughout the period of construction when the soils are not being reworked.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected

Hydraulic Mulch EC-3

weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.
- Compare the number of bags or weight of applied mulch to the area treated to determine actual application rates and compliance with specifications.

References

Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Controlling Erosion of Construction Sites, Agricultural Information #347, U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service – SCS).

Guides for Erosion and Sediment Control in California, USDA Soils Conservation Service, January 1991.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Sedimentation and Erosion Control, An Inventory of Current Practices Draft, US EPA, April 1990.

Soil Erosion by Water, Agriculture Information Bulletin #513, U.S. Department of Agriculture, Soil Conservation Service.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

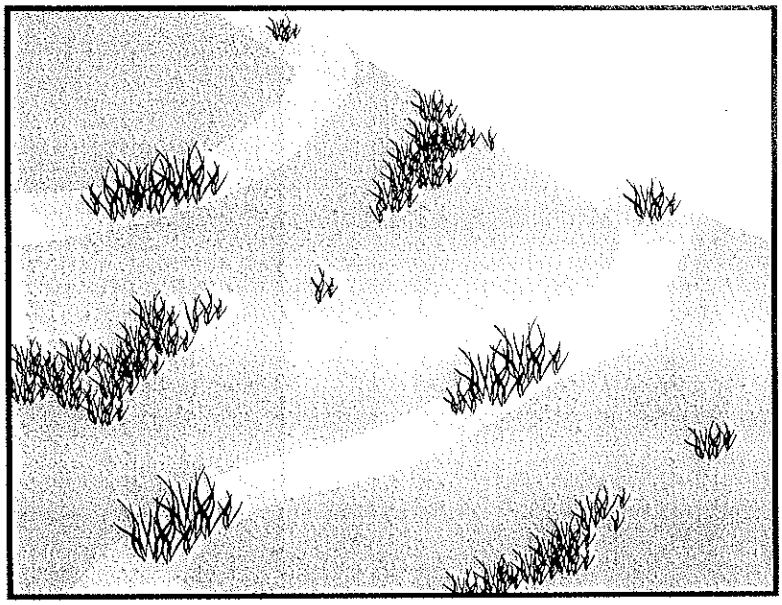
Guidance Document: Soil Stabilization for Temporary Slopes, State of California Department of Transportation (Caltrans), November 1999

Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Hydroseeding

EC-4



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Description and Purpose

Hydroseeding typically consists of applying a mixture of a hydraulic mulch, seed, fertilizer, and stabilizing emulsion with a hydraulic mulcher, to temporarily protect exposed soils from erosion by water and wind. Hydraulic seeding, or hydroseeding, is simply the method by which temporary or permanent seed is applied to the soil surface.

Suitable Applications

Hydroseeding is suitable for disturbed areas requiring temporary protection until permanent stabilization is established, for disturbed areas that will be re-disturbed following an extended period of inactivity, or to apply permanent stabilization measures. Hydroseeding without mulch or other cover (e.g. EC-7, Erosion Control Blanket) is not a stand-alone erosion control BMP and should be combined with additional measures until vegetation establishment.

Typical applications for hydroseeding include:

- Disturbed soil/graded areas where permanent stabilization or continued earthwork is not anticipated prior to seed germination.
- Cleared and graded areas exposed to seasonal rains or temporary irrigation.
- Areas not subject to heavy wear by construction equipment or high traffic.

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch

EC-5 Soil Binders

EC-6 Straw Mulch

EC-7 Geotextiles and Mats

EC-8 Wood Mulching

EC-14 Compost Blanket

EC-16 Non-Vegetative Stabilization

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Hydroseeding EC-4

Limitations

- Availability of hydroseeding equipment may be limited just prior to the rainy season and prior to storms due to high demand.
- Hydraulic seed should be applied with hydraulic mulch or a stand-alone hydroseed application should be followed by one of the following:
  - Straw mulch (see Straw Mulch EC-6)
  - Rolled erosion control products (see Geotextiles and Mats EC-7)
  - Application of Compost Blanket (see Compost Blanket EC-14)

  Hydraulic seed may be used alone only on small flat surfaces when there is sufficient time in the season to ensure adequate vegetation establishment and coverage to provide adequate erosion control.
- Hydraulic seed without mulch does not provide immediate erosion control.
- Temporary seeding may not be appropriate for steep slopes (i.e., slopes readily prone to rill erosion or without sufficient topsoil).
- Temporary seeding may not be appropriate in dry periods without supplemental irrigation.
- Temporary vegetation may have to be removed before permanent vegetation is applied.
- Temporary vegetation may not be appropriate for short term inactivity (i.e. less than 3-6 months).

Implementation

In order to select appropriate hydraulic seed mixtures, an evaluation of site conditions should be performed with respect to:

- Soil conditions
- Site topography and exposure (sun/wind)
- Season and climate
- Vegetation types
- Maintenance requirements
- Sensitive adjacent areas
- Water availability
- Plans for permanent vegetation

The local office of the U.S.D.A. Natural Resources Conservation Service (NRCS) is an excellent source of information on appropriate seed mixes.

The following steps should be followed for implementation:

- Where appropriate or feasible, soil should be prepared to receive the seed by disking or otherwise scarifying (See EC-15, Soil Preparation) the surface to eliminate crust, improve air and water infiltration and create a more favorable environment for germination and growth.

Hydroseeding EC-4

- Avoid use of hydraulic seed in areas where the BMP would be incompatible with future earthwork activities.
- Hydraulic seed can be applied using a multiple step or one step process.
  - In a multiple step process, hydraulic seed is applied first, followed by mulch or a Rolled Erosion Control Product (RECP).
  - In the one step process, hydraulic seed is applied with hydraulic mulch in a hydraulic matrix. When the one step process is used to apply the mixture of fiber, seed, etc., the seed rate should be increased to compensate for all seeds not having direct contact with the soil.
- All hydraulically seeded areas should have mulch, or alternate erosion control cover to keep seeds in place and to moderate soil moisture and temperature until the seeds germinate and grow.
- All seeds should be in conformance with the California State Seed Law of the Department of Agriculture. Each seed bag should be delivered to the site sealed and clearly marked as to species, purity, percent germination, dealer's guarantee, and dates of test. The container should be labeled to clearly reflect the amount of Pure Live Seed (PLS) contained. All legume seed should be pellet inoculated. Inoculant sources should be species specific and should be applied at a rate of 2 lb of inoculant per 100 lb seed.
- Commercial fertilizer should conform to the requirements of the California Food and Agricultural Code, which can be found at http://www.leginfo.ca.gov/.html/fac_table_of_contents.html. Fertilizer should be pelleted or granular form.
- Follow up applications should be made as needed to cover areas of poor coverage or germination/vegetation establishment and to maintain adequate soil protection.
- Avoid over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Costs

Average cost for installation and maintenance may vary from as low as $1,900 per acre for flat slopes and stable soils, to $4,000 per acre for moderate to steep slopes and/or erosive soils. Cost of seed mixtures vary based on types of required vegetation.

BMP	Installed Cost per Acre
Hydraulic Seed	$1,900-$4,000

Source: Caltrans Soil Stabilization BMP Research for Erosion and Sediment Controls, July 2007

Hydroseeding EC-4

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.
- Where seeds fail to germinate, or they germinate and die, the area must be re-seeded, fertilized, and mulched within the planting season, using not less than half the original application rates.
- Irrigation systems, if applicable, should be inspected daily while in use to identify system malfunctions and line breaks. When line breaks are detected, the system must be shut down immediately and breaks repaired before the system is put back into operation.
- Irrigation systems should be inspected for complete coverage and adjusted as needed to maintain complete coverage.

References

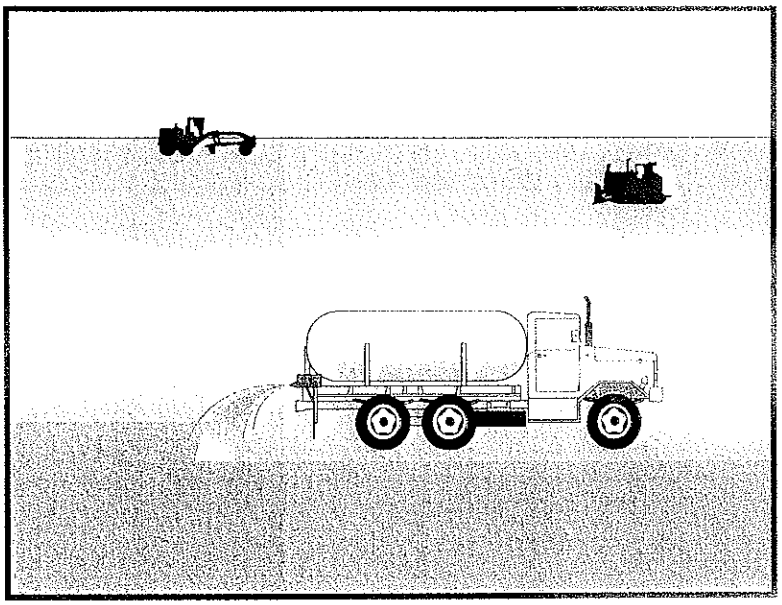
Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Guidance Document: Soil Stabilization for Temporary Slopes, State of California Department of Transportation (Caltrans), November 1999.

Soil Binders

EC-5



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ Primary Category

☒ Secondary Category

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch

EC-4 Hydroseeding

EC-6 Straw Mulch

EC-7 Geotextiles and Mats

EC-8 Wood Mulching

Description and Purpose

Soil binding consists of application and maintenance of a soil stabilizer to exposed soil surfaces. Soil binders are materials applied to the soil surface to temporarily prevent water and wind induced erosion of exposed soils on construction sites.

Suitable Applications

Soil binders are typically applied to disturbed areas requiring temporary protection. Because soil binders, when used as a stand-alone practice, can often be incorporated into the soil, they are a good alternative to mulches in areas where grading activities will soon resume. Soil binders are commonly used in the following areas:

- Rough graded soils that will be inactive for a short period of time
- Soil stockpiles
- Temporary haul roads prior to placement of crushed rock
- Compacted soil road base
- Construction staging, materials storage, and layout areas

Limitations

- Soil binders are temporary in nature and may need reapplication.

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- Soil binders require a minimum curing time until fully effective, as prescribed by the manufacturer. Curing time may be 24 hours or longer. Soil binders may need reapplication after a storm event.
- Soil binders will generally experience spot failures during heavy rainfall events. If runoff penetrates the soil at the top of a slope treated with a soil binder, it is likely that the runoff will undercut the stabilized soil layer and discharge at a point further down slope.
- Plant-material-based soil binders do not generally hold up to pedestrian or vehicular traffic across treated areas as well as polymeric emulsion blends or cementitious-based binders.
- Soil binders may not sufficiently penetrate compacted soils.
- Some soil binders are soil texture specific in terms of their effectiveness. For example, polyacrylamides (PAMs) work very well on silt and clayey soils but their performance decreases dramatically in sandy soils.
- Some soil binders may not perform well with low relative humidity. Under rainy conditions, some agents may become slippery or leach out of the soil.
- Soil binders may not cure if low temperatures occur within 24 hours of application.
- The water quality impacts of some chemical soil binders are relatively unknown and some may have water quality impacts due to their chemical makeup.

Implementation

General Considerations

- Soil binders should conform to local municipality specifications and requirements.
- Site soil types will dictate appropriate soil binders to be used.
- A soil binder must be environmentally benign (non-toxic to plant and animal life), easy to apply, easy to maintain, economical, and should not stain paved or painted surfaces. Soil binders should not pollute stormwater when cured. Obtain a Material Safety Data Sheet (MSDS) from the manufacturer to ensure non-toxicity.
- Stormwater runoff from PAM treated soils should pass through one of the following sediment control BMP prior to discharging to surface waters.
  - When the total drainage area is greater than or equal to 5 acres, PAM treated areas should drain to a sediment basin.
  - Areas less than 5 acres should drain to sediment control BMPs, such as a sediment trap, or a series of check dams. The total number of check dams used should be maximized to achieve the greatest amount of settlement of sediment prior to discharging from the site. Each check dam should be spaced evenly in the drainage channel through which stormwater flows are discharged off site.
- Performance of soil binders depends on temperature, humidity, and traffic across treated areas.

Soil Binders EC-5

- Avoid over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Selecting a Soil Binder

Properties of common soil binders used for erosion control are provided on Table 1 at the end of this Fact Sheet. Use Table 1 to select an appropriate soil binder. Refer to WE-1, Wind Erosion Control, for dust control soil binders.

Factors to consider when selecting a soil binder include the following:

- Suitability to situation - Consider where the soil binder will be applied, if it needs a high resistance to leaching or abrasion, and whether it needs to be compatible with any existing vegetation. Determine the length of time soil stabilization will be needed, and if the soil binder will be placed in an area where it will degrade rapidly. In general, slope steepness is not a discriminating factor for the listed soil binders.
- Soil types and surface materials - Fines and moisture content are key properties of surface materials. Consider a soil binder's ability to penetrate, likelihood of leaching, and ability to form a surface crust on the surface materials.
- Frequency of application - The frequency of application is related to the functional longevity of the binder, which can be affected by subgrade conditions, surface type, climate, and maintenance schedule.
- Frequent applications could lead to high costs. Application frequency may be minimized if the soil binder has good penetration, low evaporation, and good longevity. Consider also that frequent application will require frequent equipment clean up.

Plant-Material-Based (Short Lived, <6 months) Binders

Guar: Guar is a non-toxic, biodegradable, natural galactomannan-based hydrocolloid treated with dispersant agents for easy field mixing. It should be mixed with water at the rate of 11 to 15 lb per 1,000 gallons. Recommended minimum application rates are as follows:

Application Rates for Guar Soil Stabilizer

Slope (H:V):	Flat	4:1	3:1	2:1	1:1
lb/acre:	40	45	50	60	70

Psyllium: Psyllium is composed of the finely ground mucilloid coating of plantago seeds that is applied as a dry powder or in a wet slurry to the surface of the soil. It dries to form a firm but rewettable membrane that binds soil particles together, but permits germination and growth of seed. Psyllium requires 12 to 18 hours drying time. Application rates should be from 80 to 200 lb/acre, with enough water in solution to allow for a uniform slurry flow.

Starch: Starch is non-ionic, cold water soluble (pre-gelatinized) granular cornstarch. The material is mixed with water and applied at the rate of 150 lb/acre. Approximate drying time is 9 to 12 hours.

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Plant-Material-Based (Long Lived, 6-12 months) Binders

Pitch and Rosin Emulsion: Generally, a non-ionic pitch and rosin emulsion has a minimum solids content of 48%. The rosin should be a minimum of 26% of the total solids content. The soil stabilizer should be non-corrosive, water dilutable emulsion that upon application cures to a water insoluble binding and cementing agent. For soil erosion control applications, the emulsion is diluted and should be applied as follows:

- For clayey soil: 5 parts water to 1 part emulsion
- For sandy soil: 10 parts water to 1 part emulsion

Application can be by water truck or hydraulic seeder with the emulsion and product mixture applied at the rate specified by the manufacturer.

Polymeric Emulsion Blend Binders

Acrylic Copolymers and Polymers: Polymeric soil stabilizers should consist of a liquid or solid polymer or copolymer with an acrylic base that contains a minimum of 55% solids. The polymeric compound should be handled and mixed in a manner that will not cause foaming or should contain an anti-foaming agent. The polymeric emulsion should not exceed its shelf life or expiration date; manufacturers should provide the expiration date. Polymeric soil stabilizer should be readily miscible in water, non-injurious to seed or animal life, non-flammable, should provide surface soil stabilization for various soil types without totally inhibiting water infiltration, and should not re-emulsify when cured. The applied compound typically requires 12 to 24 hours drying time. Liquid copolymer should be diluted at a rate of 10 parts water to 1 part polymer and the mixture applied to soil at a rate of 1,175 gallons/acre.

Liquid Polymers of Methacrylates and Acrylates: This material consists of a tackifier/sealer that is a liquid polymer of methacrylates and acrylates. It is an aqueous 100% acrylic emulsion blend of 40% solids by volume that is free from styrene, acetate, vinyl, ethoxylated surfactants or silicates. For soil stabilization applications, it is diluted with water in accordance with the manufacturer's recommendations, and applied with a hydraulic seeder at the rate of 20 gallons/acre. Drying time is 12 to 18 hours after application.

Copolymers of Sodium Acrylates and Acrylamides: These materials are non-toxic, dry powders that are copolymers of sodium acrylate and acrylamide. They are mixed with water and applied to the soil surface for erosion control at rates that are determined by slope gradient:

Slope Gradient (H:V)	lb/acre
Flat to 5:1	3.0 – 5.0
5:1 to 3:1	5.0 – 10.0
2:1 to 1:1	10.0 – 20.0

Poly-Acrylamide (PAM) and Copolymer of Acrylamide: Linear copolymer polyacrylamide for use as a soil binder is packaged as a dry flowable solid, as a liquid. Refer to the manufacturer's recommendation for dilution and application rates as they vary based on liquid or dry form, site conditions and climate.

- Limitations specific to PAM are as follows:

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- Do not use PAM on a slope that flows into a water body without passing through a sediment trap or sediment basin.

- The specific PAM copolymer formulation must be anionic. Cationic PAM should not be used in any application because of known aquatic toxicity problems. Only the highest drinking water grade PAM, certified for compliance with ANSI/NSF Standard 60 for drinking water treatment, should be used for soil applications.

- PAM designated for erosion and sediment control should be "water soluble" or "linear" or "non-cross linked".

- PAM should not be used as a stand-alone BMP to protect against water-based erosion. When combined with mulch, its effectiveness increases dramatically.

Hydro-Colloid Polymers: Hydro-Colloid Polymers are various combinations of dry flowable poly-acrylamides, copolymers and hydro-colloid polymers that are mixed with water and applied to the soil surface at rates of 55 to 60 lb/acre. Drying times are 0 to 4 hours.

Cementitious-Based Binders

Gypsum: This is a formulated gypsum based product that readily mixes with water and mulch to form a thin protective crust on the soil surface. It is composed of high purity gypsum that is ground, calcined and processed into calcium sulfate hemihydrate with a minimum purity of 86%. It is mixed in a hydraulic seeder and applied at rates 4,000 to 12,000 lb/acre. Drying time is 4 to 8 hours.

Applying Soil Binders

After selecting an appropriate soil binder, the untreated soil surface must be prepared before applying the soil binder. The untreated soil surface must contain sufficient moisture to assist the agent in achieving uniform distribution. In general, the following steps should be followed:

- Follow manufacturer's written recommendations for application rates, pre-wetting of application area, and cleaning of equipment after use.

- Prior to application, roughen embankment and fill areas.

- Consider the drying time for the selected soil binder and apply with sufficient time before anticipated rainfall. Soil binders should not be applied during or immediately before rainfall.

- Avoid over spray onto roads, sidewalks, drainage channels, sound walls, existing vegetation, etc.

- Soil binders should not be applied to frozen soil, areas with standing water, under freezing or rainy conditions, or when the temperature is below 40°F during the curing period.

- More than one treatment is often necessary, although the second treatment may be diluted or have a lower application rate.

- Generally, soil binders require a minimum curing time of 24 hours before they are fully effective. Refer to manufacturer's instructions for specific cure time.

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- For liquid agents:
  - Crown or slope ground to avoid ponding.
  - Uniformly pre-wet ground at 0.03 to 0.3 gal/yd² or according to manufacturer's recommendations.
  - Apply solution under pressure. Overlap solution 6 to 12 in.
  - Allow treated area to cure for the time recommended by the manufacturer; typically at least 24 hours.
  - Apply second treatment before first treatment becomes ineffective, using 50% application rate.
  - In low humidities, reactivate chemicals by re-wetting with water at 0.1 to 0.2 gal/yd².

Costs

Costs vary according to the soil stabilizer selected for implementation. The following are approximate installed costs:

Soil Binder	Cost per Acre (2000)[1]	Estimated Cost per Acre (2009)[2]
Plant-Material-Based (Short Lived) Binders	$700-$900	$770-$990
Plant-Material-Based (Long Lived) Binders	$1,200-$1,500	$1,320-$1,650
Polymeric Emulsion Blend Binders	$700 -$1,500	$770-$1,650
Cementitious-Based Binders	$800-$1,200	$880-$1,350

1. Source: Erosion Control Pilot Study Report, Caltrans, June 2000.

2. 2009 costs reflect a 10% escalation over year 2000 costs. Escalation based on informal survey of industry trends. Note: Expected cost increase is offset by competitive economic conditions.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.
- Reapply the selected soil binder as needed to maintain effectiveness.

Soil Binders EC-5

Table 1 Properties of Soil Binders for Erosion Control

Evaluation Criteria	Binder Type			
	Plant Material Based (Short Lived)	**Plant Material Based (Long Lived)**	**Polymeric Emulsion Blends**	**Cementitious-Based Binders**
Relative Cost	Low	Moderate to High	Low to High	Low to Moderate
Resistance to Leaching	High	High	Low to Moderate	Moderate
Resistance to Abrasion	Moderate	Low	Moderate to High	Moderate to High
Longevity	Short to Medium	Medium	Medium to Long	Medium
Minimum Curing Time before Rain	9 to 18 hours	19 to 24 hours	0 to 24 hours	4 to 8 hours
Compatibility with Existing Vegetation	Good	Poor	Poor	Poor
Mode of Degradation	Biodegradable	Biodegradable	Photodegradable/ Chemically Degradable	Photodegradable/ Chemically Degradable
Labor Intensive	No	No	No	No
Specialized Application Equipment	Water Truck or Hydraulic Mulcher	Water Truck or Hydraulic Mulcher	Water Truck or Hydraulic Mulcher	Water Truck or Hydraulic Mulcher
Liquid/Powder	Powder	Liquid	Liquid/Powder	Powder
Surface Crusting	Yes, but dissolves on rewetting	Yes	Yes, but dissolves on rewetting	Yes
Clean Up	Water	Water	Water	Water
Erosion Control Application Rate	Varies (1)	Varies (1)	Varies (1)	4,000 to 12,000 lbs/acre

(1) See Implementation for specific rates.

Soil Binders EC-5

References

Erosion Control Pilot Study Report, State of California Department of Transportation (Caltrans), June 2000.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Sedimentation and Erosion Control, An Inventory of Current Practices Draft, US EPA, April 1990.

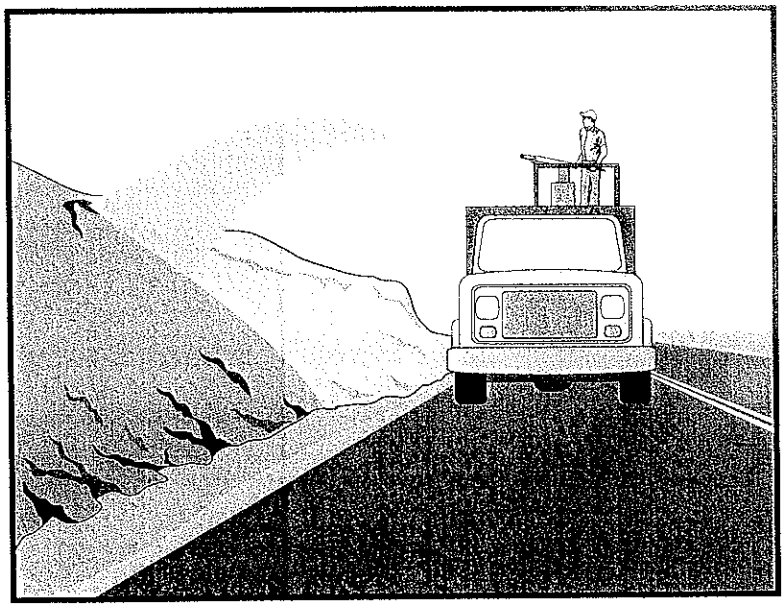
Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Guidance Document: Soil Stabilization for Temporary Slopes, State of California Department of Transportation (Caltrans), November 1999.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Straw Mulch

EC-6



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Legend:

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☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch

EC-4 Hydroseeding

EC-5 Soil Binders

EC-7 Geotextiles and Mats

EC-8 Wood Mulching

EC-14 Compost Blanket

Description and Purpose

Straw mulch consists of placing a uniform layer of straw and incorporating it into the soil with a studded roller or crimper, or anchoring it with a tackifier or stabilizing emulsion. Straw mulch protects the soil surface from the impact of rain drops, preventing soil particles from becoming dislodged.

Suitable Applications

Straw mulch is suitable for disturbed areas requiring temporary protection until permanent stabilization is established. Straw mulch can be specified for the following applications:

- As a stand-alone BMP on disturbed areas until soils can be prepared for permanent vegetation. The longevity of straw mulch is typically less than six months.
- Applied in combination with temporary seeding strategies
- Applied in combination with permanent seeding strategies to enhance plant establishment and final soil stabilization
- Applied around containerized plantings to control erosion until the plants become established to provide permanent stabilization

Limitations

- Availability of straw and straw blowing equipment may be limited just prior to the rainy season and prior to storms due to high demand.

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Straw Mulch EC-6

- There is a potential for introduction of weed seed and unwanted plant material if weed-free agricultural straw is not specified.
- Straw mulch applied by hand is more time intensive and potentially costly.
- Wind may limit application of straw and blow straw into undesired locations.
- May have to be removed prior to permanent seeding or prior to further earthwork.
- "Punching" of straw does not work in sandy soils, necessitating the use of tackifiers.
- Potential fugitive dust control issues associated with straw applications can occur. Application of a stabilizing emulsion or a water stream at the same time straw is being blown can reduce this problem.
- Use of plastic netting should be avoided in areas where wildlife may be entrapped and may be prohibited for projects in certain areas with sensitive wildlife species, especially reptiles and amphibians.

Implementation

- Straw should be derived from weed-free wheat, rice, or barley. Where required by the plans, specifications, permits, or environmental documents, native grass straw should be used.
- Use tackifier to anchor straw mulch to the soil on slopes.
- Crimping, punch roller-type rollers, or track walking may also be used to incorporate straw mulch into the soil on slopes. Track walking can be used where other methods are impractical.
- Avoid placing straw onto roads, sidewalks, drainage channels, sound walls, existing vegetation, etc.
- Straw mulch with tackifier should not be applied during or immediately before rainfall.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Application Procedures

- When using a tackifier to anchor the straw mulch, roughen embankment or fill areas by rolling with a crimping or punching-type roller or by track walking before placing the straw mulch. Track walking should only be used where rolling is impractical.
- Apply straw at a rate of between 3,000 and 4,000 lb/acre, either by machine or by hand distribution and provide 100% ground cover. A lighter application is used for flat surfaces and a heavier application is used for slopes.
- Evenly distribute straw mulch on the soil surface.
- Anchoring straw mulch to the soil surface by "punching" it into the soil mechanically (incorporating) can be used in lieu of a tackifier.

Straw Mulch EC-6

- Methods for holding the straw mulch in place depend upon the slope steepness, accessibility, soil conditions, and longevity.
  - A tackifier acts to glue the straw fibers together and to the soil surface. The tackifier should be selected based on longevity and ability to hold the fibers in place. A tackifier is typically applied at a rate of 125 lb/acre. In windy conditions, the rates are typically 180 lb/acre.
  - On very small areas, a spade or shovel can be used to punch in straw mulch.
  - On slopes with soils that are stable enough and of sufficient gradient to safely support construction equipment without contributing to compaction and instability problems, straw can be "punched" into the ground using a knife blade roller or a straight bladed coulter, known commercially as a "crimper."

Costs

Average annual cost for installation and maintenance is included in the table below. Application by hand is more time intensive and potentially more costly.

BMP	Unit Cost per Acre
Straw mulch, crimped or punched	$2,458-$5,375
Straw mulch with tackifier	$1,823-$4,802

Source: Caltrans Soil Stabilization BMP Research for Erosion and Sediment Controls, July 2007

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.
- The key consideration in inspection and maintenance is that the straw needs to last long enough to achieve erosion control objectives. Straw mulch as a stand-alone BMP is temporary and is not suited for long-term erosion control.
- Maintain an unbroken, temporary mulched ground cover while disturbed soil areas are inactive. Repair any damaged ground cover and re-mulch exposed areas.
- Reapplication of straw mulch and tackifier may be required to maintain effective soil stabilization over disturbed areas and slopes.

Straw Mulch EC-6

References

Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Controlling Erosion of Construction Sites, Agricultural Information Bulletin #347, U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service – SCS).

Guides for Erosion and Sediment Control in California, USDA Soils Conservation Service, January 1991.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Soil Erosion by Water, Agricultural Information Bulletin #513, U.S. Department of Agriculture, Soil Conservation Service.

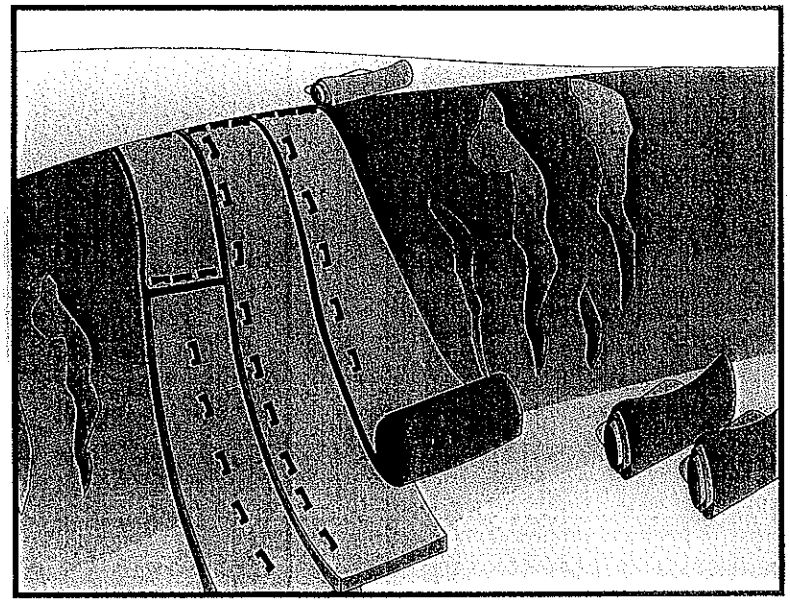
Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Geotextiles and Mats

EC-7



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Potential Alternatives

EC-3 Hydraulic Mulch

EC-4 Hydroseeding

Description and Purpose

Mattings, or Rolled Erosion Control Products (RECPs), can be made of natural or synthetic materials or a combination of the two. RECPs are used to cover the soil surface to reduce erosion from rainfall impact, hold soil in place, and absorb and hold moisture near the soil surface. Additionally, RECPs may be used to stabilize soils until vegetation is established or to reinforce non-woody surface vegetation.

Suitable Applications

RECPs are typically applied on slopes where erosion hazard is high and vegetation will be slow to establish. Mattings are also used on stream banks, swales and other drainage channels where moving water at velocities between 3 ft/s and 6 ft/s are likely to cause scour and wash out new vegetation, and in areas where the soil surface is disturbed and where existing vegetation has been removed. RECPs may also be used when seeding cannot occur (e.g., late season construction and/or the arrival of an early rain season). RECPs should be considered when the soils are fine grained and potentially erosive. RECPs should be considered in the following situations.

- Steep slopes, generally steeper than 3:1 (H:V)
- Slopes where the erosion potential is high
- Slopes and disturbed soils where mulch must be anchored
- Disturbed areas where plants are slow to develop

Geotextiles and Mats EC-7

- Channels with flows exceeding 3.3 ft/s
- Channels to be vegetated
- Stockpiles
- Slopes adjacent to water bodies

Limitations

- RECP installed costs are generally higher than other erosion control BMPs, limiting their use to areas where other BMPs are ineffective (e.g. channels, steep slopes).
- RECPs may delay seed germination, due to reduction in soil temperature.
- RECPs are generally not suitable for excessively rocky sites or areas where the final vegetation will be mowed (since staples and netting can catch in mowers). If a staple or pin cannot be driven into the soil because the underlying soil is too hard or rocky, then an alternative BMP should be selected.
- If used for temporary erosion control, RECPs should be removed and disposed of prior to application of permanent soil stabilization measures.
- The use of plastic should be limited to covering stockpiles or very small graded areas for short periods of time (such as through one imminent storm event) until more environmentally friendly measures, such as seeding and mulching, may be installed.
    - Plastic sheeting is easily vandalized, easily torn, photodegradable, and must be disposed of at a landfill.
    - Plastic sheeting results in 100% runoff, which may cause serious erosion problems in the areas receiving the increased flow.
- RECPs may have limitations based on soil type, slope gradient, or channel flow rate; consult the manufacturer for proper selection.
- Not suitable for areas that have foot traffic (tripping hazard) – e.g., pad areas around buildings under construction.
- RECPs that incorporate a plastic netting (e.g. straw blanket typically uses a plastic netting to hold the straw in place) may not be suitable near known wildlife habitat. Wildlife can become trapped in the plastic netting.
- RECPs may have limitations in extremely windy climates. However, when RECPs are properly trenched at the top and bottom and stapled in accordance with the manufacturer's recommendations, problems with wind can be minimized.

Geotextiles and Mats EC-7

Implementation

Material Selection

- Natural RECPs have been found to be effective where re-vegetation will be provided by re-seeding. The choice of material should be based on the size of area, side slopes, surface conditions such as hardness, moisture, weed growth, and availability of materials.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.
- The following natural and synthetic RECPs are commonly used:

Geotextiles

- Material can be a woven or a non-woven polypropylene fabric with minimum thickness of 0.06 in., minimum width of 12 ft and should have minimum tensile strength of 150 lbs (warp), 80 lbs (fill) in conformance with the requirements in ASTM Designation: D 4632. The permittivity of the fabric should be approximately 0.07 sec^{-1} in conformance with the requirements in ASTM Designation: D4491. The fabric should have an ultraviolet (UV) stability of 70 percent in conformance with the requirements in ASTM designation: D4355. Geotextile blankets must be secured in place with wire staples or sandbags and by keying into tops of slopes to prevent infiltration of surface waters under geotextile. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.
- Geotextiles may be reused if they are suitable for the use intended.

Plastic Covers

- Generally plastic sheeting should only be used as stockpile covering or for very small graded areas for short periods of time (such as through one imminent storm event). If plastic sheeting must be used, choose a plastic that will withstand photo degradation.
- Plastic sheeting should have a minimum thickness of 6 mils, and must be keyed in at the top of slope (when used as a temporary slope protection) and firmly held in place with sandbags or other weights placed no more than 10 ft apart. Seams are typically taped or weighted down their entire length, and there should be at least a 12 in. to 24 in. overlap of all seams. Edges should be embedded a minimum of 6 in. in soil (when used as a temporary slope protection).
- All sheeting must be inspected periodically after installation and after significant rainstorms to check for erosion, undermining, and anchorage failure. Any failures must be repaired immediately. If washout or breakages occur, the material should be re-installed after repairing the damage to the slope.

Erosion Control Blankets/Mats

- Biodegradable RECPs are typically composed of jute fibers, curled wood fibers, straw, coconut fiber, or a combination of these materials. In order for an RECP to be considered 100% biodegradable, the netting, sewing or adhesive system that holds the biodegradable mulch fibers together must also be biodegradable. See typical installation details at the end of this fact sheet.

Geotextiles and Mats EC-7

- **Jute** is a natural fiber that is made into a yarn that is loosely woven into a biodegradable mesh. The performance of jute as a stand-alone RECP is low. Most other RECPs outperform jute as a temporary erosion control product and therefore jute is not commonly used. It is designed to be used in conjunction with vegetation. The material is supplied in rolled strips, which should be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

- **Excelsior** (curled wood fiber) blanket material should consist of machine produced mats of curled wood excelsior with 80 percent of the fiber 6 in. or longer. The excelsior blanket should be of consistent thickness. The wood fiber must be evenly distributed over the entire area of the blanket. The top surface of the blanket should be covered with a photodegradable extruded plastic mesh. The blanket should be smolder resistant without the use of chemical additives and should be non-toxic and non-injurious to plant and animal life. Excelsior blankets should be furnished in rolled strips, a minimum of 48 in. wide, and should have an average weight of 0.8 lb/yd^2, ±10 percent, at the time of manufacture. Excelsior blankets must be secured in place with wire staples. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- **Straw blanket** should be machine produced mats of straw with a lightweight biodegradable netting top layer. The straw should be attached to the netting with biodegradable thread or glue strips. The straw blanket should be of consistent thickness. The straw should be evenly distributed over the entire area of the blanket. Straw blanket should be furnished in rolled strips a minimum of 6.5 ft wide, a minimum of 80 ft long and a minimum of 0.5 lb/yd^2. Straw blankets must be secured in place with wire staples. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- **Wood fiber blanket** is composed of biodegradable fiber mulch with extruded plastic netting held together with adhesives. The material is designed to enhance re-vegetation. The material is furnished in rolled strips, which must be secured to the ground with U-shaped staples or stakes in accordance with manufacturers' recommendations.

- **Coconut fiber blanket** should be a machine produced mat of 100 percent coconut fiber with biodegradable netting on the top and bottom. The coconut fiber should be attached to the netting with biodegradable thread or glue strips. The coconut fiber blanket should be of consistent thickness. The coconut fiber should be evenly distributed over the entire area of the blanket. Coconut fiber blanket should be furnished in rolled strips with a minimum of 6.5 ft wide, a minimum of 80 ft. long and a minimum of 0.5 lb/yd^2. Coconut fiber blankets must be secured in place with wire staples. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- **Coconut fiber mesh** is a thin permeable membrane made from coconut or corn fiber that is spun into a yarn and woven into a biodegradable mat. It is designed to be used in conjunction with vegetation and typically has longevity of several years. The material is supplied in rolled strips, which must be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

Geotextiles and Mats EC-7

- **Straw coconut fiber blanket** should be machine produced mats of 70 percent straw and 30 percent coconut fiber with a biodegradable netting top layer and a biodegradable bottom net. The straw and coconut fiber should be attached to the netting with biodegradable thread or glue strips. The straw coconut fiber blanket should be of consistent thickness. The straw and coconut fiber should be evenly distributed over the entire area of the blanket. Straw coconut fiber blanket should be furnished in rolled strips a minimum of 6.5 ft wide, a minimum of 80 ft long and a minimum of 0.5 lb/yd^2. Straw coconut fiber blankets must be secured in place with wire staples. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- Non-biodegradable RECPs are typically composed of polypropylene, polyethylene, nylon or other synthetic fibers. In some cases, a combination of biodegradable and synthetic fibers is used to construct the RECP. Netting used to hold these fibers together is typically non-biodegradable as well.

  - **Plastic netting** is a lightweight biaxially oriented netting designed for securing loose mulches like straw or paper to soil surfaces to establish vegetation. The netting is photodegradable. The netting is supplied in rolled strips, which must be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Plastic mesh** is an open weave geotextile that is composed of an extruded synthetic fiber woven into a mesh with an opening size of less than ¼ in. It is used with re-vegetation or may be used to secure loose fiber such as straw to the ground. The material is supplied in rolled strips, which must be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Synthetic fiber with netting** is a mat that is composed of durable synthetic fibers treated to resist chemicals and ultraviolet light. The mat is a dense, three dimensional mesh of synthetic (typically polyolefin) fibers stitched between two polypropylene nets. The mats are designed to be re-vegetated and provide a permanent composite system of soil, roots, and geomatrix. The material is furnished in rolled strips, which must be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Bonded synthetic fibers** consist of a three dimensional geomatrix nylon (or other synthetic) matting. Typically it has more than 90 percent open area, which facilitates root growth. It's tough root reinforcing system anchors vegetation and protects against hydraulic lift and shear forces created by high volume discharges. It can be installed over prepared soil, followed by seeding into the mat. Once vegetated, it becomes an invisible composite system of soil, roots, and geomatrix. The material is furnished in rolled strips that must be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Combination synthetic and biodegradable RECPs** consist of biodegradable fibers, such as wood fiber or coconut fiber, with a heavy polypropylene net stitched to the top and a high strength continuous filament geomatrix or net stitched to the bottom. The material is designed to enhance re-vegetation. The material is furnished in rolled strips,

Geotextiles and Mats EC-7

which must be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

Site Preparation

- Proper soil preparation is essential to ensure complete contact of the RECP with the soil. Soil Roughening is not recommended in areas where RECPs will be installed.
- Grade and shape the area of installation.
- Remove all rocks, clods, vegetation or other obstructions so that the installed blankets or mats will have complete, direct contact with the soil.
- Prepare seedbed by loosening 2 to 3 in. of topsoil.

Seeding/Planting

Seed the area before blanket installation for erosion control and re-vegetation. Seeding after mat installation is often specified for turf reinforcement application. When seeding prior to blanket installation, all areas disturbed during blanket installation must be re-seeded. Where soil filling is specified for turf reinforcement mats (TRMs), seed the matting and the entire disturbed area after installation and prior to filling the mat with soil.

Fertilize and seed in accordance with seeding specifications or other types of landscaping plans. The protective matting can be laid over areas where grass has been planted and the seedlings have emerged. Where vines or other ground covers are to be planted, lay the protective matting first and then plant through matting according to design of planting.

Check Slots

Check slots shall be installed as required by the manufacturer.

Laying and Securing Matting

- Before laying the matting, all check slots should be installed and the seedbed should be friable, made free from clods, rocks, and roots. The surface should be compacted and finished according to the requirements of the manufacturer's recommendations.
- Mechanical or manual lay down equipment should be capable of handling full rolls of fabric and laying the fabric smoothly without wrinkles or folds. The equipment should meet the fabric manufacturer's recommendations or equivalent standards.

Anchoring

- U-shaped wire staples, metal geotextile stake pins, or triangular wooden stakes can be used to anchor mats and blankets to the ground surface.
- Wire staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.
- Metal stake pins should be 0.188 in. diameter steel with a 1.5 in. steel washer at the head of the pin, and 8 in. in length.
- Wire staples and metal stakes should be driven flush to the soil surface.

Geotextiles and Mats EC-7

Installation on Slopes

Installation should be in accordance with the manufacturer's recommendations. In general, these will be as follows:

- Begin at the top of the slope and anchor the blanket in a 6 in. deep by 6 in. wide trench. Backfill trench and tamp earth firmly.
- Unroll blanket down slope in the direction of water flow.
- Overlap the edges of adjacent parallel rolls 2 to 3 in. and staple every 3 ft (or greater, per manufacturer's specifications).
- When blankets must be spliced, place blankets end over end (shingle style) with 6 in. overlap. Staple through overlapped area, approximately 12 in. apart.
- Lay blankets loosely and maintain direct contact with the soil. Do not stretch.
- Staple blankets sufficiently to anchor blanket and maintain contact with the soil. Staples should be placed down the center and staggered with the staples placed along the edges. Steep slopes, 1:1 (H:V) to 2:1 (H:V), require a minimum of 2 staples/yd^2. Moderate slopes, 2:1 (H:V) to 3:1 (H:V), require a minimum of 1 ½ staples/yd^2. Check manufacturer's specifications to determine if a higher density staple pattern is required.

Installation in Channels

Installation should be in accordance with the manufacturer's recommendations. In general, these will be as follows:

- Dig initial anchor trench 12 in. deep and 6 in. wide across the channel at the lower end of the project area.
- Excavate intermittent check slots, 6 in. deep and 6 in. wide across the channel at 25 to 30 ft intervals along the channels.
- Cut longitudinal channel anchor trenches 4 in. deep and 4 in. wide along each side of the installation to bury edges of matting, whenever possible extend matting 2 to 3 in. above the crest of the channel side slopes.
- Beginning at the downstream end and in the center of the channel, place the initial end of the first roll in the anchor trench and secure with fastening devices at 12 in. intervals. Note: matting will initially be upside down in anchor trench.
- In the same manner, position adjacent rolls in anchor trench, overlapping the preceding roll a minimum of 3 in.
- Secure these initial ends of mats with anchors at 12 in. intervals, backfill and compact soil.
- Unroll center strip of matting upstream. Stop at next check slot or terminal anchor trench. Unroll adjacent mats upstream in similar fashion, maintaining a 3 in. overlap.

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- Fold and secure all rolls of matting snugly into all transverse check slots. Lay mat in the bottom of the slot then fold back against itself. Anchor through both layers of mat at 12 in. intervals, then backfill and compact soil. Continue rolling all mat widths upstream to the next check slot or terminal anchor trench.
- Alternate method for non-critical installations: Place two rows of anchors on 6 in. centers at 25 to 30 ft. intervals in lieu of excavated check slots.
- Staple shingled lap spliced ends a minimum of 12 in. apart on 12 in. intervals.
- Place edges of outside mats in previously excavated longitudinal slots; anchor using prescribed staple pattern, backfill, and compact soil.
- Anchor, fill, and compact upstream end of mat in a 12 in. by 6 in. terminal trench.
- Secure mat to ground surface using U-shaped wire staples, geotextile pins, or wooden stakes.
- Seed and fill turf reinforcement matting with soil, if specified.

Soil Filling (if specified for turf reinforcement mat (TRM))

Installation should be in accordance with the manufacturer's recommendations. Typical installation guidelines are as follows:

- After seeding, spread and lightly rake ½-3/4 inches of fine topsoil into the TRM apertures to completely fill TRM thickness. Use backside of rake or other flat implement.
- Alternatively, if allowed by product specifications, spread topsoil using lightweight loader, backhoe, or other power equipment. Avoid sharp turns with equipment.
- Always consult the manufacturer's recommendations for installation.
- Do not drive tracked or heavy equipment over mat.
- Avoid any traffic over matting if loose or wet soil conditions exist.
- Use shovels, rakes, or brooms for fine grading and touch up.
- Smooth out soil filling just exposing top netting of mat.

Temporary Soil Stabilization Removal

- Temporary soil stabilization removed from the site of the work must be disposed of if necessary.

Costs

Installed costs can be relatively high compared to other BMPs. Approximate costs for installed materials are shown below:

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Rolled Erosion Control Products		Installed Cost per Acre (2000)[1]	Estimated Cost per Acre (2009)[2]
Biodegradable	Jute Mesh	$6,000-$7,000	$6,600-$7,700
	Curled Wood Fiber	$8,000-$10,500	$8,800-$11,050
	Straw	$8,000-$10,500	$8,800-$11,050
	Wood Fiber	$8,000-$10,500	$8,800-$11,050
	Coconut Fiber	$13,000-$14,000	$14,300-$15,400
	Coconut Fiber Mesh	$30,000-$33,000	$33,000-$36,300
	Straw Coconut Fiber	$10,000-$12,000	$11,000-$13,200
Non-Biodegradable	Plastic Netting	$2,000-$2,200	$2,200-$2,220
	Plastic Mesh	$3,000-$3,500	$3,300-$3,850
	Synthetic Fiber with Netting	$34,000-$40,000	$37,400-$44,000
	Bonded Synthetic Fibers	$45,000-$55,000	$49,500-$60,500
	Combination with Biodegradable	$30,000-$36,000	$33,000-$39,600

1. Source: Erosion Control Pilot Study Report, Caltrans, June 2000.
2. 2009 costs reflect a 10% escalation over year 2000 costs. Escalation based on informal survey of industry trends. Note: Expected cost increase is offset by competitive economic conditions.

Inspection and Maintenance

- RECPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident shall be repaired and BMPs reapplied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require reapplication of BMPs.
- If washout or breakage occurs, re-install the material after repairing the damage to the slope or channel.
- Make sure matting is uniformly in contact with the soil.
- Check that all the lap joints are secure.
- Check that staples are flush with the ground.

References

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005

Erosion Control Pilot Study Report, State of California Department of Transportation (Caltrans), June 2000.

Guides for Erosion and Sediment Controls in California, USDA Soils Conservation Service, January 1991.

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National Management Measures to Control Nonpoint Source Pollution from Urban Areas, United States Environmental Protection Agency, 2002.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

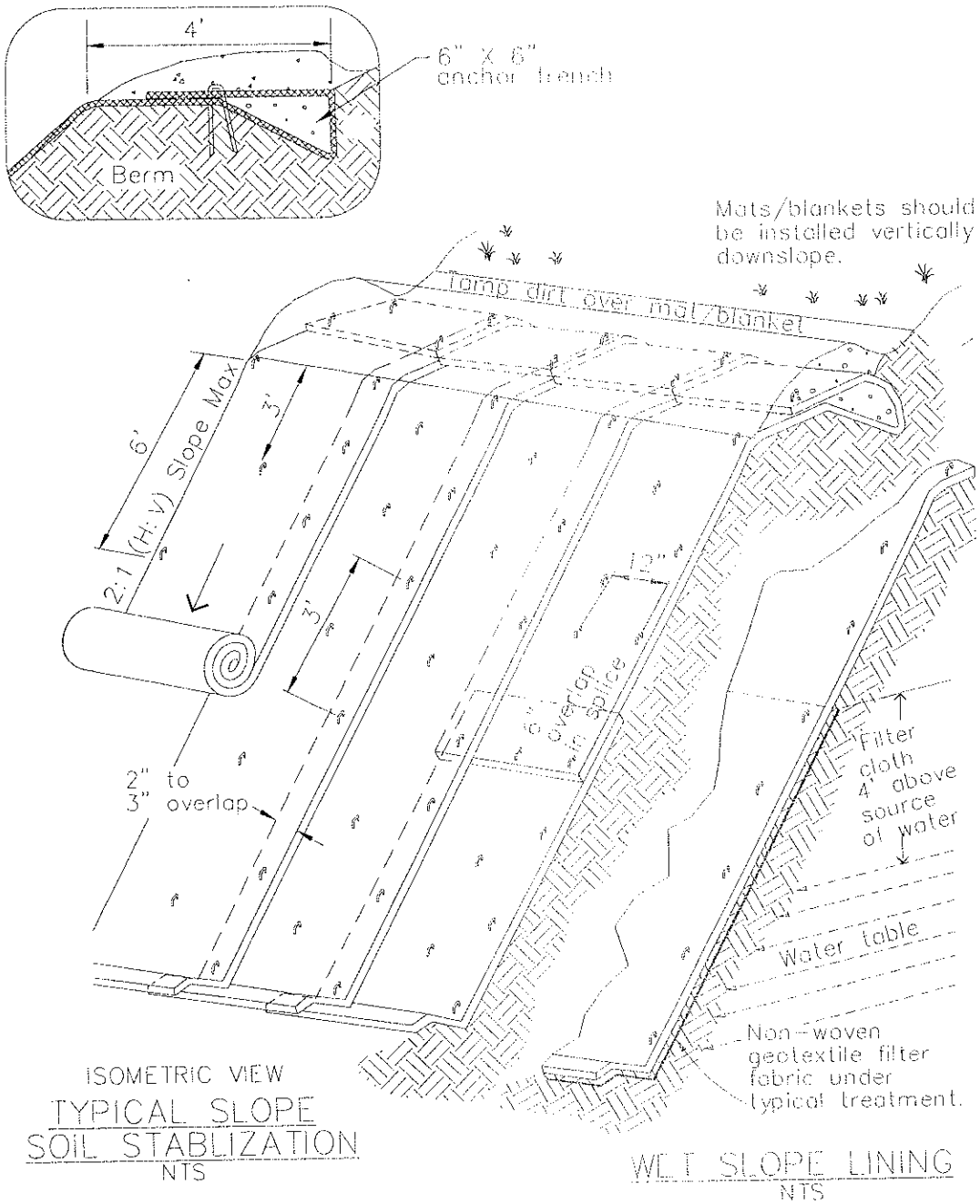
Guidance Document: Soil Stabilization for Temporary Slopes, State of California Department of Transportation (Caltrans), November 1999.

Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Water Quality Management Plan for The Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Geotextiles and Mats

EC-7



ISOMETRIC VIEW

TYPICAL SLOPE
SOIL STABLIZATION

NTS

WET SLOPE LINING

NTS

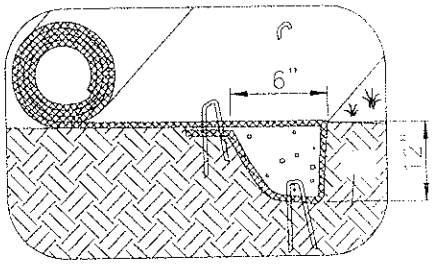
NOTES:

1. Slope surface shall be free of rocks, clods, sticks and grass. Mats/blankets shall have good soil contact.
2. Lay blankets loosely and stake or staple to maintain direct contact with the soil. Do not stretch.
3. Install per manufacturer's recommendations

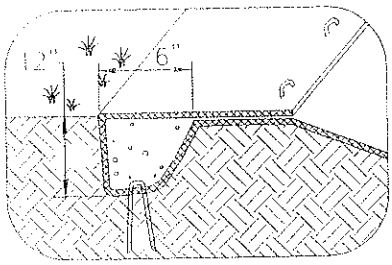
TYPICAL INSTALLATION DETAIL

Geotextiles and Mats

EC-7



INITIAL CHANNEL ANCHOR TRENCH
NTS



TERMINAL SLOPE AND CHANNEL ANCHOR TRENCH
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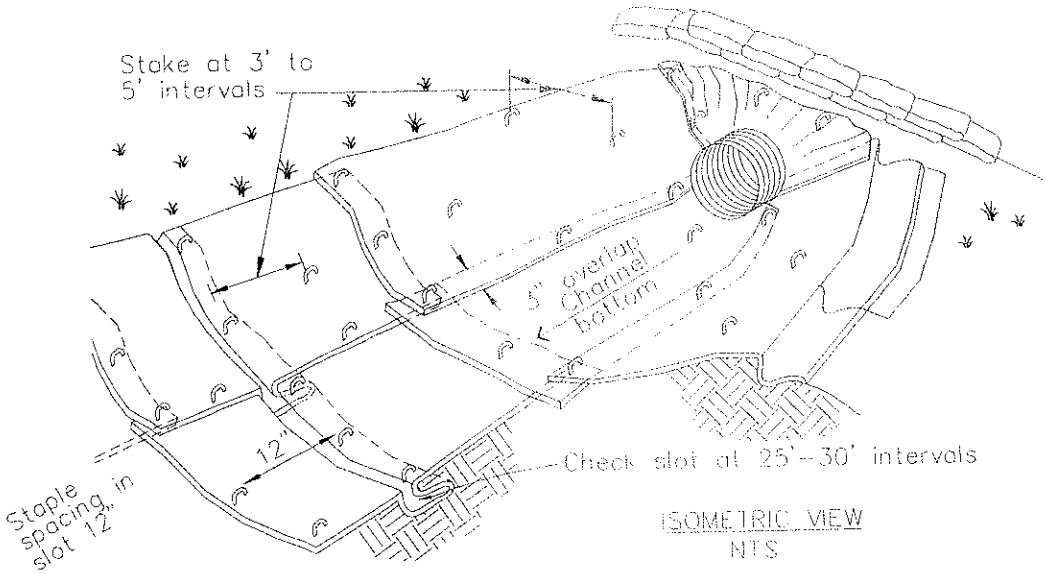
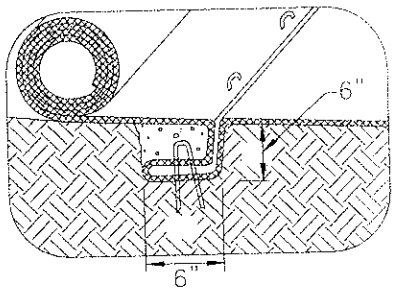
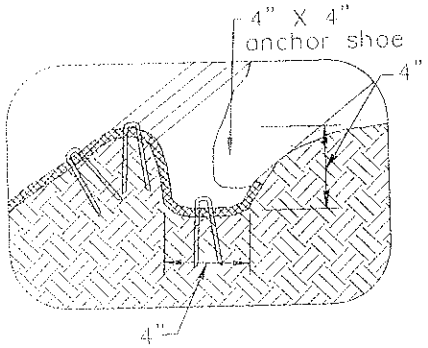


ISOMETRIC VIEW
NTS



INTERMITTENT CHECK SLOT
NTS



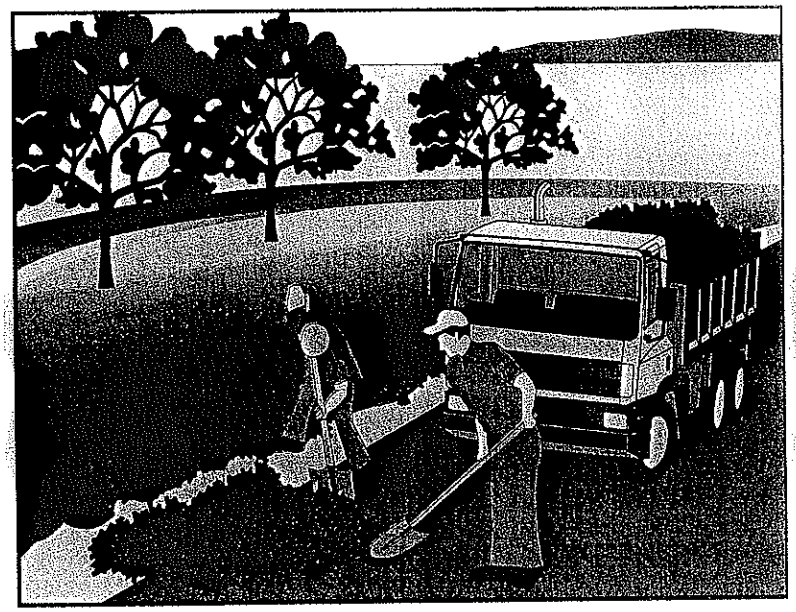
LONGITUDINAL ANCHOR TRENCH
NTS

NOTES:
1. Check slots to be constructed per manufacturers specifications.
2. Staking or stapling layout per manufacturers specifications.
3. Install per manufacturer's recommendations

TYPICAL INSTALLATION DETAIL

Wood Mulching

EC-8



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch

EC-4 Hydroseeding

EC-5 Soil Binders

EC-6 Straw Mulch

EC-7 Geotextiles and Mats

Description and Purpose

Wood mulching consists of applying a mixture of shredded wood mulch, bark or compost to disturbed soils. The primary function of wood mulching is to reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff.

Suitable Applications

Wood mulching is suitable for disturbed soil areas requiring temporary protection until permanent stabilization is established.

Limitations

- Not suitable for use on slopes steeper than 3:1 (H:V). Best suited to flat areas or gentle slopes or 5:1 (H:V) or flatter.
- Wood mulch and compost may introduce unwanted species.
- Not suitable for areas exposed to concentrated flows.
- May need to be removed prior to further earthwork.

Implementation

Mulch Selection

There are many types of mulches. Selection of the appropriate type of mulch should be based on the type of application, site conditions, and compatibility with planned or future uses.

Application Procedures

Prior to application, after existing vegetation has been

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Wood Mulching EC-8

removed, roughen embankment and fill areas by rolling with a device such as a punching type roller or by track walking. The construction application procedures for mulches vary significantly depending upon the type of mulching method specified. Two methods are highlighted here:

- Green Material: This type of mulch is produced by the recycling of vegetation trimmings such as grass, shredded shrubs, and trees. Methods of application are generally by hand although pneumatic methods are available.
  - Green material can be used as a temporary ground cover with or without seeding.
  - The green material should be evenly distributed on site to a depth of not more than 2 in.
- Shredded Wood: Suitable for ground cover in ornamental or revegetated plantings.
  - Shredded wood/bark is conditionally suitable. See note under limitations.
  - Distribute by hand or use pneumatic methods.
  - Evenly distribute the mulch across the soil surface to a depth of 2 to 3 in.
- Avoid mulch placement onto roads, sidewalks, drainage channels, existing vegetation, etc.

Costs

Average annual cost for installation and maintenance (3-4 months useful life) is around $4,000 per acre, but cost can increase if the source is not close to the project site.

Inspection and Maintenance

- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident shall be repaired and BMPs reapplied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require reapplication of BMPs.
- Regardless of the mulching technique selected, the key consideration in inspection and maintenance is that the mulch needs to last long enough to achieve erosion control objectives. If the mulch is applied as a stand alone erosion control method over disturbed areas (without seed), it should last the length of time the site will remain barren or until final re-grading and revegetation.
- Where vegetation is not the ultimate cover, such as ornamental and landscape applications of bark or wood chips, inspection and maintenance should focus on longevity and integrity of the mulch.
- Reapply mulch when bare earth becomes visible.

Wood Mulching EC-8

References

Controlling Erosion of Construction Sites Agriculture Information Bulletin #347, U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service – SCS).

Guides for Erosion and Sediment Control in California, USDA Soils Conservation Service, January 1991.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April 1992.

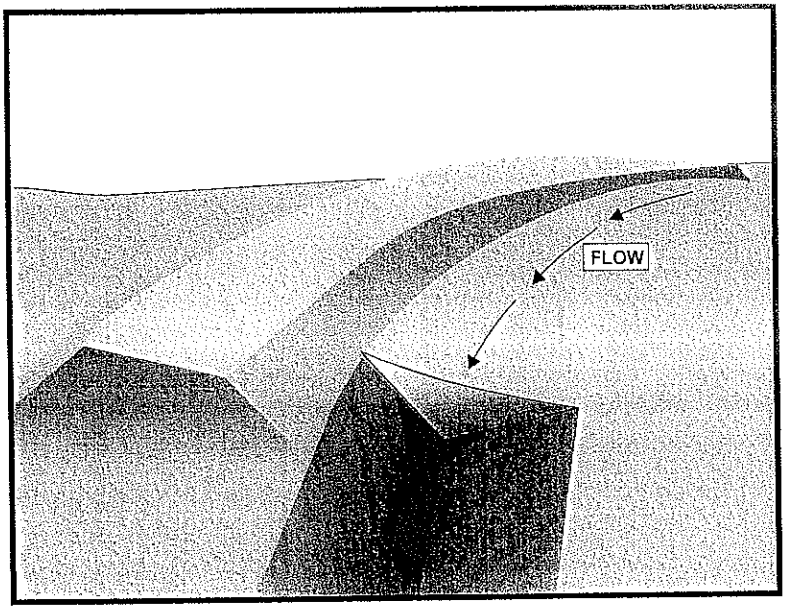
Sedimentation and Erosion Control, An Inventory of Current Practices Draft, U.S. EPA, April 1990.

Soil Erosion by Water Agricultural Information Bulletin #513, U.S. Department of Agriculture, Soil Conservation Service.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Earth Dikes and Drainage Swales EC-9



Categories

EC	Erosion Control	☑
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WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

An earth dike is a temporary berm or ridge of compacted soil used to divert runoff or channel water to a desired location. A drainage swale is a shaped and sloped depression in the soil surface used to convey runoff to a desired location. Earth dikes and drainage swales are used to divert off site runoff around the construction site, divert runoff from stabilized areas and disturbed areas, and direct runoff into sediment basins or traps.

Suitable Applications

Earth dikes and drainage swales are suitable for use, individually or together, where runoff needs to be diverted from one area and conveyed to another.

- Earth dikes and drainage swales may be used:
  - To convey surface runoff down sloping land
  - To intercept and divert runoff to avoid sheet flow over sloped surfaces
  - To divert and direct runoff towards a stabilized watercourse, drainage pipe or channel
  - To intercept runoff from paved surfaces
  - Below steep grades where runoff begins to concentrate
  - Along roadways and facility improvements subject to flood drainage

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Earth Dikes and Drainage Swales EC-9

- At the top of slopes to divert runon from adjacent or undisturbed slopes
- At bottom and mid slope locations to intercept sheet flow and convey concentrated flows
- Divert sediment laden runoff into sediment basins or traps

Limitations

Dikes should not be used for drainage areas greater than 10 acres or along slopes greater than 10 percent. For larger areas more permanent drainage structures should be built. All drainage structures should be built in compliance with local municipal requirements.

- Earth dikes may create more disturbed area on site and become barriers to construction equipment.
- Earth dikes must be stabilized immediately, which adds cost and maintenance concerns.
- Diverted stormwater may cause downstream flood damage.
- Dikes should not be constructed of soils that may be easily eroded.
- Regrading the site to remove the dike may add additional cost.
- Temporary drains and swales or any other diversion of runoff should not adversely impact upstream or downstream properties.
- Temporary drains and swales must conform to local floodplain management requirements.
- Earth dikes/drainage swales are not suitable as sediment trapping devices.
- It may be necessary to use other soil stabilization and sediment controls such as check dams, plastics, and blankets, to prevent scour and erosion in newly graded dikes, swales, and ditches.
- Sediment accumulation, scour depressions, and/or persistent non-stormwater discharges can result in areas of standing water suitable for mosquito production in drainage swales.

Implementation

The temporary earth dike is a berm or ridge of compacted soil, located in such a manner as to divert stormwater to a sediment trapping device or a stabilized outlet, thereby reducing the potential for erosion and offsite sedimentation. Earth dikes can also be used to divert runoff from off site and from undisturbed areas away from disturbed areas and to divert sheet flows away from unprotected slopes.

An earth dike does not itself control erosion or remove sediment from runoff. A dike prevents erosion by directing runoff to an erosion control device such as a sediment trap or directing runoff away from an erodible area. Temporary diversion dikes should not adversely impact adjacent properties and must conform to local floodplain management regulations, and should not be used in areas with slopes steeper than 10%.

Slopes that are formed during cut and fill operations should be protected from erosion by runoff. A combination of a temporary drainage swale and an earth dike at the top of a slope can divert

Earth Dikes and Drainage Swales EC-9

runoff to a location where it can be brought to the bottom of the slope (see EC-11, Slope Drains). A combination dike and swale is easily constructed by a single pass of a bulldozer or grader and compacted by a second pass of the tracks or wheels over the ridge. Diversion structures should be installed when the site is initially graded and remain in place until post construction BMPs are installed and the slopes are stabilized.

Diversion practices concentrate surface runoff, increasing its velocity and erosive force. Thus, the flow out of the drain or swale must be directed onto a stabilized area or into a grade stabilization structure. If significant erosion will occur, a swale should be stabilized using vegetation, chemical treatment, rock rip-rap, matting, or other physical means of stabilization. Any drain or swale that conveys sediment laden runoff must be diverted into a sediment basin or trap before it is discharged from the site.

General

- Care must be applied to correctly size and locate earth dikes, drainage swales. Excessively steep, unlined dikes, and swales are subject to erosion and gully formation.
- Conveyances should be stabilized.
- Use a lined ditch for high flow velocities.
- Select flow velocity based on careful evaluation of the risks due to erosion of the measure, soil types, overtopping, flow backups, washout, and drainage flow patterns for each project site.
- Compact any fills to prevent unequal settlement.
- Do not divert runoff onto other property without securing written authorization from the property owner.
- When possible, install and utilize permanent dikes, swales, and ditches early in the construction process.
- Provide stabilized outlets.

Earth Dikes

Temporary earth dikes are a practical, inexpensive BMP used to divert stormwater runoff. Temporary diversion dikes should be installed in the following manner:

- All dikes should be compacted by earth moving equipment.
- All dikes should have positive drainage to an outlet.
- All dikes should have 2:1 or flatter side slopes, 18 in. minimum height, and a minimum top width of 24 in. Wide top widths and flat slopes are usually needed at crossings for construction traffic.
- The outlet from the earth dike must function with a minimum of erosion. Runoff should be conveyed to a sediment trapping device such as a Sediment Trap (SE-3) or Sediment Basin

Earth Dikes and Drainage Swales EC-9

(SE-2) when either the dike channel or the drainage area above the dike are not adequately stabilized.

- Temporary stabilization may be achieved using seed and mulching for slopes less than 5% and either rip-rap or sod for slopes in excess of 5%. In either case, stabilization of the earth dike should be completed immediately after construction or prior to the first rain.
- If riprap is used to stabilize the channel formed along the toe of the dike, the following typical specifications apply:

Channel Grade	Riprap Stabilization
0.5-1.0%	4 in. Rock
1.1-2.0%	6 in. Rock
2.1-4.0%	8 in. Rock
4.1-5.0%	8 in. -12 in. Riprap

- The stone riprap, recycled concrete, etc. used for stabilization should be pressed into the soil with construction equipment.
- Filter cloth may be used to cover dikes in use for long periods.
- Construction activity on the earth dike should be kept to a minimum.

Drainage Swales

Drainage swales are only effective if they are properly installed. Swales are more effective than dikes because they tend to be more stable. The combination of a swale with a dike on the downhill side is the most cost effective diversion.

Standard engineering design criteria for small open channel and closed conveyance systems should be used (see the local drainage design manual). Unless local drainage design criteria state otherwise, drainage swales should be designed as follows:

- No more than 5 acres may drain to a temporary drainage swale.
- Place drainage swales above or below, not on, a cut or fill slope.
- Swale bottom width should be at least 2 ft
- Depth of the swale should be at least 18 in.
- Side slopes should be 2:1 or flatter.
- Drainage or swales should be laid at a grade of at least 1 percent, but not more than 15 percent.
- The swale must not be overtopped by the peak discharge from a 10-year storm, irrespective of the design criteria stated above.

Earth Dikes and Drainage Swales EC-9

- Remove all trees, stumps, obstructions, and other objectionable material from the swale when it is built.
- Compact any fill material along the path of the swale.
- Stabilize all swales immediately. Seed and mulch swales at a slope of less than 5 percent, and use rip-rap or sod for swales with a slope between 5 and 15 percent. For temporary swales, geotextiles and mats (EC-7) may provide immediate stabilization.
- Irrigation may be required to establish sufficient vegetation to prevent erosion.
- Do not operate construction vehicles across a swale unless a stabilized crossing is provided.
- Permanent drainage facilities must be designed by a professional engineer (see the local drainage design criteria for proper design).
- At a minimum, the drainage swale should conform to predevelopment drainage patterns and capacities.
- Construct the drainage swale with a positive grade to a stabilized outlet.
- Provide erosion protection or energy dissipation measures if the flow out of the drainage swale can reach an erosive velocity.

Costs

- Cost ranges from $15 to $55 per ft for both earthwork and stabilization and depends on availability of material, site location, and access.
- Small dikes: $2.50 - $6.50/linear ft; Large dikes: $2.50/yd^3.
- The cost of a drainage swale increases with drainage area and slope. Typical swales for controlling internal erosion are inexpensive, as they are quickly formed during routine earthwork.

Inspection and Maintenance

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Inspect ditches and berms for washouts. Replace lost riprap, damaged linings or soil stabilizers as needed.
- Inspect channel linings, embankments, and beds of ditches and berms for erosion and accumulation of debris and sediment. Remove debris and sediment and repair linings and embankments as needed.
- Temporary conveyances should be completely removed as soon as the surrounding drainage area has been stabilized or at the completion of construction

Earth Dikes and Drainage Swales EC-9

References

Erosion and Sediment Control Handbook, S.J. Goldman, K. Jackson, T.A. Bursetynsky, P.E., McGraw Hill Book Company, 1986.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Metzger, M.E. 2004. Managing mosquitoes in stormwater treatment devices. University of California Division of Agriculture and Natural Resources, Publication 8125. On-line: http://anrcatalog.ucdavis.edu/pdf/8125.pdf

National Association of Home Builders (NAHB). Stormwater Runoff & Nonpoint Source Pollution Control Guide for Builders and Developers. National Association of Home Builders, Washington, D.C., 1995

National Management Measures to Control Nonpoint Source Pollution from Urban Areas, United States Environmental Protection Agency, 2002.

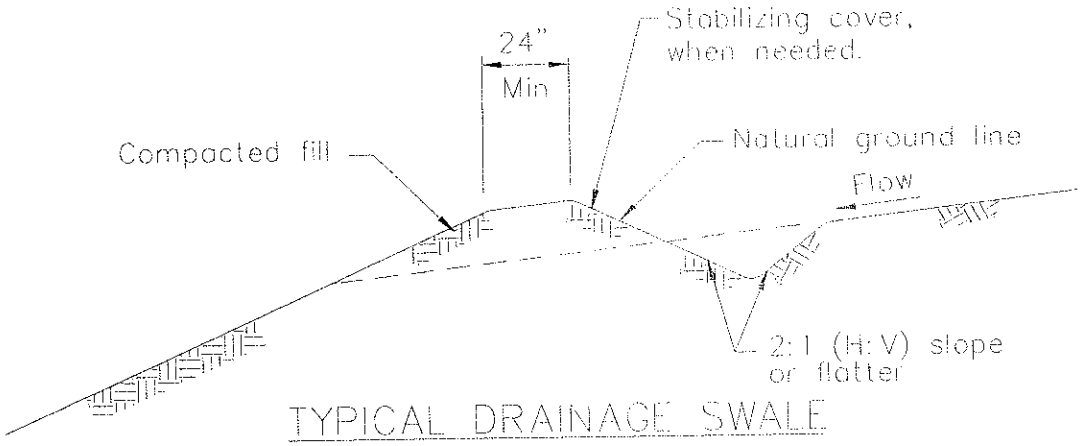
Southeastern Wisconsin Regional Planning Commission (SWRPC). Costs of Urban Nonpoint Source Water Pollution Control Measures. Technical Report No. 31. Southeastern Wisconsin Regional Planning Commission, Waukesha, WI. 1991

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

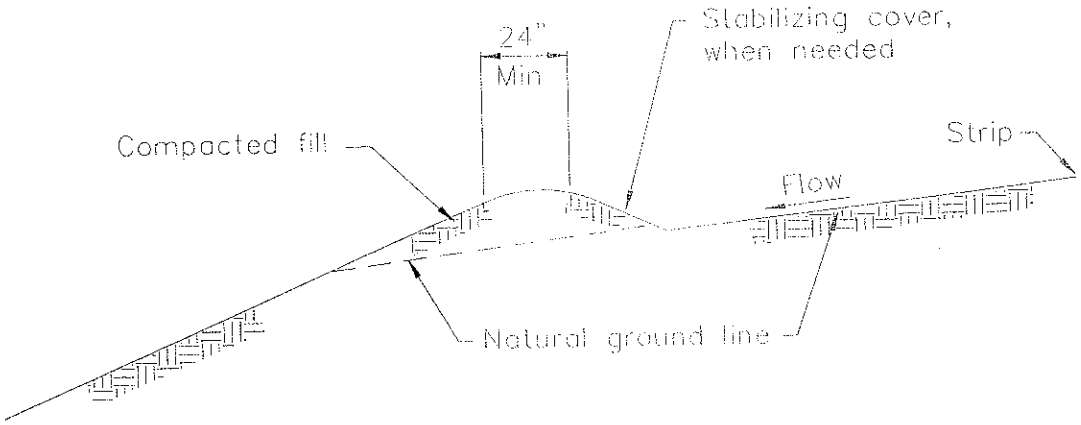
Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Earth Dikes and Drainage Swales EC-9



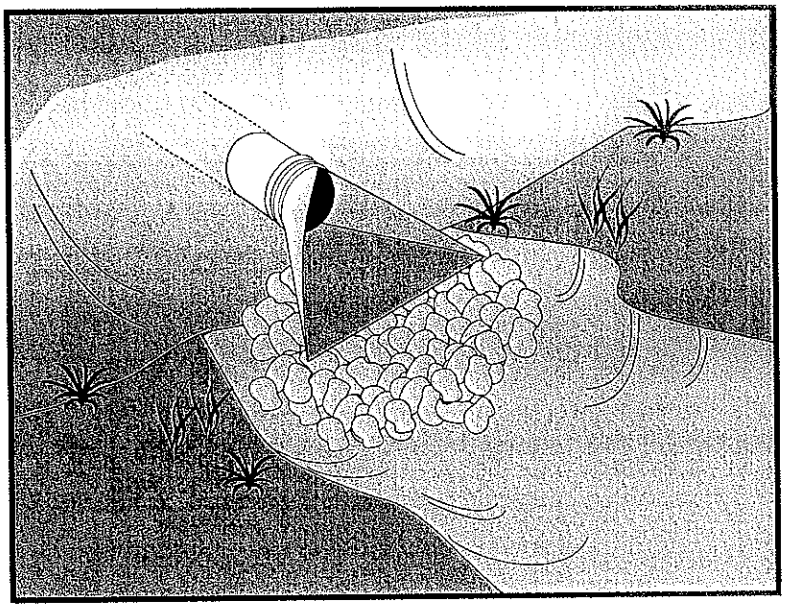
TYPICAL DRAINAGE SWALE
NOT TO SCALE

NOTES:
1. Stabilize inlet, outlets and slopes.
2. Properly compact the subgrade.



TYPICAL EARTH DIKE
NOT TO SCALE

Velocity Dissipation Devices EC-10



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Outlet protection is a physical device composed of rock, grouted riprap, or concrete rubble, which is placed at the outlet of a pipe or channel to prevent scour of the soil caused by concentrated, high velocity flows.

Suitable Applications

Whenever discharge velocities and energies at the outlets of culverts, conduits, or channels are sufficient to erode the next downstream reach. This includes temporary diversion structures to divert runon during construction.

- These devices may be used at the following locations:
  - Outlets of pipes, drains, culverts, slope drains, diversion ditches, swales, conduits, or channels.
  - Outlets located at the bottom of mild to steep slopes.
  - Discharge outlets that carry continuous flows of water.
  - Outlets subject to short, intense flows of water, such as flash floods.
  - Points where lined conveyances discharge to unlined conveyances

Limitations

- Large storms or high flows can wash away the rock outlet protection and leave the area susceptible to erosion.

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Velocity Dissipation Devices EC-10

- Sediment captured by the rock outlet protection may be difficult to remove without removing the rock.
- Outlet protection may negatively impact the channel habitat.
- Grouted riprap may break up in areas of freeze and thaw.
- If there is not adequate drainage, and water builds up behind grouted riprap, it may cause the grouted riprap to break up due to the resulting hydrostatic pressure.
- Sediment accumulation, scour depressions, and/or persistent non-stormwater discharges can result in areas of standing water suitable for mosquito production in velocity dissipation devices.

Implementation

General

Outlet protection is needed where discharge velocities and energies at the outlets of culverts, conduits or channels are sufficient to erode the immediate downstream reach. This practice protects the outlet from developing small eroded pools (plange pools), and protects against gully erosion resulting from scouring at a culvert mouth.

Design and Layout

As with most channel design projects, depth of flow, roughness, gradient, side slopes, discharge rate, and velocity should be considered in the outlet design. Compliance to local and state regulations should also be considered while working in environmentally sensitive streambeds. General recommendations for rock size and length of outlet protection mat are shown in the rock outlet protection figure in this BMP and should be considered minimums. The apron length and rock size gradation are determined using a combination of the discharge pipe diameter and estimate discharge rate: Select the longest apron length and largest rock size suggested by the pipe size and discharge rate. Where flows are conveyed in open channels such as ditches and swales, use the estimated discharge rate for selecting the apron length and rock size. Flows should be same as the culvert or channel design flow but never the less than the peak 5 year flow for temporary structures planned for one rainy season, or the 10 year peak flow for temporary structures planned for two or three rainy seasons.

- There are many types of energy dissipaters, with rock being the one that is represented in the attached figure.
- Best results are obtained when sound, durable, and angular rock is used.
- Install riprap, grouted riprap, or concrete apron at selected outlet. Riprap aprons are best suited for temporary use during construction. Grouted or wired tied rock riprap can minimize maintenance requirements.
- Rock outlet protection is usually less expensive and easier to install than concrete aprons or energy dissipaters. It also serves to trap sediment and reduce flow velocities.
- Carefully place riprap to avoid damaging the filter fabric.

Velocity Dissipation Devices EC-10

- Stone 4 in. to 6 in. may be carefully dumped onto filter fabric from a height not to exceed 12 in.
- Stone 8 in. to 12 in. must be hand placed onto filter fabric, or the filter fabric may be covered with 4 in. of gravel and the 8 in. to 12 in. rock may be dumped from a height not to exceed 16 in.
- Stone greater than 12 in. shall only be dumped onto filter fabric protected with a layer of gravel with a thickness equal to one half the D_{50} rock size, and the dump height limited to twice the depth of the gravel protection layer thickness.

- For proper operation of apron: Align apron with receiving stream and keep straight throughout its length. If a curve is needed to fit site conditions, place it in upper section of apron.
- Outlets on slopes steeper than 10 percent should have additional protection.

Costs

Costs are low if material is readily available. If material is imported, costs will be higher. Average installed cost is $150 per device.

Inspection and Maintenance

- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect BMPs subjected to non-stormwater discharges daily while non-stormwater discharges occur. Minimize areas of standing water by removing sediment blockages and filling scour depressions.
- Inspect apron for displacement of the riprap and damage to the underlying fabric. Repair fabric and replace riprap that has washed away. If riprap continues to wash away, consider using larger material.
- Inspect for scour beneath the riprap and around the outlet. Repair damage to slopes or underlying filter fabric immediately.
- Temporary devices should be completely removed as soon as the surrounding drainage area has been stabilized or at the completion of construction.

References

County of Sacramento Improvement Standards, Sacramento County, May 1989.

Erosion and Sediment Control Handbook, S.J. Goldman, K. Jackson, T.A. Bursztynsky, P.E., McGraw Hill Book Company, 1986.

Handbook of Steel Drainage & Highway Construction, American Iron and Steel Institute, 1983.

Velocity Dissipation Devices EC-10

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Metzger, M.E. 2004. Managing mosquitoes in stormwater treatment devices. University of California Division of Agriculture and Natural Resources, Publication 8125. On-line: http://anrcatalog.ucdavis.edu/pdf/8125.pdf

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Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

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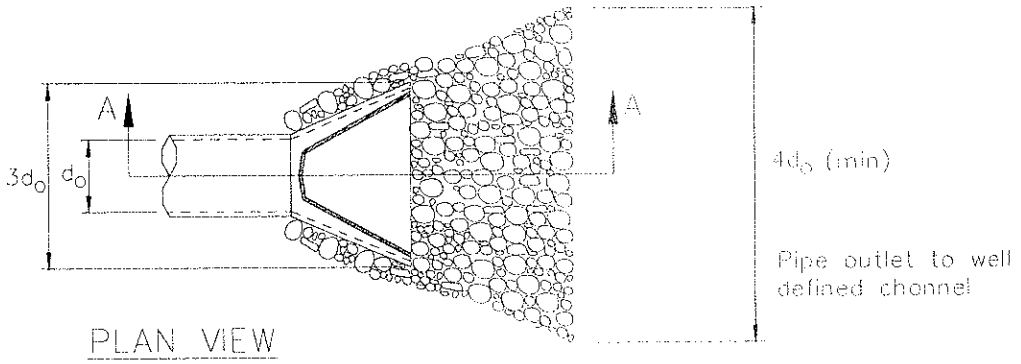
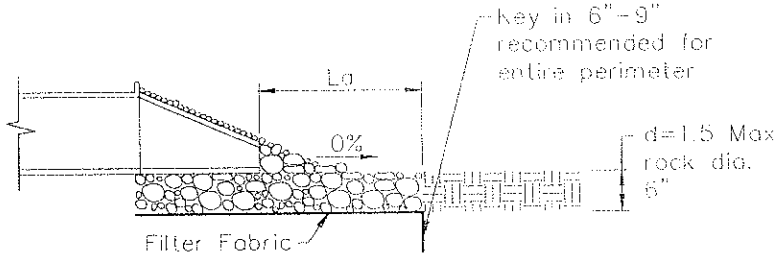
Velocity Dissipation Devices EC-10



PLAN VIEW

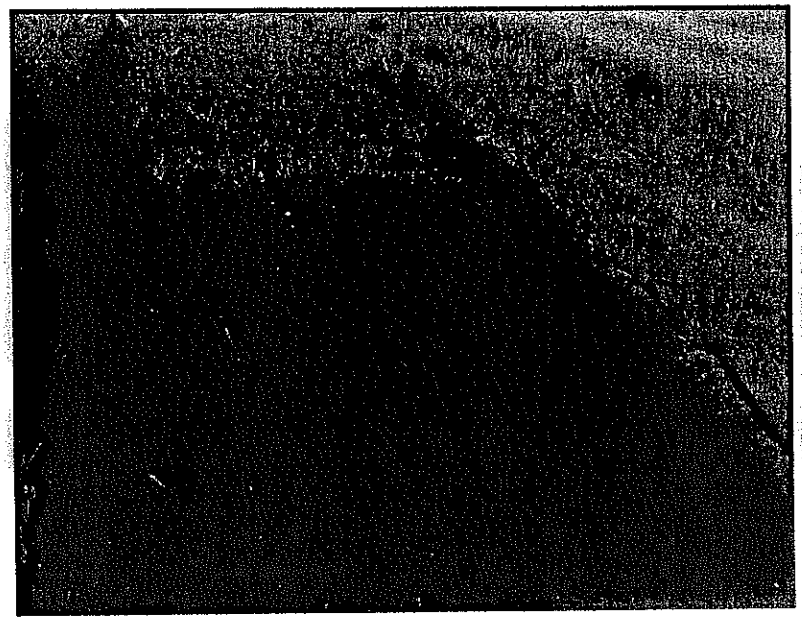


SECTION A--A

Pipe Diameter inches	Discharge ft^3/s	Apron Length, La ft	Rip Rap D_{50} Diameter Min inches
12	5	10	4
	10	13	6
18	10	10	6
	20	16	8
	30	23	12
	40	26	16
24	30	16	8
	40	26	8
	50	26	12
	60	30	16

For larger or higher flows consult a Registered Civil Engineer
Source: USDA - SCS

Compost Blanket EC-14



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch
EC-4 Hydroseeding
EC-5 Soil Binders
EC-7 Geotextiles and Mats
EC-8 Wood Mulching

Description and Purpose

A compost blanket is applied to slopes and earth disturbed areas to prevent erosion, and in some cases, increase infiltration and/or establish vegetation. The compost blanket can be applied by hand, conveyor system, compost spreader, or pneumatic delivery (blower) system. The blanket thickness is determined from the slope steepness and anticipated precipitation. A compost blanket protects the soil surface from raindrop erosion, particularly rills and gullies that may form under other methods of erosion control.

A compost blanket, if properly installed, can be very successful at vegetation establishment, weed suppression and erosion control. The compost blanket comes into direct contact with the underlying soil, reducing rill formation. Furthermore, compost provides organic matter and nutrients important for vegetation growth. The compost blanket provides soil structure that allows water to infiltrate the soil surface and retain moisture, which also promotes seed germination and vegetation growth, in addition to reducing runoff.

Compost is typically derived from combinations of feedstocks, biosolids, leaf and yard trimmings, manure, wood, or mixed solid waste. Many types of compost are products of municipal recycle or "Greenwaste" programs. Compost is organic and biodegradable and can be left onsite. There are many types of compost with a variety of properties with specific functions, and accordingly, compost selection is an important design consideration in the application of this type of erosion control.

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Compost Blanket EC-14

Suitable Applications

A compost blanket is appropriate for slopes and earth disturbed areas requiring protection until permanent stabilization is established. A compost blanket can also used in combination with temporary and/or permanent seeding strategies to enhance plant establishment. Examples include:

- Rough-graded areas that will remain inactive for longer than 14 days
- Soil stockpiles
- Slopes with exposed soil between existing vegetation such as trees or shrubs
- Slopes planted with live, container-grown vegetation
- Disturbed areas where plants are slow to develop

A compost blanket is typically used on slopes of 2:1 (H:V) or gentler. However, a compost blanket can be effective when applied to slopes as steep as 1:1 (H:V) with appropriate design considerations including slope length, blanket thickness, adding components such as a tackifier, or using compost blankets in conjunction with other techniques, such as compost socks and berms or fiber rolls.

Compost can be pre-seeded prior to application to the soil (recommended by the EPA for construction site stormwater runoff control) or seeded after the blanket has been installed. The compost medium can also remove pollutants in stormwater including heavy metals; oil and grease; and hydrocarbons (USEPA, 1998).

Limitations

- Compost can potentially leach nutrients (dissolved phosphorus and nitrogen) into runoff and potentially impact water quality. Compost should not be used directly upstream from nutrient impaired waterbodies (Adams et. al, 2008).
- Compost may also contain other undesirable constituents that are detrimental to water quality. Carefully consider the qualifications and experience of any compost producer/supplier.
- A compost blanket applied by hand is more time intensive and potentially costly. Using a pneumatic blower truck is the recommended cost effective method of application.
- When blowers are used, the treatment areas should be within 300 ft of a road or surface capable of supporting trucks.
- Wind may limit application of compost and result in application to undesired locations.
- Compost blankets should not be applied in areas of concentrated flows.
- Steeper slopes may require additional blanket thickness and other stability measures such as using tackifiers or slope interruption devices (compost socks and berms, or fiber rolls). The same applies for sites with high precipitation totals or during the rainy season.

Compost Blanket EC-14

Implementation

- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Compost Materials

- California Compost Regulations (Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7, Section 17868.3) define and require a quality of compost for application. Compost should comply with all physical and chemical requirements. Specific requirements are provided in Table 1 below, taken from Caltrans Standard Special Provision 10-1 (SSP 10-1), Erosion Control (Compost Blanket).

- The compost producer should be fully permitted as specified under the California Integrated Waste Management Board, Local Enforcement Agencies and any other State and Local Agencies that regulate Solid Waste Facilities. If exempt from State permitting requirements, the composting facility should certify that it follows guidelines and procedures for production of compost meeting the environmental health standards of Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7.

- The compost producer should be a participant in United States Composting Council's Seal of Testing Assurance program.

- Compost moisture should be considered for composition quality and application purposes. A range of 30-50% is typical. Compost that is too dry is hard to apply and compost that is too wet is more difficult (and more expensive) to transport. For arid or semi-arid areas, or for application during the dry season, use compost with greater moisture content than areas with wetter climates. For wetter or more humid climates or for application during the wet season, drier composts can be used as the compost will absorb moisture from the ambient air.

- Organic content of the compost is also important and should range from 30 to 65% depending on site conditions.

- Compost should be high-quality mature compost. Immature compost can potentially leach nutrients.

- Compost should not be derived from mixed municipal solid waste and should be free of visible contaminants.

- Compost should not contain paint, petroleum products, pesticides or any other chemical residues harmful to animal life or plant growth. Metal concentrations in compost should not exceed the maximum metal concentrations listed under Title 14, California Code of Regulations, Division 7, Chapter 3.1, Section 17868.2.

- Compost should not possess objectionable odors.

- Compost should be weed free.

Compost Blanket EC-14

Table 1. Physical/Chemical Requirements of Compost
Reference - Caltrans SSP-10 Erosion Control Blanket (Compost)

Property	Test Method	Requirement
pH	*TMECC 04.11-A Elastometric pH 1:5 Slurry Method pH Units	6.0–8.0
Soluble Salts	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method dS/m (mmhos/cm)	0-10.0
Moisture Content	TMECC 03.09-A Total Solids & Moisture at 70+/- 5 deg C % Wet Weight Basis	30-60
Organic Matter Content	TMECC 05.07-A Loss-On-Ignition Organic Matter Method (LOI) % Dry Weight Basis	30–65
Maturity	TMECC 05.05-A Germination and Vigor Seed Emergence Seedling Vigor % Relative to Positive Control	80 or Above 80 or Above
Stability	TMECC 05.08-B Carbon Dioxide Evolution Rate mg CO_2-C/g OM per day	8 or below
Particle Size	TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	100% Passing, 3 inch 90-100% Passing, 1 inch 65-100% Passing, 3/4 inch 0 - 75% Passing, 1/4 inch Maximum length 6 inches
Pathogen	TMECC 07.01-B Fecal Coliform Bacteria < 1000 MPN/gram dry wt.	Pass
Pathogen	TMECC 07.01-B Salmonella < 3 MPN/4 grams dry wt.	Pass
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Plastic, Glass and Metal % > 4mm fraction	Combined Total: < 1.0
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Sharps (Sewing needles, straight pins and hypodermic needles) % > 4mm fraction	None Detected

*TMECC refers to "Test Methods for the Examination of Composting and Compost," published by the United States Department of Agriculture and the United States Compost Council (USCC).

Installation

- Prior to compost application, prepare the slope by removing loose rocks, roots, stumps, and other debris greater than 2" in diameter. Prepare the slope area surface by scarifying or track walking/roughening if necessary.
- Select method to apply the compost blanket. A pneumatic blower is most cost effective and most adaptive in applying compost to steep, rough terrain, and hard to reach locations.
- A compost blanket thickness of 1" to 4" should be applied to slopes of 2:1 (H:V) or gentler, based on site-specific conditions. Increase blanket thickness with increased slope steepness and/or during installation during the rainy season (for example, 2" to 3" should be used for a

Compost Blanket EC-14

3:1 slope, while 1" to 2" can be used for a 4:1 slope). Erosion control using a compost blanket is not recommended for slopes greater than 1:1 (H:V).

- For steeper slopes, tackifiers should be utilized and/or other stabilization techniques employed. For example, compost socks or berms can be installed at intervals over the compost blanket (in a similar manner as Fiber Rolls, SE-5).
- Compost socks or berms (or equivalent linear sediment control BMP) should be placed at the top and/or bottom of the slope for additional erosion control performance.
- For optimum vegetation establishment, a blanket thickness of 1" to 2" is recommended. If vegetation establishment is not the primary function of the compost blanket, a thicker blanket may be recommended based on slope or rainfall conditions.
- Evenly distribute compost on the soil surface to the desired blanket thickness (1/2" to 4" as calculated prior based on site conditions and objectives). Even distribution is an important factor in preventing future rill and gully erosion.
- The compost blanket should extend 3 to 6 feet over the top of the shoulder of the slope. A compost sock or compost berm can be used at the top of the slope as an auxiliary technique to prevent runoff from flowing underneath the compost blanket.
- Use additional anchoring and erosion control BMPs in conjunction of the compost blanket as needed.

Costs

The cost associated with a compost blanket is similar to that of a straw mat and generally less expensive than a geotextile blanket (USEPA, 2009). Caltrans has provided a recent estimate for $5,000 to $8,000 per acre for application of an unseeded 1 inch compost blanket (Caltrans Compost Specifications, 2009). Recently obtained vendor costs indicate that proprietary blends of compost that are seeded and contain a nutrient rich "tackifier" can cost approximately $0.35 per square foot, or approximately $15,000 per acre for a 2 inch blanket. Application by hand is more time intensive and likely more costly.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident, another layer of compost should be reapplied as soon as possible. It may be necessary to install an additional type of stormwater BMP at the top of slope or as a slope interrupter to control flow, such as a fiber roll (SE-5) or compost sock (SE-11).
- Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require reapplication of BMPs.
- Limit or prohibit foot traffic to minimize damage to BMP or impede vegetation establishment.

Compost Blanket EC-14

References

An Analysis of Composting as an Environmental Remediation Technology, U.S. Environmental Protection Agency (USEPA), Solid Waste and Emergency Response (5305W), EPA530-R-8-008, 1998.

Characteristics of Compost: Moisture Holding and Water Quality Improvement, Center for Research in Water Resources, Kirchoff, C., Malina, J., and Barrett, M., 2003.

Compost Utilization for Erosion Control, The University of Georgia College of Agricultural and Environmental Sciences, pubs.caes.uga.edu/caespubs/pubcd/B1200.htm, Faucette, B. and Risse, M., 2009.

Demonstration Project Using Yard Debris Compost for Erosion Control, Final Report, presented to Metropolitan Service District, W&H Pacific, 1993.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, 2005.

Standard Special Provision 10-1, Erosion Control (Compost Blanket), California Department of Transportation (Caltrans). 2007 Update.

Evaluation of Environmental Benefits and Impacts of Compost and Industry Standard Erosion and Sediment Controls Measures Used in Construction Activities, Dissertation, Institute of Ecology, University of Georgia, Faucette, B., 2004.

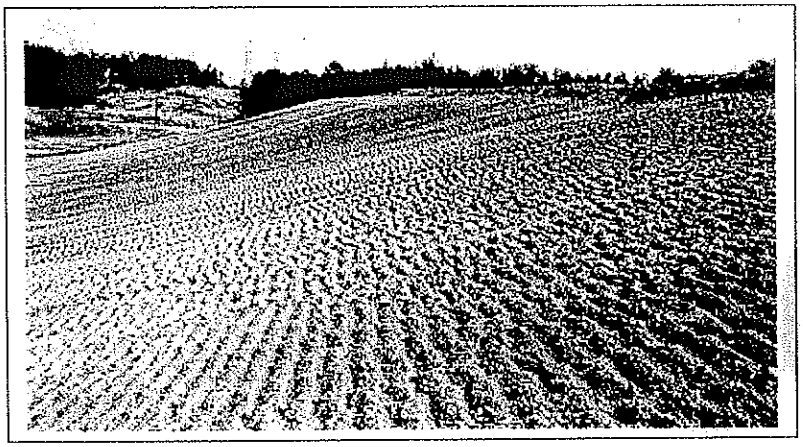
Filter Sock Presentation provided at Erosion, Sediment Control and Stormwater Management with Compost BMPs Workshop, U.S. Composting Council 13th Annual Conference and Trade Show, McCoy, S., 2005.

National Pollutant Discharge Elimination System (NPDES), Compost Blankets, U.S. Environmental Protection Agency (USEPA). http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=118, 2009.

Standard Specifications for Transportation Materials and Methods of Sampling and Testing Designation M10-03, Compost for Erosion/Sediment Control (Compost Blankets), Provisional, American Association of State Highway Transportation Officials (AASHTO), 2003.

Stormwater Best Management Practices (BMPs) Field Trials of Erosion Control Compost in Reclamation of Rock Quarry Operations, Nonpoint Source Protection Program CWA §319(h), Texas Commission on Environmental Quality, Adams, T., McFarland, A., Hauck, L., Barrett, M., and Eck, B., 2008.

Soil Preparation/Roughening EC-15



Categories

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Legend:
☑ **Primary Category**
☒ **Secondary Category**

Description and Purpose

Soil Preparation/Roughening involves assessment and preparation of surface soils for BMP installation. This can include soil testing (for seed base, soil characteristics, or nutrients), as well as roughening surface soils by mechanical methods (including sheepsfoot rolling, track walking, scarifying, stair stepping, and imprinting) to prepare soil for additional BMPs, or to break up sheet flow. Soil Preparation can also involve tilling topsoil to prepare a seed bed and/or incorporation of soil amendments, to enhance vegetative establishment.

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch

EC-5 Soil Binders

EC-7 Geotextiles and Mats

Suitable Applications

Soil preparation: Soil preparation is essential to proper vegetative establishment. In particular, soil preparation (i.e. tilling, raking, and amendment) is suitable for use in combination with any soil stabilization method, including RECPs or sod. Soil preparation should not be confused with roughening.

Roughening: Soil roughening is generally referred to as track walking (sometimes called imprinting) a slope, where treads from heavy equipment run parallel to the contours of the slope and act as mini terraces. Soil preparation is most effective when used in combination with erosion controls. Soil Roughening is suitable for use as a complementary process for controlling erosion on a site. Roughening is not intended to be used as a stand-alone BMP, and should be used with perimeter controls, additional erosion control measures, grade breaks, and vegetative establishment for maximum effectiveness. Roughening is intended to only affect surface soils and should not compromise slope stability or overall compaction. Suitable applications for soil roughening include:

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Soil Preparation/Roughening EC-15

- Along any disturbed slopes, including temporary stockpiles, sediment basins, or compacted soil diversion berms and swales.

- Roughening should be used in combination with hydraulically applied stabilization methods, compost blanket, or straw mulch; but should not be used in combination with RECPs or sod because roughening is intended to leave terraces on the slope.

Limitations

- Preparation and roughening must take place prior to installing other erosion controls (such as hydraulically applied stabilizers) or sediment controls (such as fiber rolls) on the faces of slopes.

- In such cases where slope preparation is minimal, erosion control/revegetation BMPs that do not require extensive soil preparation - such as hydraulic mulching and seeding applications - should be employed.

- Consideration should be given to the type of erosion control BMP that follows surface preparation, as some BMPs are not designed to be installed over various types of tillage/roughening, i.e., RECPs (erosion control blankets) should not be used with soil roughening due to a "bridging" effect, which suspends the blanket above the seed bed.

- Surface roughness has an effect on the amount of mulch material that needs to be applied, which shows up as a general increase in mulch material due to an increase in surface area (Topographic Index -see EC-3 Hydraulic Mulching).

Implementation

- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

General

A roughened surface can significantly reduce erosion. Based on tests done at the San Diego State Erosion Research Laboratory, various roughening techniques on slopes can result in a 12 - 76% reduction in the erosion rate versus smooth slopes.

Materials

Minimal materials are required unless amendments and/or seed are added to the soil. The majority of soil roughening/preparation can be done with equipment that is on hand at a normal construction site, such as bull dozers and compaction equipment.

Installation Guidelines

Soil Preparation

- Where appropriate or feasible, soil should be prepared to receive the seed by disking or otherwise scarifying the surface to eliminate crust, improve air and water infiltration and create a more favorable environment for germination and growth.

- Based upon soil testing conducted, apply additional soil amendments (e.g. fertilizers, additional seed) to the soil to help with germination. Follow EC-4, Hydroseeding, when selecting and applying seed and fertilizers.

Soil Preparation/Roughening EC-15

Cut Slope Roughening:

- Stair-step grade or groove the cut slopes that are steeper than 3:1.
- Use stair-step grading on any erodible material soft enough to be ripped with a bulldozer. Slopes consisting of soft rock with some subsoil are particularly suited to stair-step grading.
- Make the vertical cut distance less than the horizontal distance, and slightly slope the horizontal position of the "step" in toward the vertical wall.
- Do not make individual vertical cuts more than 2 feet (0.6 m) high in soft materials or more than 3 feet (0.9 m) high in rocky materials.
- Groove the slope using machinery to create a series of ridges and depressions that run across the slope, on the contour.

Fill Slope Roughening:

- Place on fill slopes with a gradient steeper than 3:1 in lifts not to exceed 8 inches (0.2 m), and make sure each lift is properly compacted.
- Ensure that the face of the slope consists of loose, uncompacted fill 4-6 inches (0.1-0.2 m) deep.
- Use grooving or tracking to roughen the face of the slopes, if necessary.
- Do not blade or scrape the final slope face.

Roughening for Slopes to be Mowed:

- Slopes which require mowing activities should not be steeper than 3:1.
- Roughen these areas to shallow grooves by track walking, scarifying, sheepsfoot rolling, or imprinting.
- Make grooves close together (less than 10 inches), and not less than 1 inch deep, and perpendicular to the direction of runoff (i.e., parallel to the slope contours).
- Excessive roughness is undesirable where mowing is planned.

Roughening With Tracked Machinery:

- Limit roughening with tracked machinery to soils with a sandy textural component to avoid undue compaction of the soil surface.
- Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. Do not back-blade during the final grading operation.
- Seed and mulch roughened areas as soon as possible to obtain optimum seed germination and growth.

Soil Preparation/Roughening EC-15

Costs

Costs are based on the additional labor of tracking or preparation of the slope plus the cost of any required soil amendment materials.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Check the seeded slopes for signs of erosion such as rills and gullies. Fill these areas slightly above the original grade, then reseed and mulch as soon as possible.
- Inspect BMPs weekly during normal operations, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

References

Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Non-Vegetative Stabilization EC-16

Categories

EC	Erosion Control	☑
SE	Sediment Control	☒
TR	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Non-vegetative stabilization methods are used for temporary or permanent stabilization of areas prone to erosion and should be used only where vegetative options are not feasible; examples include:

- Areas of vehicular or pedestrian traffic such as roads or paths;
- Arid environments where vegetation would not provide timely ground coverage, or would require excessive irrigation;
- Rocky substrate, infertile or droughty soils where vegetation would be difficult to establish; and
- Areas where vegetation will not grow adequately within the construction time frame.

There are several non-vegetative stabilization methods and selection should be based on site-specific conditions.

Decomposed Granite (DG) is a permanent erosion protection method that consists of a layer of stabilized decomposed granite placed over an erodible surface.

Degradable Mulches of various types (see EC-3, EC-6, EC-8) can be used for temporary non-vegetative stabilization; examples include straw mulch, compost, wood chips or hydraulic mulch.

Geotextiles and Mats can be used for temporary non-vegetative stabilization (see EC-7). These BMPs are typically manufactured

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Non-Vegetative Stabilization EC-16

from degradable or synthetic materials and are designed and specified based on their functional longevity, i.e., how long they will persist and provide erosion protection. All geotextiles and mats should be replaced when they exceed their functional longevity or when permanent stabilization methods are instituted.

Gravel Mulch is a non-degradable erosion control product that is composed of washed and screened coarse to very coarse gravel, 16 mm to 64 mm (0.6" - 2.5"), similar to an AASHTO No. 3 coarse aggregate.

Rock Slope Protection consists of utilizing large rock or rip-rap (4"- 24") to stabilize slopes with a high erosion potential and those subject to scour along waterways.

Soil Binders can be used for temporary non-vegetative stabilization (see EC-5). The key to their use is functional longevity. In most cases, the soil binder will need to be routinely monitored and re-applied to maintain an erosion-resistant coverage.

Suitable Applications

Non-vegetated stabilization methods are suitable for use on disturbed soil areas and on material stockpiles that need to be temporarily or permanently protected from erosion by water and wind. Non-vegetated stabilization should only be utilized when vegetation cannot be established in the required timeframe, due to soil or climactic conditions, or where vegetation may be a potential fire hazard.

Decomposed Granite (DG) and Gravel Mulch are suitable for use in areas where vegetation establishment is difficult, on flat surfaces, trails and pathways, and when used in conjunction with a stabilizer or tackifier, on shallow slopes (i.e., 10:1 [H:V]). DG and gravel can also be used on shallow rocky slopes where vegetation cannot be established for permanent erosion control.

Degradable Mulches can be used to cover and protect soil surfaces from erosion both in temporary and permanent applications. In many cases, the use of mulches by themselves requires routine inspection and re-application. See EC-3 Hydraulic Mulch, EC-6 Straw Mulch, EC-8 Wood Mulch, or EC-14 Compost Blankets for more information.

Geotextiles and Mats can be used as a temporary stand-alone soil stabilization method. Depending on material selection, geotextiles and mats can be a short-term (3 mos – 1 year) or long-term (1-2 years) temporary stabilization method. For more information on geotextiles and mats see EC-7 Geotextiles and Mats.

Rock Slope Protection can be used when the slopes are subject to scour or have a high erosion potential, such as slopes adjacent to flowing waterways or slopes subject to overflow from detention facilities (spillways).

Soil Binders can be used for temporary stabilization of stockpiles and disturbed areas not subject to heavy traffic. See EC-5 Soil Binders for more information.

Non-Vegetative Stabilization EC-16

Limitations

General

- Refer to EC-3, EC-6, EC-8, and EC-14 for limitations on use of mulches. Refer to EC-7 for limitations on use of geotextiles and mats. Refer to EC-5 for limitations on use of Soil Binders.

Decomposed Granite

- Not available in some geographic regions.
- If not tackified, material may be susceptible to erosion even on slight slopes (e.g., 30:1 [H:V]).
- Installed costs may be more expensive than vegetative stabilization methods.

Gravel Mulch

- Availability is limited in some geographic regions.
- If not properly screened and washed, can contain fine material that can erode and/or create dust problems.
- If inadequately sized, material may be susceptible to erosion on sloped areas.
- Pore spaces fill with dirt and debris over time; may provide a growing medium for weeds.

Rock Slope Protection

- Installation is labor intensive.
- Installed costs can be significantly higher than vegetative stabilization methods.
- Rounded stones may not be used on slopes greater than 2:1 [H:V].

Implementation

General

Non-vegetated stabilization should be used in accordance with the following general guidance:

- Should be used in conjunction with other BMPs, including drainage, erosion controls and sediment controls.
- Refer to EC-3, EC-6, EC-8, and EC-14 for implementation details for mulches. Refer to EC-7 for implementation details for geotextiles and mats. Refer to EC-5 for implementation details for soil binders.
- Non-vegetated stabilization measures should be implemented as soon as the disturbance in the areas they are intended to protect has ceased.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Decomposed Granite Stabilization

- If used for a road or path should be installed on a prepared base.

Non-Vegetative Stabilization EC-16

- Should be mixed with a stabilizer if used for roads or pathways, or on slope applications.
- Though porous it is recommended to prevent standing water on or next to a decomposed granite road or pathway.

Gravel Mulch

- Should be sized based on slope, rainfall, and upgradient run-on conditions. Stone size should be increased as potential for erosion increases (steeper slopes, high intensity rainfall).
- If permanent, a weed control fabric should be placed prior to installation.
- Should be installed at a minimum 2" depth.
- Should completely cover all exposed surfaces.

Rock Slope Protection

- Rock slope protection installation should follow Caltrans Standard Specification 72-2: Rock Slope Protection. Refer to the specification for rock conformity requirements and installation methods.
- When using rock slope protection, rock size and installation method should be specified by an Engineer.
- A geotextile fabric should be placed prior to installation.

Costs

- Costs are highly variable depending not only on technique chosen, but also on materials chosen within specific techniques. In addition, availability of certain materials will vary by region/location, which will also affect the cost. Costs of mulches, geotextiles and mats, and soil binders are presented in their respective fact sheets. Costs for decomposed granite, gravel mulch stabilization and rock slope protection may be higher depending on location and availability of materials. Caltrans has provided an estimate for gravel mulch of \$10 - \$15/yd^2 in flat areas and \$11 - \$23/yd^2 on side slopes.

Inspection and Maintenance

General

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- For permanent installation, require inspection periodically and after major storm events to look for signs of erosion or damage to the stabilization.
- All damage should be repaired immediately.
- Refer to EC-3, EC-6, EC-8, and EC-14 for inspection and maintenance requirements for mulches. Refer to EC-7 for inspection and maintenance requirements for geotextiles and mats. Refer to EC-5 for inspection and maintenance requirements for soil binders.

Non-Vegetative Stabilization EC-16

Decomposed Granite and Gravel Mulch Stabilization

- Rake out and add decomposed granite or gravel as needed to areas subject to rill erosion. Inspect upgradient drainage controls and repair/modify as necessary.
- Should remain stable under loose surface material. Any significant problem areas should be repaired to restore uniformity to the installation.

References

Arid Zone Forestry: A Guide for Field Technicians. Food and Agriculture Organization of the United Nations, 1989.

Design of Roadside Channels with Flexible Linings, Hydraulic Engineering Circular Number 15, Third Edition, Federal Highway Administration, 2007.

Design Standards for Urban Infrastructure - Soft Landscape Design, Department of Territory and Municipal Services - Australian Capital Territory http://www.tams.act.gov.au/work/standards_and_procedures/design_standards_for_urban_infrastructure

Erosion and Sediment Control Handbook: A Guide for Protection of State Waters through the use of Best Management Practices during Land Disturbing Activities, Tennessee Department of Environment and Conservation, 2002.

Gravel Mulch, Landscape Architecture Non-Standard Specification 10-2, California Department of Transportation (Caltrans), http://www.dot.ca.gov/hq/LandArch/roadside/detail-gm.htm

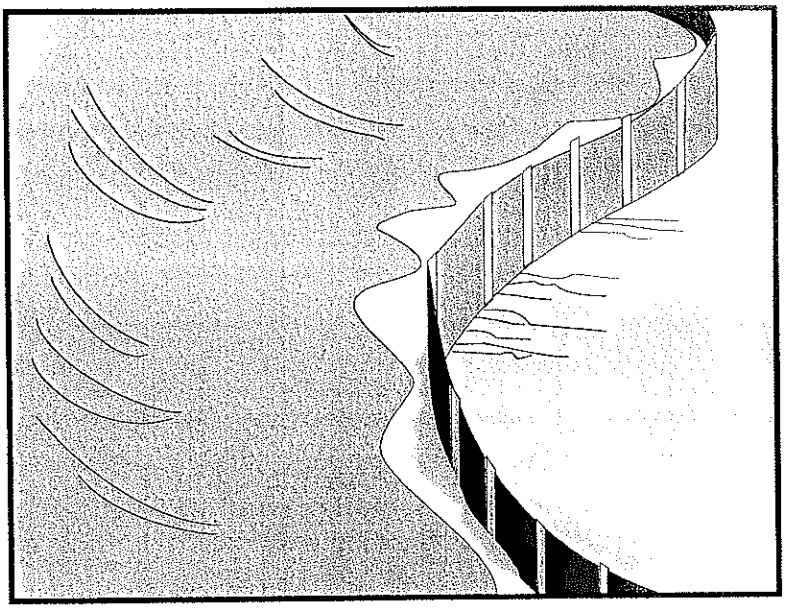
Maine Erosion and Sediment Control BMPs, DEPLW0588, Maine Department of Environmental Protection: Bureau of Land and Water Quality, 2003.

National Menu of Best Management Practices, US Environmental Protection Agency, 2006.

Standard Specification 72-2: Rock Slope Protection. California Department of Transportation, 2006.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Silt Fence SE-1



Categories

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Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-5 Fiber Rolls

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-10 Storm Drain Inlet Protection

SE-12 Temporary Silt Dike

SE-14 Biofilter Bags

Description and Purpose

A silt fence is made of a woven geotextile that has been entrenched, attached to supporting poles, and sometimes backed by a plastic or wire mesh for support. The silt fence detains sediment-laden water, promoting sedimentation behind the fence.

Suitable Applications

Silt fences are suitable for perimeter control, placed below areas where sheet flows discharge from the site. They could also be used as interior controls below disturbed areas where runoff may occur in the form of sheet and rill erosion and around inlets within disturbed areas (SE-10). Silt fences are generally ineffective in locations where the flow is concentrated and are only applicable for sheet or overland flows. Silt fences are most effective when used in combination with erosion controls. Suitable applications include:

- Along the perimeter of a project.
- Below the toe or down slope of exposed and erodible slopes.
- Along streams and channels.
- Around temporary spoil areas and stockpiles.
- Around inlets.
- Below other small cleared areas.

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Silt Fence SE-1

Limitations

- Do not use in streams, channels, drain inlets, or anywhere flow is concentrated.
- Do not use in locations where ponded water may cause a flooding hazard. Runoff typically ponds temporarily on the upstream side of silt fence.
- Do not use silt fence to divert water flows or place across any contour line. Fences not constructed on a level contour, or fences used to divert flow will concentrate flows resulting in additional erosion and possibly overtopping or failure of the silt fence.
- Improperly installed fences are subject to failure from undercutting, overtopping, or collapsing.
- Not effective unless trenched and keyed in.
- Not intended for use as mid-slope protection on slopes greater than 4:1 (H:V).
- Do not use on slopes subject to creeping, slumping, or landslides.

Implementation

General

A silt fence is a temporary sediment barrier consisting of woven geotextile stretched across and attached to supporting posts, trenched-in, and, depending upon the strength of fabric used, supported with plastic or wire mesh fence. Silt fences trap sediment by intercepting and detaining small amounts of sediment-laden runoff from disturbed areas in order to promote sedimentation behind the fence.

The following layout and installation guidance can improve performance and should be followed:

- Use principally in areas where sheet flow occurs.
- Install along a level contour, so water does not pond more than 1.5 ft at any point along the silt fence.
- The maximum length of slope draining to any point along the silt fence should be 200 ft or less.
- The maximum slope perpendicular to the fence line should be 1:1.
- Provide sufficient room for runoff to pond behind the fence and to allow sediment removal equipment to pass between the silt fence and toes of slopes or other obstructions. About 1200 ft^2 of ponding area should be provided for every acre draining to the fence.
- Turn the ends of the filter fence uphill to prevent stormwater from flowing around the fence.
- Leave an undisturbed or stabilized area immediately down slope from the fence where feasible.

Silt Fence SE-1

- Silt fences should remain in place until the disturbed area is permanently stabilized, after which, the silt fence should be removed and properly disposed.
- Silt fence should be used in combination with erosion source controls up slope in order to provide the most effective sediment control.
- Be aware of local regulations regarding the type and installation requirements of silt fence, which may differ from those presented in this fact sheet.

Design and Layout

The fence should be supported by a plastic or wire mesh if the fabric selected does not have sufficient strength and bursting strength characteristics for the planned application (as recommended by the fabric manufacturer). Woven geotextile material should contain ultraviolet inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 °F to 120 °F.

- Layout in accordance with attached figures.
- For slopes steeper than 2:1 (H:V) and that contain a high number of rocks or large dirt clods that tend to dislodge, it may be necessary to install additional protection immediately adjacent to the bottom of the slope, prior to installing silt fence. Additional protection may be a chain link fence or a cable fence.
- For slopes adjacent to sensitive receiving waters or Environmentally Sensitive Areas (ESAs), silt fence should be used in conjunction with erosion control BMPs.

Standard vs. Heavy Duty Silt Fence

Standard Silt Fence

- Generally applicable in cases where the slope of area draining to the silt fence is 4:1 (H:V) or less.
- Used for shorter durations, typically 5 months or less
- Area draining to fence produces moderate sediment loads.

Heavy Duty Silt Fence

- Use is generally limited to 8 months or less.
- Area draining to fence produces moderate sediment loads.
- Heavy duty silt fence usually has 1 or more of the following characteristics, not possessed by standard silt fence.
  - Fence fabric has higher tensile strength.
  - Fabric is reinforced with wire backing or additional support.
  - Posts are spaced closer than pre-manufactured, standard silt fence products.
  - Posts are metal (steel or aluminum)

Materials

<u>Standard Silt Fence</u>

- Silt fence material should be woven geotextile with a minimum width of 36 in. and a minimum tensile strength of 100 lb force. The fabric should conform to the requirements in ASTM designation D4632 and should have an integral reinforcement layer. The

reinforcement layer should be a polypropylene, or equivalent, net provided by the manufacturer. The permittivity of the fabric should be between 0.1 sec^{-1} and 0.15 sec^{-1} in conformance with the requirements in ASTM designation D4491.

- Wood stakes should be commercial quality lumber of the size and shape shown on the plans. Each stake should be free from decay, splits or cracks longer than the thickness of the stake or other defects that would weaken the stakes and cause the stakes to be structurally unsuitable.

- Staples used to fasten the fence fabric to the stakes should be not less than 1.75 in. long and should be fabricated from 15 gauge or heavier wire. The wire used to fasten the tops of the stakes together when joining two sections of fence should be 9 gauge or heavier wire. Galvanizing of the fastening wire will not be required.

Heavy-Duty Silt Fence

- Some silt fence has a wire backing to provide additional support, and there are products that may use prefabricated plastic holders for the silt fence and use metal posts or bar reinforcement instead of wood stakes. If bar reinforcement is used in lieu of wood stakes, use number four or greater bar. Provide end protection for any exposed bar reinforcement for health and safety purposes.

Installation Guidelines – Traditional Method

Silt fences are to be constructed on a level contour. Sufficient area should exist behind the fence for ponding to occur without flooding or overtopping the fence.

- A trench should be excavated approximately 6 in. wide and 6 in. deep along the line of the proposed silt fence (trenches should not be excavated wider or deeper than necessary for proper silt fence installation).

- Bottom of the silt fence should be keyed-in a minimum of 12 in.

- Posts should be spaced a maximum of 6 ft apart and driven securely into the ground a minimum of 18 in. or 12 in. below the bottom of the trench.

- When standard strength geotextile is used, a plastic or wire mesh support fence should be fastened securely to the upslope side of posts using heavy--duty wire staples at least 1 in. long. The mesh should extend into the trench.

- When extra-strength geotextile and closer post spacing are used, the mesh support fence may be eliminated.

- Woven geotextile should be purchased in a long roll, then cut to the length of the barrier. When joints are necessary, geotextile should be spliced together only at a support post, with a minimum 6 in. overlap and both ends securely fastened to the post.

- The trench should be backfilled with native material and compacted.

- Construct silt fences with a setback of at least 3 ft from the toe of a slope. Where, due to specific site conditions, a 3 ft setback is not available, the silt fence may be constructed at the

Silt Fence SE-1

toe of the slope, but should be constructed as far from the toe of the slope as practicable. Silt fences close to the toe of the slope will be less effective and more difficult to maintain.

- Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the barrier; in no case should the reach exceed 500 ft.
- Cross barriers should be a minimum of $^1/_3$ and a maximum of ½ the height of the linear barrier.
- See typical installation details at the end of this fact sheet.

Installation Guidelines - Static Slicing Method

- Static Slicing is defined as insertion of a narrow blade pulled behind a tractor, similar to a plow blade, at least 10 inches into the soil while at the same time pulling silt geotextile fabric into the ground through the opening created by the blade to the depth of the blade. Once the gerotextile is installed, the soil is compacted using tractor tires.
- This method will not work with pre-fabricated, wire backed silt fence.
- Benefits:
    - Ease of installation (most often done with a 2 person crew). In addition, installation using static slicing has been found to be more efficient on slopes, in rocky soils, and in saturated soils.
    - Minimal soil disturbance.
    - Greater level of compaction along fence, leading to higher performance (i.e. greater sediment retention).
    - Uniform installation.
    - Less susceptible to undercutting/undermining.

Costs

- It should be noted that costs vary greatly across regions due to available supplies and labor costs.
- Average annual cost for installation using the traditional silt fence installation method (assumes 6 month useful life) is $7 per linear foot based on vendor research. Range of cost is $3.50 - $9.10 per linear foot.
- In tests, the slicing method required 0.33 man hours per 100 linear feet, while the trenched based systems required as much as 1.01 man hours per linear foot.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Repair undercut silt fences.

Silt Fence SE-1

- Repair or replace split, torn, slumping, or weathered fabric. The lifespan of silt fence fabric is generally 5 to 8 months.
- Silt fences that are damaged and become unsuitable for the intended purpose should be removed from the site of work, disposed, and replaced with new silt fence barriers.
- Sediment that accumulates in the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.
- Silt fences should be left in place until the upstream area is permanently stabilized. Until then, the silt fence should be inspected and maintained regularly.
- Remove silt fence when upgradient areas are stabilized. Fill and compact post holes and anchor trench, remove sediment accumulation, grade fence alignment to blend with adjacent ground, and stabilize disturbed area.

References

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

National Management Measures to Control Nonpoint Source Pollution from Urban Areas, United States Environmental Protection Agency, 2002.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group-Working Paper, USEPA, April 1992.

Sedimentation and Erosion Control Practices, and Inventory of Current Practices (Draft), UESPA, 1990.

Southeastern Wisconsin Regional Planning Commission (SWRPC). Costs of Urban Nonpoint Source Water Pollution Control Measures. Technical Report No. 31. Southeastern Wisconsin Regional Planning Commission, Waukesha, WI. 1991

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

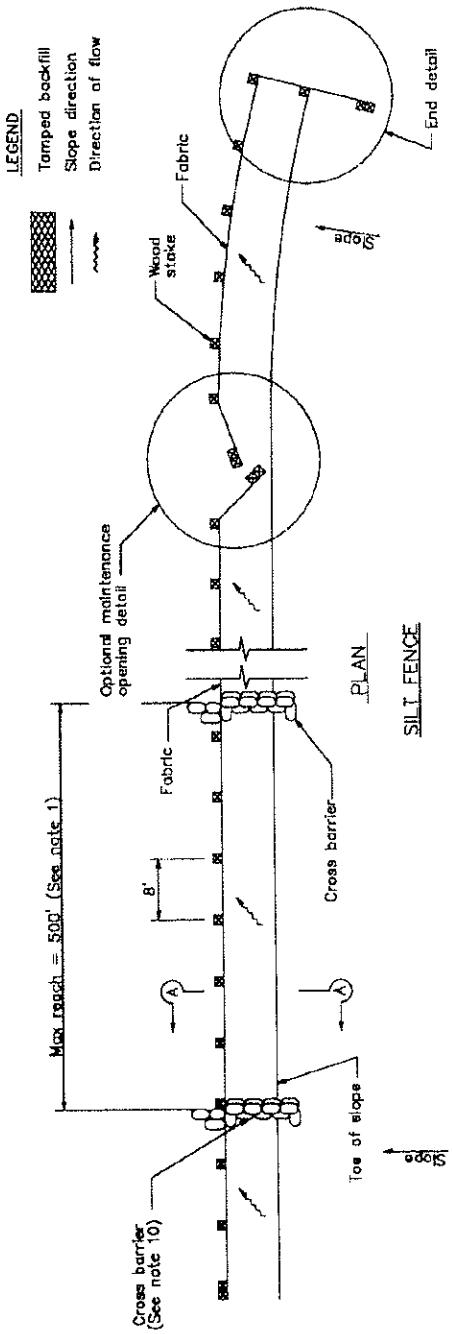
Stormwater Management Manual for The Puget Sound Basin, Washington State Department of Ecology, Public Review Draft, 1991.

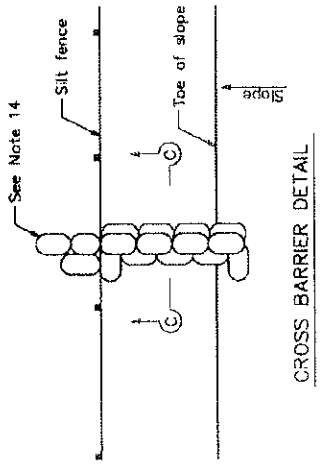
U.S. Environmental Protection Agency (USEPA). Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices. U.S. Environmental Protection Agency, Office of Water, Washington, DC, 1992.

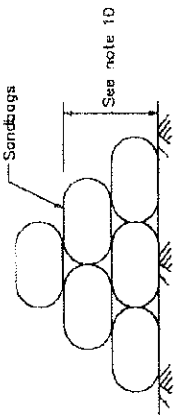
Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Silt Fence SE-1



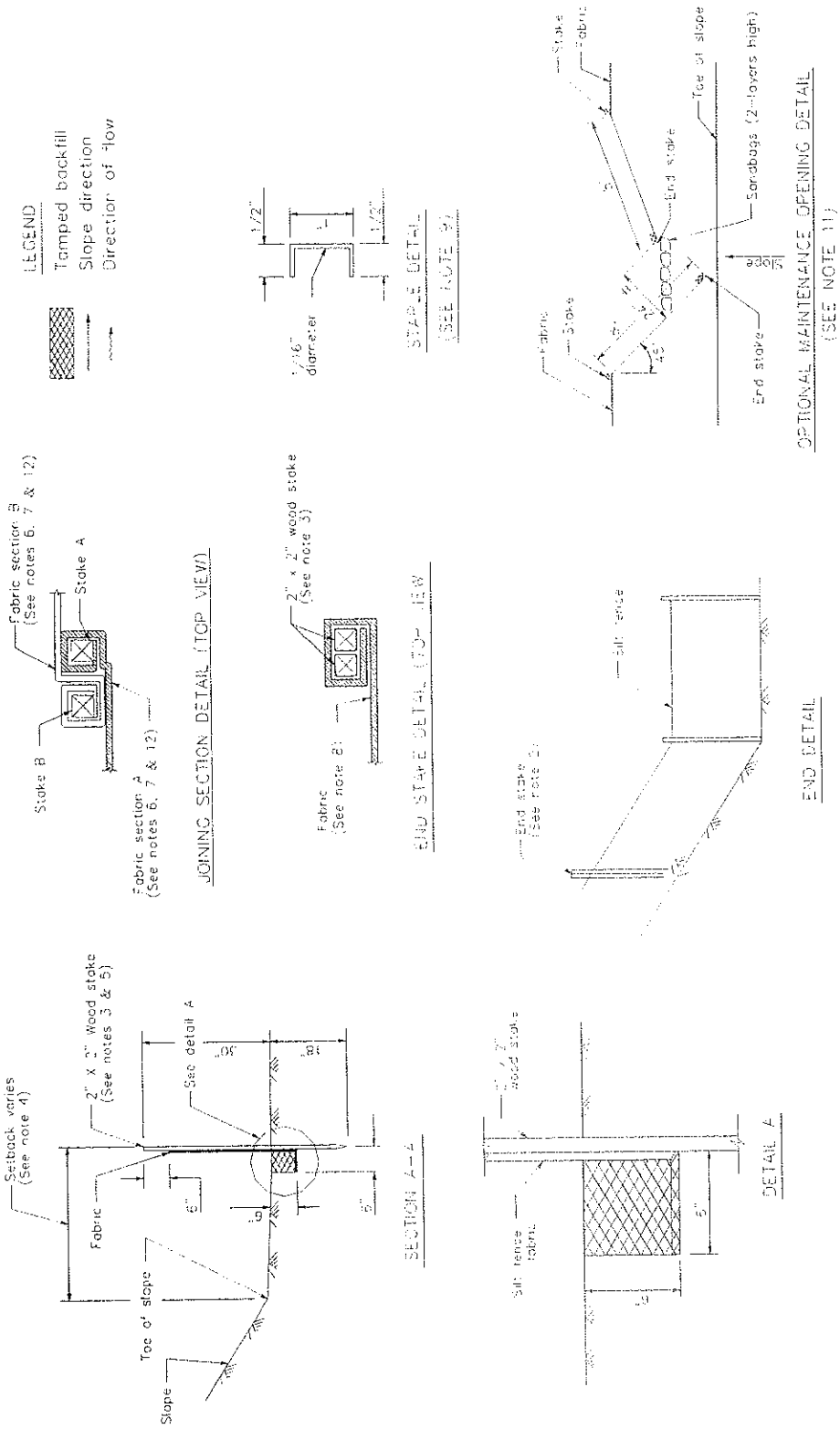




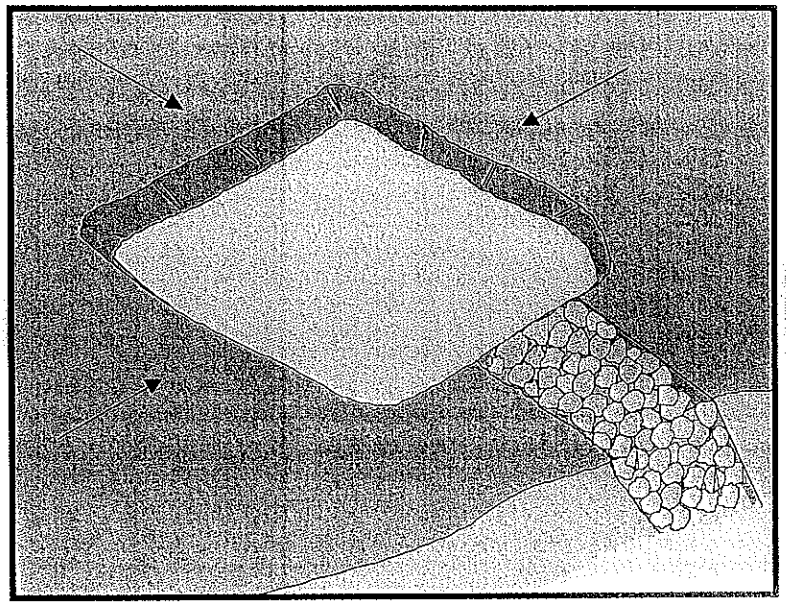
NOTES

1. Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the linear barrier, in no case shall the reach length exceed 500'.
2. The last 8'-0" of fence shall be turned up slope.
3. Stake dimensions are nominal.
4. Dimension may vary to fit field condition.
5. Stakes shall be spaced at 8'-0" maximum and shall be positioned on downstream side of fence.
6. Stakes to overlap and fence fabric to fold around each stake one full turn. Secure fabric to stake with 4 staples.
7. Stakes shall be driven tightly together to prevent potential flow-through of sediment at joint. The tops of the stakes shall be secured with wire.
8. For end stake, fence fabric shall be folded around two stakes one full turn and secured with 4 staples.
9. Minimum 4 staples per stake. Dimensions shown are typical.
10. Cross barriers shall be a minimum of 1/3 and a maximum of 1/2 the height of the linear barrier.
11. Maintenance openings shall be constructed in a manner to ensure sediment remains behind silt fence.
12. Joining sections shall not be placed at sump locations.
13. Sandbag rows and layers shall be offset to eliminate gaps.
14. Add 3-4 bags to cross barrier on downgradient side of silt fence as needed to prevent bypass or undermining and as allowable based on site limits of disturbance.

Silt Fence SE-1



Sediment Trap SE-3



Categories

EC	Erosion Control	
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	☑
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-2 Sediment Basin (for larger areas)

Description and Purpose

A sediment trap is a containment area where sediment-laden runoff is temporarily detained under quiescent conditions, allowing sediment to settle out or before the runoff is discharged by gravity flow. Sediment traps are formed by excavating or constructing an earthen embankment across a waterway or low drainage area.

Trap design guidance provided in this fact sheet is not intended to guarantee compliance with numeric discharge limits (numeric action levels or numeric effluent limits for turbidity). Compliance with discharge limits requires a thoughtful approach to comprehensive BMP planning, implementation, and maintenance. Therefore, optimally designed and maintained sediment traps should be used in conjunction with a comprehensive system of BMPs.

Suitable Applications

Sediment traps should be considered for use:

- At the perimeter of the site at locations where sediment-laden runoff is discharged offsite.
- At multiple locations within the project site where sediment control is needed.
- Around or upslope from storm drain inlet protection measures.
- Sediment traps may be used on construction projects where the drainage area is less than 5 acres. Traps would be

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Sediment Trap SE-3

placed where sediment-laden stormwater may enter a storm drain or watercourse. SE-2, Sediment Basins, must be used for drainage areas greater than 5 acres.

- As a supplemental control, sediment traps provide additional protection for a water body or for reducing sediment before it enters a drainage system.

Limitations

- Requires large surface areas to permit infiltration and settling of sediment.
- Not appropriate for drainage areas greater than 5 acres.
- Only removes large and medium sized particles and requires upstream erosion control.
- Attractive and dangerous to children, requiring protective fencing.
- Conducive to vector production.
- Should not be located in live streams.

Implementation

Design

A sediment trap is a small temporary ponding area, usually with a gravel outlet, formed by excavation or by construction of an earthen embankment. Its purpose is to collect and store sediment from sites cleared or graded during construction. It is intended for use on small drainage areas with no unusual drainage features and projected for a quick build-out time. It should help in removing coarse sediment from runoff. The trap is a temporary measure with a design life of approximately six months to one year and is to be maintained until the site area is permanently protected against erosion by vegetation and/or structures.

Sediment traps should be used only for small drainage areas. If the contributing drainage area is greater than 5 acres, refer to SE-2, Sediment Basins, or subdivide the catchment area into smaller drainage basins.

Sediment usually must be removed from the trap after each rainfall event. The SWPPP should detail how this sediment is to be disposed, such as in fill areas onsite, or removal to an approved offsite dump. Sediment traps used as perimeter controls should be installed before any land disturbance takes place in the drainage area.

Sediment traps are usually small enough that a failure of the structure would not result in a loss of life, damage to home or buildings, or interruption in the use of public roads or utilities. However, sediment traps are attractive to children and can be dangerous. The following recommendations should be implemented to reduce risks:

- Install continuous fencing around the sediment trap or pond. Consult local ordinances regarding requirements for maintaining health and safety.
- Restrict basin side slopes to 3:1 or flatter.

Sediment trap size depends on the type of soil, size of the drainage area, and desired sediment removal efficiency (see SE-2, Sediment Basin). As a rule of thumb, the larger the basin volume

Sediment Trap SE-3

the greater the sediment removal efficiency. Sizing criteria are typically established under the local grading ordinance or equivalent. The runoff volume from a 2-year storm is a common design criteria for a sediment trap. The sizing criteria below assume that this runoff volume is 0.042 acre-ft/acre (0.5 in. of runoff). While the climatic, topographic, and soil type extremes make it difficult to establish a statewide standard, the following criteria should trap moderate to high amounts of sediment in most areas of California:

- Locate sediment traps as near as practical to areas producing the sediment.
- Trap should be situated according to the following criteria: (1) by excavating a suitable area or where a low embankment can be constructed across a swale, (2) where failure would not cause loss of life or property damage, and (3) to provide access for maintenance, including sediment removal and sediment stockpiling in a protected area.
- Trap should be sized to accommodate a settling zone and sediment storage zone with recommended minimum volumes of 67 yd^3/acre and 33 yd^3/acre of contributing drainage area, respectively, based on 0.5 in. of runoff volume over a 24-hour period. In many cases, the size of an individual trap is limited by available space. Multiple traps or additional volume may be required to accommodate specific rainfall, soil, and site conditions.
- Traps with an impounding levee greater than 4.5 ft tall, measured from the lowest point to the impounding area to the highest point of the levee, and traps capable of impounding more than 35,000 ft^3, should be designed by a Registered Civil Engineer. The design should include maintenance requirements, including sediment and vegetation removal, to ensure continuous function of the trap outlet and bypass structures.
- The outlet pipe or open spillway must be designed to convey anticipated peak flows.
- Use rock or vegetation to protect the trap outlets against erosion.
- Fencing should be provided to prevent unauthorized entry.

Installation

Sediment traps can be constructed by excavating a depression in the ground or creating an impoundment with a small embankment. Sediment traps should be installed outside the area being graded and should be built prior to the start of the grading activities or removal of vegetation. To minimize the area disturbed by them, sediment traps should be installed in natural depressions or in small swales or drainage ways. The following steps must be followed during installation:

- The area under the embankment must be cleared, grubbed, and stripped of any vegetation and root mat. The pool area should be cleared.
- The fill material for the embankment must be free of roots or other woody vegetation as well as oversized stones, rocks, organic material, or other objectionable material. The embankment may be compacted by traversing with equipment while it is being constructed.
- All cut-and-fill slopes should be 3:1 or flatter.
- When a riser is used, all pipe joints must be watertight.

Sediment Trap SE-3

- When a riser is used, at least the top two-thirds of the riser should be perforated with 0.5 in. diameter holes spaced 8 in. vertically and 10 to 12 in. horizontally. See SE-2, Sediment Basin.
- When an earth or stone outlet is used, the outlet crest elevation should be at least 1 ft below the top of the embankment.
- When crushed stone outlet is used, the crushed stone used in the outlet should meet AASHTO M43, size No. 2 or 24, or its equivalent such as MSHA No. 2. Gravel meeting the above gradation may be used if crushed stone is not available.

Costs

Average annual cost per installation and maintenance (18 month useful life) is $0.73 per ft^3 ($1,300 per drainage acre). Maintenance costs are approximately 20% of installation costs.

Inspection and Maintenance

- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect outlet area for erosion and stabilize if required.
- Inspect trap banks for seepage and structural soundness, repair as needed.
- Inspect outlet structure and spillway for any damage or obstructions. Repair damage and remove obstructions as needed.
- Inspect fencing for damage and repair as needed.
- Inspect the sediment trap for area of standing water during every visit. Corrective measures should be taken if the BMP does not dewater completely in 96 hours or less to prevent vector production.
- Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the trap capacity. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed of at an appropriate location.
- Remove vegetation from the sediment trap when first detected to prevent pools of standing water and subsequent vector production.
- BMPs that require dewatering shall be continuously attended while dewatering takes place. Dewatering BMPs per NS-2 shall be implemented at all times during dewatering activities.

References

Brown, W., and T. Schueler. The Economics of Stormwater BMPs in the Mid-Atlantic Region. Prepared for Chesapeake Research Consortium, Edgewater, MD, by the Center for Watershed Protection, Ellicott City, MD, 1997.

Sediment Trap SE-3

Draft – Sedimentation and Erosion Control, an Inventory of Current Practices, USEPA, April 1990.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Metzger, M.E., D.F. Messer, C.L. Beitia, C.M. Myers, and V.L. Kramer, The Dark Side of Stormwater Runoff Management: Disease Vectors Associated with Structural BMPs, 2002.

National Management Measures to Control Nonpoint Source Pollution from Urban Areas, United States Environmental Protection Agency, 2002.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group-Working Paper, USEPA, April 1992.

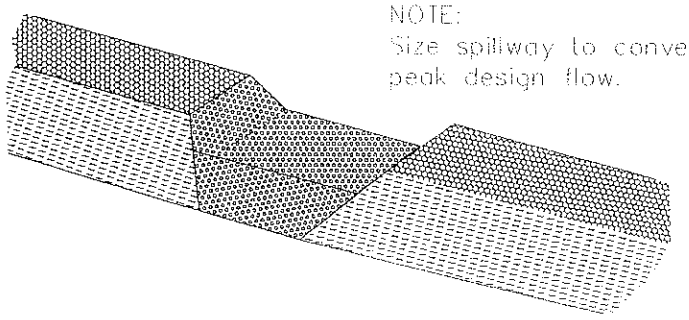
Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management Manual for The Puget Sound Basin, Washington State Department of Ecology, Public Review Draft, 1991.

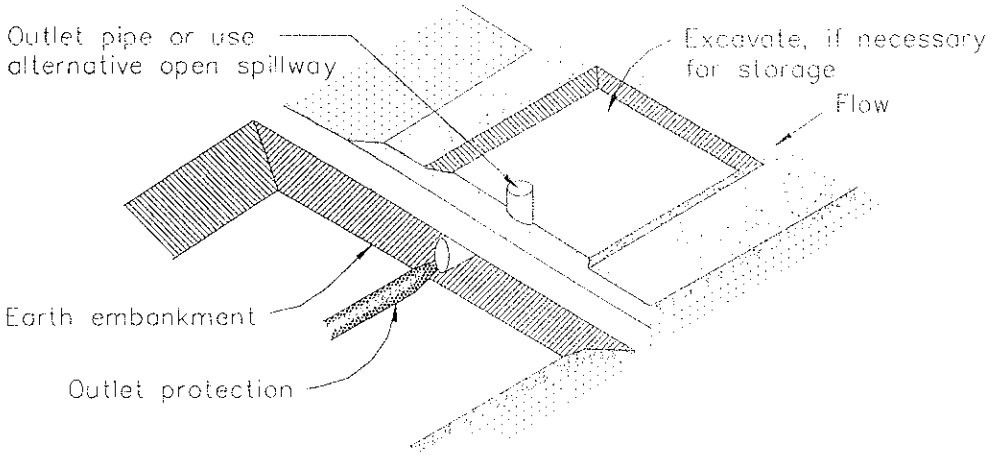
U.S. Environmental Protection Agency (USEPA). Guidance Specifying Management Measures for Nonpoint Pollution in Coastal Waters. EPA 840-B-9-002. U.S. Environmental Protection Agency, Office of Water, Washington, DC, 1993.

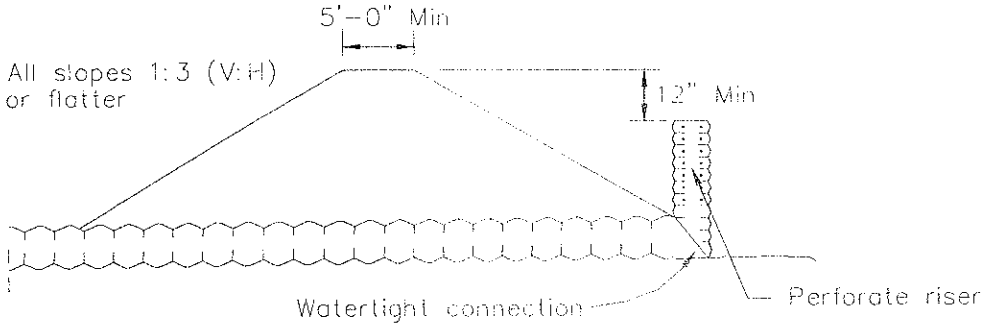
Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Sediment Trap SE-3



TYPICAL OPEN SPILLWAY



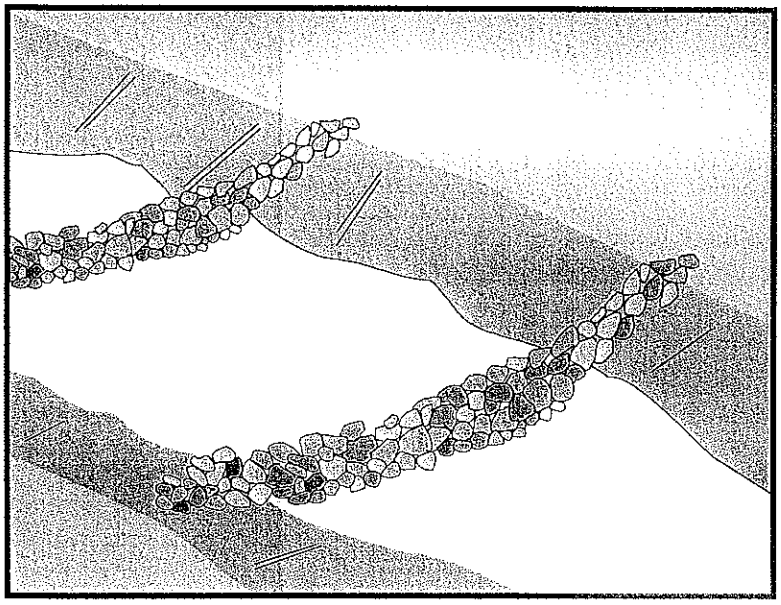


EMBANKMENT SECTION THRU RISER

TYPICAL SEDIMENT TRAP
NOT TO SCALE

Check Dams

SE-4



Categories

EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Description and Purpose

A check dam is a small barrier constructed of rock, gravel bags, sandbags, fiber rolls, or other proprietary products, placed across a constructed swale or drainage ditch. Check dams reduce the effective slope of the channel, thereby reducing scour and channel erosion by reducing flow velocity and increasing residence time within the channel, allowing sediment to settle.

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Suitable Applications

Check dams may be appropriate in the following situations:

- To promote sedimentation behind the dam.
- To prevent erosion by reducing the velocity of channel flow in small intermittent channels and temporary swales.
- In small open channels that drain 10 acres or less.
- In steep channels where stormwater runoff velocities exceed 5 ft/s.
- During the establishment of grass linings in drainage ditches or channels.
- In temporary ditches where the short length of service does not warrant establishment of erosion-resistant linings.
- To act as a grade control structure.

Potential Alternatives

SE-5 Fiber Rolls

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-12 Temporary Silt Dike

SE-14 Biofilter Bags

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Check Dams SE-4

Limitations

- Not to be used in live streams or in channels with extended base flows.
- Not appropriate in channels that drain areas greater than 10 acres.
- Not appropriate in channels that are already grass-lined unless erosion potential or sediment-laden flow is expected, as installation may damage vegetation.
- Require extensive maintenance following high velocity flows.
- Promotes sediment trapping which can be re-suspended during subsequent storms or removal of the check dam.
- Do not construct check dams with straw bales or silt fence.
- Water suitable for mosquito production may stand behind check dams, particularly if subjected to daily non-stormwater discharges.

Implementation

General

Check dams reduce the effective slope and create small pools in swales and ditches that drain 10 acres or less. Using check dams to reduce channel slope reduces the velocity of stormwater flows, thus reducing erosion of the swale or ditch and promoting sedimentation. Thus, check dams are dual-purpose and serve an important role as erosion controls as well as as sediment controls. Note that use of 1-2 isolated check dams for sedimentation will likely result in little net removal of sediment because of the small detention time and probable scour during longer storms. Using a series of check dams will generally increase their effectiveness. A sediment trap (SE-3) may be placed immediately upstream of the check dam to increase sediment removal efficiency.

Design and Layout

Check dams work by decreasing the effective slope in ditches and swales. An important consequence of the reduced slope is a reduction in capacity of the ditch or swale. This reduction in capacity should be considered when using this BMP, as reduced capacity can result in overtopping of the ditch or swale and resultant consequences. In some cases, such as a "permanent" ditch or swale being constructed early and used as a "temporary" conveyance for construction flows, the ditch or swale may have sufficient capacity such that the temporary reduction in capacity due to check dams is acceptable. When check dams reduce capacities beyond acceptable limits, either:

- Don't use check dams. Consider alternative BMPs, or.
- Increase the size of the ditch or swale to restore capacity.

Maximum slope and velocity reduction is achieved when the toe of the upstream dam is at the same elevation as the top of the downstream dam (see "Spacing Between Check Dams" detail at the end of this fact sheet). The center section of the dam should be lower than the edge sections (at least 6 inches), acting as a spillway, so that the check dam will direct flows to the center of

Check Dams SE-4

the ditch or swale (see "Typical Rock Check Dam" detail at the end of this fact sheet). Bypass or side-cutting can occur if a sufficient spillway is not provided in the center of the dam.

Check dams are usually constructed of rock, gravel bags, sandbags, and fiber rolls. A number of products can also be used as check dams (e.g. HDPE check dams, temporary silt dikes (SE-12)), and some of these products can be removed and reused. Check dams can also be constructed of logs or lumber, and have the advantage of a longer lifespan when compared to gravel bags, sandbags, and fiber rolls. Check dams should not be constructed from straw bales or silt fences, since concentrated flows quickly wash out these materials.

Rock check dams are usually constructed of 8 to 12 in. rock. The rock is placed either by hand or mechanically, but never just dumped into the channel. The dam should completely span the ditch or swale to prevent washout. The rock used should be large enough to stay in place given the expected design flow through the channel. It is recommended that abutments be extended 18 in. into the channel bank. Rock can be graded such that smaller diameter rock (e.g. 2-4 in) is located on the upstream side of larger rock (holding the smaller rock in place); increasing residence time.

Log check dams are usually constructed of 4 to 6 in. diameter logs, installed vertically. The logs should be embedded into the soil at least 18 in. Logs can be bolted or wired to vertical support logs that have been driven or buried into the soil.

See fiber rolls, SE-5, for installation of fiber roll check dams.

Gravel bag and sand bag check dams are constructed by stacking bags across the ditch or swale, shaped as shown in the drawings at the end of this fact sheet (see "Gravel Bag Check Dam" detail at the end of this fact sheet).

Manufactured products, such as temporary silt dikes (SE-12), should be installed in accordance with the manufacturer's instructions. Installation typically requires anchoring or trenching of products, as well as regular maintenance to remove accumulated sediment and debris.

If grass is planted to stabilize the ditch or swale, the check dam should be removed when the grass has matured (unless the slope of the swales is greater than 4%).

The following guidance should be followed for the design and layout of check dams:

- Install the first check dam approximately 16 ft from the outfall device and at regular intervals based on slope gradient and soil type.
- Check dams should be placed at a distance and height to allow small pools to form between each check dam.
- For multiple check dam installation, backwater from a downstream check dam should reach the toes of the upstream check dam.
- A sediment trap provided immediately upstream of the check dam will help capture sediment. Due to the potential for this sediment to be resuspended in subsequent storms, the sediment trap should be cleaned following each storm event.

Check Dams SE-4

- High flows (typically a 2-year storm or larger) should safely flow over the check dam without an increase in upstream flooding or damage to the check dam.
- Where grass is used to line ditches, check dams should be removed when grass has matured sufficiently to protect the ditch or swale.

Materials

- Rock used for check dams should typically be 8-12 in rock and be sufficiently sized to stay in place given expected design flows in the channel. Smaller diameter rock (e.g. 2 to 4 in) can be placed on the upstream side of larger rock to increase residence time.
- Gravel bags used for check dams should conform to the requirements of SE-6, Gravel Bag Berms.
- Sandbags used for check dams should conform to SE-8, Sandbag Barrier.
- Fiber rolls used for check dams should conform to SE-5, Fiber Rolls.
- Temporary silt dikes used for check dams should conform to SE-12, Temporary Silt Dikes.

Installation

- Rock should be placed individually by hand or by mechanical methods (no dumping of rock) to achieve complete ditch or swale coverage.
- Tightly abut bags and stack according to detail shown in the figure at the end of this section (pyramid approach). Gravel bags and sandbags should not be stacked any higher than 3 ft.
- Upper rows or gravel and sand bags shall overlap joints in lower rows.
- Fiber rolls should be trenched in, backfilled, and firmly staked in place.
- Install along a level contour.
- HDPE check dams, temporary silt dikes, and other manufactured products should be used and installed per manufacturer specifications.

Costs

Cost consists of labor costs if materials are readily available (such as gravel on-site). If material must be imported, costs will increase. For other material and installation costs, see SE-5, SE-6, SE-8, SE-12, and SE-14.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Replace missing rock, bags, rolls, etc. Replace bags or rolls that have degraded or have become damaged.

Check Dams SE-4

- If the check dam is used as a sediment capture device, sediment that accumulates behind the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.
- If the check dam is used as a grade control structure, sediment removal is not required as long as the system continues to control the grade.
- Inspect areas behind check dams for pools of standing water, especially if subjected to daily non-stormwater discharges.
- Remove accumulated sediment prior to permanent seeding or soil stabilization.
- Remove check dam and accumulated sediment when check dams are no longer needed.

References

Draft – Sedimentation and Erosion Control, and Inventory of Current Practices, USEPA, April 1990.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

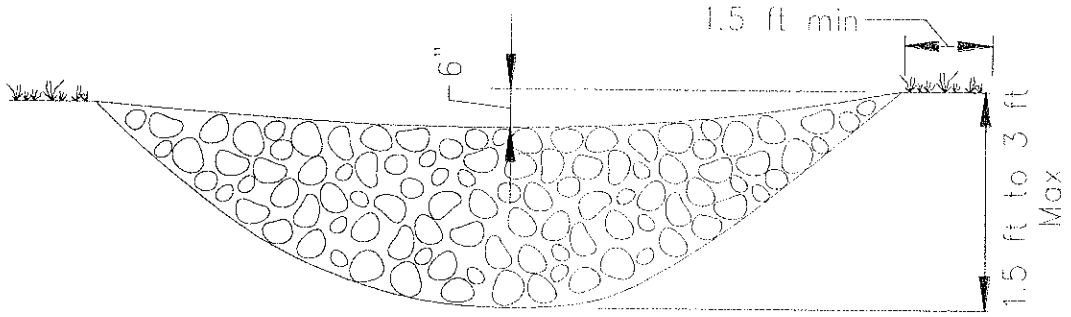
Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

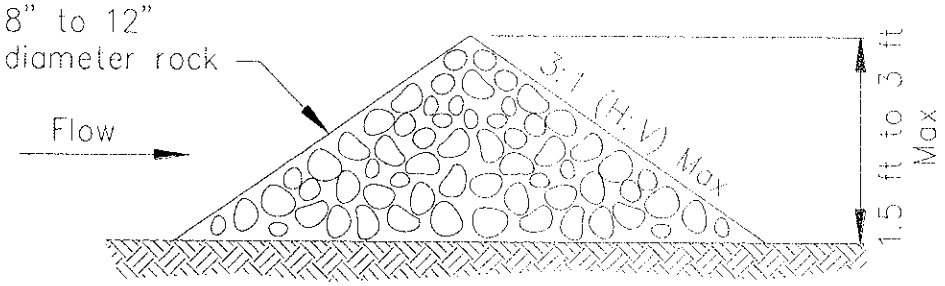
Metzger, M.E. 2004. Managing mosquitoes in stormwater treatment devices. University of California Division of Agriculture and Natural Resources, Publication 8125. On-line: http://anrcatalog.ucdavis.edu/pdf/8125.pdf

Check Dams

SE-4

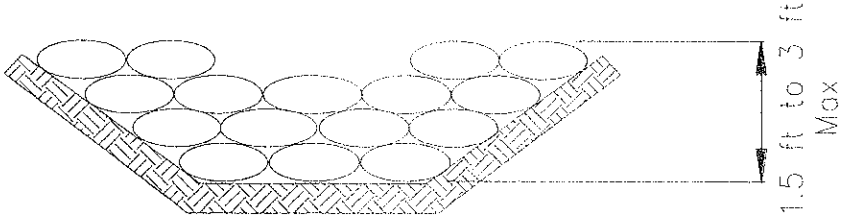


ELEVATION



TYPICAL ROCK CHECK DAM SECTION

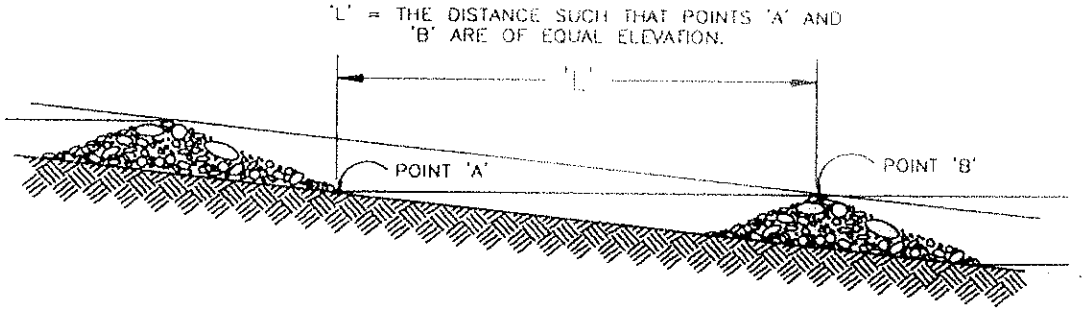
ROCK CHECK DAM
NOT TO SCALE



GRAVEL BAG CHECK DAM ELEVATION
NOT TO SCALE

Check Dams

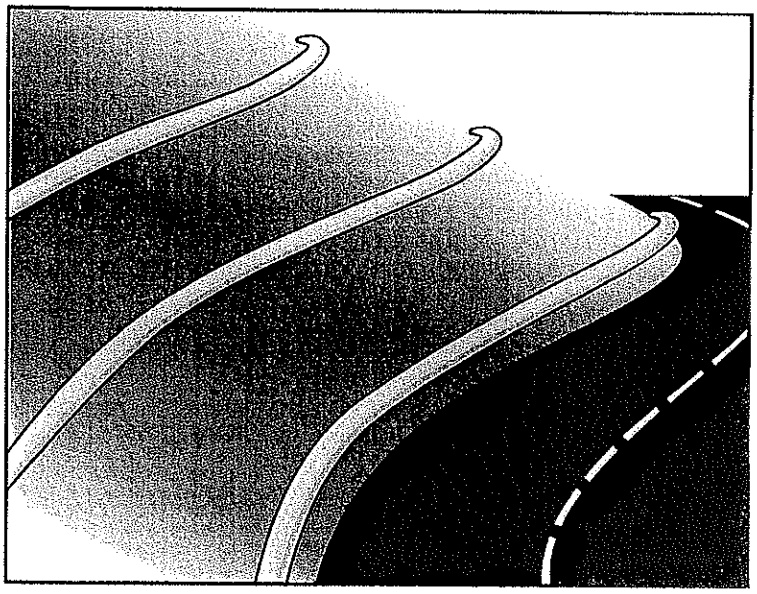
SE-4



SPACING BETWEEN CHECK DAMS

Fiber Rolls

SE-5



Categories

EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ Primary Category

☒ Secondary Category

Description and Purpose

A fiber roll consists of straw, coir, or other biodegradable materials bound into a tight tubular roll wrapped by netting, which can be photodegradable or natural. Additionally, gravel core fiber rolls are available, which contain an imbedded ballast material such as gravel or sand for additional weight when staking the rolls are not feasible (such as use as inlet protection). When fiber rolls are placed at the toe and on the face of slopes along the contours, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff (through sedimentation). By interrupting the length of a slope, fiber rolls can also reduce sheet and rill erosion until vegetation is established.

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-1 Silt Fence

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-12 Temporary Silt Dike

SE-14 Biofilter Bags

Suitable Applications

Fiber rolls may be suitable:

- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
- At the end of a downward slope where it transitions to a steeper slope.
- Along the perimeter of a project.
- As check dams in unlined ditches with minimal grade.
- Down-slope of exposed soil areas.
- At operational storm drains as a form of inlet protection.

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Fiber Rolls SE-5

- Around temporary stockpiles.

Limitations

- Fiber rolls are not effective unless trenched in and staked.
- Not intended for use in high flow situations.
- Difficult to move once saturated.
- If not properly staked and trenched in, fiber rolls could be transported by high flows.
- Fiber rolls have a very limited sediment capture zone.
- Fiber rolls should not be used on slopes subject to creep, slumping, or landslide.
- Rolls typically function for 12-24 months depending upon local conditions.

Implementation

Fiber Roll Materials

- Fiber rolls should be prefabricated.
- Fiber rolls may come manufactured containing polyacrylamide (PAM), a flocculating agent within the roll. Fiber rolls impregnated with PAM provide additional sediment removal capabilities and should be used in areas with fine, clayey or silty soils to provide additional sediment removal capabilities. Monitoring may be required for these installations.
- Fiber rolls are made from weed free rice straw, flax, or a similar agricultural material bound into a tight tubular roll by netting.
- Typical fiber rolls vary in diameter from 9 in. to 20 in. Larger diameter rolls are available as well.

Installation

- Locate fiber rolls on level contours spaced as follows:
  - Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
  - Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
  - Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
- Prepare the slope before beginning installation.
- Dig small trenches across the slope on the contour. The trench depth should be ¼ to 1/3 of the thickness of the roll, and the width should equal the roll diameter, in order to provide area to backfill the trench.

Fiber Rolls SE-5

- It is critical that rolls are installed perpendicular to water movement, and parallel to the slope contour.
- Start building trenches and installing rolls from the bottom of the slope and work up.
- It is recommended that pilot holes be driven through the fiber roll. Use a straight bar to drive holes through the roll and into the soil for the wooden stakes.
- Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
- Stake fiber rolls into the trench.
  - Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
  - Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.
- If more than one fiber roll is placed in a row, the rolls should be overlapped, not abutted.
- See typical fiber roll installation details at the end of this fact sheet.

Removal

- Fiber rolls can be left in place or removed depending on the type of fiber roll and application (temporary vs. permanent installation). Typically, fiber rolls encased with plastic netting are used for a temporary application because the netting does not biodegrade. Fiber rolls used in a permanent application are typically encased with a biodegradeable material and are left in place. Removal of a fiber roll used in a permanent application can result in greater disturbance.
- Temporary installations should only be removed when up gradient areas are stabilized per General Permit requirements, and/or pollutant sources no longer present a hazard. But, they should also be removed before vegetation becomes too mature so that the removal process does not disturb more soil and vegetation than is necessary.

Costs

Material costs for regular fiber rolls range from $20 - $30 per 25 ft roll.

Material costs for PAM impregnated fiber rolls range between 7.00-$9.00 per linear foot, based upon vendor research.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates in the BMP should be periodically removed

in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-third the designated sediment storage depth.

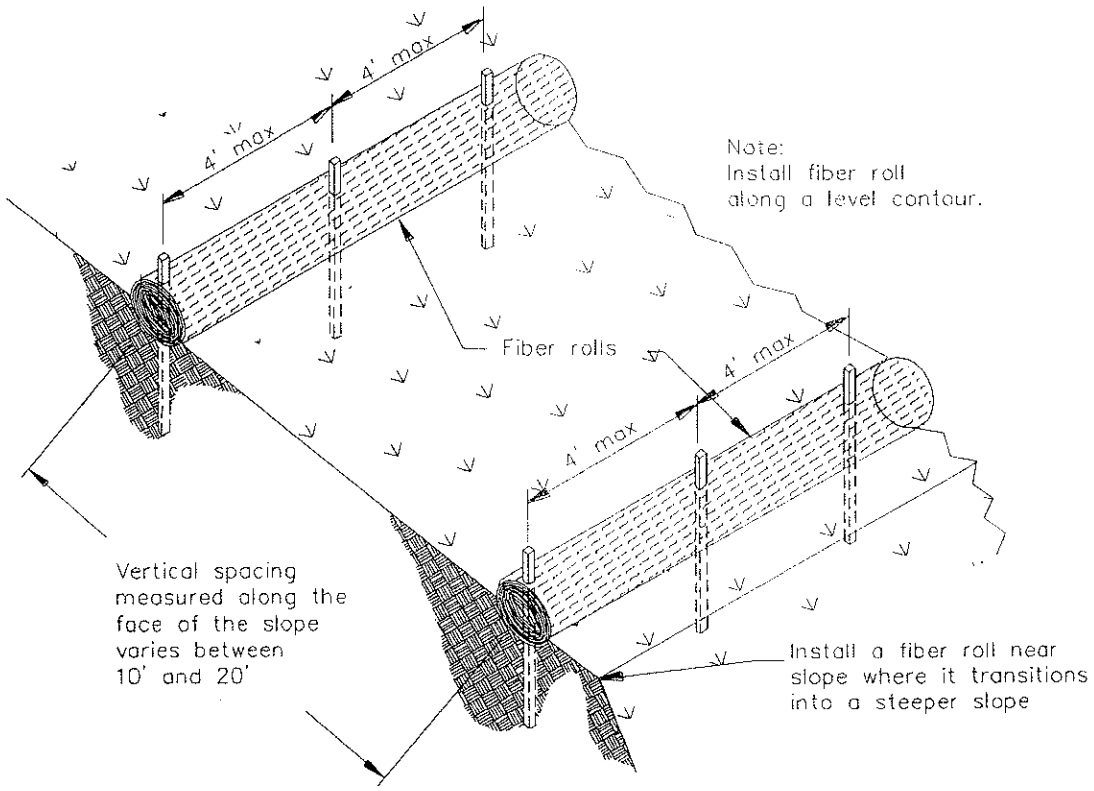
- If fiber rolls are used for erosion control, such as in a check dam, sediment removal should not be required as long as the system continues to control the grade. Sediment control BMPs will likely be required in conjunction with this type of application.
- Repair any rills or gullies promptly.

References

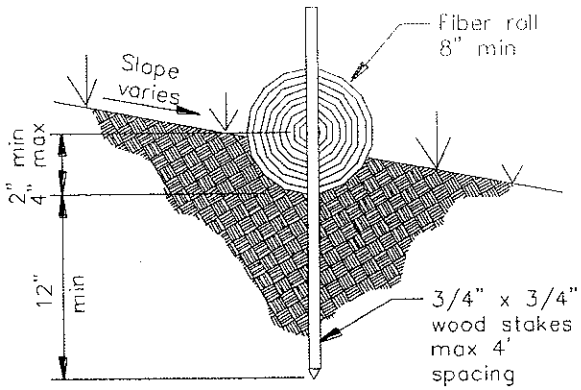
Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Fiber Rolls SE-5



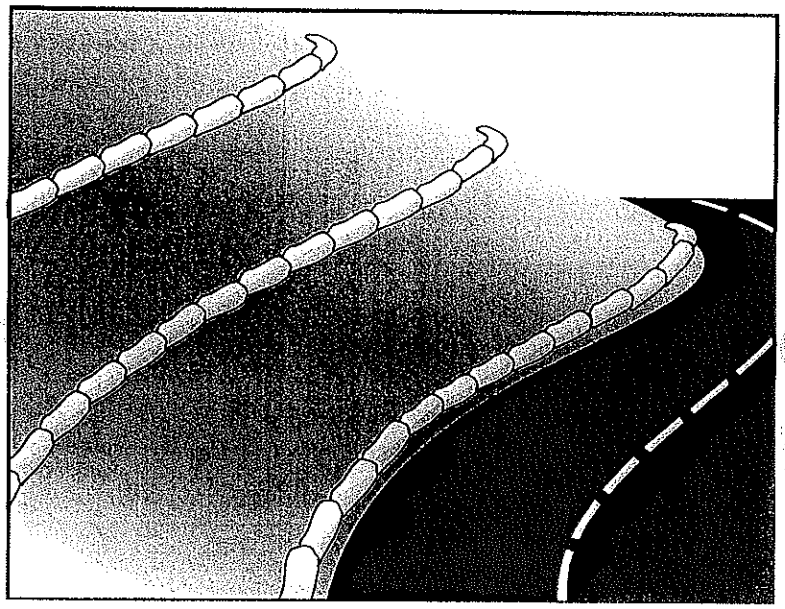
TYPICAL FIBER ROLL INSTALLATION
N.T.S.



ENTRENCHMENT DETAIL
N.T.S.

Gravel Bag Berm

SE-6



Categories

EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Description and Purpose

A gravel bag berm is a series of gravel-filled bags placed on a level contour to intercept sheet flows. Gravel bags pond sheet flow runoff, allowing sediment to settle out, and release runoff slowly as sheet flow, preventing erosion.

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Suitable Applications

Gravel bag berms may be suitable:

- As a linear sediment control measure:
  - Below the toe of slopes and erodible slopes
  - As sediment traps at culvert/pipe outlets
  - Below other small cleared areas
  - Along the perimeter of a site
  - Down slope of exposed soil areas
  - Around temporary stockpiles and spoil areas
  - Parallel to a roadway to keep sediment off paved areas
  - Along streams and channels
- As a linear erosion control measure:
  - Along the face and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.

Potential Alternatives

SE-1 Silt Fence

SE-5 Fiber Roll

SE-8 Sandbag Barrier

SE-12 Temporary Silt Dike

SE-14 Biofilter Bags

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Gravel Bag Berm SE-6

- At the top of slopes to divert runoff away from disturbed slopes.
- As chevrons (small check dams) across mildly sloped construction roads. For use check dam use in channels, see SE-4, Check Dams.

Limitations

- Gravel berms may be difficult to remove.
- Removal problems limit their usefulness in landscaped areas.
- Gravel bag berm may not be appropriate for drainage areas greater than 5 acres.
- Runoff will pond upstream of the berm, possibly causing flooding if sufficient space does not exist.
- Degraded gravel bags may rupture when removed, spilling contents.
- Installation can be labor intensive.
- Durability of gravel bags is somewhat limited and bags may need to be replaced when installation is required for longer than 6 months.
- Easily damaged by construction equipment.
- When used to detain concentrated flows, maintenance requirements increase.

Implementation

General

A gravel bag berm consists of a row of open graded gravel-filled bags placed on a level contour. When appropriately placed, a gravel bag berm intercepts and slows sheet flow runoff, causing temporary ponding. The temporary ponding allows sediment to settle. The open graded gravel in the bags is porous, which allows the ponded runoff to flow slowly through the bags, releasing the runoff as sheet flows. Gravel bag berms also interrupt the slope length and thereby reduce erosion by reducing the tendency of sheet flows to concentrate into rivulets, which erode rills, and ultimately gullies, into disturbed, sloped soils. Gravel bag berms are similar to sand bag barriers, but are more porous. Generally, gravel bag berms should be used in conjunction with temporary soil stabilization controls up slope to provide effective erosion and sediment control.

Design and Layout

- Locate gravel bag berms on level contours.
- When used for slope interruption, the following slope/sheet flow length combinations apply:
  - Slope inclination of 4:1 (H:V) or flatter: Gravel bags should be placed at a maximum interval of 20 ft, with the first row near the slope toe.
  - Slope inclination between 4:1 and 2:1 (H:V): Gravel bags should be placed at a maximum interval of 15 ft. (a closer spacing is more effective), with the first row near the slope toe.

Gravel Bag Berm SE-6

Slope inclination 2:1 (H:V) or greater: Gravel bags should be placed at a maximum interval of 10 ft. (a closer spacing is more effective), with the first row near the slope toe.

- Turn the ends of the gravel bag barriers up slope to prevent runoff from going around the berm.
- Allow sufficient space up slope from the gravel bag berm to allow ponding, and to provide room for sediment storage.
- For installation near the toe of the slope, gravel bag barriers should be set back from the slope toe to facilitate cleaning. Where specific site conditions do not allow for a set-back, the gravel bag barrier may be constructed on the toe of the slope. To prevent flows behind the barrier, bags can be placed perpendicular to a berm to serve as cross barriers.
- Drainage area should not exceed 5 acres.
- In Non-Traffic Areas:
  - Height = 18 in. maximum
  - Top width = 24 in. minimum for three or more layer construction
  - Top width = 12 in. minimum for one or two layer construction
  - Side slopes = 2:1 (H:V) or flatter
- In Construction Traffic Areas:
  - Height = 12 in. maximum
  - Top width = 24 in. minimum for three or more layer construction.
  - Top width = 12 in. minimum for one or two layer construction.
  - Side slopes = 2:1 (H:V) or flatter.
- Butt ends of bags tightly.
- On multiple row, or multiple layer construction, overlap butt joints of adjacent row and row beneath.
- Use a pyramid approach when stacking bags.

Materials

- ***Bag Material:*** Bags should be woven polypropylene, polyethylene or polyamide fabric or burlap, minimum unit weight of 4 ounces/yd^2, Mullen burst strength exceeding 300 lb/in^2 in conformance with the requirements in ASTM designation D3786, and ultraviolet stability exceeding 70% in conformance with the requirements in ASTM designation D4355.

Gravel Bag Berm SE-6

- ***Bag Size:*** Each gravel-filled bag should have a length of 18 in., width of 12 in., thickness of 3 in., and mass of approximately 33 lbs. Bag dimensions are nominal, and may vary based on locally available materials.

- ***Fill Material:*** Fill material should be 0.5 to 1 in. crushed rock, clean and free from clay, organic matter, and other deleterious material, or other suitable open graded, non-cohesive, porous gravel.

Costs

Material costs for gravel bags are average and are dependent upon material availability. $2.50-3.00 per filled gravel bag is standard based upon vendor research.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

- Gravel bags exposed to sunlight will need to be replaced every two to three months due to degrading of the bags.

- Reshape or replace gravel bags as needed.

- Repair washouts or other damage as needed.

- Sediment that accumulates in the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.

- Remove gravel bag berms when no longer needed and recycle gravel fill whenever possible and properly dispose of bag material. Remove sediment accumulation and clean, re-grade, and stabilize the area.

References

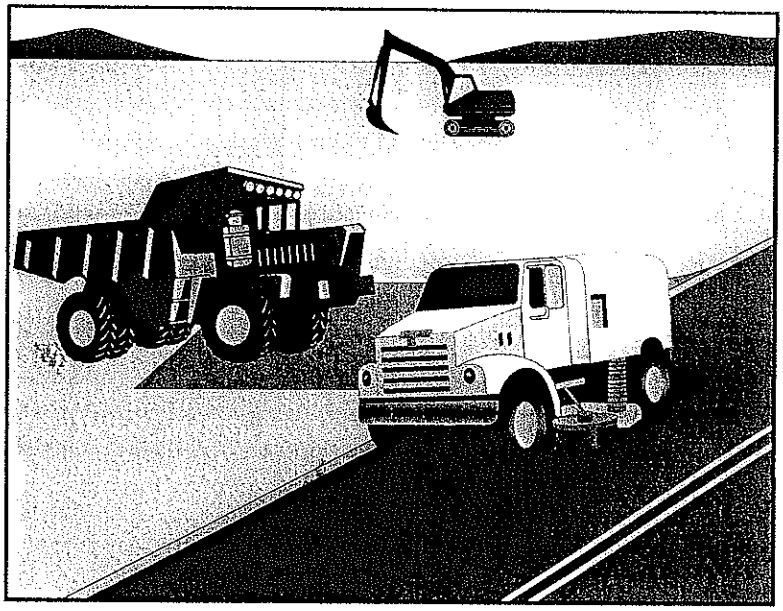
Handbook of Steel Drainage and Highway Construction, American Iron and Steel Institute, 1983.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Pollution Plan Handbook, First Edition, State of California, Department of Transportation Division of New Technology, Materials and Research, October 1992.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Street Sweeping and Vacuuming SE-7



Categories

EC	Erosion Control	
SE	Sediment Control	☒
TC	Tracking Control	☑
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	☑
Metals	
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Street sweeping and vacuuming includes use of self-propelled and walk-behind equipment to remove sediment from streets and roadways, and to clean paved surfaces in preparation for final paving. Sweeping and vacuuming prevents sediment from the project site from entering storm drains or receiving waters.

Suitable Applications

Sweeping and vacuuming are suitable anywhere sediment is tracked from the project site onto public or private paved streets and roads, typically at points of egress. Sweeping and vacuuming are also applicable during preparation of paved surfaces for final paving.

Limitations

Sweeping and vacuuming may not be effective when sediment is wet or when tracked soil is caked (caked soil may need to be scraped loose).

Implementation

- Controlling the number of points where vehicles can leave the site will allow sweeping and vacuuming efforts to be focused, and perhaps save money.
- Inspect potential sediment tracking locations daily.
- Visible sediment tracking should be swept or vacuumed on a daily basis.
- Do not use kick brooms or sweeper attachments. These tend to spread the dirt rather than remove it.

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Street Sweeping and Vacuuming SE-7

- If not mixed with debris or trash, consider incorporating the removed sediment back into the project

Costs

Rental rates for self-propelled sweepers vary depending on hopper size and duration of rental. Expect rental rates from $58/hour (3 yd^3 hopper) to $88/hour (9 yd^3 hopper), plus operator costs. Hourly production rates vary with the amount of area to be swept and amount of sediment. Match the hopper size to the area and expect sediment load to minimize time spent dumping.

Inspection and Maintenance

- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- When actively in use, points of ingress and egress must be inspected daily.
- When tracked or spilled sediment is observed outside the construction limits, it must be removed at least daily. More frequent removal, even continuous removal, may be required in some jurisdictions.
- Be careful not to sweep up any unknown substance or any object that may be potentially hazardous.
- Adjust brooms frequently; maximize efficiency of sweeping operations.
- After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite.

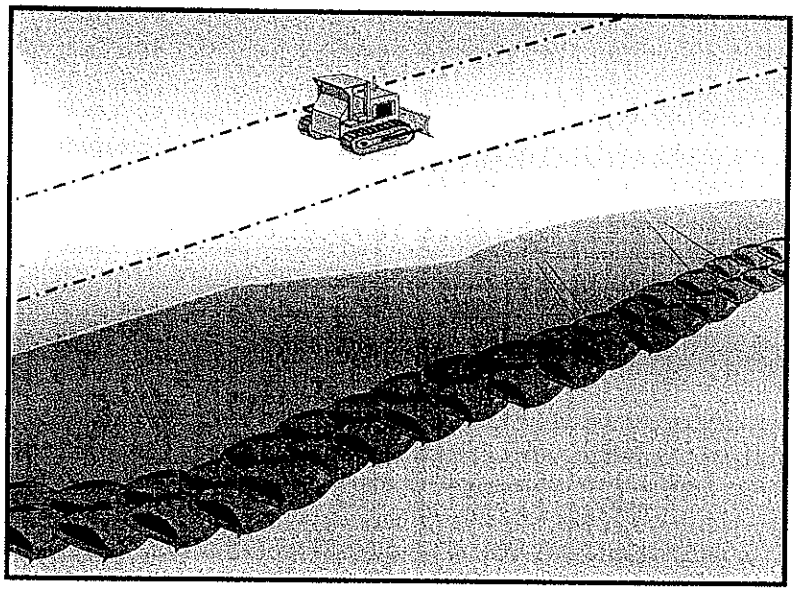
References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Labor Surcharge and Equipment Rental Rates, State of California Department of Transportation (Caltrans), April 1, 2002 – March 31, 2003.

Sandbag Barrier

SE-8



Categories

EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Description and Purpose

A sandbag barrier is a series of sand-filled bags placed on a level contour to intercept or to divert sheet flows. Sandbag barriers placed on a level contour pond sheet flow runoff, allowing sediment to settle out.

Suitable Applications

Sandbag barriers may be suitable:

- As a linear sediment control measure:
  - Below the toe of slopes and erodible slopes.
  - As sediment traps at culvert/pipe outlets.
  - Below other small cleared areas.
  - Along the perimeter of a site.
  - Down slope of exposed soil areas.
  - Around temporary stockpiles and spoil areas.
  - Parallel to a roadway to keep sediment off paved areas.
  - Along streams and channels.
- As linear erosion control measure:
  - Along the face and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-1 Silt Fence

SE-5 Fiber Rolls

SE-6 Gravel Bag Berm

SE-12 Temporary Silt Dike

SE-14 Biofilter Bags

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Sandbag Barrier SE-8

- At the top of slopes to divert runoff away from disturbed slopes.
- As check dams across mildly sloped construction roads.

Limitations

- It is necessary to limit the drainage area upstream of the barrier to 5 acres.
- Sandbags are not intended to be used as filtration devices.
- Easily damaged by construction equipment.
- Degraded sandbags may rupture when removed, spilling sand.
- Sand is easily transported by runoff if bag is damaged or ruptured.
- Installation can be labor intensive.
- Durability of sandbags is somewhat limited and bags may need to be replaced when installation is required for longer than 6 months. When used to detain concentrated flows, maintenance requirements increase.
- Burlap should not be used for sandbags.

Implementation

General

A sandbag barrier consists of a row of sand-filled bags placed on a level contour. When appropriately placed, a sandbag barrier intercepts and slows sheet flow runoff, causing temporary ponding. The temporary ponding allows sediment to settle. Sand-filled bags have limited porosity, which is further limited as the fine sand tends to quickly plug with sediment, limiting or completely blocking the rate of flow through the barrier. If a porous barrier is desired, consider SE-1, Silt Fence, SE-5, Fiber Rolls, SE-6, Gravel Bag Berms or SE-14, Biofilter Bags. Sandbag barriers also interrupt the slope length and thereby reduce erosion by reducing the tendency of sheet flows to concentrate into rivulets which erode rills, and ultimately gullies, into disturbed, sloped soils. Sandbag barriers are similar to gravel bag berms, but less porous. Generally, sandbag barriers should be used in conjunction with temporary soil stabilization controls up slope to provide effective erosion and sediment control.

Design and Layout

- Locate sandbag barriers on a level contour.
- When used for slope interruption, the following slope/sheet flow length combinations apply:
  - Slope inclination of 4:1 (H:V) or flatter: Sandbags should be placed at a maximum interval of 20 ft, with the first row near the slope toe.
  - Slope inclination between 4:1 and 2:1 (H:V): Sandbags should be placed at a maximum interval of 15 ft. (a closer spacing is more effective), with the first row near the slope toe.

    Slope inclination 2:1 (H:V) or greater: Sandbags should be placed at a maximum interval of 10 ft. (a closer spacing is more effective), with the first row near the slope toe.

Sandbag Barrier SE-8

- Turn the ends of the sandbag barrier up slope to prevent runoff from going around the barrier.
- Allow sufficient space up slope from the barrier to allow ponding, and to provide room for sediment storage.
- For installation near the toe of the slope, sand bag barriers should be set back from the slope toe to facilitate cleaning. Where specific site conditions do not allow for a set-back, the sand bag barrier may be constructed on the toe of the slope. To prevent flows behind the barrier, bags can be placed perpendicular to a berm to serve as cross barriers.
- Drainage area should not exceed 5 acres.
- Stack sandbags at least three bags high.
- Butt ends of bags tightly.
- Overlap butt joints of row beneath with each successive row.
- Use a pyramid approach when stacking bags.
- In non-traffic areas
  - Height = 18 in. maximum
  - Top width = 24 in. minimum for three or more layer construction
  - Side slope = 2:1 (H:V) or flatter
- In construction traffic areas
  - Height = 12 in. maximum
  - Top width = 24 in. minimum for three or more layer construction.
  - Side slopes = 2:1 (H:V) or flatter.
- See typical sandbag barrier installation details at the end of this fact sheet.

Materials

- ***Sandbag Material:*** Sandbag should be woven polypropylene, polyethylene or polyamide fabric, minimum unit weight of 4 ounces/yd^2, Mullen burst strength exceeding 300 lb/in^2 in conformance with the requirements in ASTM designation D3786, and ultraviolet stability exceeding 70% in conformance with the requirements in ASTM designation D4355. Use of burlap is not an acceptable substitute, as sand can more easily mobilize out of burlap.
- ***Sandbag Size:*** Each sand-filled bag should have a length of 18 in., width of 12 in., thickness of 3 in., and mass of approximately 33 lbs. Bag dimensions are nominal, and may vary based on locally available materials.

Sandbag Barrier SE-8

- ***Fill Material:*** All sandbag fill material should be non-cohesive, Class 3 (Caltrans Standard Specification, Section 25) permeable material free from clay and deleterious material, such as recycled concrete or asphalt..

Costs

Empty sandbags cost $0.25 - $0.75. Average cost of fill material is $8 per yd^3. Additional labor is required to fill the bags. Pre-filled sandbags are more expensive at $1.50 - $2.00 per bag. These costs are based upon vendor research.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Sandbags exposed to sunlight will need to be replaced every two to three months due to degradation of the bags.
- Reshape or replace sandbags as needed.
- Repair washouts or other damage as needed.
- Sediment that accumulates behind the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.
- Remove sandbags when no longer needed and recycle sand fill whenever possible and properly dispose of bag material. Remove sediment accumulation, and clean, re-grade, and stabilize the area.

References

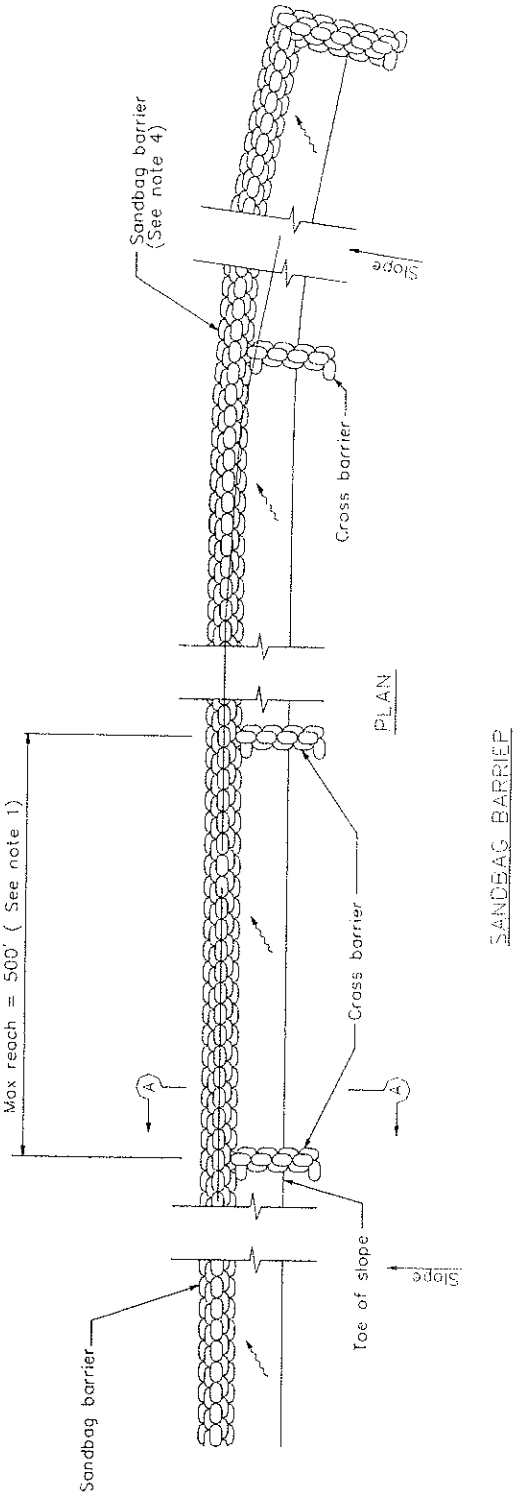
Standard Specifications for Construction of Local Streets and Roads, California Department of Transportation (Caltrans), July 2002.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Sandbag Barrier

SE-8



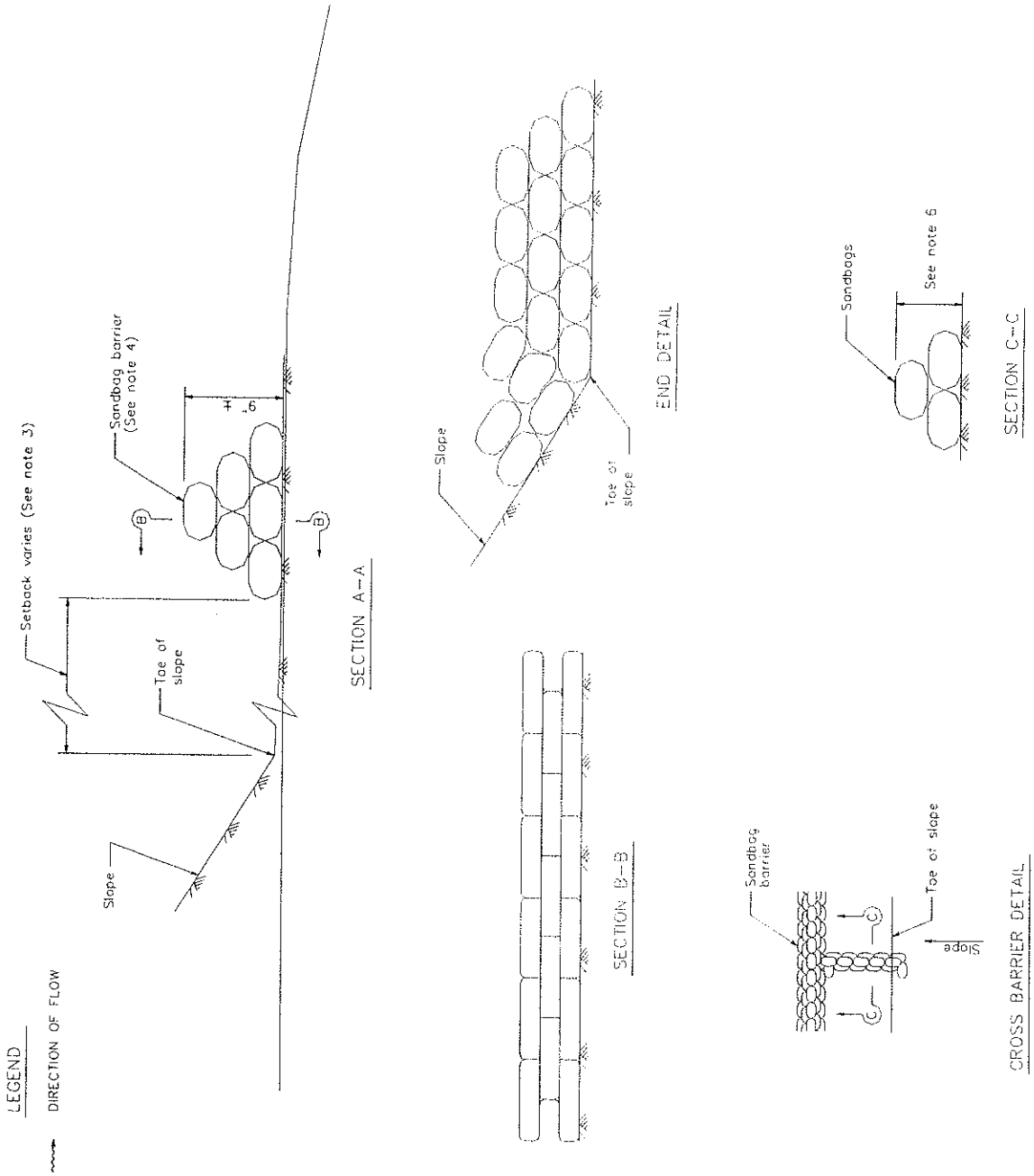
SANDBAG BARRIER

NOTES

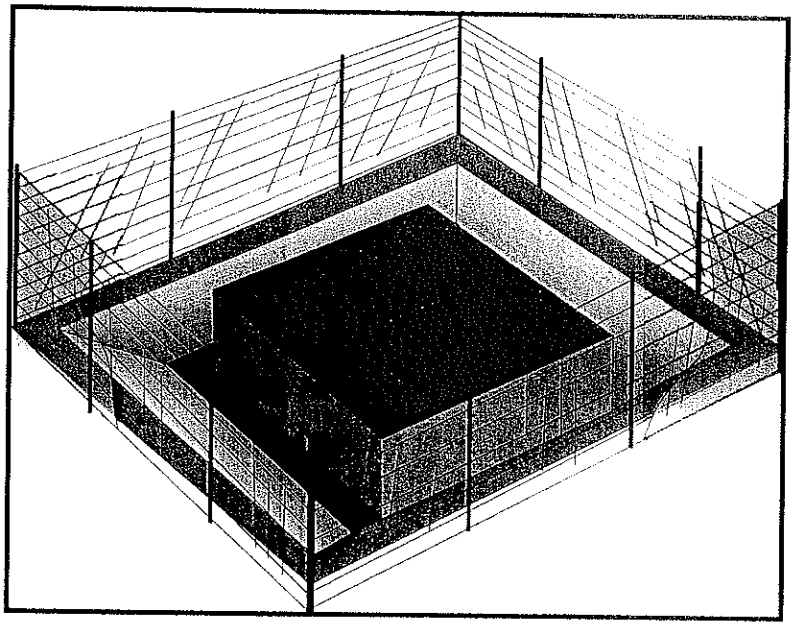
1. Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/2 the height of the linear barrier In no case shall the reach length exceed 500'.
2. Place sandbags tightly.
3. Dimension may vary to fit field condition.
4. Sandbag barrier shall be a minimum of 3 bags high.
5. The end of the barrier shall be turned up slope
6. Cross barriers shall be a min of 1/2 and a max of 2/3 the height of the linear barrier.
7. Sandbag rows and layers shall be staggered to eliminate gaps.

Sandbag Barrier

SE-8



Storm Drain Inlet Protection SE-10



Categories

EC	Erosion Control	
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	☒
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-1 Silt Fence
SE-5 Fiber Rolls
SE-6 Gravel Bag Berm
SE-8 Sandbag Barrier
SE-14 Biofilter Bags

Description and Purpose

Storm drain inlet protection consists of a sediment filter or an impounding area in, around or upstream of a storm drain, drop inlet, or curb inlet. Storm drain inlet protection measures temporarily pond runoff before it enters the storm drain, allowing sediment to settle. Some filter configurations also remove sediment by filtering, but usually the ponding action results in the greatest sediment reduction. Temporary geotextile storm drain inserts attach underneath storm drain grates to capture and filter storm water.

Suitable Applications

Every storm drain inlet receiving runoff from unstabilized or otherwise active work areas should be protected. Inlet protection should be used in conjunction with other erosion and sediment controls to prevent sediment-laden stormwater and non-stormwater discharges from entering the storm drain system.

Limitations

- Drainage area should not exceed 1 acre.
- In general straw bales should not be used as inlet protection.
- Requires an adequate area for water to pond without encroaching into portions of the roadway subject to traffic.

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Storm Drain Inlet Protection SE-10

- Sediment removal may be inadequate to prevent sediment discharges in high flow conditions or if runoff is heavily sediment laden. If high flow conditions are expected, use other onsite sediment trapping techniques in conjunction with inlet protection.
- Frequent maintenance is required.
- Limit drainage area to 1 acre maximum. For drainage areas larger than 1 acre, runoff should be routed to a sediment-trapping device designed for larger flows. See BMPs SE-2, Sediment Basin, and SE-3, Sediment Traps.
- Excavated drop inlet sediment traps are appropriate where relatively heavy flows are expected, and overflow capability is needed.

Implementation

General

Inlet control measures presented in this handbook should not be used for inlets draining more than one acre. Runoff from larger disturbed areas should be first routed through SE-2, Sediment Basin or SE-3, Sediment Trap and/or used in conjunction with other drainage control, erosion control, and sediment control BMPs to protect the site. Different types of inlet protection are appropriate for different applications depending on site conditions and the type of inlet. Alternative methods are available in addition to the methods described/shown herein such as prefabricated inlet insert devices, or gutter protection devices.

Design and Layout

Identify existing and planned storm drain inlets that have the potential to receive sediment-laden surface runoff. Determine if storm drain inlet protection is needed and which method to use.

- The key to successful and safe use of storm drain inlet protection devices is to know where runoff that is directed toward the inlet to be protected will pond or be diverted as a result of installing the protection device.
  - Determine the acceptable location and extent of ponding in the vicinity of the drain inlet. The acceptable location and extent of ponding will influence the type and design of the storm drain inlet protection device.
  - Determine the extent of potential runoff diversion caused by the storm drain inlet protection device. Runoff ponded by inlet protection devices may flow around the device and towards the next downstream inlet. In some cases, this is acceptable; in other cases, serious erosion or downstream property damage can be caused by these diversions. The possibility of runoff diversions will influence whether or not storm drain inlet protection is suitable; and, if suitable, the type and design of the device.
- The location and extent of ponding, and the extent of diversion, can usually be controlled through appropriate placement of the inlet protection device. In some cases, moving the inlet protection device a short distance upstream of the actual inlet can provide more efficient sediment control, limit ponding to desired areas, and prevent or control diversions.

Storm Drain Inlet Protection SE-10

- Six types of inlet protection are presented below. However, it is recognized that other effective methods and proprietary devices exist and may be selected.
  - Silt Fence: Appropriate for drainage basins with less than a 5% slope, sheet flows, and flows under 0.5 cfs.
  - Excavated Drop Inlet Sediment Trap: An excavated area around the inlet to trap sediment (SE-3).
  - Gravel bag barrier: Used to create a small sediment trap upstream of inlets on sloped, paved streets. Appropriate for sheet flow or when concentrated flow may exceed 0.5 cfs, and where overtopping is required to prevent flooding.
  - Block and Gravel Filter: Appropriate for flows greater than 0.5 cfs.
  - Temporary Geotextile Storm drain Inserts: Different products provide different features. Refer to manufacturer details for targeted pollutants and additional features.
  - Biofilter Bag Barrier: Used to create a small retention area upstream of inlets and can be located on pavement or soil. Biofilter bags slowly filter runoff allowing sediment to settle out. Appropriate for flows under 0.5 cfs.
- Select the appropriate type of inlet protection and design as referred to or as described in this fact sheet.
- Provide area around the inlet for water to pond without flooding structures and property.
- Grates and spaces around all inlets should be sealed to prevent seepage of sediment-laden water.
- Excavate sediment sumps (where needed) 1 to 2 ft with 2:1 side slopes around the inlet.

Installation

- ***DI Protection Type 1 - Silt Fence*** - Similar to constructing a silt fence; see BMP SE-1, Silt Fence. Do not place fabric underneath the inlet grate since the collected sediment may fall into the drain inlet when the fabric is removed or replaced and water flow through the grate will be blocked resulting in flooding. See typical Type 1 installation details at the end of this fact sheet.

  1. Excavate a trench approximately 6 in. wide and 6 in. deep along the line of the silt fence inlet protection device.
  2. Place 2 in. by 2 in. wooden stakes around the perimeter of the inlet a maximum of 3 ft apart and drive them at least 18 in. into the ground or 12 in. below the bottom of the trench. The stakes should be at least 48 in.
  3. Lay fabric along bottom of trench, up side of trench, and then up stakes. See SE-1, Silt Fence, for details. The maximum silt fence height around the inlet is 24 in.
  4. Staple the filter fabric (for materials and specifications, see SE-1, Silt Fence) to wooden stakes. Use heavy-duty wire staples at least 1 in. in length.

Storm Drain Inlet Protection SE-10

5. Backfill the trench with gravel or compacted earth all the way around.

- ***DI Protection Type 2 - Excavated Drop Inlet Sediment Trap*** - Install filter fabric fence in accordance with DI Protection Type 1. Size excavated trap to provide a minimum storage capacity calculated at the rate 67 yd^3/acre of drainage area. See typical Type 2 installation details at the end of this fact sheet.

- ***DI Protection Type 3 - Gravel bag*** - Flow from a severe storm should not overtop the curb. In areas of high clay and silts, use filter fabric and gravel as additional filter media. Construct gravel bags in accordance with SE-6, Gravel Bag Berm. Gravel bags should be used due to their high permeability. See typical Type 3 installation details at the end of this fact sheet.

  1. Construct on gently sloping street.
  2. Leave room upstream of barrier for water to pond and sediment to settle.
  3. Place several layers of gravel bags – overlapping the bags and packing them tightly together.
  4. Leave gap of one bag on the top row to serve as a spillway. Flow from a severe storm (e.g., 10 year storm) should not overtop the curb.

- ***DI Protection Type 4 – Block and Gravel Filter*** - Block and gravel filters are suitable for curb inlets commonly used in residential, commercial, and industrial construction. See typical Type 4 installation details at the end of this fact sheet.

  1. Place hardware cloth or comparable wire mesh with 0.5 in. openings over the drop inlet so that the wire extends a minimum of 1 ft beyond each side of the inlet structure. If more than one strip is necessary, overlap the strips. Place woven geotextile over the wire mesh.
  2. Place concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, so that the open ends face outward, not upward. The ends of adjacent blocks should abut. The height of the barrier can be varied, depending on design needs, by stacking combinations of blocks that are 4 in., 8 in., and 12 in. wide. The row of blocks should be at least 12 in. but no greater than 24 in. high.
  3. Place wire mesh over the outside vertical face (open end) of the concrete blocks to prevent stone from being washed through the blocks. Use hardware cloth or comparable wire mesh with 0.5 in. opening.
  4. Pile washed stone against the wire mesh to the top of the blocks. Use 0.75 to 3 in.

- ***DI Protection Type 5 – Temporary Geotextile Insert (proprietary)*** – Many types of temporary inserts are available. Most inserts fit underneath the grate of a drop inlet or inside of a curb inlet and are fastened to the outside of the grate or curb. These inserts are removable and many can be cleaned and reused. Installation of these inserts differs between manufacturers. Please refer to manufacturer instruction for installation of proprietary devices.

Storm Drain Inlet Protection SE-10

- ***DI Protection Type 6 - Biofilter bags*** – Biofilter bags may be used as a substitute for gravel bags in low-flow situations. Biofilter bags should conform to specifications detailed in SE-14, Biofilter bags.

  1. Construct in a gently sloping area.
  2. Biofilter bags should be placed around inlets to intercept runoff flows.
  3. All bag joints should overlap by 6 in.
  4. Leave room upstream for water to pond and for sediment to settle out.
  5. Stake bags to the ground as described in the following detail. Stakes may be omitted if bags are placed on a paved surface.

Costs

- Average annual cost for installation and maintenance of DI Type 1-4 and 6 (one year useful life) is $200 per inlet.
- Temporary geotextile inserts are proprietary and cost varies by region. These inserts can often be reused and may have greater than 1 year of use if maintained and kept undamaged. Average cost per insert ranges from $50-75 plus installation, but costs can exceed $100. This cost does not include maintenance.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Silt Fences. If the fabric becomes clogged, torn, or degrades, it should be replaced. Make sure the stakes are securely driven in the ground and are in good shape (i.e., not bent, cracked, or splintered, and are reasonably perpendicular to the ground). Replace damaged stakes. At a minimum, remove the sediment behind the fabric fence when accumulation reaches one-third the height of the fence or barrier height.
- Gravel Filters. If the gravel becomes clogged with sediment, it should be carefully removed from the inlet and either cleaned or replaced. Since cleaning gravel at a construction site may be difficult, consider using the sediment-laden stone as fill material and put fresh stone around the inlet. Inspect bags for holes, gashes, and snags, and replace bags as needed. Check gravel bags for proper arrangement and displacement.
- Sediment that accumulates in the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.
- Inspect and maintain temporary geotextile insert devices according to manufacturer's specifications.
- Remove storm drain inlet protection once the drainage area is stabilized.

Storm Drain Inlet Protection SE-10

- Clean and regrade area around the inlet and clean the inside of the storm drain inlet, as it should be free of sediment and debris at the time of final inspection.

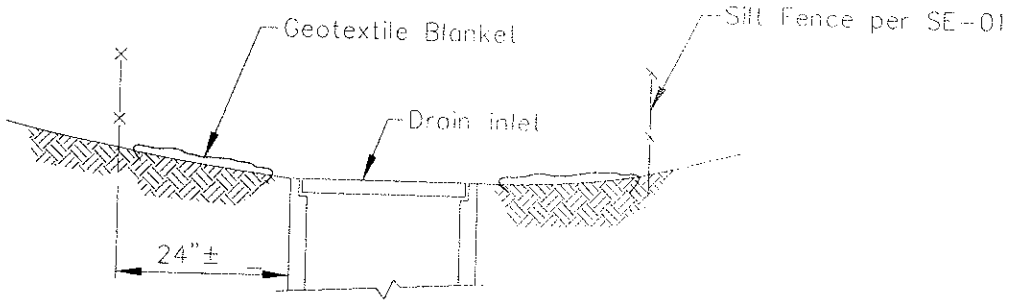
References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

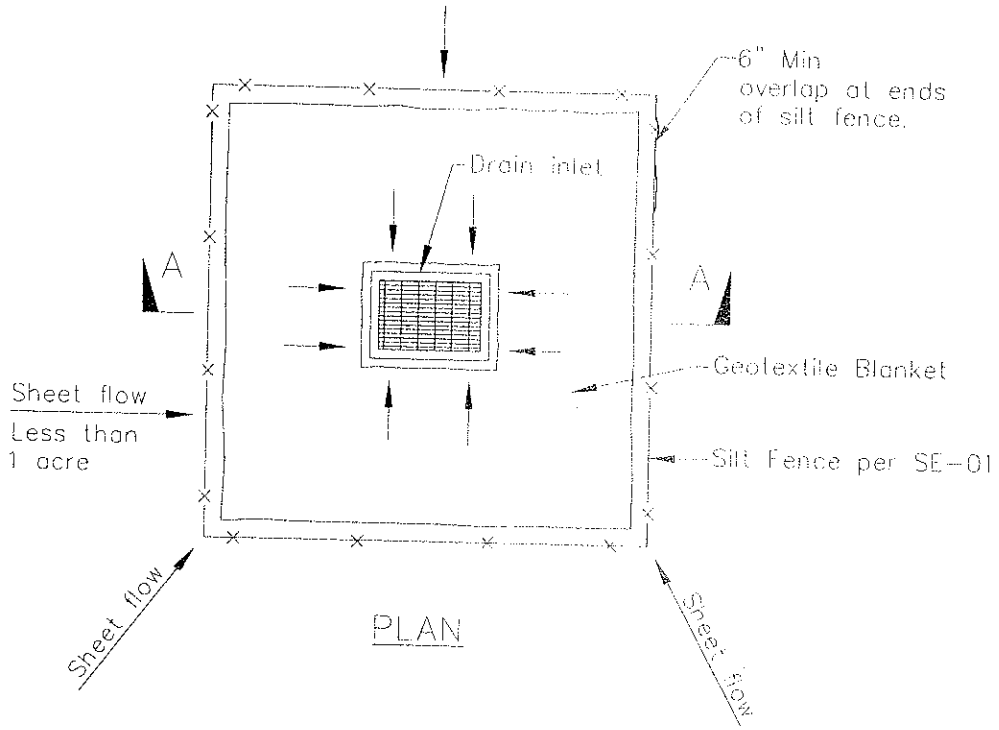
Stormwater Management Manual for The Puget Sound Basin, Washington State Department of Ecology, Public Review Draft, 1991.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Storm Drain Inlet Protection SE-10



SECTION A-A



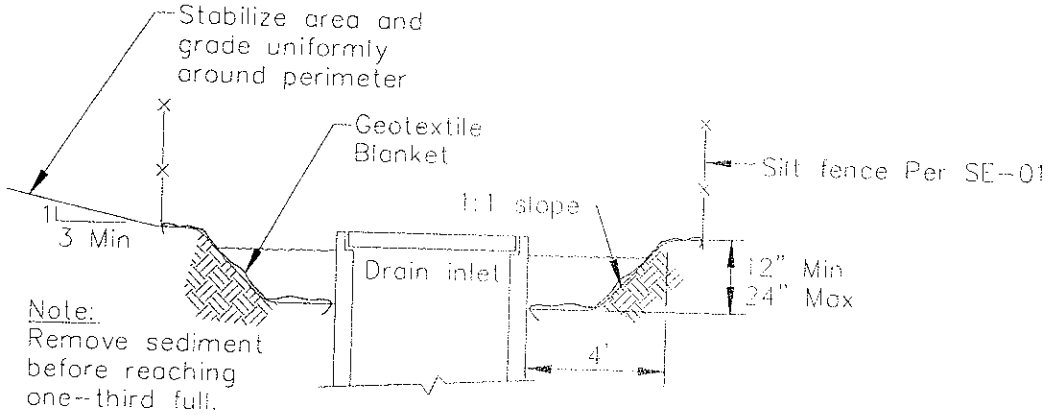
PLAN

DI PROTECTION TYPE 1
NOT TO SCALE

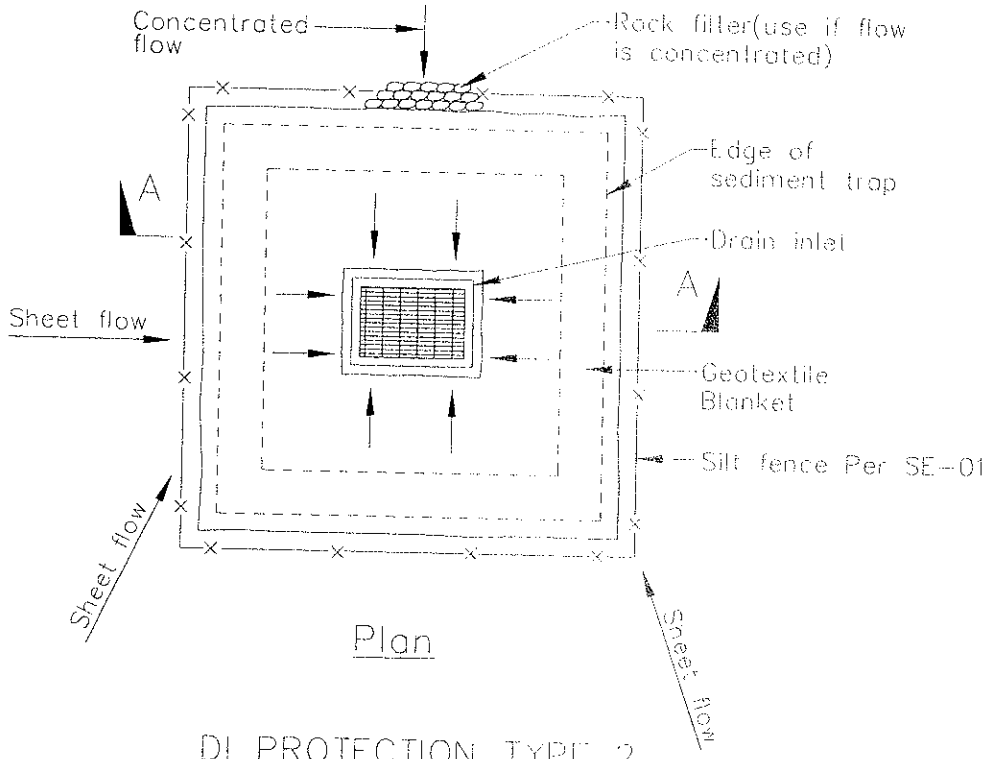
NOTES:

1. For use in areas where grading has been completed and final soil stabilization and seeding are pending.
2. Not applicable in paved areas.
3. Not applicable with concentrated flows.

Storm Drain Inlet Protection SE-10



Section A-A

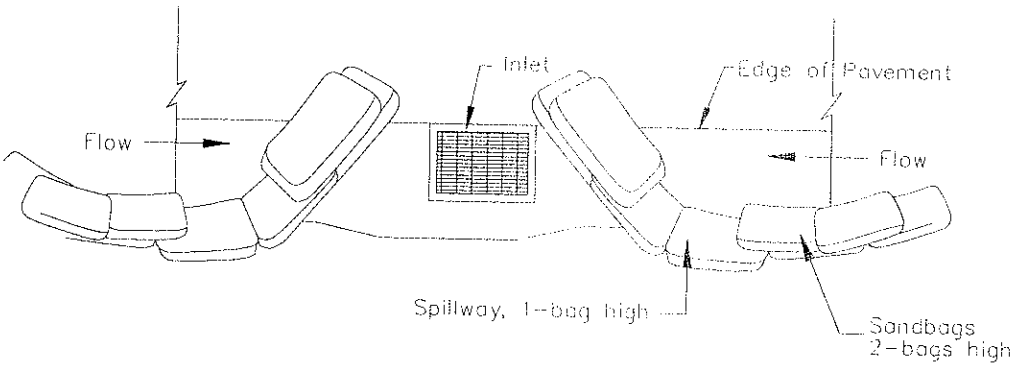


Plan

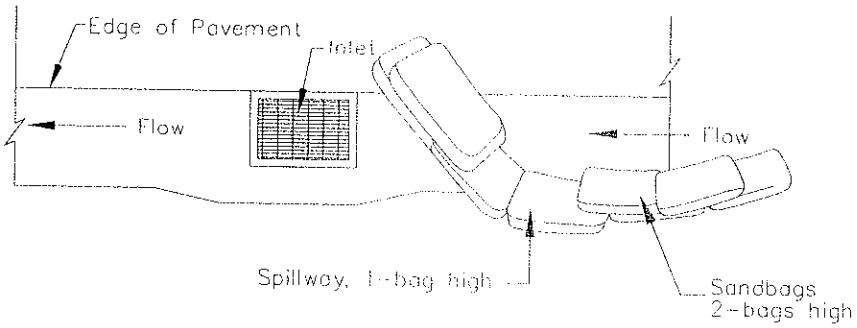
DI PROTECTION TYPE 2
NOT TO SCALE

Notes
1. For use in cleared and grubbed and in graded areas.
2. Shape basin so that longest inflow area faces longest length of trap.
3. For concentrated flows, shape basin in 2:1 ratio with length oriented towards direction of flow.

Storm Drain Inlet Protection SE-10



TYPICAL PROTECTION FOR INLET ON SUMP



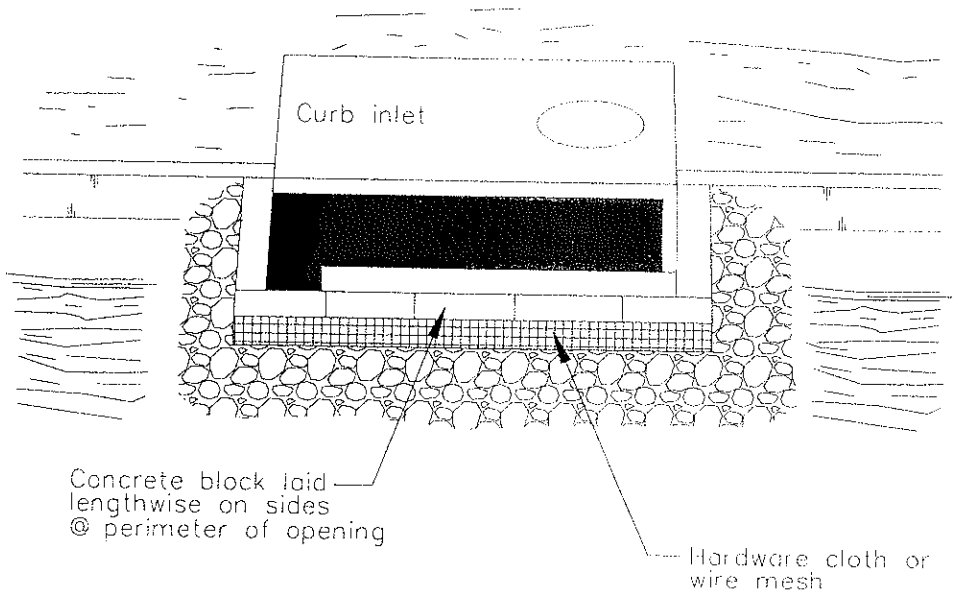
TYPICAL PROTECTION FOR INLET ON GRADE

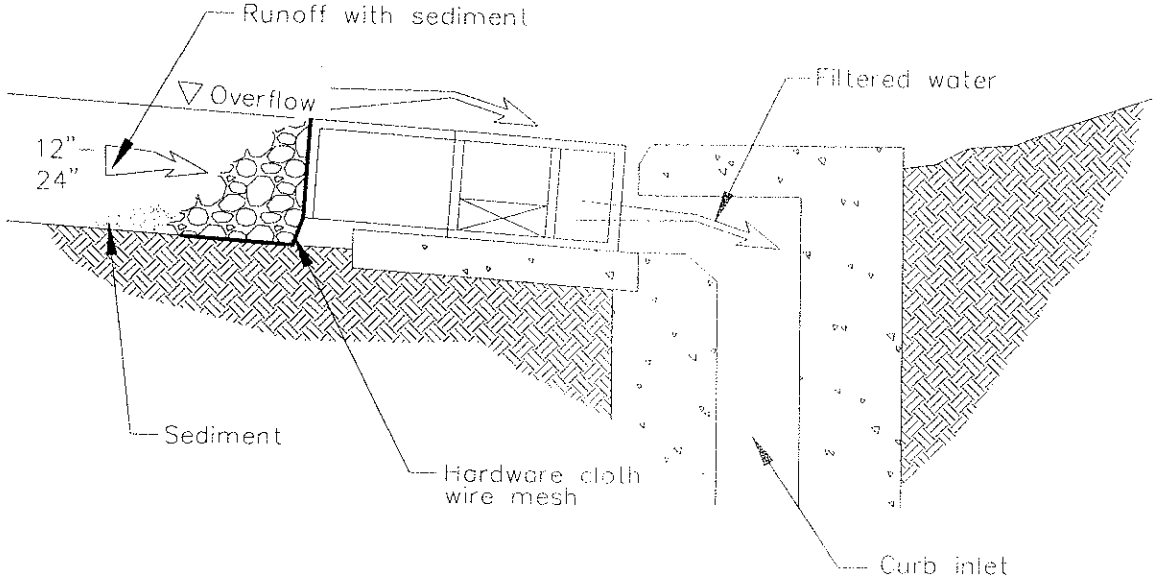
NOTES:

1. Intended for short-term use.
2. Use to inhibit non-storm water flow.
3. Allow for proper maintenance and cleanup.
4. Bags must be removed after adjacent operation is completed
5. Not applicable in areas with high silts and clays without filter fabric.

DI PROTECTION TYPE 3
NOT TO SCALE

Storm Drain Inlet Protection SE-10





DI PROTECTION – TYPE 4
NOT TO SCALE

Compost Socks and Berms SE-13

Categories

EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	☒
Bacteria	☒
Oil and Grease	☒
Organics	

Potential Alternatives

SE-1 Silt Fence

SE-5 Fiber Roll

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-14 Biofilter Bags

Description and Purpose

Compost socks and berms act as three-dimensional biodegradable filtering structures to intercept runoff where sheet flow occurs and are generally placed at the site perimeter or at intervals on sloped areas. Compost socks are generally a mesh sock containing compost and a compost berm is a dike of compost, trapezoidal in cross section. When employed to intercept sheet flow, both BMPs are placed perpendicular to the flow of runoff, allowing filtered runoff to pass through the compost and retaining sediment (and potentially other pollutants). A compost sock can be assembled on site by filling a mesh sock (e.g. with a pneumatic blower). The compost berm should be constructed using a backhoe or equivalent and/or a pneumatic delivery (blower) system and should be properly compacted. Compost socks and berms act as filters, reduce runoff velocities, and in some cases, aid in establishing vegetation.

Compost is organic, biodegradable, and renewable. Compost provides soil structure that allows water to infiltrate the compost medium which helps prevent rill erosion and the retained moisture promotes seed germination and vegetation growth, in addition to providing organic matter and nutrients important for fostering vegetation. Compost improves soil quality and productivity, as well as erosion and sediment control. The compost of the compost sock or berm can be selected that targets site specific objectives in capturing sediment and other pollutants, supporting vegetation, or additional erosion control.

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Compost Socks and Berms SE-13

Compost is typically derived from combinations of feedstocks, biosolids, leaf and yard trimmings, manure, wood, or mixed solid waste. Many types of compost are products of municipal recycle or "Greenwaste" programs. Compost is organic and biodegradable and can be left onsite. There are many types of compost with a variety of properties with specific functions, and accordingly compost selection is an important design consideration in the application of this type of erosion and sediment control.

Suitable Applications

- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow (compost berms should only be used at the top of slopes or on slopes 4:1 (H:V) or flatter, all other slope applications should use compost socks)
- Along the perimeter of a project
- As check dams in unlined ditches (compost socks only)
- Down-slope of exposed soil areas
- At operational storm drains as a form of inlet protection (compost socks only)
- Around temporary stockpiles

Compost socks and berms do not require special trenching or BMP removal compared to other sediment control methods (e.g. silt fence or fiber rolls). Compost socks and berms can remain in place after earth disturbing activities are completed or the compost components can be spread over the site providing nutrients for plant growth and augmenting soil structure. BMPs that remain in place are particularly advantageous below embankments, especially adjacent streams, by limiting re-entry and the disturbance to sensitive areas.

Compost can be pre-seeded prior to application (recommended by the EPA for construction site stormwater runoff control and required for compost socks) or seeded after installation (for compost berms only). The compost medium can also remove pollutants in stormwater including heavy metals; oil and grease; and hydrocarbons.

Limitations

- Compost can potentially leach nutrients (dissolved phosphorus and nitrogen) into runoff and potentially impact water quality. Compost should not be used directly upstream from nutrient impaired waterbodies (Adams et. al, 2008).
- Compost may also contain other undesirable constituents that are detrimental to water quality. Compost should be obtained from a supplier certified by the California Integrated Waste Management Board or compost should otherwise meet the environmental health standards of Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7. Carefully consider the qualifications and experience of any compost producer/supplier.
- Application by hand is more time intensive and potentially costly. Using a pneumatic blower truck is the recommended cost effective method of assembly.
- Compost socks and berms should not be employed at the base of slopes greater than 2:1 (H:V). They can be employed with other erosion control methods for steeper slopes.

Compost Socks and Berms SE-13

- Difficult to move once saturated.
- Compost berms should not be applied in areas of concentrated flows.
- Compost socks and berms are easy to fix; however, they are susceptible to damage by frequent traffic. Compost socks can be used around heavy machinery, but regular disturbance decreases sock performance.

Implementation

Compost Materials

- California Compost Regulations (Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7, Section 17868.3) define and require a quality of compost for application. Compost should comply with all physical and chemical requirements. Specific requirements are provided in Table 1, taken from Caltrans Standard Special Provision 10-1 (SSP 10-1), Erosion Control (Compost Blanket).
- The compost producer should be fully permitted as specified under the California Integrated Waste Management Board, Local Enforcement Agencies and any other State and Local Agencies that regulate Solid Waste Facilities. If exempt from State permitting requirements, the composting facility should certify that it follows guidelines and procedures for production of compost meeting the environmental health standards of Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7.
- The compost producer should be a participant in United States Composting Council's Seal of Testing Assurance program.
- Compost medium parameter specifications for compost socks and berms have been developed to assist in compost selection, such as those provided by the American Association of State Highway Transportation Officials (AASHTO).
- Particle size is important parameter for selecting compost. Well consolidated coarser grades of compost (e.g. small and large pieces) perform better for filtration objectives, while finer grades better support vegetation. Particle size of the compost should be selected based on site conditions, such as expected precipitation, and filtration goals and / or long term plant nutrients.
- Compost moisture should be considered for composition quality and application purposes. A range of 30-50% is typical. Compost that is too dry is hard to apply and compost that is too wet is more difficult (and more expensive) to transport. For arid or semi-arid areas, or for application during the dry season, use compost with greater moisture content than areas with wetter climates. For wetter or more humid climates or for application during the wet season, drier composts can be used as the compost will absorb moisture from the ambient air.
- If vegetation establishment is a desired function of the compost, a compost sample should be inspected by a qualified individual. Vegetation has different nutrient and moisture needs.
- Organic content of the compost is also important and should range from 30 to 65% depending on site conditions.

Compost Socks and Berms SE-13

- Compost should not be derived from mixed municipal solid waste and should be reasonably free of visible contaminates.
- Compost should not contain paint, petroleum products, pesticides or any other chemical residues harmful to animal life or plant growth. Metal concentrations in compost should not exceed the maximum metal concentrations listed under Title 14, California Code of Regulations, Division 7, Chapter 3.1, Section 17868.2.
- Compost should not possess objectionable odors.
- Compost should be weed free.

Compost Socks and Berms SE-13

Table 1. Physical/Chemical Requirements of Compost
Reference - Caltrans SSP-10 Erosion Control Blanket (Compost)

Property	Test Method	Requirement
pH	*TMECC 04.11-A Elastometric pH 1:5 Slurry Method pH Units	6.0–8.0
Soluble Salts	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method dS/m (mmhos/cm)	0-10.0
Moisture Content	TMECC 03.09-A Total Solids & Moisture at 70+/- 5 deg C % Wet Weight Basis	30-60
Organic Matter Content	TMECC 05.07-A Loss-On-Ignition Organic Matter Method (LOI) % Dry Weight Basis	30–65
Maturity	TMECC 05.05-A Germination and Vigor Seed Emergence Seedling Vigor % Relative to Positive Control	80 or Above 80 or Above
Stability	TMECC 05.08-B Carbon Dioxide Evolution Rate mg CO_2-C/g OM per day	8 or below
Particle Size	TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	100% Passing, 3 inch 90-100% Passing, 1 inch 65-100% Passing, 3/4 inch 0 - 75% Passing, 1/4 inch Maximum length 6 inches
Pathogen	TMECC 07.01-B Fecal Coliform Bacteria < 1000 MPN/gram dry wt.	Pass
Pathogen	TMECC 07.01-B Salmonella < 3 MPN/4 grams dry wt.	Pass
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Plastic, Glass and Metal % > 4mm fraction	Combined Total: < 1.0
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Sharps (Sewing needles, straight pins and hypodermic needles) % > 4mm fraction	None Detected

*TMECC refers to "Test Methods for the Examination of Composting and Compost," published by the United States Department of Agriculture and the United States Compost Council (USCC).

Installation

- Prior to application, prepare locations for socks and berms by removing brush and thick vegetation. The compost of the sock and/or berm should be allowed to come in full contact with the ground surface.
- Select method to apply the compost sock or berm. A pneumatic blower is most cost effective and most adaptive in applying compost to steep, rough terrain, and hard to reach locations.
- The compost of the berm should be distributed evenly to the surface, compacted, and shaped trapezoidal in cross section. Berm design is generally consists of a base two times the height. AASHTO specification MP 9-03 provides compost berm dimensions based on anticipated site precipitation (AASHTO, 2003 and USEPA, 2009). State agencies, such as Oregon

Compost Socks and Berms SE-13

Department of Environmental Quality (ODEQ) have developed berm dimension based on slope steepness and length (ODEQ, 2004).

- Compost socks can be assembled on site by filling mesh socks with the selected compost. Mesh socks can be tied at one end, filled, and then tied at the other end. The ends of socks can be interlocked until the desired length is achieved. The sock diameter is a function of slope steepness and length. Again, ASSHTO provides specifications for various parameters. Compost socks range from 8" to 18", but are typically 12" to 18" in diameter.
- Compost socks are typically placed in contours perpendicular to sheet flow. They can also be placed in V formation on a slope. Compost socks need to be anchored, typically stakes, through the center of the sock. To prevent water flowing around them, the ends of compost socks should be placed upslope.
- Locate compost socks and berms on level contours spaced as follows:
  - Slope inclination of 4:1 (H:V) or flatter: Socks and/or berms should be placed at a maximum interval of 20 ft.
  - Slope inclination between 4:1 and 2:1 (H:V): Socks should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
  - Slope inclination 2:1 (H:V) or greater: Socks should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
- Place perimeter socks and berms using a j-hook installation. Use of vegetation will also provide additional anchoring.
- Compost socks and berms can be placed around the perimeter of an affected area, like a silt fence, if the area is flat or on a contour. Do not place these socks and berms where ponded water could become an issue.
- If used at the toe of slopes, the compost sock or berm should at a minimum of 5 to 10 feet away.
- Use additional anchoring and erosion control BMPS in conjunction of the compost socks and berms as needed.
- Consider using compost berms or socks as necessary at the top and/or bottom of the slope for additional erosion control performance.
- Compost socks and berms can also be effective over rocky and frozen ground if installed properly.
- It is recommended that the drainage areas of these compost BMPs do not exceed 0.25 acre per 100 feet placement interval and runoff does not exceed 1 cubic foot per second.

Compost Socks and Berms SE-13

Costs

Recently obtained vendor costs indicated $3.50 per linear foot for compost berm application and $2.00 per linear foot for 8" socks and $2.50 per linear foot for 12"socks. Costs do not include final compost sock or berm functions at the end of construction activities, including spreading or removal, if required. ODEQ estimates that compost berms cost 30 percent less than silt fences to install.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Once damage is identified, mend or reapply the sock or berm as needed. Washed out areas should be replaced. If the sock or berm height is breached during a storm, an additional sock can be stacked to increase the sock height and similarly the berm dimensions can be increased, as applicable. An additional sock or berm may be installed upslope, as needed. It may be necessary to apply an additional type of stormwater BMP, such as a compost blanket.
- Sediment contained by the sock or berm should be removed prior reaching 1/3 of the exposed height of the BMP. The sediment can be stabilized with the compost sock or berm with vegetation at the end of construction activities.
- Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require reapplication of BMPs.
- Limit traffic to minimize damage to BMPs or impede vegetation establishment.

References

An analysis of Composting as an Environmental Remediation Technology, U.S. Environmental Protection Agency (USEPA), Solid Waste and Emergency Response (5305W), EPA530-R-8-008, 1998.

Characteristics of Compost: Moisture Holding and Water Quality Improvement, Center for Research in Water Resources, Kirchoff, C., Malina, J., and Barrett, M., 2003.

Compost Utilization for Erosion Control, The University of Georgia College of Agricultural and Environmental Sciences, pubs.caes.uga.edu/caespubs/pubcd/B1200.htm, Faucette, B. and Risse, M., 2001.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Standard Special Provision 10-1, Erosion Control (Compost Blanket), State of California Department of Transportation (Caltrans). 2007 Update.

Evaluation of Environmental Benefits and Impacts of Compost and Industry Standard Erosion and Sediment Controls Measures Used in Construction Activities, Dissertation, Institute of Ecology, University of Georgia, Faucette, B., 2004.

Compost Socks and Berms SE-13

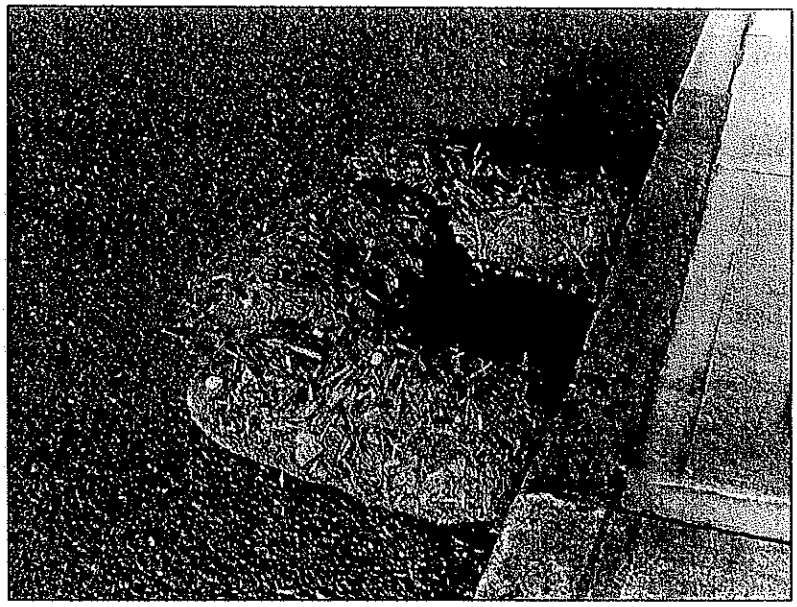
National Pollutant Discharge Elimination System (NPDES), Compost Blankets, U.S. Environmental Protection Agency (USEPA). http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=118, 2009.

Standard Specifications for Transportation Materials and Methods of Sampling and Testing, Designation MP-9, Compost for Erosion/Sediment Control (Filter Berms), Provisional, American Association of State Highway Transportation Officials (AASHTO), 2003.

Stormwater Best Management Practices (BMPs) Field Trials of Erosion Control Compost in Reclamation of Rock Quarry Operations, Nonpoint Source Protection Program CWA §319(h), Texas Commission on Environmental Quality, Adams, T., McFarland, A., Hauck, L., Barrett, M., and Eck, B., 2008.

Biofilter Bags

SE-14



Categories

EC	Erosion Control	
SE	Sediment Control	☑
TR	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-1 Silt Fence

SE-4 Check Dams

SE-5 Fiber Roll

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-10 Storm Drain Inlet Protection

Description and Purpose

Biofilter bags, or bio-bags, are a multi-purpose sediment control BMP consisting of a plastic mesh bag filled with 100% recycled wood product waste. Biofilter bags come in a variety of sizes (30" X 18" and 30" X 9" being common) and generally have between 1-2 cubic yards of recycled wood waste (or wood chips). Biofilter bags work by detaining flow and allowing a slow rate of discharge through the wood media. This action removes suspended sediment through gravity settling of the detained water and filtration within the bag.

Suitable Applications

Biofilter bags are a short-term BMP that can be rapidly deployed, maintained, and replaced. Biofilter bags can be an effective short-term solution to place in developed rills to prevent further erosion until permanent measures can be established. Suitable short-term applications include:

- As a linear sediment control measure:
  - Below the toe of slopes and erodible slopes
  - Below other small cleared areas
  - Along the perimeter of a site (with low-expected flow)
  - Down slope of exposed soil areas
  - Around temporary stockpiles and spoil areas
  - Parallel to a roadway to keep sediment off paved areas

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Biofilter Bags SE-14

- Along streams and channels

- As linear erosion control measure:
  - Along the face and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow
  - At the top of slopes to divert runoff away from disturbed slopes
  - As check dams across mildly sloped construction roads
- Inlet Protection (See SE-10)
- Supplement to silt fences or other sediment control devices

Limitations

- Short life-span (2-3 months); regular maintenance and replacement required to ensure effectiveness. Bags will rapidly fill with sediment and reduce permeability.
- Easily damaged by construction vehicles.
- If not properly staked, will fail on slope applications.
- If improperly installed can allow undercutting or side-cutting flow.
- Not effective where water velocities or volumes are high.
- Potentially buoyant and easily displaced if not properly installed.

Implementation

General

Biofilter bags are a relatively low cost temporary BMP that are easily deployed and have a simple installation that can be performed by hand. Without proper installation, however, biofilter bags can fail due to their light weight, potential displacement, and multiple joint locations. One of the benefits of utilizing biofilter bags is that the media (wood-product) can be recycled or used onsite when no longer needed (where acceptable).

Design and Layout – Linear control

- Locate biofilter bags on level contours.
  - Slopes between 20:1 and 4:1 (H:V): Biofilter bags should be placed at a maximum interval of 20 ft, with the first row near the slope toe.
  - Slopes between 4:1 and 2:1 (H:V): Biofilter bags should be placed at a maximum interval of 15 ft, with the first row near the slope toe.
  - Slopes 2:1 (H:V) or steeper: Biofilter bags should be placed at a maximum interval of 10 ft., with the first row placed the slope toe.

Biofilter Bags SE-14

- Turn the ends of the biofilter bag barriers up slope to prevent runoff from going around the berm.
- Allow sufficient space up slope from the biofilter bag berm to allow ponding, and to provide room for sediment storage.
- Stake biofilter bags into a 1 to 2 in. deep trench with a width equal to the bag.
  - Drive one stake at each end of the bag.
  - Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.
- Biofilter bags should be overlapped (6 in.), not abutted.

Costs

Pre-filled biofilter bags cost approximately $2.50-$3.50 per bag, dependent upon size.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Biofilter bags exposed to sunlight will need to be replaced every two to three months due to degrading of the bags.
- Reshape or replace biofilter bags as needed.
- Repair washouts or other damage as needed.
- Sediment that is retained by the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.
- Remove biofilter bag berms when no longer needed. Remove sediment accumulation and clean, re-grade, and stabilize the area. Biofilter media may be used on-site, if allowed.

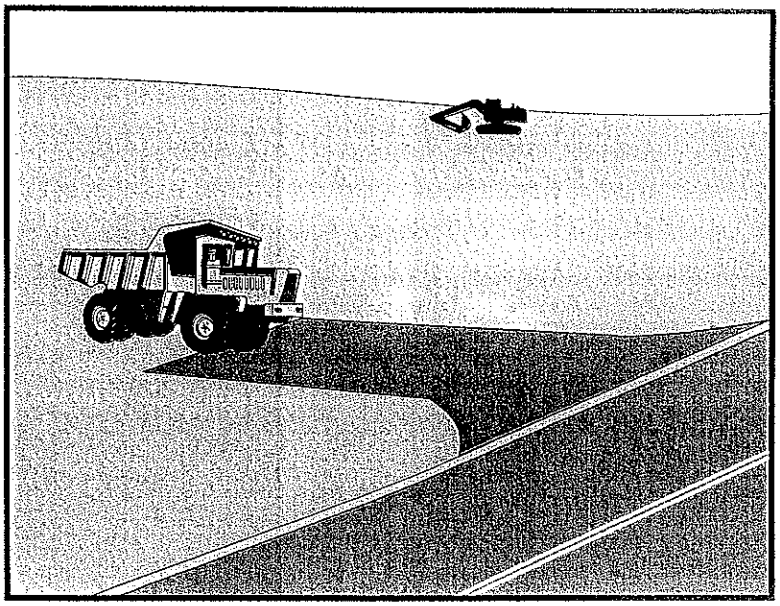
References

Catalog of Stormwater Best Management Practices for Idaho Cities and Counties. Volume 2, Section 7, BMP 34 – Biofilter Bags, Idaho Department of Environmental Quality, 2005.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stabilized Construction Entrance/Exit TC-1



Categories

EC	Erosion Control	☒
SE	Sediment Control	☒
TC	Tracking Control	☑
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

A stabilized construction access is defined by a point of entrance/exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto public roads by construction vehicles.

Suitable Applications

Use at construction sites:

- Where dirt or mud can be tracked onto public roads.
- Adjacent to water bodies.
- Where poor soils are encountered.
- Where dust is a problem during dry weather conditions.

Limitations

- Entrances and exits require periodic top dressing with additional stones.
- This BMP should be used in conjunction with street sweeping on adjacent public right of way.
- Entrances and exits should be constructed on level ground only.
- Stabilized construction entrances are rather expensive to construct and when a wash rack is included, a sediment trap of some kind must also be provided to collect wash water runoff.

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Stabilized Construction Entrance/Exit TC-1

Implementation

General

A stabilized construction entrance is a pad of aggregate underlain with filter cloth located at any point where traffic will be entering or leaving a construction site to or from a public right of way, street, alley, sidewalk, or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights of way or streets. Reducing tracking of sediments and other pollutants onto paved roads helps prevent deposition of sediments into local storm drains and production of airborne dust.

Where traffic will be entering or leaving the construction site, a stabilized construction entrance should be used. NPDES permits require that appropriate measures be implemented to prevent tracking of sediments onto paved roadways, where a significant source of sediments is derived from mud and dirt carried out from unpaved roads and construction sites.

Stabilized construction entrances are moderately effective in removing sediment from equipment leaving a construction site. The entrance should be built on level ground. Advantages of the Stabilized Construction Entrance/Exit is that it does remove some sediment from equipment and serves to channel construction traffic in and out of the site at specified locations. Efficiency is greatly increased when a washing rack is included as part of a stabilized construction entrance/exit.

Design and Layout

- Construct on level ground where possible.
- Select 3 to 6 in. diameter stones.
- Use minimum depth of stones of 12 in. or as recommended by soils engineer.
- Construct length of 50 ft or maximum site will allow, and 10 ft minimum width or to accommodate traffic.
- Rumble racks constructed of steel panels with ridges and installed in the stabilized entrance/exit will help remove additional sediment and to keep adjacent streets clean.
- Provide ample turning radii as part of the entrance.
- Limit the points of entrance/exit to the construction site.
- Limit speed of vehicles to control dust.
- Properly grade each construction entrance/exit to prevent runoff from leaving the construction site.
- Route runoff from stabilized entrances/exits through a sediment trapping device before discharge.
- Design stabilized entrance/exit to support heaviest vehicles and equipment that will use it.

Stabilized Construction Entrance/Exit TC-1

- Select construction access stabilization (aggregate, asphaltic concrete, concrete) based on longevity, required performance, and site conditions. Do not use asphalt concrete (AC) grindings for stabilized construction access/roadway.
- If aggregate is selected, place crushed aggregate over geotextile fabric to at least 12 in. depth, or place aggregate to a depth recommended by a geotechnical engineer. A crushed aggregate greater than 3 in. but smaller than 6 in. should be used.
- Designate combination or single purpose entrances and exits to the construction site.
- Require that all employees, subcontractors, and suppliers utilize the stabilized construction access.
- Implement SE-7, Street Sweeping and Vacuuming, as needed.
- All exit locations intended to be used for more than a two-week period should have stabilized construction entrance/exit BMPs.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMPs are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect local roads adjacent to the site daily. Sweep or vacuum to remove visible accumulated sediment.
- Remove aggregate, separate and dispose of sediment if construction entrance/exit is clogged with sediment.
- Keep all temporary roadway ditches clear.
- Check for damage and repair as needed.
- Replace gravel material when surface voids are visible.
- Remove all sediment deposited on paved roadways within 24 hours.
- Remove gravel and filter fabric at completion of construction

Costs

Average annual cost for installation and maintenance may vary from $1,200 to $4,800 each, averaging $2,400 per entrance. Costs will increase with addition of washing rack, and sediment trap. With wash rack, costs range from $1,200 - $6,000 each, averaging $3,600 per entrance.

References

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Stabilized Construction Entrance/Exit TC-1

National Management Measures to Control Nonpoint Source Pollution from Urban Areas, USEPA Agency, 2002.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April 1992.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

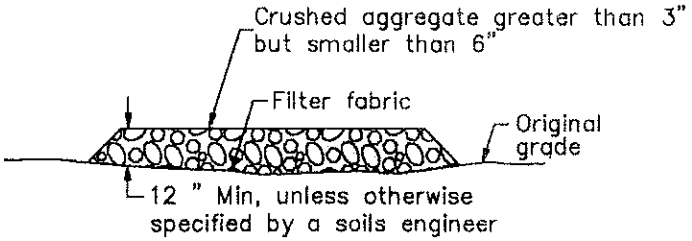
Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Virginia Erosion and Sedimentation Control Handbook, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, 1991.

Guidance Specifying Management Measures for Nonpoint Pollution in Coastal Waters, EPA 840-B-9-002, USEPA, Office of Water, Washington, DC, 1993.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Stabilized Construction Entrance/Exit TC-1



SECTION B–B
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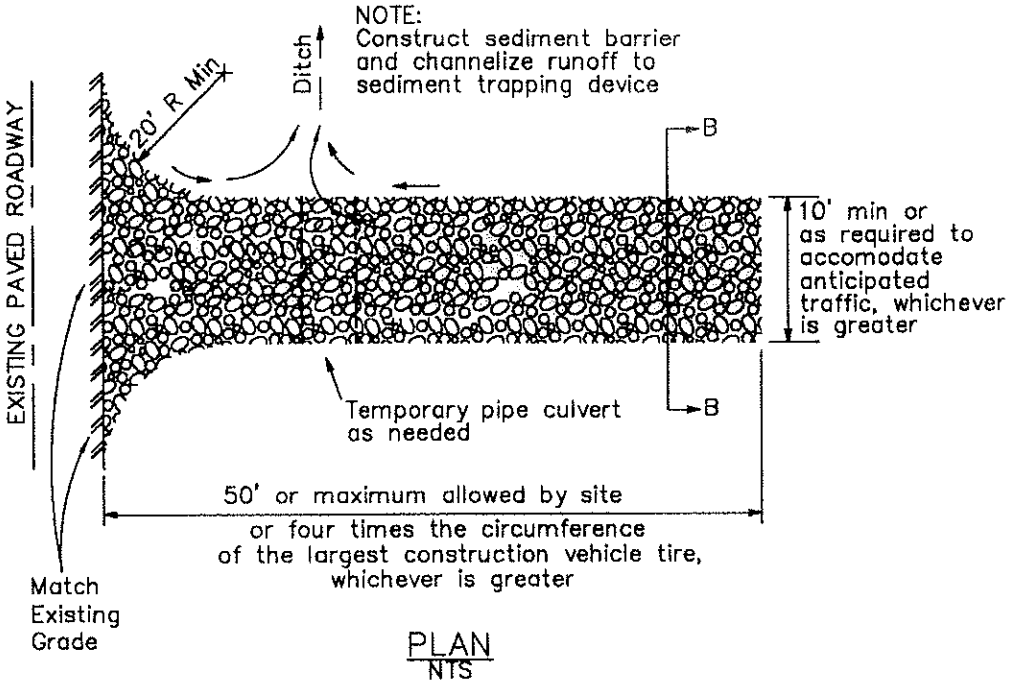

PLAN
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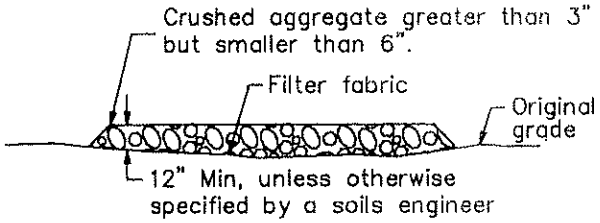
Stabilized Construction Entrance/Exit TC-1



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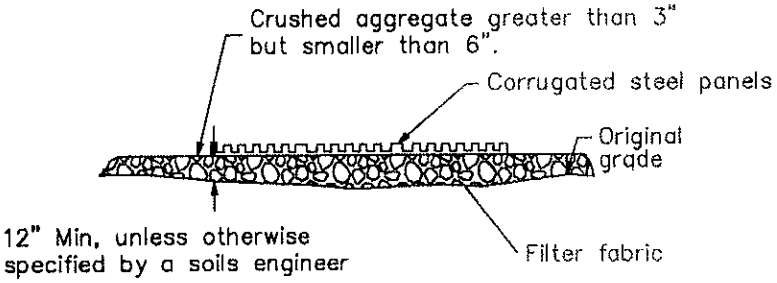
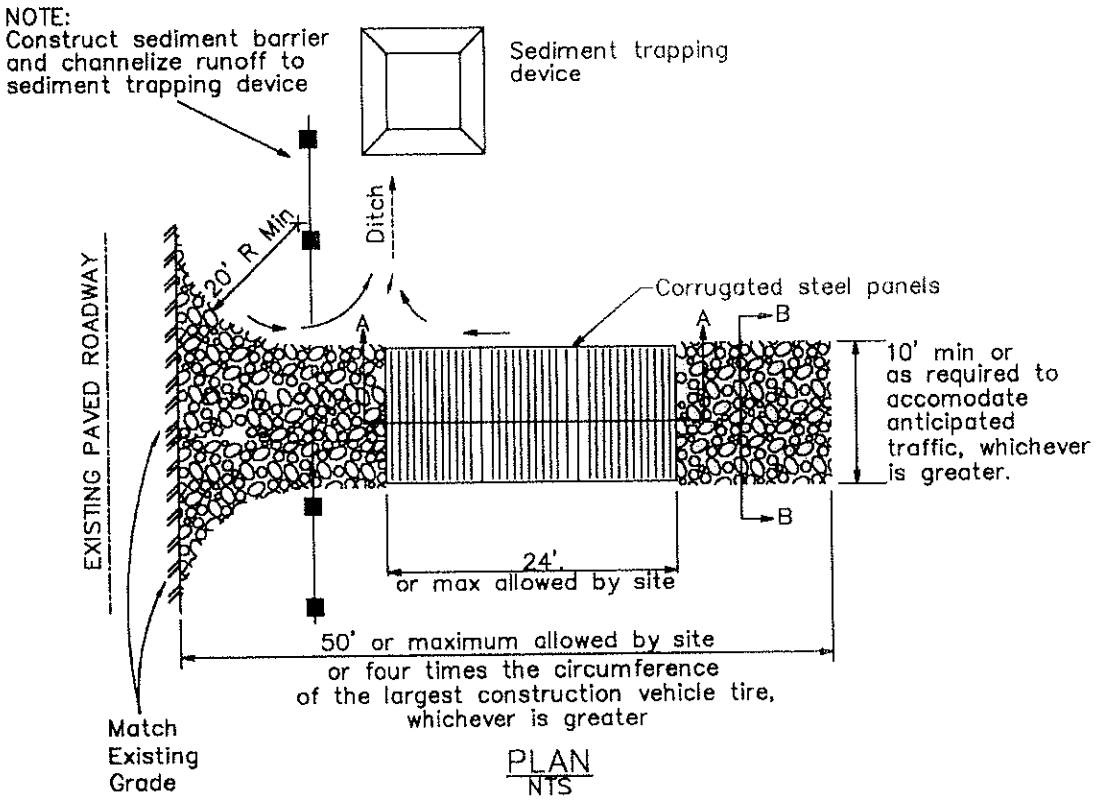


SECTION A–A
NOT TO SCALE



PLAN
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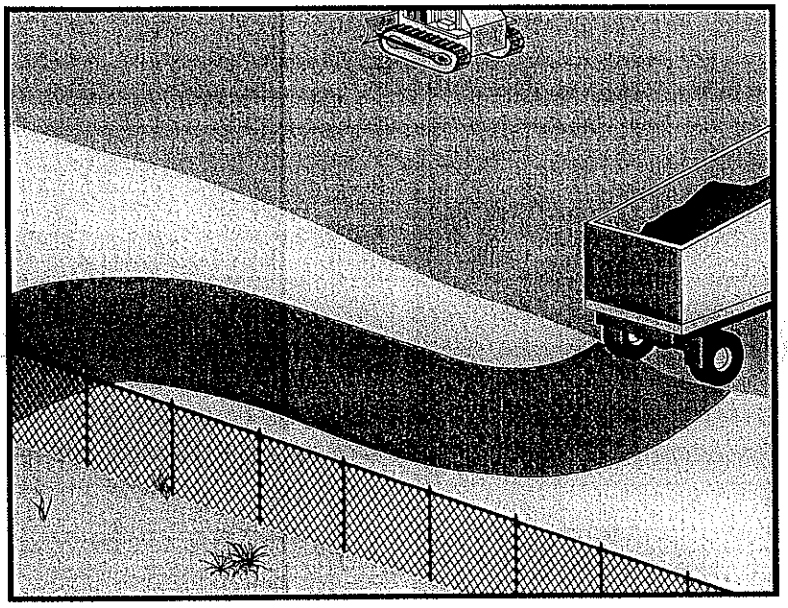
Stabilized Construction Roadway TC-2



Categories

EC	Erosion Control	☒
SE	Sediment Control	☒
TC	Tracking Control	☑
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Access roads, subdivision roads, parking areas, and other onsite vehicle transportation routes should be stabilized immediately after grading, and frequently maintained to prevent erosion and control dust.

Suitable Applications

This BMP should be applied for the following conditions:

- Temporary Construction Traffic:
  - Phased construction projects and offsite road access
  - Construction during wet weather
- Construction roadways and detour roads:
  - Where mud tracking is a problem during wet weather
  - Where dust is a problem during dry weather
  - Adjacent to water bodies
  - Where poor soils are encountered

Limitations

- The roadway must be removed or paved when construction is complete.
- Certain chemical stabilization methods may cause stormwater or soil pollution and should not be used. See WE-1, Wind Erosion Control.

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Stabilized Construction Roadway TC-2

- Management of construction traffic is subject to air quality control measures. Contact the local air quality management agency.
- Materials will likely need to be removed prior to final project grading and stabilization.
- Use of this BMP may not be applicable to very short duration projects.

Implementation

General

Areas that are graded for construction vehicle transport and parking purposes are especially susceptible to erosion and dust. The exposed soil surface is continually disturbed, leaving no opportunity for vegetative stabilization. Such areas also tend to collect and transport runoff waters along their surfaces. During wet weather, they often become muddy quagmires that generate significant quantities of sediment that may pollute nearby streams or be transported offsite on the wheels of construction vehicles. Dirt roads can become so unstable during wet weather that they are virtually unusable.

Efficient construction road stabilization not only reduces onsite erosion but also can significantly speed onsite work, avoid instances of immobilized machinery and delivery vehicles, and generally improve site efficiency and working conditions during adverse weather

Installation/Application Criteria

Permanent roads and parking areas should be paved as soon as possible after grading. As an alternative where construction will be phased, the early application of gravel or chemical stabilization may solve potential erosion and stability problems. Temporary gravel roadway should be considered during the rainy season and on slopes greater than 5%.

Temporary roads should follow the contour of the natural terrain to the maximum extent possible. Slope should not exceed 15%. Roadways should be carefully graded to drain transversely. Provide drainage swales on each side of the roadway in the case of a crowned section or one side in the case of a super elevated section. Simple gravel berms without a trench can also be used.

Installed inlets should be protected to prevent sediment laden water from entering the storm sewer system (SE-10, Storm Drain Inlet Protection). In addition, the following criteria should be considered.

- Road should follow topographic contours to reduce erosion of the roadway.
- The roadway slope should not exceed 15%.
- Chemical stabilizers or water are usually required on gravel or dirt roads to prevent dust (WE-1, Wind Erosion Control).
- Properly grade roadway to prevent runoff from leaving the construction site.
- Design stabilized access to support heaviest vehicles and equipment that will use it.

Stabilized Construction Roadway TC-2

- Stabilize roadway using aggregate, asphalt concrete, or concrete based on longevity, required performance, and site conditions. The use of cold mix asphalt or asphalt concrete (AC) grindings for stabilized construction roadway is not allowed.
- Coordinate materials with those used for stabilized construction entrance/exit points.
- If aggregate is selected, place crushed aggregate over geotextile fabric to at least 12 in. depth. A crushed aggregate greater than 3 in. but smaller than 6 in. should be used.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Keep all temporary roadway ditches clear.
- When no longer required, remove stabilized construction roadway and re-grade and repair slopes.
- Periodically apply additional aggregate on gravel roads.
- Active dirt construction roads are commonly watered three or more times per day during the dry season.

Costs

Gravel construction roads are moderately expensive, but cost is often balanced by reductions in construction delay. No additional costs for dust control on construction roads should be required above that needed to meet local air quality requirements.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program; Program Development and Approval Guidance, Working Group, Working Paper; USEPA, April 1992.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

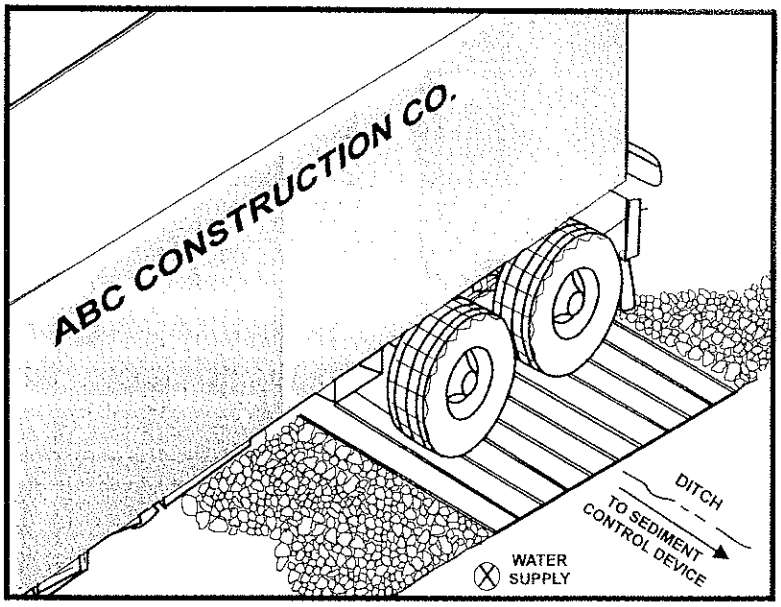
Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Stabilized Construction Roadway TC-2

Virginia Erosion and Sedimentation Control Handbook, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, 1991.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Entrance/Outlet Tire Wash TC-3



Categories

EC	Erosion Control	
SE	Sediment Control	☒
TC	Tracking Control	☑
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

TC-1 Stabilized Construction Entrance/Exit

Description and Purpose

A tire wash is an area located at stabilized construction access points to remove sediment from tires and under carriages and to prevent sediment from being transported onto public roadways.

Suitable Applications

Tire washes may be used on construction sites where dirt and mud tracking onto public roads by construction vehicles may occur.

Limitations

- The tire wash requires a supply of wash water.
- A turnout or doublewide exit is required to avoid having entering vehicles drive through the wash area.
- Do not use where wet tire trucks leaving the site leave the road dangerously slick.

Implementation

- Incorporate with a stabilized construction entrance/exit. See TC-1, Stabilized Construction Entrance/Exit.
- Construct on level ground when possible, on a pad of coarse aggregate greater than 3 in. but smaller than 6 in. A geotextile fabric should be placed below the aggregate.
- Wash rack should be designed and constructed/manufactured for anticipated traffic loads.

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Entrance/Outlet Tire Wash TC-3

- Provide a drainage ditch that will convey the runoff from the wash area to a sediment trapping device. The drainage ditch should be of sufficient grade, width, and depth to carry the wash runoff.
- Use hoses with automatic shutoff nozzles to prevent hoses from being left on.
- Require that all employees, subcontractors, and others that leave the site with mud caked tires and undercarriages to use the wash facility.
- Implement SC-7, Street Sweeping and Vacuuming, as needed.

Costs

Costs are low for installation of wash rack.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.
- Remove accumulated sediment in wash rack and/or sediment trap to maintain system performance.
- Inspect routinely for damage and repair as needed.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program; Program Development and Approval Guidance, Working Group, Working Paper; USEPA, April 1992.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

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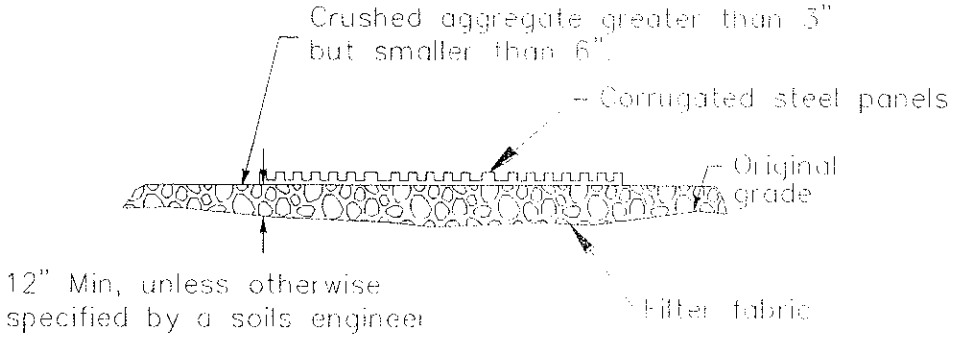
Entrance/Outlet Tire Wash TC-3



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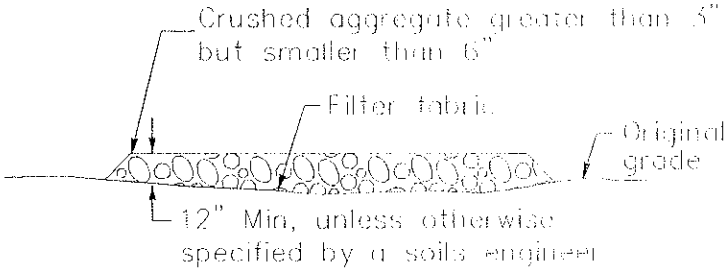

SECTION B–B
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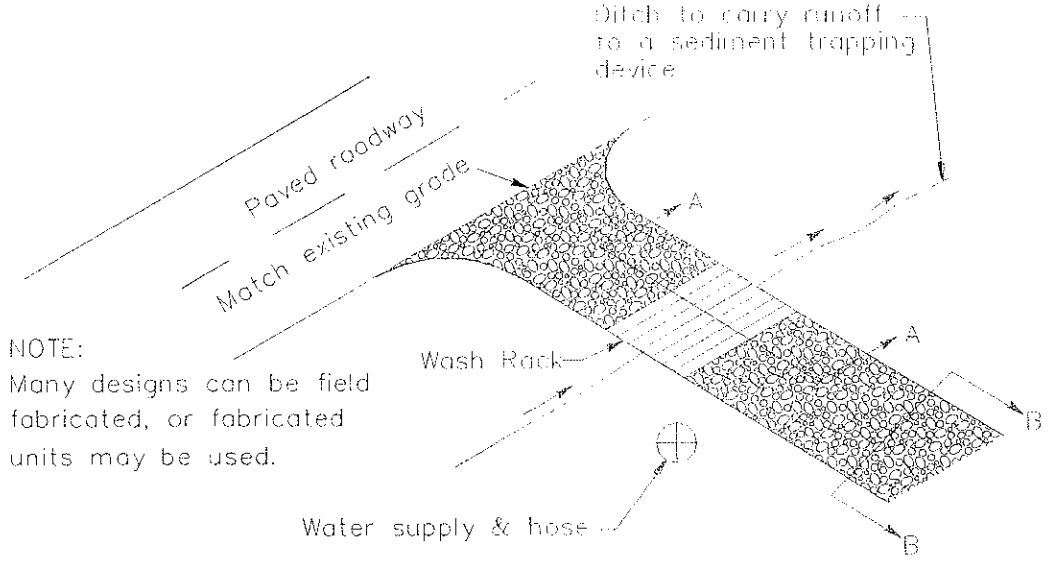
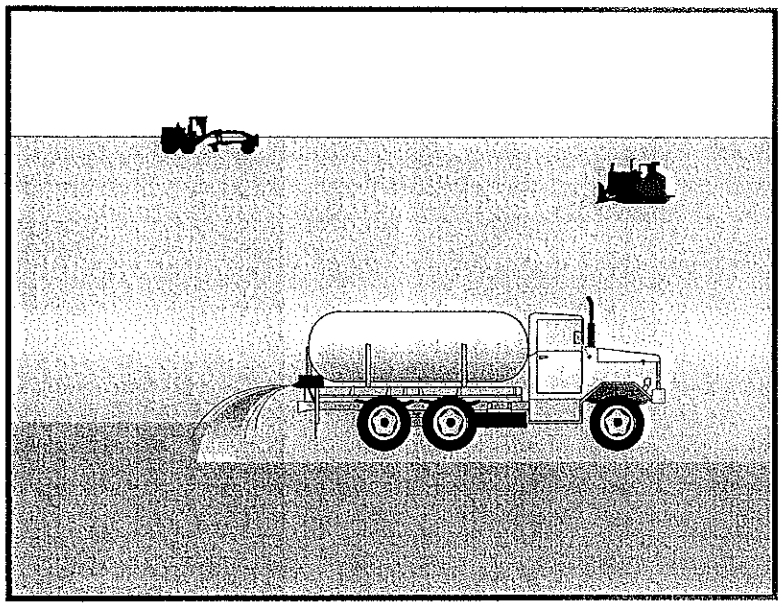


TYPICAL TIRE WASH
NOT TO SCALE

Wind Erosion Control WE-1



Categories

EC	Erosion Control	
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	☑
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-5 Soil Binders

Description and Purpose

Wind erosion or dust control consists of applying water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

California's Mediterranean climate, with a short "wet" season and a typically long, hot "dry" season, allows the soils to thoroughly dry out. During the dry season, construction activities are at their peak, and disturbed and exposed areas are increasingly subject to wind erosion, sediment tracking and dust generated by construction equipment. Site conditions and climate can make dust control more of an erosion problem than water based erosion. Additionally, many local agencies, including Air Quality Management Districts, require dust control and/or dust control permits in order to comply with local nuisance laws, opacity laws (visibility impairment) and the requirements of the Clean Air Act. Wind erosion control is required to be implemented at all construction sites greater than 1 acre by the General Permit.

Suitable Applications

Most BMPs that provide protection against water-based erosion will also protect against wind-based erosion and dust control requirements required by other agencies will generally meet wind erosion control requirements for water quality protection. Wind erosion control BMPs are suitable during the following construction activities:

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Wind Erosion Control WE-1

- Construction vehicle traffic on unpaved roads
- Drilling and blasting activities
- Soils and debris storage piles
- Batch drop from front-end loaders
- Areas with unstabilized soil
- Final grading/site stabilization

Limitations

- Watering prevents dust only for a short period (generally less than a few hours) and should be applied daily (or more often) to be effective.
- Over watering may cause erosion and track-out.
- Oil or oil-treated subgrade should not be used for dust control because the oil may migrate into drainageways and/or seep into the soil.
- Chemical dust suppression agents may have potential environmental impacts. Selected chemical dust control agents should be environmentally benign.
- Effectiveness of controls depends on soil, temperature, humidity, wind velocity and traffic.
- Chemical dust suppression agents should not be used within 100 feet of wetlands or water bodies.
- Chemically treated subgrades may make the soil water repellant, interfering with long-term infiltration and the vegetation/re-vegetation of the site. Some chemical dust suppressants may be subject to freezing and may contain solvents and should be handled properly.
- In compacted areas, watering and other liquid dust control measures may wash sediment or other constituents into the drainage system.
- If the soil surface has minimal natural moisture, the affected area may need to be pre-wetted so that chemical dust control agents can uniformly penetrate the soil surface.

Implementation

Dust Control Practices

Dust control BMPs generally stabilize exposed surfaces and minimize activities that suspend or track dust particles. The following table presents dust control practices that can be applied to varying site conditions that could potentially cause dust. For heavily traveled and disturbed areas, wet suppression (watering), chemical dust suppression, gravel asphalt surfacing, temporary gravel construction entrances, equipment wash-out areas, and haul truck covers can be employed as dust control applications. Permanent or temporary vegetation and mulching can be employed for areas of occasional or no construction traffic. Preventive measures include minimizing surface areas to be disturbed, limiting onsite vehicle traffic to 15 mph or less, and controlling the number and activity of vehicles on a site at any given time.

Wind Erosion Control WE-1

Chemical dust suppressants include: mulch and fiber based dust palliatives (e.g. paper mulch with gypsum binder), salts and brines (e.g. calcium chloride, magnesium chloride), non-petroleum based organics (e.g. vegetable oil, lignosulfonate), petroleum based organics (e.g. asphalt emulsion, dust oils, petroleum resins), synthetic polymers (e.g. polyvinyl acetate, vinyls, acrylic), clay additives (e.g. bentonite, montimorillonite) and electrochemical products (e.g. enzymes, ionic products).

Site Condition	Dust Control Practices							
	Permanent Vegetation	Mulching	Wet Suppression (Watering)	Chemical Dust Suppression	Gravel or Asphalt	Temporary Gravel Construction Entrances/Equipment Wash Down	Synthetic Covers	Minimize Extent of Disturbed Area
Disturbed Areas not Subject to Traffic	X	X	X	X	X			X
Disturbed Areas Subject to Traffic			X	X	X	X		X
Material Stockpiles		X	X	X			X	X
Demolition			X			X	X	
Clearing/ Excavation			X	X				X
Truck Traffic on Unpaved Roads			X	X	X	X	X	
Tracking					X	X		

Additional preventive measures include:

- Schedule construction activities to minimize exposed area (see EC-1, Scheduling).
- Quickly treat exposed soils using water, mulching, chemical dust suppressants, or stone/gravel layering.
- Identify and stabilize key access points prior to commencement of construction.
- Minimize the impact of dust by anticipating the direction of prevailing winds.
- Restrict construction traffic to stabilized roadways within the project site, as practicable.
- Water should be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution.
- All distribution equipment should be equipped with a positive means of shutoff.
- Unless water is applied by means of pipelines, at least one mobile unit should be available at all times to apply water or dust palliative to the project.
- If reclaimed waste water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality

Wind Erosion Control WE-1

Control Board (RWQCB) requirements. Non-potable water should not be conveyed in tanks or drain pipes that will be used to convey potable water and there should be no connection between potable and non-potable supplies. Non-potable tanks, pipes, and other conveyances should be marked, "NON-POTABLE WATER - DO NOT DRINK."

- Pave or chemically stabilize access points where unpaved traffic surfaces adjoin paved roads.
- Provide covers for haul trucks transporting materials that contribute to dust.
- Provide for rapid clean up of sediments deposited on paved roads. Furnish stabilized construction road entrances and wheel wash areas.
- Stabilize inactive areas of construction sites using temporary vegetation or chemical stabilization methods.

For chemical stabilization, there are many products available for chemically stabilizing gravel roadways and stockpiles. If chemical stabilization is used, the chemicals should not create any adverse effects on stormwater, plant life, or groundwater and should meet all applicable regulatory requirements.

Costs

Installation costs for water and chemical dust suppression vary based on the method used and the length of effectiveness. Annual costs may be high since some of these measures are effective for only a few hours to a few days.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Check areas protected to ensure coverage.
- Most water-based dust control measures require frequent application, often daily or even multiple times per day. Obtain vendor or independent information on longevity of chemical dust suppressants.

References

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

California Air Pollution Control Laws, California Air Resources Board, updated annually.

Construction Manual, Chapter 4, Section 10, "Dust Control"; Section 17, "Watering"; and Section 18, "Dust Palliative", California Department of Transportation (Caltrans), July 2001.

Wind Erosion Control WE-1

Prospects for Attaining the State Ambient Air Quality Standards for Suspended Particulate Matter (PM10), Visibility Reducing Particles, Sulfates, Lead, and Hydrogen Sulfide, California Air Resources Board, April 1991.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Water Conservation Practices NS-1

Categories

EC	Erosion Control	☒
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Water conservation practices are activities that use water during the construction of a project in a manner that avoids causing erosion and the transport of pollutants offsite. These practices can reduce or eliminate non-stormwater discharges.

Suitable Applications

Water conservation practices are suitable for all construction sites where water is used, including piped water, metered water, trucked water, and water from a reservoir.

Limitations

- None identified.

Implementation

- Keep water equipment in good working condition.
- Stabilize water truck filling area.
- Repair water leaks promptly.
- Washing of vehicles and equipment on the construction site is discouraged.
- Avoid using water to clean construction areas. If water must be used for cleaning or surface preparation, surface should be swept and vacuumed first to remove dirt. This will minimize amount of water required.
- Direct construction water runoff to areas where it can soak

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Water Conservation Practices NS-1

into the ground or be collected and reused.

- Authorized non-stormwater discharges to the storm drain system, channels, or receiving waters are acceptable with the implementation of appropriate BMPs.
- Lock water tank valves to prevent unauthorized use.

Costs

The cost is small to none compared to the benefits of conserving water.

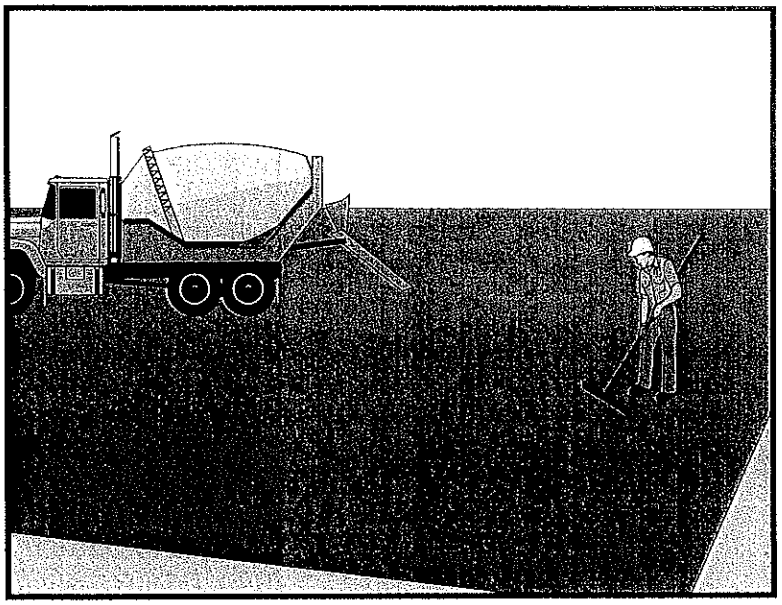
Inspection and Maintenance

- Inspect and verify that activity based BMPs are in place prior to the commencement of authorized non-stormwater discharges.
- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges are occuring.
- Repair water equipment as needed to prevent unintended discharges.
  - Water trucks
  - Water reservoirs (water buffalos)
  - Irrigation systems
  - Hydrant connections

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Paving and Grinding Operations NS-3



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	☒

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants from paving operations, using measures to prevent runon and runoff pollution, properly disposing of wastes, and training employees and subcontractors.

The General Permit incorporates Numeric Effluent Limits (NEL) and Numeric Action Levels (NAL) for pH and turbidity (see Section 2 of this handbook to determine your project's risk level and if you are subject to these requirements).

Many types of construction materials associated with paving and grinding operations, including mortar, concrete, and cement and their associated wastes have basic chemical properties that can raise pH levels outside of the permitted range. Additional care should be taken when managing these materials to prevent them from coming into contact with stormwater flows, which could lead to exceedances of the General Permit requirements.

Suitable Applications

These procedures are implemented where paving, surfacing, resurfacing, or sawcutting, may pollute stormwater runoff or discharge to the storm drain system or watercourses.

Limitations

- Paving opportunities may be limited during wet weather.
- Discharges of freshly paved surfaces may raise pH to environmentally harmful levels and trigger permit violations.

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Paving and Grinding Operations NS-3

Implementation

General

- Avoid paving during the wet season when feasible.
- Reschedule paving and grinding activities if rain is forecasted.
- Train employees and sub-contractors in pollution prevention and reduction.
- Store materials away from drainage courses to prevent stormwater runon (see WM-1, Material Delivery and Storage).
- Protect drainage courses, particularly in areas with a grade, by employing BMPs to divert runoff or to trap and filter sediment.
- Stockpile material removed from roadways away from drain inlets, drainage ditches, and watercourses. These materials should be stored consistent with WM-3, Stockpile Management.
- Disposal of PCC (Portland cement concrete) and AC (asphalt concrete) waste should be in conformance with WM-8, Concrete Waste Management.

Saw Cutting, Grinding, and Pavement Removal

- Shovel or vacuum saw-cut slurry and remove from site. Cover or barricade storm drains during saw cutting to contain slurry.
- When paving involves AC, the following steps should be implemented to prevent the discharge of grinding residue, uncompacted or loose AC, tack coats, equipment cleaners, or unrelated paving materials:
  - AC grindings, pieces, or chunks used in embankments or shoulder backing should not be allowed to enter any storm drains or watercourses. Install inlet protection and perimeter controls until area is stabilized (i.e. cutting, grinding or other removal activities are complete and loose material has been properly removed and disposed of)or permanent controls are in place. Examples of temporary perimeter controls can be found in EC-9, Earth Dikes and Drainage Swales; SE-1, Silt Fence; SE-5, Fiber Rolls, or SE-13 Compost Socks and Berms
  - Collect and remove all broken asphalt and recycle when practical. Old or spilled asphalt should be recycled or disposed of properly.
- Do not allow saw-cut slurry to enter storm drains or watercourses. Residue from grinding operations should be picked up by a vacuum attachment to the grinding machine, or by sweeping, should not be allowed to flow across the pavement, and should not be left on the surface of the pavement. See also WM-8, Concrete Waste Management, and WM-10, Liquid Waste Management.
- Pavement removal activities should not be conducted in the rain.
- Collect removed pavement material by mechanical or manual methods. This material may be recycled for use as shoulder backing or base material.

Paving and Grinding Operations NS-3

- If removed pavement material cannot be recycled, transport the material back to an approved storage site.

Asphaltic Concrete Paving

- If paving involves asphaltic cement concrete, follow these steps:
  - Do not allow sand or gravel placed over new asphalt to wash into storm drains, streets, or creeks. Vacuum or sweep loose sand and gravel and properly dispose of this waste by referring to WM-5, Solid Waste Management.
  - Old asphalt should be disposed of properly. Collect and remove all broken asphalt from the site and recycle whenever possible.

Portland Cement Concrete Paving

- Do not wash sweepings from exposed aggregate concrete into a storm drain system. Collect waste materials by dry methods, such as sweeping or shoveling, and return to aggregate base stockpile or dispose of properly. Allow aggregate rinse to settle. Then, either allow rinse water to dry in a temporary pit as described in WM-8, Concrete Waste Management, or pump the water to the sanitary sewer if authorized by the local wastewater authority.

Sealing Operations

- During chip seal application and sweeping operations, petroleum or petroleum covered aggregate should not be allowed to enter any storm drain or water courses. Apply temporary perimeter controls until structure is stabilized (i.e. all sealing operations are complete and cured and loose materials have been properly removed and disposed).
- Inlet protection (SE-10, Storm Drain Inlet Protection) should be used during application of seal coat, tack coat, slurry seal, and fog seal.
- Seal coat, tack coat, slurry seal, or fog seal should not be applied if rainfall is predicted to occur during the application or curing period.

Paving Equipment

- Leaks and spills from paving equipment can contain toxic levels of heavy metals and oil and grease. Place drip pans or absorbent materials under paving equipment when not in use. Clean up spills with absorbent materials and dispose of in accordance with the applicable regulations. See NS-10, Vehicle and Equipment Maintenance, WM-4, Spill Prevention and Control, and WM-10, Liquid Waste Management.
- Substances used to coat asphalt transport trucks and asphalt spreading equipment should not contain soap and should be non-foaming and non-toxic.
- Paving equipment parked onsite should be parked over plastic to prevent soil contamination.
- Clean asphalt coated equipment offsite whenever possible. When cleaning dry, hardened asphalt from equipment, manage hardened asphalt debris as described in WM-5, Solid Waste Management. Any cleaning onsite should follow NS-8, Vehicle and Equipment Cleaning.

Paving and Grinding Operations NS-3

Thermoplastic Striping

- Thermoplastic striper and pre-heater equipment shutoff valves should be inspected to ensure that they are working properly to prevent leaking thermoplastic from entering drain inlets, the stormwater drainage system, or watercourses.
- Pre-heaters should be filled carefully to prevent splashing or spilling of hot thermoplastic. Leave six inches of space at the top of the pre-heater container when filling thermoplastic to allow room for material to move.
- Do not pre-heat, transfer, or load thermoplastic near drain inlets or watercourses.
- Clean truck beds daily of loose debris and melted thermoplastic. When possible, recycle thermoplastic material.

Raised/Recessed Pavement Marker Application and Removal

- Do not transfer or load bituminous material near drain inlets, the stormwater drainage system, or watercourses.
- Melting tanks should be loaded with care and not filled to beyond six inches from the top to leave room for splashing.
- When servicing or filling melting tanks, ensure all pressure is released before removing lids to avoid spills.
- On large-scale projects, use mechanical or manual methods to collect excess bituminous material from the roadway after removal of markers.

Costs

- All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of paving and grinding operations.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Sample stormwater runoff required by the General Permit.
- Keep ample supplies of drip pans or absorbent materials onsite.
- Inspect and maintain machinery regularly to minimize leaks and drips.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

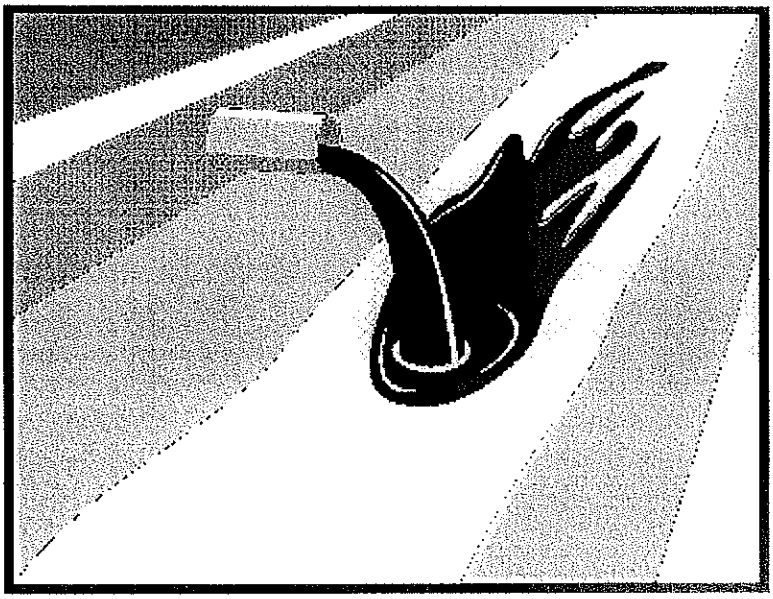
Paving and Grinding Operations NS-3

Hot Mix Asphalt-Paving Handbook AC 150/5370-14, Appendix I, U.S. Army Corps of Engineers, July 1991.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Illicit Connection/Discharge NS-6



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	☑
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Procedures and practices designed for construction contractors to recognize illicit connections or illegally dumped or discharged materials on a construction site and report incidents.

Suitable Applications

This best management practice (BMP) applies to all construction projects. Illicit connection/discharge and reporting is applicable anytime an illicit connection or discharge is discovered or illegally dumped material is found on the construction site.

Limitations

Illicit connections and illegal discharges or dumping, for the purposes of this BMP, refer to discharges and dumping caused by parties other than the contractor. If pre-existing hazardous materials or wastes are known to exist onsite, they should be identified in the SWPPP and handled as set forth in the SWPPP.

Implementation

Planning

- Review the SWPPP. Pre-existing areas of contamination should be identified and documented in the SWPPP.
- Inspect site before beginning the job for evidence of illicit connections, illegal dumping or discharges. Document any pre-existing conditions and notify the owner.
- Inspect site regularly during project execution for evidence

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Illicit Connection/Discharge NS-6

of illicit connections, illegal dumping or discharges.

- Observe site perimeter for evidence for potential of illicitly discharged or illegally dumped material, which may enter the job site.

Identification of Illicit Connections and Illegal Dumping or Discharges

- **General** – unlabeled and unidentifiable material should be treated as hazardous.
- **Solids** - Look for debris, or rubbish piles. Solid waste dumping often occurs on roadways with light traffic loads or in areas not easily visible from the traveled way.
- **Liquids** - signs of illegal liquid dumping or discharge can include:
  - Visible signs of staining or unusual colors to the pavement or surrounding adjacent soils
  - Pungent odors coming from the drainage systems
  - Discoloration or oily substances in the water or stains and residues detained within ditches, channels or drain boxes
  - Abnormal water flow during the dry weather season
- **Urban Areas** - Evidence of illicit connections or illegal discharges is typically detected at storm drain outfall locations or at manholes. Signs of an illicit connection or illegal discharge can include:
  - Abnormal water flow during the dry weather season
  - Unusual flows in sub drain systems used for dewatering
  - Pungent odors coming from the drainage systems
  - Discoloration or oily substances in the water or stains and residues detained within ditches, channels or drain boxes
  - Excessive sediment deposits, particularly adjacent to or near active offsite construction projects
- **Rural Areas** - Illicit connections or illegal discharges involving irrigation drainage ditches are detected by visual inspections. Signs of an illicit discharge can include:
  - Abnormal water flow during the non-irrigation season
  - Non-standard junction structures
  - Broken concrete or other disturbances at or near junction structures

Reporting

Notify the owner of any illicit connections and illegal dumping or discharge incidents at the time of discovery. For illicit connections or discharges to the storm drain system, notify the local stormwater management agency. For illegal dumping, notify the local law enforcement agency.

Cleanup and Removal

The responsibility for cleanup and removal of illicit or illegal dumping or discharges will vary by location. Contact the local stormwater management agency for further information.

Illicit Connection/Discharge NS-6

Costs

Costs to look for and report illicit connections and illegal discharges and dumping are low. The best way to avoid costs associated with illicit connections and illegal discharges and dumping is to keep the project perimeters secure to prevent access to the site, to observe the site for vehicles that should not be there, and to document any waste or hazardous materials that exist onsite before taking possession of the site.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect the site regularly to check for any illegal dumping or discharge.
- Prohibit employees and subcontractors from disposing of non-job related debris or materials at the construction site.
- Notify the owner of any illicit connections and illegal dumping or discharge incidents at the time of discovery.

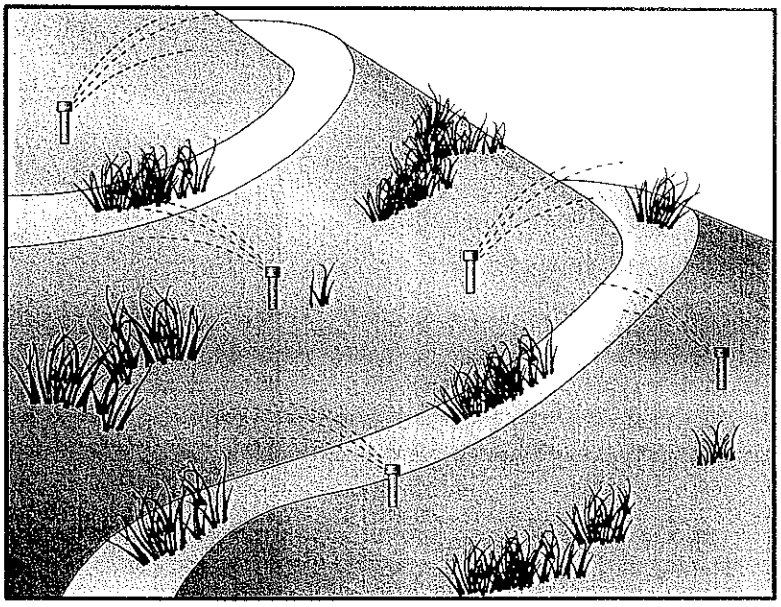
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Potable Water/Irrigation NS-7



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	
Metals	☑
Bacteria	
Oil and Grease	
Organics	☑

Potential Alternatives

None

Description and Purpose

Potable Water/Irrigation consists of practices and procedures to manage the discharge of potential pollutants generated during discharges from irrigation water lines, landscape irrigation, lawn or garden watering, planned and unplanned discharges from potable water sources, water line flushing, and hydrant flushing.

Suitable Applications

Implement this BMP whenever potable water or irrigation water discharges occur at or enter a construction site.

Limitations

None identified.

Implementation

- Direct water from offsite sources around or through a construction site, where feasible, in a way that minimizes contact with the construction site.
- Discharges from water line flushing should be reused for landscaping purposes where feasible.
- Shut off the water source to broken lines, sprinklers, or valves as soon as possible to prevent excess water flow.
- Protect downstream stormwater drainage systems and watercourses from water pumped or bailed from trenches excavated to repair water lines.
- Inspect irrigated areas within the construction limits for

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Potable Water/Irrigation NS-7

excess watering. Adjust watering times and schedules to ensure that the appropriate amount of water is being used and to minimize runoff. Consider factors such as soil structure, grade, time of year, and type of plant material in determining the proper amounts of water for a specific area.

Costs

Cost to manage potable water and irrigation are low and generally considered to be a normal part of related activities.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events..
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Repair broken water lines as soon as possible.
- Inspect irrigated areas regularly for signs of erosion and/or discharge.

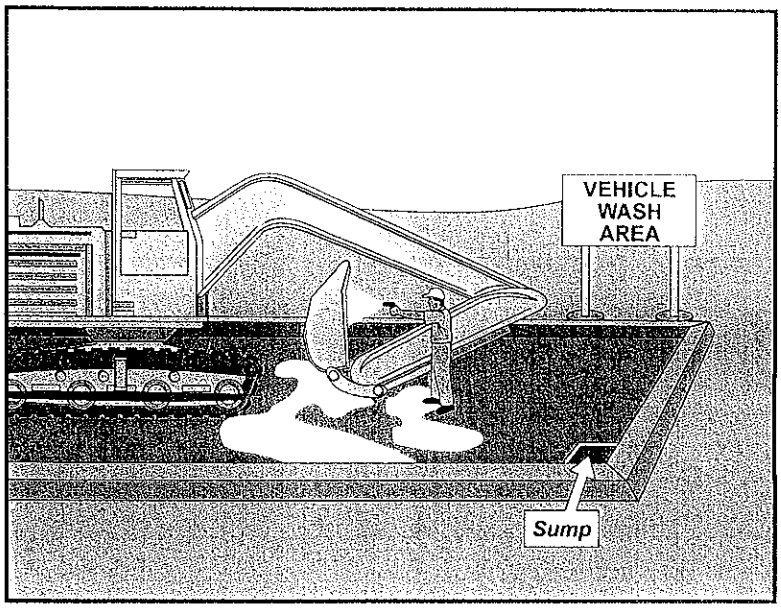
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Vehicle and Equipment Cleaning NS-8



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Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	
Metals	
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Vehicle and equipment cleaning procedures and practices eliminate or reduce the discharge of pollutants to stormwater from vehicle and equipment cleaning operations. Procedures and practices include but are not limited to: using offsite facilities; washing in designated, contained areas only; eliminating discharges to the storm drain by infiltrating the wash water; and training employees and subcontractors in proper cleaning procedures.

Suitable Applications

These procedures are suitable on all construction sites where vehicle and equipment cleaning is performed.

Limitations

Even phosphate-free, biodegradable soaps have been shown to be toxic to fish before the soap degrades. Sending vehicles/equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/Exit.

Implementation

Other options to washing equipment onsite include contracting with either an offsite or mobile commercial washing business. These businesses may be better equipped to handle and dispose of the wash waters properly. Performing this work offsite can also be economical by eliminating the need for a separate washing operation onsite.

If washing operations are to take place onsite, then:

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Vehicle and Equipment Cleaning NS-8

- Use phosphate-free, biodegradable soaps.
- Educate employees and subcontractors on pollution prevention measures.
- Do not permit steam cleaning onsite. Steam cleaning can generate significant pollutant concentrates.
- Cleaning of vehicles and equipment with soap, solvents or steam should not occur on the project site unless resulting wastes are fully contained and disposed of. Resulting wastes should not be discharged or buried, and must be captured and recycled or disposed according to the requirements of WM-10, Liquid Waste Management or WM-6, Hazardous Waste Management, depending on the waste characteristics. Minimize use of solvents. Use of diesel for vehicle and equipment cleaning is prohibited.
- All vehicles and equipment that regularly enter and leave the construction site must be cleaned offsite.
- When vehicle and equipment washing and cleaning must occur onsite, and the operation cannot be located within a structure or building equipped with appropriate disposal facilities, the outside cleaning area should have the following characteristics:
  - Located away from storm drain inlets, drainage facilities, or watercourses
  - Paved with concrete or asphalt and bermed to contain wash waters and to prevent runon and runoff
  - Configured with a sump to allow collection and disposal of wash water
  - No discharge of wash waters to storm drains or watercourses
  - Used only when necessary
- When cleaning vehicles and equipment with water:
  - Use as little water as possible. High-pressure sprayers may use less water than a hose and should be considered
  - Use positive shutoff valve to minimize water usage
  - Facility wash racks should discharge to a sanitary sewer, recycle system or other approved discharge system and must not discharge to the storm drainage system, watercourses, or to groundwater

Costs

Cleaning vehicles and equipment at an offsite facility may reduce overall costs for vehicle and equipment cleaning by eliminating the need to provide similar services onsite. When onsite cleaning is needed, the cost to establish appropriate facilities is relatively low on larger, long-duration projects, and moderate to high on small, short-duration projects.

Vehicle and Equipment Cleaning NS-8

Inspection and Maintenance

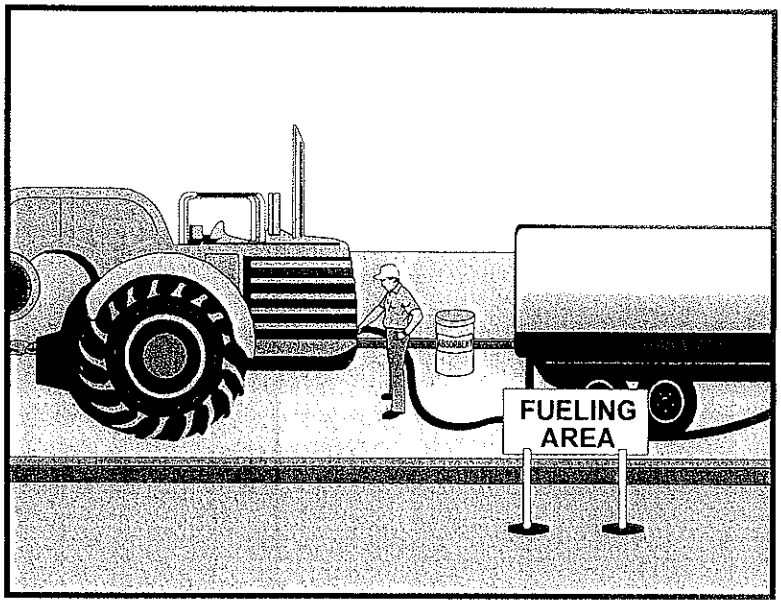
- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Inspection and maintenance is minimal, although some berm repair may be necessary.
- Monitor employees and subcontractors throughout the duration of the construction project to ensure appropriate practices are being implemented.
- Inspect sump regularly and remove liquids and sediment as needed.
- Prohibit employees and subcontractors from washing personal vehicles and equipment on the construction site.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Swisher, R.D. Surfactant Biodegradation, Marcel Decker Corporation, 1987.

Vehicle and Equipment Fueling NS-9



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Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks, and reduce or eliminate contamination of stormwater. This can be accomplished by using offsite facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors in proper fueling procedures.

Suitable Applications

These procedures are suitable on all construction sites where vehicle and equipment fueling takes place.

Limitations

Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for fueling. Sending vehicles and equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/ Exit.

Implementation

- Use offsite fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate fueling area at a site.
- Discourage "topping-off" of fuel tanks.
- Absorbent spill cleanup materials and spill kits should be available in fueling areas and on fueling trucks, and should

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Vehicle and Equipment Fueling NS-9

be disposed of properly after use.

- Drip pans or absorbent pads should be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
- Use absorbent materials on small spills. Do not hose down or bury the spill. Remove the adsorbent materials promptly and dispose of properly.
- Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and large excavators, most vehicles should be able to travel to a designated area with little lost time.
- Train employees and subcontractors in proper fueling and cleanup procedures.
- When fueling must take place onsite, designate an area away from drainage courses to be used. Fueling areas should be identified in the SWPPP.
- Dedicated fueling areas should be protected from stormwater runon and runoff, and should be located at least 50 ft away from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
- Protect fueling areas with berms and dikes to prevent runon, runoff, and to contain spills.
- Nozzles used in vehicle and equipment fueling should be equipped with an automatic shutoff to control drips. Fueling operations should not be left unattended.
- Use vapor recovery nozzles to help control drips as well as air pollution where required by Air Quality Management Districts (AQMD).
- Federal, state, and local requirements should be observed for any stationary above ground storage tanks.

Costs

- All of the above measures are low cost except for the capital costs of above ground tanks that meet all local environmental, zoning, and fire codes.

Inspection and Maintenance

- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Vehicles and equipment should be inspected each day of use for leaks. Leaks should be repaired immediately or problem vehicles or equipment should be removed from the project site.
- Keep ample supplies of spill cleanup materials onsite.

Vehicle and Equipment Fueling NS-9

- Immediately clean up spills and properly dispose of contaminated soil and cleanup materials.

References

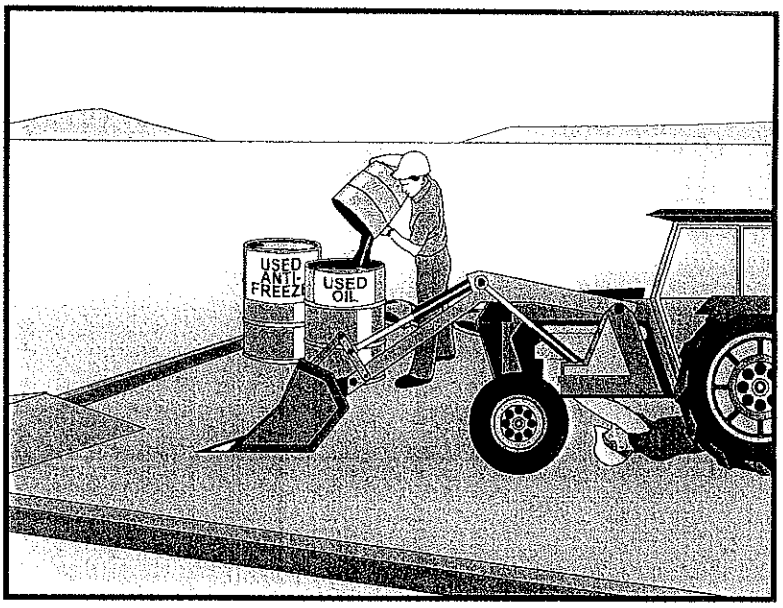
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Vehicle & Equipment Maintenance NS-10



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Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	
Nutrients	☑
Trash	☑
Metals	
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent or reduce the contamination of stormwater resulting from vehicle and equipment maintenance by running a "dry and clean site". The best option would be to perform maintenance activities at an offsite facility. If this option is not available then work should be performed in designated areas only, while providing cover for materials stored outside, checking for leaks and spills, and containing and cleaning up spills immediately. Employees and subcontractors must be trained in proper procedures.

Suitable Applications

These procedures are suitable on all construction projects where an onsite yard area is necessary for storage and maintenance of heavy equipment and vehicles.

Limitations

Onsite vehicle and equipment maintenance should only be used where it is impractical to send vehicles and equipment offsite for maintenance and repair. Sending vehicles/equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/Exit.

Outdoor vehicle or equipment maintenance is a potentially significant source of stormwater pollution. Activities that can contaminate stormwater include engine repair and service, changing or replacement of fluids, and outdoor equipment storage and parking (engine fluid leaks). For further information on vehicle or equipment servicing, see NS-8, Vehicle and Equipment Cleaning, and NS-9, Vehicle and

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Vehicle & Equipment Maintenance NS-10

Equipment Fueling.

Implementation

- Use offsite repair shops as much as possible. These businesses are better equipped to handle vehicle fluids and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate maintenance area.
- If maintenance must occur onsite, use designated areas, located away from drainage courses. Dedicated maintenance areas should be protected from stormwater runon and runoff, and should be located at least 50 ft from downstream drainage facilities and watercourses.
- Drip pans or absorbent pads should be used during vehicle and equipment maintenance work that involves fluids, unless the maintenance work is performed over an impermeable surface in a dedicated maintenance area.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- All fueling trucks and fueling areas are required to have spill kits and/or use other spill protection devices.
- Use adsorbent materials on small spills. Remove the absorbent materials promptly and dispose of properly.
- Inspect onsite vehicles and equipment daily at startup for leaks, and repair immediately.
- Keep vehicles and equipment clean; do not allow excessive build-up of oil and grease.
- Segregate and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic and transmission fluids. Provide secondary containment and covers for these materials if stored onsite.
- Train employees and subcontractors in proper maintenance and spill cleanup procedures.
- Drip pans or plastic sheeting should be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is planned to be idle for more than 1 hour.
- For long-term projects, consider using portable tents or covers over maintenance areas if maintenance cannot be performed offsite.
- Consider use of new, alternative greases and lubricants, such as adhesive greases, for chassis lubrication and fifth-wheel lubrication.
- Properly dispose of used oils, fluids, lubricants, and spill cleanup materials.
- Do not place used oil in a dumpster or pour into a storm drain or watercourse.
- Properly dispose of or recycle used batteries.
- Do not bury used tires.

Vehicle & Equipment Maintenance NS-10

- Repair leaks of fluids and oil immediately.

Listed below is further information if you must perform vehicle or equipment maintenance onsite.

Safer Alternative Products

- Consider products that are less toxic or hazardous than regular products. These products are often sold under an "environmentally friendly" label.
- Consider use of grease substitutes for lubrication of truck fifth-wheels. Follow manufacturers label for details on specific uses.
- Consider use of plastic friction plates on truck fifth-wheels in lieu of grease. Follow manufacturers label for details on specific uses.

Waste Reduction

Parts are often cleaned using solvents such as trichloroethylene, trichloroethane, or methylene chloride. Many of these cleaners are listed in California Toxic Rule as priority pollutants. These materials are harmful and must not contaminate stormwater. They must be disposed of as a hazardous waste. Reducing the number of solvents makes recycling easier and reduces hazardous waste management costs. Often, one solvent can perform a job as well as two different solvents. Also, if possible, eliminate or reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous materials. For example, replace chlorinated organic solvents with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check the list of active ingredients to see whether it contains chlorinated solvents. The "chlor" term indicates that the solvent is chlorinated. Also, try substituting a wire brush for solvents to clean parts.

Recycling and Disposal

Separating wastes allows for easier recycling and may reduce disposal costs. Keep hazardous wastes separate, do not mix used oil solvents, and keep chlorinated solvents (like,-trichloroethane) separate from non-chlorinated solvents (like kerosene and mineral spirits). Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around. Provide cover and secondary containment until these materials can be removed from the site.

Oil filters can be recycled. Ask your oil supplier or recycler about recycling oil filters.

Do not dispose of extra paints and coatings by dumping liquid onto the ground or throwing it into dumpsters. Allow coatings to dry or harden before disposal into covered dumpsters.

Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Costs

All of the above are low cost measures. Higher costs are incurred to setup and maintain onsite maintenance areas.

Vehicle & Equipment Maintenance NS-10

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Keep ample supplies of spill cleanup materials onsite.
- Maintain waste fluid containers in leak proof condition.
- Vehicles and equipment should be inspected on each day of use. Leaks should be repaired immediately or the problem vehicle(s) or equipment should be removed from the project site.
- Inspect equipment for damaged hoses and leaky gaskets routinely. Repair or replace as needed.

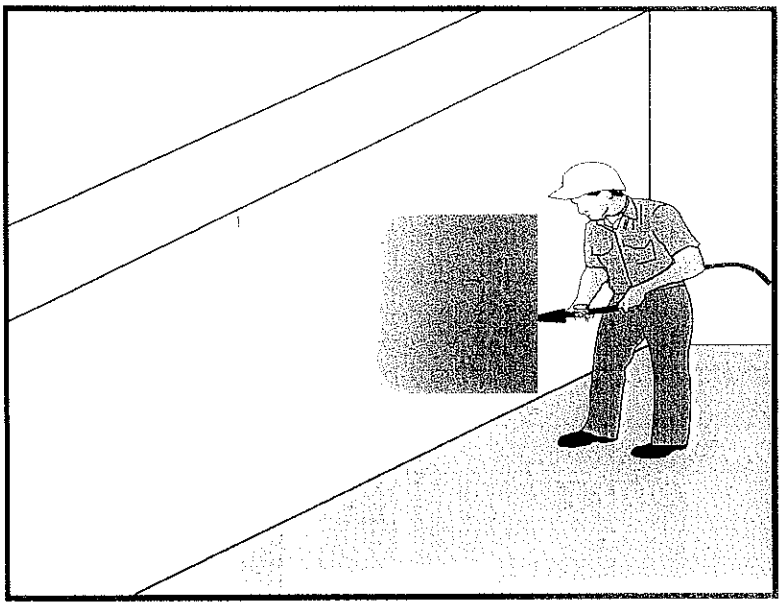
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program; Program Development and Approval Guidance, Working Group, Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Concrete Curing NS-12



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Concrete curing is used in the construction of structures such as bridges, retaining walls, pump houses, large slabs, and structured foundations. Concrete curing includes the use of both chemical and water methods.

Concrete and its associated curing materials have basic chemical properties that can raise the pH of water to levels outside of the permitted range. Discharges of stormwater and non-stormwater exposed to concrete during curing may have a high pH and may contain chemicals, metals, and fines. The General Permit incorporates Numeric Effluent Limits (NEL) and Numeric Action Levels (NAL) for pH (see Section 2 of this handbook to determine your project's risk level and if you are subject to these requirements).

Proper procedures and care should be taken when managing concrete curing materials to prevent them from coming into contact with stormwater flows, which could result in a high pH discharge.

Suitable Applications

Suitable applications include all projects where Portland Cement Concrete (PCC) and concrete curing chemicals are placed where they can be exposed to rainfall, runoff from other areas, or where runoff from the PCC will leave the site.

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Concrete Curing NS-12

Limitations

- Runoff contact with concrete waste can raise pH levels in the water to environmentally harmful levels and trigger permit violations.

Implementation

Chemical Curing

- Avoid over spray of curing compounds.
- Minimize the drift by applying the curing compound close to the concrete surface. Apply an amount of compound that covers the surface, but does not allow any runoff of the compound.
- Use proper storage and handling techniques for concrete curing compounds. Refer to WM-1, Material Delivery and Storage.
- Protect drain inlets prior to the application of curing compounds.
- Refer to WM-4, Spill Prevention and Control.

Water Curing for Bridge Decks, Retaining Walls, and other Structures

- Direct cure water away from inlets and watercourses to collection areas for evaporation or other means of removal in accordance with all applicable permits. See WM-8 Concrete Waste Management.
- Collect cure water at the top of slopes and transport to a concrete waste management area in a non-erosive manner. See EC-9 Earth Dikes and Drainage Swales, EC-10, Velocity Dissipation Devices, and EC-11, Slope Drains.
- Utilize wet blankets or a similar method that maintains moisture while minimizing the use and possible discharge of water.

Education

- Educate employees, subcontractors, and suppliers on proper concrete curing techniques to prevent contact with discharge as described herein.
- Arrange for the QSP or the appropriately trained contractor's superintendent or representative to oversee and enforce concrete curing procedures.

Costs

All of the above measures are generally low cost.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

Concrete Curing NS-12

- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Sample non-stormwater discharges and stormwater runoff that contacts uncured and partially cured concrete as required by the General Permit.
- Ensure that employees and subcontractors implement appropriate measures for storage, handling, and use of curing compounds.
- Inspect cure containers and spraying equipment for leaks.

References

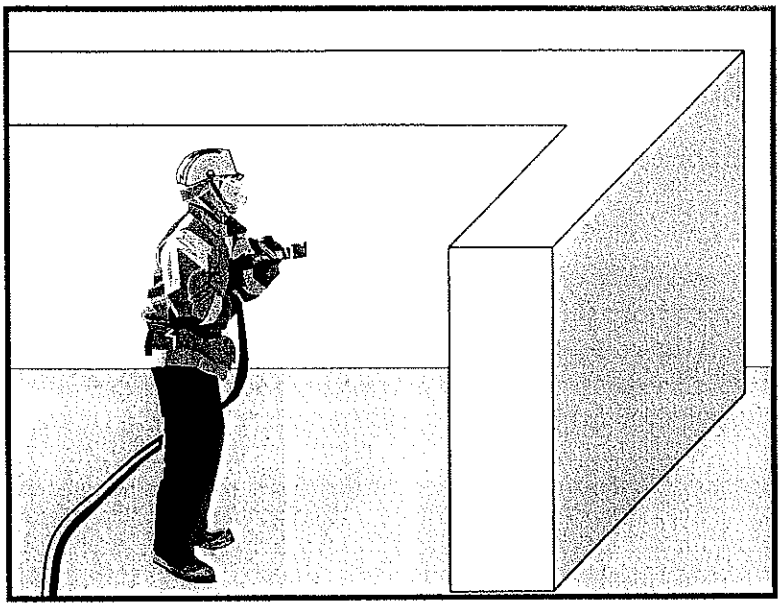
Blue Print for a Clean Bay-Construction-Related Industries: Best Management Practices for Stormwater Pollution Prevention; Santa Clara Valley Non Point Source Pollution Control Program, 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Concrete Finishing NS-13



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Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	☑
Bacteria	
Oil and Grease	
Organics	☑

Potential Alternatives

None

Description and Purpose

Concrete finishing methods are used for bridge deck rehabilitation, paint removal, curing compound removal, and final surface finish appearances. Methods include sand blasting, shot blasting, grinding, or high pressure water blasting. Stormwater and non-stormwater exposed to concrete finishing by-products may have a high pH and may contain chemicals, metals, and fines. Proper procedures and implementation of appropriate BMPs can minimize the impact that concrete-finishing methods may have on stormwater and non-stormwater discharges.

The General Permit incorporates Numeric Effluent Limits (NEL) and Numeric Action Levels (NAL) for pH (see Section 2 of this handbook to determine your project's risk level and if you are subject to these requirements).

Concrete and its associated curing materials have basic chemical properties that can raise pH levels outside of the permitted range. Additional care should be taken when managing these materials to prevent them from coming into contact with stormwater flows, which could lead to exceedances of the General Permit requirements.

Suitable Applications

These procedures apply to all construction locations where concrete finishing operations are performed.

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Concrete Finishing NS-13

Limitations

- Runoff contact with concrete waste can raise pH levels in the water to environmentally harmful levels and trigger permit violations.

Implementation

- Collect and properly dispose of water from high-pressure water blasting operations.
- Collect contaminated water from blasting operations at the top of slopes. Transport or dispose of contaminated water while using BMPs such as those for erosion control. Refer to EC-9, Earth Dikes and Drainage Swales, EC-10, Velocity Dissipation Devices, and EC-11, Slope Drains.
- Direct water from blasting operations away from inlets and watercourses to collection areas for infiltration or other means of removal (dewatering). Refer to NS-2 Dewatering Operations.
- Protect inlets during sandblasting operations. Refer to SE-10, Storm Drain Inlet Protection.
- Refer to WM-8, Concrete Waste Management for disposal of concrete debris.
- Minimize the drift of dust and blast material as much as possible by keeping the blasting nozzle close to the surface.
- When blast residue contains a potentially hazardous waste, refer to WM-6, Hazardous Waste Management.

Education

- Educate employees, subcontractors, and suppliers on proper concrete finishing techniques to prevent contact with discharge as described herein.
- Arrange for the QSP or the appropriately trained contractor's superintendent or representative to oversee and enforce concrete finishing procedures.

Costs

These measures are generally of low cost.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Sample non-stormwater discharges and stormwater runoff that contacts concrete dust and debris as required by the General Permit.

Concrete Finishing NS-13

- Sweep or vacuum up debris from sandblasting at the end of each shift.
- At the end of each work shift, remove and contain liquid and solid waste from containment structures, if any, and from the general work area.
- Inspect containment structures for damage prior to use and prior to onset of forecasted rain.

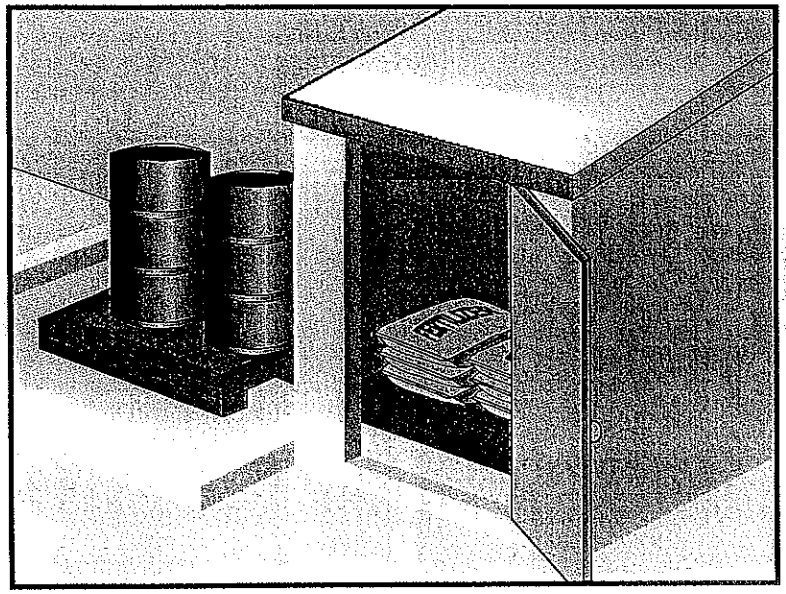
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Material Delivery and Storage WM-1



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☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in watertight containers and/or a completely enclosed designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

This best management practice covers only material delivery and storage. For other information on materials, see WM-2, Material Use, or WM-4, Spill Prevention and Control. For information on wastes, see the waste management BMPs in this section.

Suitable Applications

These procedures are suitable for use at all construction sites with delivery and storage of the following materials:

- Soil stabilizers and binders
- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease

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Material Delivery and Storage WM-1

- Asphalt and concrete components
- Hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

Limitations

- Space limitation may preclude indoor storage.
- Storage sheds often must meet building and fire code requirements.

Implementation

The following steps should be taken to minimize risk:

- Chemicals must be stored in water tight containers with appropriate secondary containment or in a storage shed.
- When a material storage area is located on bare soil, the area should be lined and bermed.
- Use containment pallets or other practical and available solutions, such as storing materials within newly constructed buildings or garages, to meet material storage requirements.
- Stack erodible landscape material on pallets and cover when not in use.
- Contain all fertilizers and other landscape materials when not in use.
- Temporary storage areas should be located away from vehicular traffic.
- Material Safety Data Sheets (MSDS) should be available on-site for all materials stored that have the potential to effect water quality.
- Construction site areas should be designated for material delivery and storage.
- Material delivery and storage areas should be located away from waterways, if possible.
  - Avoid transport near drainage paths or waterways.
  - Surround with earth berms or other appropriate containment BMP. See EC-9, Earth Dikes and Drainage Swales.
  - Place in an area that will be paved.
- Storage of reactive, ignitable, or flammable liquids must comply with the fire codes of your area. Contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code, NFPA30.
- An up to date inventory of materials delivered and stored onsite should be kept.

Material Delivery and Storage WM-1

- Hazardous materials storage onsite should be minimized.
- Hazardous materials should be handled as infrequently as possible.
- Keep ample spill cleanup supplies appropriate for the materials being stored. Ensure that cleanup supplies are in a conspicuous, labeled area.
- Employees and subcontractors should be trained on the proper material delivery and storage practices.
- Employees trained in emergency spill cleanup procedures must be present when dangerous materials or liquid chemicals are unloaded.
- If significant residual materials remain on the ground after construction is complete, properly remove and dispose of materials and any contaminated soil. See WM-7, Contaminated Soil Management. If the area is to be paved, pave as soon as materials are removed to stabilize the soil.

Material Storage Areas and Practices

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 should be stored in approved containers and drums and should not be overfilled. Containers and drums should be placed in temporary containment facilities for storage.
- A temporary containment facility should provide for a spill containment volume able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest container within its boundary, whichever is greater.
- A temporary containment facility should be impervious to the materials stored therein for a minimum contact time of 72 hours.
- A temporary containment facility should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be collected and placed into drums. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. All collected liquids or non-hazardous liquids should be sent to an approved disposal site.
- Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.
- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.
- Materials should be covered prior to, and during rain events.
- Materials should be stored in their original containers and the original product labels should be maintained in place in a legible condition. Damaged or otherwise illegible labels should be replaced immediately.

Material Delivery and Storage WM-1

- Bagged and boxed materials should be stored on pallets and should not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials should be covered during non-working days and prior to and during rain events.
- Stockpiles should be protected in accordance with WM-3, Stockpile Management.
- Materials should be stored indoors within existing structures or completely enclosed storage sheds when available.
- Proper storage instructions should be posted at all times in an open and conspicuous location.
- An ample supply of appropriate spill clean up material should be kept near storage areas.
- Also see WM-6, Hazardous Waste Management, for storing of hazardous wastes.

Material Delivery Practices

- Keep an accurate, up-to-date inventory of material delivered and stored onsite.
- Arrange for employees trained in emergency spill cleanup procedures to be present when dangerous materials or liquid chemicals are unloaded.

Spill Cleanup

- Contain and clean up any spill immediately.
- Properly remove and dispose of any hazardous materials or contaminated soil if significant residual materials remain on the ground after construction is complete. See WM-7, Contaminated Soil Management.
- See WM-4, Spill Prevention and Control, for spills of chemicals and/or hazardous materials.
- If spills or leaks of materials occur that are not contained and could discharge to surface waters, non-visible sampling of site discharge may be required. Refer to the General Permit or to your project specific Construction Site Monitoring Plan to determine if and where sampling is required.

Cost

- The largest cost of implementation may be in the construction of a materials storage area that is covered and provides secondary containment.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Keep storage areas clean and well organized, including a current list of all materials onsite.
- Inspect labels on containers for legibility and accuracy.

Material Delivery and Storage WM-1

- Repair or replace perimeter controls, containment structures, covers, and liners as needed to maintain proper function.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

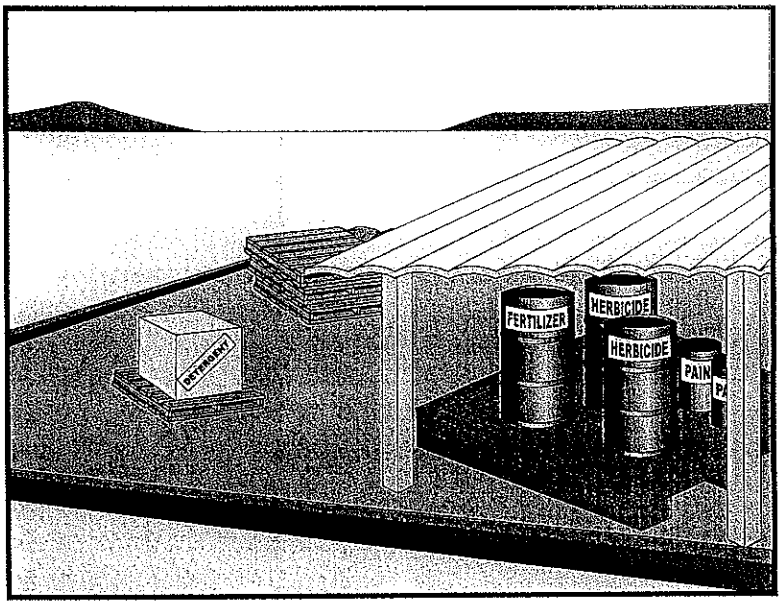
Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Material Use

WM-2



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Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use onsite, and training employees and subcontractors.

Suitable Applications

This BMP is suitable for use at all construction projects. These procedures apply when the following materials are used or prepared onsite:

- Pesticides and herbicides
- Fertilizers
- Detergents
- Petroleum products such as fuel, oil, and grease
- Asphalt and other concrete components
- Other hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Other materials that may be detrimental if released to the environment

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Material Use WM-2

Limitations

Safer alternative building and construction products may not be available or suitable in every instance.

Implementation

The following steps should be taken to minimize risk:

- Minimize use of hazardous materials onsite.
- Follow manufacturer instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
- Train personnel who use pesticides. The California Department of Pesticide Regulation and county agricultural commissioners license pesticide dealers, certify pesticide applicators, and conduct onsite inspections.
- The preferred method of termiticide application is soil injection near the existing or proposed structure foundation/slab; however, if not feasible, soil drench application of termiticides should follow EPA label guidelines and the following recommendations (most of which are applicable to most pesticide applications):
  - Do not treat soil that is water-saturated or frozen.
  - Application shall not commence within 24-hours of a predicted precipitation event with a 40% or greater probability. Weather tracking must be performed on a daily basis prior to termiticide application and during the period of termiticide application.
  - Do not allow treatment chemicals to runoff from the target area. Apply proper quantity to prevent excess runoff. Provide containment for and divert stormwater from application areas using berms or diversion ditches during application.
  - Dry season: Do not apply within 10 feet of storm drains. Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes or ponds; estuaries; and commercial fish farm ponds).
  - Wet season: Do not apply within 50 feet of storm drains or aquatic habitats (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes or ponds; estuaries; and commercial fish farm ponds) unless a vegetative buffer is present (if so, refer to dry season requirements).
  - Do not make on-grade applications when sustained wind speeds are above 10 mph (at application site) at nozzle end height.
  - Cover treatment site prior to a rain event in order to prevent run-off of the pesticide into non-target areas. The treated area should be limited to a size that can be backfilled and/or covered by the end of the work shift. Backfilling or covering of the treated area shall be done by the end of the same work shift in which the application is made.
  - The applicator must either cover the soil him/herself or provide written notification of the above requirement to the contractor on site and to the person commissioning the

application (if different than the contractor). If notice is provided to the contractor or the person commissioning the application, then they are responsible under the Federal Insecticide Fungicide, and Rodenticide Act (FIFRA) to ensure that: 1) if the concrete slab cannot be poured over the treated soil within 24 hours of application, the treated soil is covered with a waterproof covering (such as polyethylene sheeting), and 2) the treated soil is covered if precipitation is predicted to occur before the concrete slab is scheduled to be poured.

- Do not over-apply fertilizers, herbicides, and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Unless on steep slopes, till fertilizers into the soil rather than hydraulic application. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried offsite by runoff. Do not apply these chemicals before predicted rainfall.
- Train employees and subcontractors in proper material use.
- Supply Material Safety Data Sheets (MSDS) for all materials.
- Dispose of latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, with other construction debris.
- Do not remove the original product label; it contains important safety and disposal information. Use the entire product before disposing of the container.
- Mix paint indoors or in a containment area. Never clean paintbrushes or rinse paint containers into a street, gutter, storm drain, or watercourse. Dispose of any paint thinners, residue, and sludge(s) that cannot be recycled, as hazardous waste.
- For water-based paint, clean brushes to the extent practicable, and rinse to a drain leading to a sanitary sewer where permitted, or contain for proper disposal off site. For oil-based paints, clean brushes to the extent practicable, and filter and reuse thinners and solvents.
- Use recycled and less hazardous products when practical. Recycle residual paints, solvents, non-treated lumber, and other materials.
- Use materials only where and when needed to complete the construction activity. Use safer alternative materials as much as possible. Reduce or eliminate use of hazardous materials onsite when practical.
- Document the location, time, chemicals applied, and applicator's name and qualifications.
- Keep an ample supply of spill clean up material near use areas. Train employees in spill clean up procedures.
- Avoid exposing applied materials to rainfall and runoff unless sufficient time has been allowed for them to dry.
- Discontinue use of erodible landscape material within 2 days prior to a forecasted rain event and materials should be covered and/or bermed.

Material Use WM-2

- Provide containment for material use areas such as masons' areas or paint mixing/preparation areas to prevent materials/pollutants from entering stormwater.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Ensure employees and subcontractors throughout the job are using appropriate practices.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

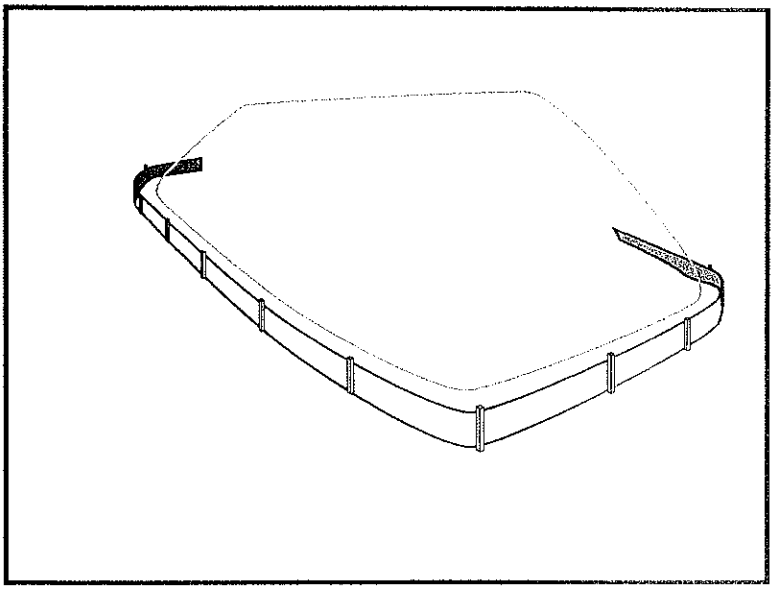
Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Comments on Risk Assessments Risk Reduction Options for Cypermethrin: Docket No. OPP–2005–0293; California Stormwater Quality Association (CASQA) letter to USEPA, 2006.Environmental Hazard and General Labeling for Pyrethroid Non-Agricultural Outdoor Products, EPA-HQ-OPP-2008-0331-0021; USEPA, 2008.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Stockpile Management WM-3



Categories

EC	Erosion Control	
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☒
WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Description and Purpose

Stockpile management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, soil amendments, sand, paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate sub base or pre-mixed aggregate, asphalt minder (so called "cold mix" asphalt), and pressure treated wood.

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Suitable Applications

Implement in all projects that stockpile soil and other loose materials.

Potential Alternatives

None

Limitations

- Plastic sheeting as a stockpile protection is temporary and hard to manage in windy conditions. Where plastic is used, consider use of plastic tarps with nylon reinforcement which may be more durable than standard sheeting.
- Plastic sheeting can increase runoff volume due to lack of infiltration and potentially cause perimeter control failure.
- Plastic sheeting breaks down faster in sunlight.
- The use of plastic materials should be avoided when feasible and photodegradable plastics should not be used.

Implementation

Protection of stockpiles is a year-round requirement. To properly manage stockpiles:

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Stockpile Management WM-3

- On larger sites, a minimum of 50 ft separation from concentrated flows of stormwater, drainage courses, and inlets is recommended.
- All stockpiles are required to be protected immediately if they are not scheduled to be used within 14 days.
- Protect all stockpiles from stormwater run-on using temporary perimeter sediment barriers such as compost berms (SE-13), temporary silt dikes (SE-12), fiber rolls (SE-5), silt fences (SE-1), sandbags (SE-8), gravel bags (SE-6), or biofilter bags (SE-14). Refer to the individual fact sheet for each of these controls for installation information.
- Implement wind erosion control practices as appropriate on all stockpiled material. For specific information, see WE-1, Wind Erosion Control.
- Manage stockpiles of contaminated soil in accordance with WM-7, Contaminated Soil Management.
- Place bagged materials on pallets and under cover.
- Ensure that stockpile coverings are installed securely to protect from wind and rain.
- Some plastic covers withstand weather and sunlight better than others. Select cover materials or methods based on anticipated duration of use.

Protection of Non-Active Stockpiles

Non-active stockpiles of the identified materials should be protected further as follows:

Soil stockpiles

- Cover and project soil stockpiles with soil stabilization measures and a temporary perimeter sediment barrier at all times.
- Consider temporary vegetation for topsoil piles that will be stockpiled for extended periods.

Stockpiles of Portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate sub base

- Provide covers and protect these stockpiles with a temporary perimeter sediment barrier at all times.

Stockpiles of "cold mix"

- Cover cold mix stockpiles and place them on plastic sheeting (or comparable material) and surround the stockpiles with a berm all times.

Stockpiles of fly ash, stucco, hydrated lime

- Cover stockpiles of materials that may raise the pH of runoff (i.e., basic materials) with plastic and surround the stockpiles with a berm at all times.

Stockpile Management WM-3

Stockpiles/Storage of wood (Pressure treated with chromated copper arsenate or ammoniacal copper zinc arsenate)

- Cover treated wood with plastic sheeting (or comparable material) and surround with a berm at all times.

Protection of Active Stockpiles

Active stockpiles of the identified materials should be protected as follows:

- All stockpiles should be covered and protected with a temporary linear sediment barrier prior to the onset of precipitation.
- Stockpiles of "cold mix" and treated wood, and basic materials should be placed on and covered with plastic sheeting or comparable material and surrounded by a berm prior to the onset of precipitation.
- The downstream perimeter of an active stockpile should be protected with a linear sediment barrier or berm and runoff should be diverted around or away from the stockpile on the upstream perimeter.

Costs

For cost information associated with stockpile protection refer to the individual erosion or sediment control BMP fact sheet considered for implementation (For example, refer to SE-1 Silt Fence for installation of silt fence around the perimeter of a stockpile.)

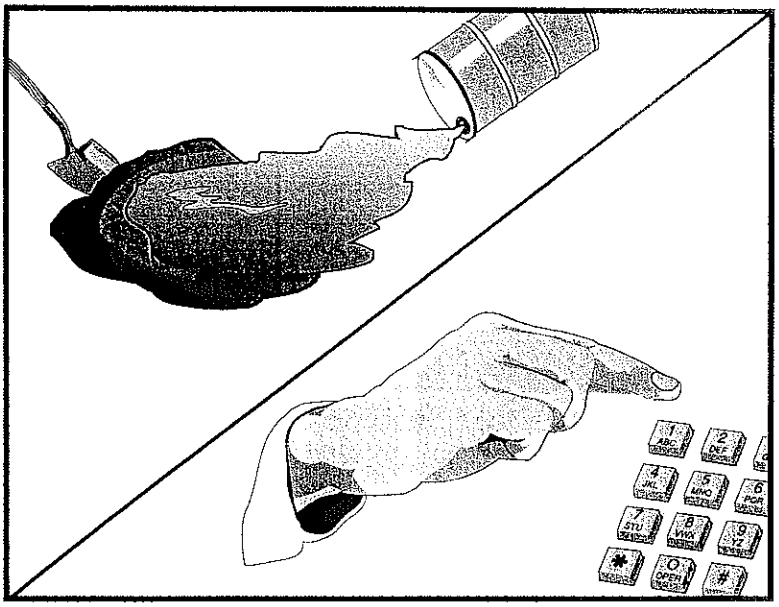
Inspection and Maintenance

- Stockpiles must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- It may be necessary to inspect stockpiles covered with plastic sheeting more frequently during certain conditions (for example, high winds or extreme heat).
- Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.
- Sediment shall be removed when it reaches one-third of the barrier height.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Spill Prevention and Control WM-4



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

This best management practice covers only spill prevention and control. However, WM-1, Materials Delivery and Storage, and WM-2, Material Use, also contain useful information, particularly on spill prevention. For information on wastes, see the waste management BMPs in this section.

Suitable Applications

This BMP is suitable for all construction projects. Spill control procedures are implemented anytime chemicals or hazardous substances are stored on the construction site, including the following materials:

- Soil stabilizers/binders
- Dust palliatives
- Herbicides
- Growth inhibitors
- Fertilizers
- Deicing/anti-icing chemicals

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Spill Prevention and Control WM-4

- Fuels
- Lubricants
- Other petroleum distillates

Limitations

- In some cases it may be necessary to use a private spill cleanup company.
- This BMP applies to spills caused by the contractor and subcontractors.
- Procedures and practices presented in this BMP are general. Contractor should identify appropriate practices for the specific materials used or stored onsite

Implementation

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

- Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

- To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- Store hazardous materials and wastes in covered containers and protect from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals to oversee and enforce control measures.
- Spills should be covered and protected from stormwater runon during rainfall to the extent that it doesn't compromise clean up activities.
- Do not bury or wash spills with water.

Spill Prevention and Control WM-4

- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with WM-10, Liquid Waste Management.
- Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- Place proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

- Clean up leaks and spills immediately.
- Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

- Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Absorbent materials should be promptly removed and disposed of properly.
- Follow the practice below for a minor spill:
  - Contain the spread of the spill.
  - Recover spilled materials.
  - Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

- Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

Spill Prevention and Control WM-4

- Spills should be cleaned up immediately:
  - Contain spread of the spill.
  - Notify the project foreman immediately.
  - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
  - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
  - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

- For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps should be taken:
  - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
  - Notify the Governor's Office of Emergency Services Warning Center, (916) 845-8911.
  - For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
  - Notification should first be made by telephone and followed up with a written report.
  - The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
  - Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, etc.

Reporting

- Report significant spills to local agencies, such as the Fire Department; they can assist in cleanup.
- Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hours).

Use the following measures related to specific activities:

Spill Prevention and Control WM-4

Vehicle and Equipment Maintenance

- If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
- Regularly inspect onsite vehicles and equipment for leaks and repair immediately
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Place drip pans or absorbent materials under paving equipment when not in use.
- Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around
- Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- If fueling must occur onsite, use designate areas, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
- Discourage "topping off" of fuel tanks.
- Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

Costs

Prevention of leaks and spills is inexpensive. Treatment and/ or disposal of contaminated soil or water can be quite expensive.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

Spill Prevention and Control WM-4

- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.
- Keep ample supplies of spill control and cleanup materials onsite, near storage, unloading, and maintenance areas.
- Update your spill prevention and control plan and stock cleanup materials as changes occur in the types of chemicals onsite.

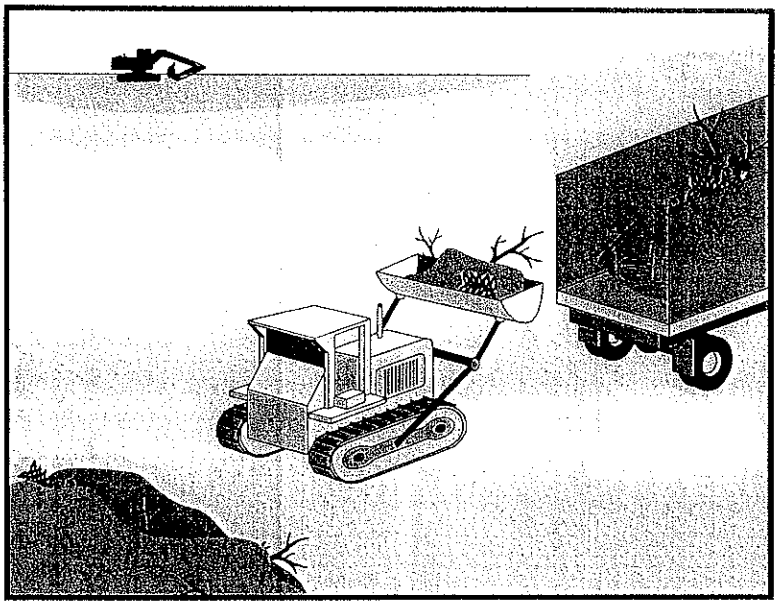
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Solid Waste Management WM-5



Categories

EC	Erosion Control	
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WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Solid waste management procedures and practices are designed to prevent or reduce the discharge of pollutants to stormwater from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

Suitable Applications

This BMP is suitable for construction sites where the following wastes are generated or stored:

- Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction
- Packaging materials including wood, paper, and plastic
- Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces, and masonry products
- Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes
- Construction wastes including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts, styrofoam and other materials used to transport and package construction materials
- Highway planting wastes, including vegetative material,

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Solid Waste Management WM-5

plant containers, and packaging materials

Limitations

Temporary stockpiling of certain construction wastes may not necessitate stringent drainage related controls during the non-rainy season or in desert areas with low rainfall.

Implementation

The following steps will help keep a clean site and reduce stormwater pollution:

- Select designated waste collection areas onsite.
- Inform trash-hauling contractors that you will accept only watertight dumpsters for onsite use. Inspect dumpsters for leaks and repair any dumpster that is not watertight.
- Locate containers in a covered area or in a secondary containment.
- Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it is windy.
- Cover waste containers at the end of each work day and when it is raining.
- Plan for additional containers and more frequent pickup during the demolition phase of construction.
- Collect site trash daily, especially during rainy and windy conditions.
- Remove this solid waste promptly since erosion and sediment control devices tend to collect litter.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the trash hauling contractor.
- Arrange for regular waste collection before containers overflow.
- Clean up immediately if a container does spill.
- Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas.

Education

- Have the contractor's superintendent or representative oversee and enforce proper solid waste management procedures and practices.
- Instruct employees and subcontractors on identification of solid waste and hazardous waste.
- Educate employees and subcontractors on solid waste storage and disposal procedures.

Solid Waste Management WM-5

- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Require that employees and subcontractors follow solid waste handling and storage procedures.
- Prohibit littering by employees, subcontractors, and visitors.
- Minimize production of solid waste materials wherever possible.

Collection, Storage, and Disposal

- Littering on the project site should be prohibited.
- To prevent clogging of the storm drainage system, litter and debris removal from drainage grates, trash racks, and ditch lines should be a priority.
- Trash receptacles should be provided in the contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods.
- Litter from work areas within the construction limits of the project site should be collected and placed in watertight dumpsters at least weekly, regardless of whether the litter was generated by the contractor, the public, or others. Collected litter and debris should not be placed in or next to drain inlets, stormwater drainage systems, or watercourses.
- Dumpsters of sufficient size and number should be provided to contain the solid waste generated by the project.
- Full dumpsters should be removed from the project site and the contents should be disposed of by the trash hauling contractor.
- Construction debris and waste should be removed from the site biweekly or more frequently as needed.
- Construction material visible to the public should be stored or stacked in an orderly manner.
- Stormwater runon should be prevented from contacting stored solid waste through the use of berms, dikes, or other temporary diversion structures or through the use of measures to elevate waste from site surfaces.
- Solid waste storage areas should be located at least 50 ft from drainage facilities and watercourses and should not be located in areas prone to flooding or ponding.
- Except during fair weather, construction and highway planting waste not stored in watertight dumpsters should be securely covered from wind and rain by covering the waste with tarps or plastic.
- Segregate potentially hazardous waste from non-hazardous construction site waste.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.

Solid Waste Management WM-5

- For disposal of hazardous waste, see WM-6, Hazardous Waste Management. Have hazardous waste hauled to an appropriate disposal and/or recycling facility.
- Salvage or recycle useful vegetation debris, packaging and surplus building materials when practical. For example, trees and shrubs from land clearing can be used as a brush barrier, or converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Inspect construction waste area regularly.
- Arrange for regular waste collection.

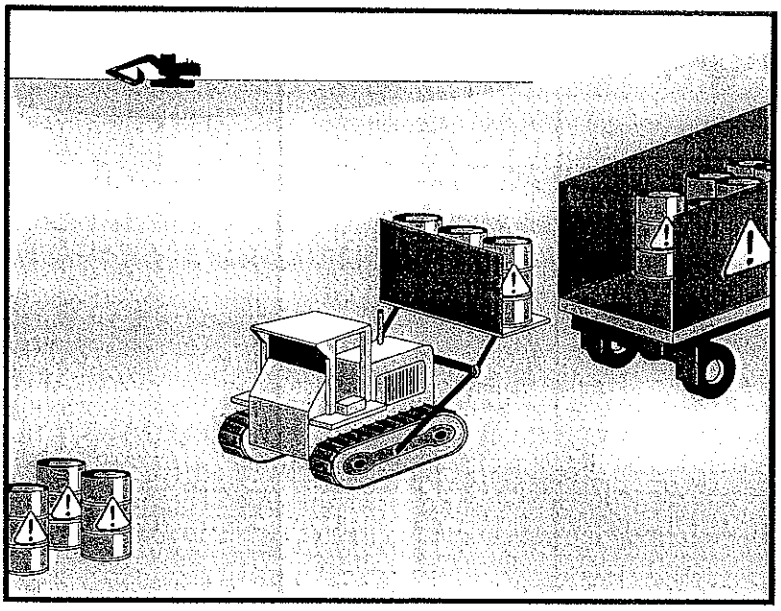
References

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Hazardous Waste Management WM-6



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Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	☑
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.

Suitable Applications

This best management practice (BMP) applies to all construction projects. Hazardous waste management practices are implemented on construction projects that generate waste from the use of:

- Petroleum Products
- Asphalt Products
- Concrete Curing Compounds
- Pesticides
- Palliatives
- Acids
- Septic Wastes
- Paints
- Stains
- Solvents
- Wood Preservatives
- Roofing Tar
- Any materials deemed a hazardous waste in California, Title 22 Division 4.5, or listed in 40 CFR Parts 110, 117, 261, or 302

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Hazardous Waste Management WM-6

In addition, sites with existing structures may contain wastes, which must be disposed of in accordance with federal, state, and local regulations. These wastes include:

- Sandblasting grit mixed with lead-, cadmium-, or chromium-based paints
- Asbestos
- PCBs (particularly in older transformers)

Limitations

- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
- Nothing in this BMP relieves the contractor from responsibility for compliance with federal, state, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.
- This BMP does not cover aerially deposited lead (ADL) soils. For ADL soils refer to WM-7, Contaminated Soil Management.

Implementation

The following steps will help reduce stormwater pollution from hazardous wastes:

Material Use

- Wastes should be stored in sealed containers constructed of a suitable material and should be labeled as required by Title 22 CCR, Division 4.5 and 49 CFR Parts 172, 173, 178, and 179.
- All hazardous waste should be stored, transported, and disposed as required in Title 22 CCR, Division 4.5 and 49 CFR 261-263.
- Waste containers should be stored in temporary containment facilities that should comply with the following requirements:
  - Temporary containment facility should provide for a spill containment volume equal to 1.5 times the volume of all containers able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest tank within its boundary, whichever is greater.
  - Temporary containment facility should be impervious to the materials stored there for a minimum contact time of 72 hours.
  - Temporary containment facilities should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be placed into drums after each rainfall. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. Non-hazardous liquids should be sent to an approved disposal site.
  - Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.

Hazardous Waste Management WM-6

- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.

- Throughout the rainy season, temporary containment facilities should be covered during non-working days, and prior to rain events. Covered facilities may include use of plastic tarps for small facilities or constructed roofs with overhangs.

- Drums should not be overfilled and wastes should not be mixed.

- Unless watertight, containers of dry waste should be stored on pallets.

- Do not over-apply herbicides and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over application is expensive and environmentally harmful. Apply surface dressings in several smaller applications, as opposed to one large application. Allow time for infiltration and avoid excess material being carried offsite by runoff. Do not apply these chemicals just before it rains. People applying pesticides must be certified in accordance with federal and state regulations.

- Paint brushes and equipment for water and oil based paints should be cleaned within a contained area and should not be allowed to contaminate site soils, watercourses, or drainage systems. Waste paints, thinners, solvents, residues, and sludges that cannot be recycled or reused should be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths should be disposed of as solid waste.

- Do not clean out brushes or rinse paint containers into the dirt, street, gutter, storm drain, or stream. "Paint out" brushes as much as possible. Rinse water-based paints to the sanitary sewer. Filter and reuse thinners and solvents. Dispose of excess oil-based paints and sludge as hazardous waste.

- The following actions should be taken with respect to temporary contaminant:

  - Ensure that adequate hazardous waste storage volume is available.

  - Ensure that hazardous waste collection containers are conveniently located.

  - Designate hazardous waste storage areas onsite away from storm drains or watercourses and away from moving vehicles and equipment to prevent accidental spills.

  - Minimize production or generation of hazardous materials and hazardous waste on the job site.

  - Use containment berms in fueling and maintenance areas and where the potential for spills is high.

  - Segregate potentially hazardous waste from non-hazardous construction site debris.

  - Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.

Hazardous Waste Management WM-6

- Clearly label all hazardous waste containers with the waste being stored and the date of accumulation.
- Place hazardous waste containers in secondary containment.
- Do not allow potentially hazardous waste materials to accumulate on the ground.
- Do not mix wastes.
- Use all of the product before disposing of the container.
- Do not remove the original product label; it contains important safety and disposal information.

Waste Recycling Disposal

- Select designated hazardous waste collection areas onsite.
- Hazardous materials and wastes should be stored in covered containers and protected from vandalism.
- Place hazardous waste containers in secondary containment.
- Do not mix wastes, this can cause chemical reactions, making recycling impossible and complicating disposal.
- Recycle any useful materials such as used oil or water-based paint.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Arrange for regular waste collection before containers overflow.
- Make sure that hazardous waste (e.g., excess oil-based paint and sludge) is collected, removed, and disposed of only at authorized disposal areas.

Disposal Procedures

- Waste should be disposed of by a licensed hazardous waste transporter at an authorized and licensed disposal facility or recycling facility utilizing properly completed Uniform Hazardous Waste Manifest forms.
- A Department of Health Services certified laboratory should sample waste to determine the appropriate disposal facility.
- Properly dispose of rainwater in secondary containment that may have mixed with hazardous waste.
- Attention is directed to "Hazardous Material", "Contaminated Material", and "Aerially Deposited Lead" of the contract documents regarding the handling and disposal of hazardous materials.

Hazardous Waste Management WM-6

Education

- Educate employees and subcontractors on hazardous waste storage and disposal procedures.
- Educate employees and subcontractors on potential dangers to humans and the environment from hazardous wastes.
- Instruct employees and subcontractors on safety procedures for common construction site hazardous wastes.
- Instruct employees and subcontractors in identification of hazardous and solid waste.
- Hold regular meetings to discuss and reinforce hazardous waste management procedures (incorporate into regular safety meetings).
- The contractor's superintendent or representative should oversee and enforce proper hazardous waste management procedures and practices.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Warning signs should be placed in areas recently treated with chemicals.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- If a container does spill, clean up immediately.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events..
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Hazardous waste should be regularly collected.
- A foreman or construction supervisor should monitor onsite hazardous waste storage and disposal procedures.
- Waste storage areas should be kept clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored.
- Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Hazardous Waste Management WM-6

- Hazardous spills should be cleaned up and reported in conformance with the applicable Material Safety Data Sheet (MSDS) and the instructions posted at the project site.
- The National Response Center, at (800) 424-8802, should be notified of spills of federal reportable quantities in conformance with the requirements in 40 CFR parts 110, 117, and 302. Also notify the Governors Office of Emergency Services Warning Center at (916) 845-8911.
- A copy of the hazardous waste manifests should be provided.

References

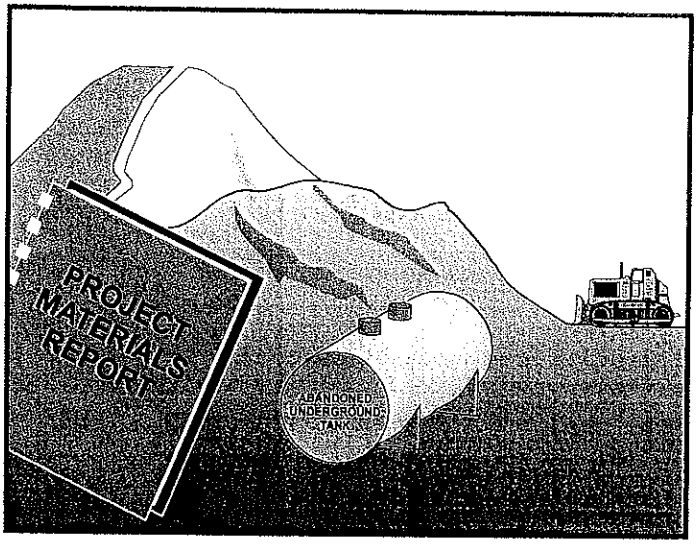
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Contaminated Soil Management WM-7



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Description and Purpose

Prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

Targeted Constituents

Sediment	
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	☑
Oil and Grease	☑
Organics	☑

Suitable Applications

Contaminated soil management is implemented on construction projects in highly urbanized or industrial areas where soil contamination may have occurred due to spills, illicit discharges, aerial deposition, past use and leaks from underground storage tanks.

Potential Alternatives

None

Limitations

Contaminated soils that cannot be treated onsite must be disposed of offsite by a licensed hazardous waste hauler. The presence of contaminated soil may indicate contaminated water as well. See NS-2, Dewatering Operations, for more information.

The procedures and practices presented in this BMP are general. The contractor should identify appropriate practices and procedures for the specific contaminants known to exist or discovered onsite.

Implementation

Most owners and developers conduct pre-construction environmental assessments as a matter of routine. Contaminated soils are often identified during project planning and development with known locations identified in the plans, specifications and in the SWPPP. The contractor should review applicable reports and investigate appropriate call-outs in the

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Contaminated Soil Management WM-7

plans, specifications, and SWPPP. Recent court rulings holding contractors liable for cleanup costs when they unknowingly move contaminated soil highlight the need for contractors to confirm a site assessment is completed before earth moving begins.

The following steps will help reduce stormwater pollution from contaminated soil:

- Conduct thorough, pre-construction inspections of the site and review documents related to the site. If inspection or reviews indicated presence of contaminated soils, develop a plan before starting work.
- Look for contaminated soil as evidenced by discoloration, odors, differences in soil properties, abandoned underground tanks or pipes, or buried debris.
- Prevent leaks and spills. Contaminated soil can be expensive to treat and dispose of properly. However, addressing the problem before construction is much less expensive than after the structures are in place.
- The contractor may further identify contaminated soils by investigating:
  - Past site uses and activities
  - Detected or undetected spills and leaks
  - Acid or alkaline solutions from exposed soil or rock formations high in acid or alkaline forming elements
  - Contaminated soil as evidenced by discoloration, odors, differences in soil properties, abandoned underground tanks or pipes, or buried debris.
  - Suspected soils should be tested at a certified laboratory.

Education

- Have employees and subcontractors complete a safety training program which meets 29 CFR 1910.120 and 8 CCR 5192 covering the potential hazards as identified, prior to performing any excavation work at the locations containing material classified as hazardous.
- Educate employees and subcontractors in identification of contaminated soil and on contaminated soil handling and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).

Handling Procedures for Material with Aerially Deposited Lead (ADL)

- Materials from areas designated as containing (ADL) may, if allowed by the contract special provisions, be excavated, transported, and used in the construction of embankments and/or backfill.
- Excavation, transportation, and placement operations should result in no visible dust.
- Caution should be exercised to prevent spillage of lead containing material during transport.

Contaminated Soil Management WM-7

- Quality should be monitored during excavation of soils contaminated with lead.

Handling Procedures for Contaminated Soils

- Minimize onsite storage. Contaminated soil should be disposed of properly in accordance with all applicable regulations. All hazardous waste storage will comply with the requirements in Title 22, CCR, Sections 66265.250 to 66265.260.
- Test suspected soils at an approved certified laboratory.
- Work with the local regulatory agencies to develop options for treatment or disposal if the soil is contaminated.
- Avoid temporary stockpiling of contaminated soils or hazardous material.
- Take the following precautions if temporary stockpiling is necessary:
  - Cover the stockpile with plastic sheeting or tarps.
  - Install a berm around the stockpile to prevent runoff from leaving the area.
  - Do not stockpile in or near storm drains or watercourses.
- Remove contaminated material and hazardous material on exteriors of transport vehicles and place either into the current transport vehicle or into the excavation prior to the vehicle leaving the exclusion zone.
- Monitor the air quality continuously during excavation operations at all locations containing hazardous material.
- Procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work, including registration for transporting vehicles carrying the contaminated material and the hazardous material.
- Collect water from decontamination procedures and treat or dispose of it at an appropriate disposal site.
- Collect non-reusable protective equipment, once used by any personnel, and dispose of at an appropriate disposal site.
- Install temporary security fence to surround and secure the exclusion zone. Remove fencing when no longer needed.
- Excavate, transport, and dispose of contaminated material and hazardous material in accordance with the rules and regulations of the following agencies (the specifications of these agencies supersede the procedures outlined in this BMP):
  - United States Department of Transportation (USDOT)
  - United States Environmental Protection Agency (USEPA)
  - California Environmental Protection Agency (CAL-EPA)

Contaminated Soil Management WM-7

- California Division of Occupation Safety and Health Administration (CAL-OSHA)
- Local regulatory agencies

Procedures for Underground Storage Tank Removals

- Prior to commencing tank removal operations, obtain the required underground storage tank removal permits and approval from the federal, state, and local agencies that have jurisdiction over such work.
- To determine if it contains hazardous substances, arrange to have tested, any liquid or sludge found in the underground tank prior to its removal.
- Following the tank removal, take soil samples beneath the excavated tank and perform analysis as required by the local agency representative(s).
- The underground storage tank, any liquid or sludge found within the tank, and all contaminated substances and hazardous substances removed during the tank removal and transported to disposal facilities permitted to accept such waste.

Water Control

- All necessary precautions and preventive measures should be taken to prevent the flow of water, including ground water, from mixing with hazardous substances or underground storage tank excavations. Such preventative measures may consist of, but are not limited to, berms, cofferdams, grout curtains, freeze walls, and seal course concrete or any combination thereof.
- If water does enter an excavation and becomes contaminated, such water, when necessary to proceed with the work, should be discharged to clean, closed top, watertight transportable holding tanks, treated, and disposed of in accordance with federal, state, and local laws.

Costs

Prevention of leaks and spills is inexpensive. Treatment or disposal of contaminated soil can be quite expensive.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Arrange for contractor's Water Pollution Control Manager, foreman, and/or construction supervisor to monitor onsite contaminated soil storage and disposal procedures.
- Monitor air quality continuously during excavation operations at all locations containing hazardous material.
- Coordinate contaminated soils and hazardous substances/waste management with the appropriate federal, state, and local agencies.

Contaminated Soil Management WM-7

- Implement WM-4, Spill Prevention and Control, to prevent leaks and spills as much as possible.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

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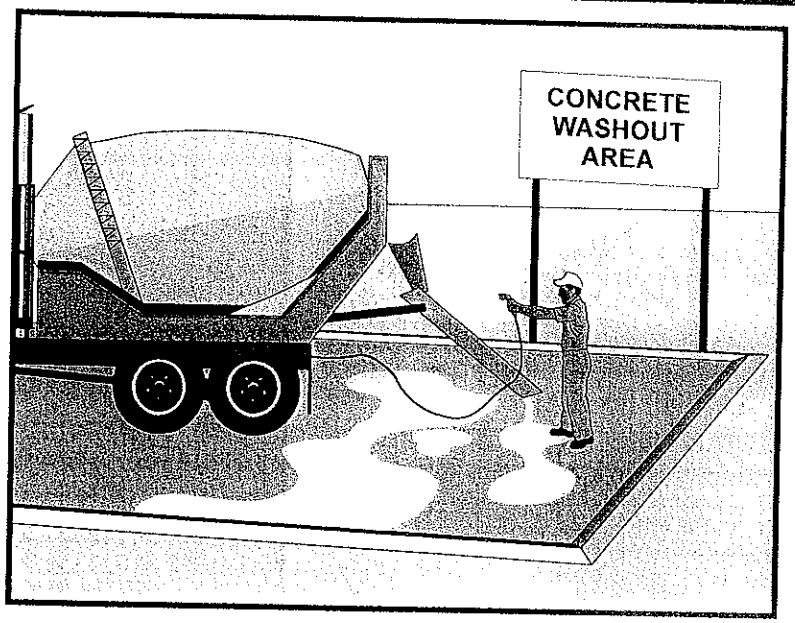
Concrete Waste Management WM-8



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☒
WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	☑
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Prevent the discharge of pollutants to stormwater from concrete waste by conducting washout onsite or offsite in a designated area, and by employee and subcontractor training.

The General Permit incorporates Numeric Effluent Limits (NEL) and Numeric Action Levels (NAL) for pH (see Section 2 of this handbook to determine your project's risk level and if you are subject to these requirements).

Many types of construction materials, including mortar, concrete, stucco, cement and block and their associated wastes have basic chemical properties that can raise pH levels outside of the permitted range. Additional care should be taken when managing these materials to prevent them from coming into contact with stormwater flows and raising pH to levels outside the accepted range.

Suitable Applications

Concrete waste management procedures and practices are implemented on construction projects where:

- Concrete is used as a construction material or where concrete dust and debris result from demolition activities.
- Slurries containing portland cement concrete (PCC) are generated, such as from saw cutting, coring, grinding, grooving, and hydro-concrete demolition.

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Concrete Waste Management WM-8

- Concrete trucks and other concrete-coated equipment are washed onsite.
- Mortar-mixing stations exist.
- Stucco mixing and spraying .
- See also NS-8, Vehicle and Equipment Cleaning.

Limitations

- Offsite washout of concrete wastes may not always be possible.
- Multiple washouts may be needed to assure adequate capacity and to allow for evaporation.

Implementation

The following steps will help reduce stormwater pollution from concrete wastes:

- Incorporate requirements for concrete waste management into material supplier and subcontractor agreements.
- Store dry and wet materials under cover, away from drainage areas. Refer to WM-1, Material Delivery and Storage for more information.
- Avoid mixing excess amounts of concrete.
- Perform washout of concrete trucks in designated areas only, where washout will not reach stormwater.
- Do not wash out concrete trucks into storm drains, open ditches, streets, streams or onto the ground. Trucks should always be washed out into designated facilities.
- Do not allow excess concrete to be dumped onsite, except in designated areas.
- For onsite washout:
  - On larger sites, it is recommended to locate washout areas at least 50 feet from storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
  - Washout wastes into the temporary washout where the concrete can set, be broken up, and then disposed properly.
  - Washout should be lined so there is no discharge into the underlying soil.
- Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile or dispose in the trash.
- See typical concrete washout installation details at the end of this fact sheet.

Education

- Educate employees, subcontractors, and suppliers on the concrete waste management techniques described herein.

Concrete Waste Management WM-8

- Arrange for contractor's superintendent or representative to oversee and enforce concrete waste management procedures.
- Discuss the concrete management techniques described in this BMP (such as handling of concrete waste and washout) with the ready-mix concrete supplier before any deliveries are made.

Concrete Demolition Wastes

- Stockpile concrete demolition waste in accordance with BMP WM-3, Stockpile Management.
- Dispose of or recycle hardened concrete waste in accordance with applicable federal, state or local regulations.

Concrete Slurry Wastes

- PCC and AC waste should not be allowed to enter storm drains or watercourses.
- PCC and AC waste should be collected and disposed of or placed in a temporary concrete washout facility (as described in Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures, below).
- A foreman or construction supervisor should monitor onsite concrete working tasks, such as saw cutting, coring, grinding and grooving to ensure proper methods are implemented.
- Saw-cut concrete slurry should not be allowed to enter storm drains or watercourses. Residue from grinding operations should be picked up by means of a vacuum attachment to the grinding machine or by sweeping. Saw cutting residue should not be allowed to flow across the pavement and should not be left on the surface of the pavement. See also NS-3, Paving and Grinding Operations; and WM-10, Liquid Waste Management.
- Concrete slurry residue should be disposed in a temporary washout facility (as described in Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures, below) and allowed to dry. Dispose of dry slurry residue in accordance with WM-5, Solid Waste Management.

Onsite Temporary Concrete Washout Facility, Transit Truck Washout Procedures

- Temporary concrete washout facilities should be located a minimum of 50 ft from storm drain inlets, open drainage facilities, and watercourses. Each facility should be located away from construction traffic or access areas to prevent disturbance or tracking.
- A sign should be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.
- Temporary concrete washout facilities should be constructed above grade or below grade at the option of the contractor. Temporary concrete washout facilities should be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.

Concrete Waste Management WM-8

- Temporary washout facilities should have a temporary pit or bermed areas of sufficient volume to completely contain all liquid and waste concrete materials generated during washout procedures.
- Temporary washout facilities should be lined to prevent discharge to the underlying ground or surrounding area.
- Washout of concrete trucks should be performed in designated areas only.
- Only concrete from mixer truck chutes should be washed into concrete wash out.
- Concrete washout from concrete pumper bins can be washed into concrete pumper trucks and discharged into designated washout area or properly disposed of or recycled offsite.
- Once concrete wastes are washed into the designated area and allowed to harden, the concrete should be broken up, removed, and disposed of per WM-5, Solid Waste Management. Dispose of or recycle hardened concrete on a regular basis.
- Temporary Concrete Washout Facility (Type Above Grade)
  - Temporary concrete washout facility (type above grade) should be constructed as shown on the details at the end of this BMP, with a recommended minimum length and minimum width of 10 ft; however, smaller sites or jobs may only need a smaller washout facility. With any washout, always maintain a sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations.
  - Materials used to construct the washout area should conform to the provisions detailed in their respective BMPs (e.g., SE-8 Sandbag Barrier).
  - Plastic lining material should be a minimum of 10 mil in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.
  - Alternatively, portable removable containers can be used as above grade concrete washouts. Also called a "roll-off"; this concrete washout facility should be properly sealed to prevent leakage, and should be removed from the site and replaced when the container reaches 75% capacity.
- Temporary Concrete Washout Facility (Type Below Grade)
  - Temporary concrete washout facilities (type below grade) should be constructed as shown on the details at the end of this BMP, with a recommended minimum length and minimum width of 10 ft. The quantity and volume should be sufficient to contain all liquid and concrete waste generated by washout operations.
  - Lath and flagging should be commercial type.
  - Plastic lining material should be a minimum of 10 mil polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.

Concrete Waste Management WM-8

- The base of a washout facility should be free of rock or debris that may damage a plastic liner.

Removal of Temporary Concrete Washout Facilities

- When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and properly disposed or recycled in accordance with federal, state or local regulations. Materials used to construct temporary concrete washout facilities should be removed from the site of the work and properly disposed or recycled in accordance with federal, state or local regulations..

- Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

Costs

All of the above are low cost measures. Roll-off concrete washout facilities can be more costly than other measures due to removal and replacement; however, provide a cleaner alternative to traditional washouts. The type of washout facility, size, and availability of materials will determine the cost of the washout.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

- Temporary concrete washout facilities should be maintained to provide adequate holding capacity with a minimum freeboard of 4 in. for above grade facilities and 12 in. for below grade facilities. Maintaining temporary concrete washout facilities should include removing and disposing of hardened concrete and returning the facilities to a functional condition. Hardened concrete materials should be removed and properly disposed or recycled in accordance with federal, state or local regulations.

- Washout facilities must be cleaned, or new facilities must be constructed and ready for use once the washout is 75% full.

- Inspect washout facilities for damage (e.g. torn liner, evidence of leaks, signage, etc.). Repair all identified damage.

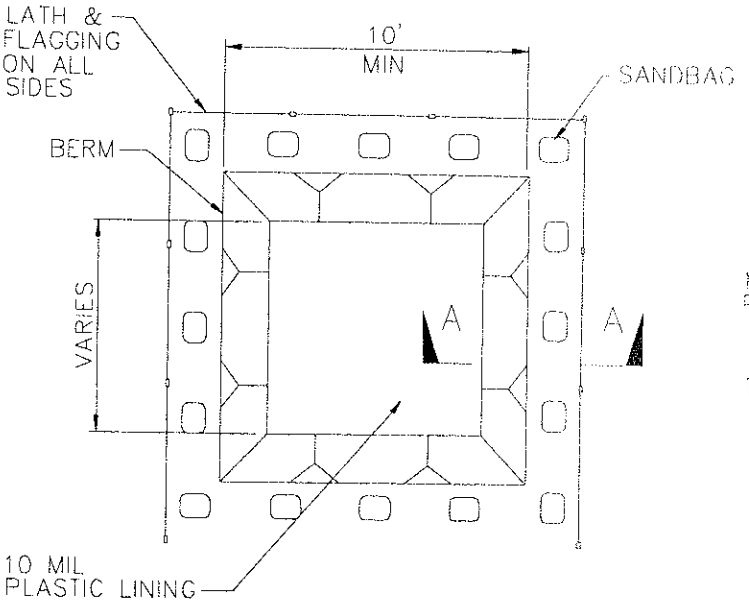
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000, Updated March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Concrete Waste Management WM-8



PLAN
NOT TO SCALE
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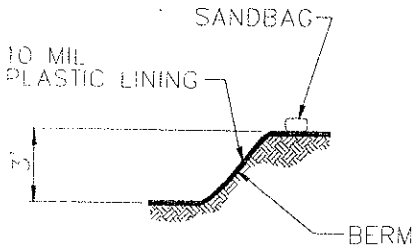
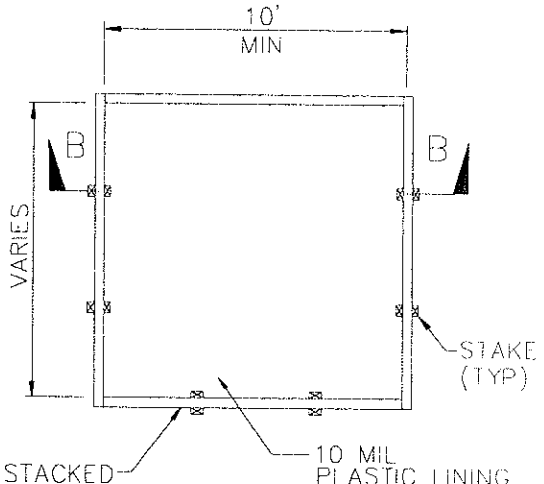
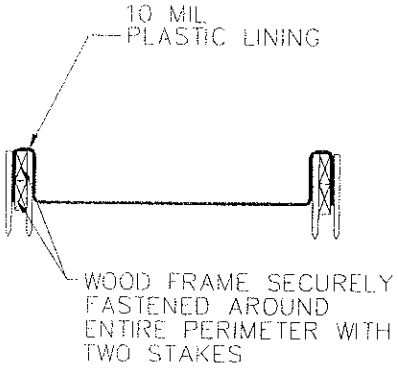


SECTION A–A
NOT TO SCALE



PLAN
NOT TO SCALE
TYPE "ABOVE GRADE"

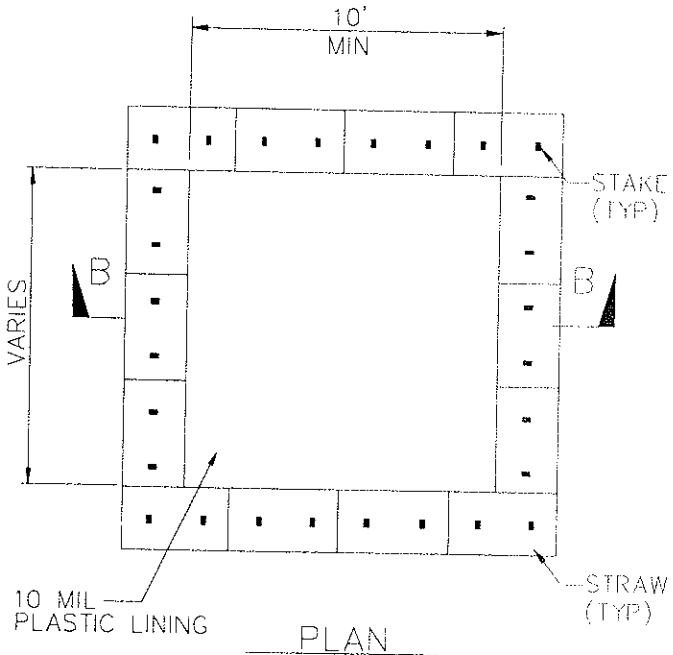


SECTION B–B
NOT TO SCALE

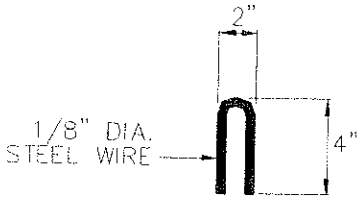
NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

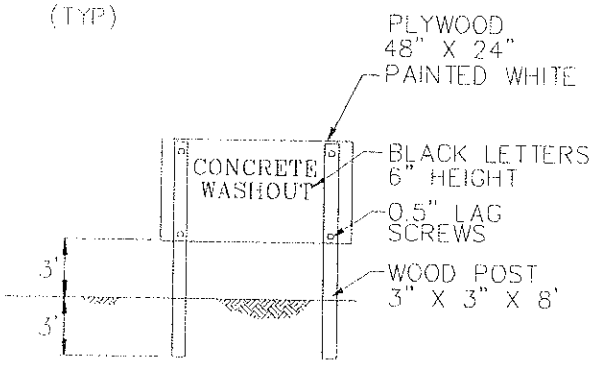
Concrete Waste Management WM-8



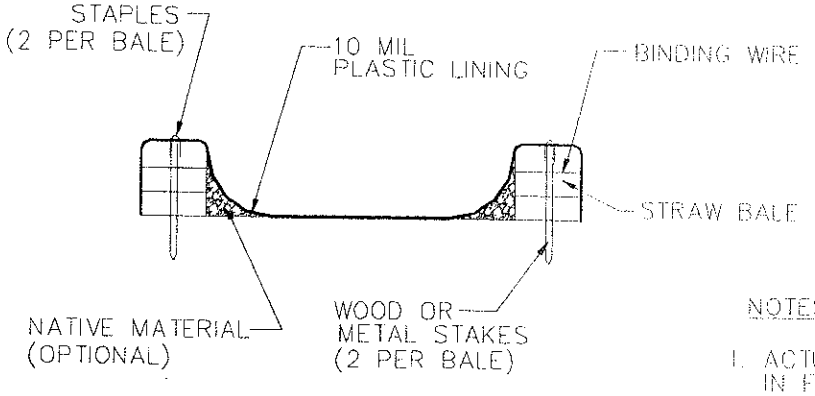
PLAN
NOT TO SCALE
TYPE "ABOVE GRADE"
WITH STRAW BALES



STAPLE DETAIL



CONCRETE WASHOUT
SIGN DETAIL
(OR EQUIVALENT)

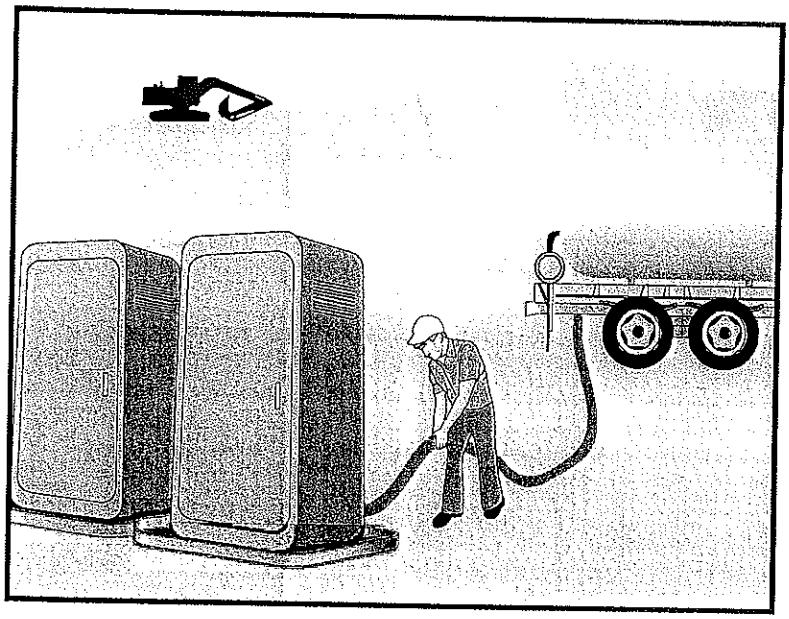


SECTION B-B
NOT TO SCALE

NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

Sanitary/Septic Waste Management WM-9



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Description and Purpose

Proper sanitary and septic waste management prevent the discharge of pollutants to stormwater from sanitary and septic waste by providing convenient, well-maintained facilities, and arranging for regular service and disposal.

Suitable Applications

Sanitary septic waste management practices are suitable for use at all construction sites that use temporary or portable sanitary and septic waste systems.

Limitations

None identified.

Implementation

Sanitary or septic wastes should be treated or disposed of in accordance with state and local requirements. In many cases, one contract with a local facility supplier will be all that it takes to make sure sanitary wastes are properly disposed.

Storage and Disposal Procedures

- Temporary sanitary facilities should be located away from drainage facilities, watercourses, and from traffic circulation. If site conditions allow, place portable facilities a minimum of 50 feet from drainage conveyances and traffic areas. When subjected to high winds or risk of high winds, temporary sanitary facilities should be secured to prevent overturning.

Targeted Constituents

Sediment	
Nutrients	☑
Trash	☑
Metals	
Bacteria	☑
Oil and Grease	
Organics	☑

Potential Alternatives

None

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Sanitary/Septic Waste Management WM-9

- Temporary sanitary facilities must be equipped with containment to prevent discharge of pollutants to the stormwater drainage system of the receiving water.
- Consider safety as well as environmental implications before placing temporary sanitary facilities.
- Wastewater should not be discharged or buried within the project site.
- Sanitary and septic systems that discharge directly into sanitary sewer systems, where permissible, should comply with the local health agency, city, county, and sewer district requirements.
- Only reputable, licensed sanitary and septic waste haulers should be used.
- Sanitary facilities should be located in a convenient location.
- Temporary septic systems should treat wastes to appropriate levels before discharging.
- If using an onsite disposal system (OSDS), such as a septic system, local health agency requirements must be followed.
- Temporary sanitary facilities that discharge to the sanitary sewer system should be properly connected to avoid illicit discharges.
- Sanitary and septic facilities should be maintained in good working order by a licensed service.
- Regular waste collection by a licensed hauler should be arranged before facilities overflow.
- If a spill does occur from a temporary sanitary facility, follow federal, state and local regulations for containment and clean-up.

Education

- Educate employees, subcontractors, and suppliers on sanitary and septic waste storage and disposal procedures.
- Educate employees, subcontractors, and suppliers of potential dangers to humans and the environment from sanitary and septic wastes.
- Instruct employees, subcontractors, and suppliers in identification of sanitary and septic waste.
- Hold regular meetings to discuss and reinforce the use of sanitary facilities (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.

Costs

All of the above are low cost measures.

Sanitary/Septic Waste Management WM-9

Inspection and Maintenance

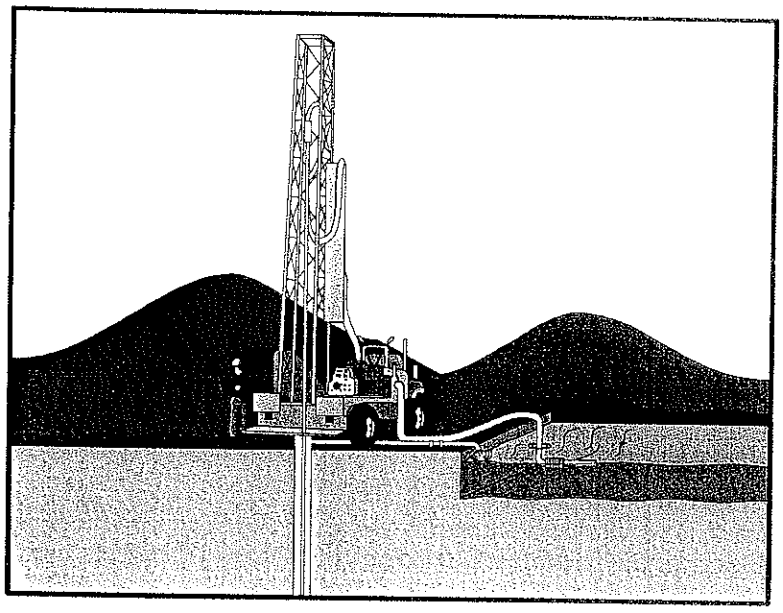
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Arrange for regular waste collection.
- If high winds are expected, portable sanitary facilities must be secured with spikes or weighed down to prevent over turning.
- If spills or leaks from sanitary or septic facilities occur that are not contained and discharge from the site, non-visible sampling of site discharge may be required. Refer to the General Permit or to your project specific Construction Site Monitoring Plan to determine if and where sampling is required.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Liquid Waste Management WM-10



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Liquid waste management includes procedures and practices to prevent discharge of pollutants to the storm drain system or to watercourses as a result of the creation, collection, and disposal of non-hazardous liquid wastes.

Suitable Applications

Liquid waste management is applicable to construction projects that generate any of the following non-hazardous by-products, residuals, or wastes:

- Drilling slurries and drilling fluids
- Grease-free and oil-free wastewater and rinse water
- Dredgings
- Other non-stormwater liquid discharges not permitted by separate permits

Limitations

- Disposal of some liquid wastes may be subject to specific laws and regulations or to requirements of other permits secured for the construction project (e.g., NPDES permits, Army Corps permits, Coastal Commission permits, etc.).
- Liquid waste management does not apply to dewatering operations (NS-2 Dewatering Operations), solid waste management (WM-5, Solid Waste Management), hazardous wastes (WM-6, Hazardous Waste Management), or concrete slurry residue (WM-8, Concrete Waste

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

Liquid Waste Management WM-10

Management).

- Typical permitted non-stormwater discharges can include: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated pumped ground water; discharges from potable water sources; foundation drains; irrigation water; springs; water from crawl space pumps; footing drains; lawn watering; flows from riparian habitats and wetlands; and discharges or flows from emergency fire fighting activities.

Implementation

General Practices

- Instruct employees and subcontractors how to safely differentiate between non-hazardous liquid waste and potential or known hazardous liquid waste.
- Instruct employees, subcontractors, and suppliers that it is unacceptable for any liquid waste to enter any storm drainage device, waterway, or receiving water.
- Educate employees and subcontractors on liquid waste generating activities and liquid waste storage and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Verify which non-stormwater discharges are permitted by the statewide NPDES permit; different regions might have different requirements not outlined in this permit.
- Apply NS-8, Vehicle and Equipment Cleaning for managing wash water and rinse water from vehicle and equipment cleaning operations.

Containing Liquid Wastes

- Drilling residue and drilling fluids should not be allowed to enter storm drains and watercourses and should be disposed of.
- If an appropriate location is available, drilling residue and drilling fluids that are exempt under Title 23, CCR § 2511(g) may be dried by infiltration and evaporation in a containment facility constructed in conformance with the provisions concerning the Temporary Concrete Washout Facilities detailed in WM-8, Concrete Waste Management.
- Liquid wastes generated as part of an operational procedure, such as water-laden dredged material and drilling mud, should be contained and not allowed to flow into drainage channels or receiving waters prior to treatment.
- Liquid wastes should be contained in a controlled area such as a holding pit, sediment basin, roll-off bin, or portable tank.
- Containment devices must be structurally sound and leak free.
- Containment devices must be of sufficient quantity or volume to completely contain the liquid wastes generated.

Liquid Waste Management WM-10

- Precautions should be taken to avoid spills or accidental releases of contained liquid wastes. Apply the education measures and spill response procedures outlined in WM-4, Spill Prevention and Control.

- Containment areas or devices should not be located where accidental release of the contained liquid can threaten health or safety or discharge to water bodies, channels, or storm drains.

Capturing Liquid Wastes

- Capture all liquid wastes that have the potential to affect the storm drainage system (such as wash water and rinse water from cleaning walls or pavement), before they run off a surface.

- Do not allow liquid wastes to flow or discharge uncontrolled. Use temporary dikes or berms to intercept flows and direct them to a containment area or device for capture.

- Use a sediment trap (SE-3, Sediment Trap) for capturing and treating sediment laden liquid waste or capture in a containment device and allow sediment to settle.

Disposing of Liquid Wastes

- A typical method to handle liquid waste is to dewater the contained liquid waste, using procedures such as described in NS-2, Dewatering Operations, and SE-2, Sediment Basin, and dispose of resulting solids per WM-5, Solid Waste Management.

- Methods of disposal for some liquid wastes may be prescribed in Water Quality Reports, NPDES permits, Environmental Impact Reports, 401 or 404 permits, and local agency discharge permits, etc. Review the SWPPP to see if disposal methods are identified.

- Liquid wastes, such as from dredged material, may require testing and certification whether it is hazardous or not before a disposal method can be determined.

- For disposal of hazardous waste, see WM-6, Hazardous Waste Management.

- If necessary, further treat liquid wastes prior to disposal. Treatment may include, though is not limited to, sedimentation, filtration, and chemical neutralization.

Costs

Prevention costs for liquid waste management are minimal. Costs increase if cleanup or fines are involved.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.

- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.

Liquid Waste Management WM-10

- Remove deposited solids in containment areas and capturing devices as needed and at the completion of the task. Dispose of any solids as described in WM-5, Solid Waste Management.

- Inspect containment areas and capturing devices and repair as needed.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Appendix I: BMP Inspection Form

BMP INSPECTION REPORT

Date and Time of Inspection:			Date Report Written:	
Inspection Type: (Circle one)	Weekly *Complete Parts I,II,III and VII*	Pre-Storm *Complete Parts I,II,III,IV and VII*	During Rain Event *Complete Parts I, II, III, V, and VII*	Post-Storm *Complete Parts I,II,III,VI and VII*

Part I. General Information

Site Information

Construction Site Name:			
Construction stage and completed activities:			Approximate area of site that is exposed:
Photos Taken: (Circle one)	Yes	No	Photo Reference IDs:

Weather

Estimate storm beginning: (date and time)	Estimate storm duration: (hours)
Estimate time since last storm: (days or hours)	Rain gauge reading and location: (in)

Is a "Qualifying Event" predicted or did one occur (i.e., 0.5" rain with 48-hrs or greater between events)? (Y/N)
If yes, summarize forecast:

Exemption Documentation (explanation required if inspection could not be conducted). Visual inspections are not required outside of business hours or during dangerous weather conditions such as flooding or electrical storms.

Inspector Information

Inspector Name:	Inspector Title:
Signature:	Date:

Part II. BMP Observations. Describe deficiencies in Part III.			
Minimum BMPs for Risk Level _____ Sites	Failures or other short comings (yes, no, N/A)	Action Required (yes/no)	Action Implemented (Date)
Good Housekeeping for Construction Materials			
Inventory of products (excluding materials designed to be outdoors)			
Stockpiled construction materials not actively in use are covered and bermed			
All chemicals are stored in watertight containers with appropriate secondary containment, or in a completely enclosed storage shed			
Construction materials are minimally exposed to precipitation			
BMPs preventing the off-site tracking of materials are implemented and properly effective			
Good Housekeeping for Waste Management			
Wash/rinse water and materials are prevented from being disposed into the storm drain system			
Portable toilets are contained to prevent discharges of waste			
Sanitation facilities are clean and with no apparent for leaks and spills			
Equipment is in place to cover waste disposal containers at the end of business day and during rain events			
Discharges from waste disposal containers are prevented from discharging to the storm drain system / receiving water			
Stockpiled waste material is securely protected from wind and rain if not actively in use			
Procedures are in place for addressing hazardous and non-hazardous spills			
Appropriate spill response personnel are assigned and trained			
Equipment and materials for cleanup of spills is available onsite			
Washout areas (e.g., concrete) are contained appropriately to prevent discharge or infiltration into the underlying soil			
Good Housekeeping for Vehicle Storage and Maintenance			
Measures are in place to prevent oil, grease, or fuel from leaking into the ground, storm drains, or surface waters			
All equipment or vehicles are fueled, maintained, and stored in a designated area with appropriate BMPs			
Vehicle and equipment leaks are cleaned immediately and disposed of properly			

Part II. BMP Observations Continued. Describe deficiencies in Part III.			
Minimum BMPs for Risk Level _____ Sites	Adequately designed, implemented and effective (yes, no, N/A)	Action Required (yes/no)	Action Implemented (Date)
Good Housekeeping for Landscape Materials			
Stockpiled landscape materials such as mulches and topsoil are contained and covered when not actively in use			
Erodible landscape material has not been applied 2 days before a forecasted rain event or during an event			
Erodible landscape materials are applied at quantities and rates in accordance with manufacturer recommendations			
Bagged erodible landscape materials are stored on pallets and covered			
Good Housekeeping for Air Deposition of Site Materials			
Good housekeeping measures are implemented onsite to control the air deposition of site materials and from site operations			
Non-Stormwater Management			
Non-Stormwater discharges are properly controlled			
Vehicles are washed in a manner to prevent non-stormwater discharges to surface waters or drainage systems			
Streets are cleaned in a manner to prevent unauthorized non-stormwater discharges to surface waters or drainage systems.			
Erosion Controls			
Wind erosion controls are effectively implemented			
Effective soil cover is provided for disturbed areas inactive (i.e., not scheduled to be disturbed for 14 days) as well as finished slopes, open space, utility backfill, and completed lots			
The use of plastic materials is limited in cases when a more sustainable, environmentally friendly alternative exists.			
Sediment Controls			
Perimeter controls are established and effective at controlling erosion and sediment discharges from the site			
Entrances and exits are stabilized to control erosion and sediment discharges from the site			
Sediment basins are properly maintained			
Linear sediment control along toe of slope, face of slope an at grade breaks (Risk Level 2 & 3 Only)			
Limit construction activity to and from site to entrances and exits that employ effective controls to prevent offsite tracking (Risk Level 2 & 3 Only)			

Ensure all storm, drain inlets and perimeter controls, runoff control BMPs and pollutants controls at entrances and exits are maintained and protected from activities the reduce their effectiveness (Risk Level 2 & 3 Only)			
Inspect all immediate access roads daily (Risk Level 2 & 3 Only)			
Run-On and Run-Off Controls			
Run-on to the site is effectively managed and directed away from all disturbed areas.			
Other			
Are the project SWPPP and BMP plan up to date, available on-site and being properly implemented?			

Part III. Descriptions of BMP Deficiencies		
Deficiency	**Repairs Implemented: Note - Repairs must begin within 72 hours of identification and, complete repairs as soon as possible.**	
	Start Date	**Action**
1.		
2.		
3.		
4.		

Part IV. Additional Pre-Storm Observations. Note the presence or absence of floating and suspended materials, sheen, discoloration, turbidity, odors, and source(s) of pollutants(s).	
	Yes, No, N/A
Do stormwater storage and containment areas have adequate freeboard? If no, complete Part III.	
Are drainage areas free of spills, leaks, or uncontrolled pollutant sources? If no, complete Part VII and describe below.	
Notes:	
Are stormwater storage and containment areas free of leaks? If no, complete Parts III and/or VII and describe below.	

Notes:	

Part V. Additional During Storm Observations. If BMPs cannot be inspected during inclement weather, list the results of visual inspections at all relevant outfalls, discharge points, and downstream locations. Note odors or visible sheen on the surface of discharges. Complete Part VII (Corrective Actions) as needed.	
Outfall, Discharge Point, or Other Downstream Location	
Location	Description
Location	Description
Location	Description
Location	Description
Location	Description
Location	Description
Location	Description
Location	Description

Part VI. Additional Post-Storm Observations. Visually observe (inspect) stormwater discharges at all discharge locations within two business days (48 hours) after each qualifying rain event, and observe (inspect) the discharge of stored or contained stormwater that is derived from and discharged subsequent to a qualifying rain event producing precipitation of ½ inch or more at the time of discharge. Complete Part VII (Corrective Actions) as needed.	
Discharge Location, Storage or Containment Area	**Visual Observation**

Part VII. Additional Corrective Actions Required. Identify additional corrective actions not included with BMP Deficiencies (Part III) above. Note if SWPPP change is required.	
Required Actions	**Implementation Date**

Appendix J: Project Specific Rain Event Action Plan Template

Rain Event Action Plan (REAP)			
Date of REAP		**WDID Number:**	
Date Rain Predicted to Occur:		**Predicted % chance of rain:**	

Predicted Rain Event Triggered Actions

Below is a list of suggested actions and items to review for this project. Each active Trade should check all material storage areas, stockpiles, waste management areas, vehicle and equipment storage and maintenance, areas of active soil disturbance, and areas of active work to ensure the proper implementation of BMPs. Project-wide BMPs should be checked and cross-referenced to the BMP progress map.

Trade or Activity	Suggested action(s) to perform / item(s) to review prior to rain event
❑ Information & Scheduling	❑ Inform trade supervisors of predicted rain ❑ Check scheduled activities and reschedule as needed ❑ Alert erosion/sediment control provider ❑ Alert sample collection contractor (if applicable) ❑ Schedule staff for extended rain inspections (including weekends & holidays) ❑ Check Erosion and Sediment Control (ESC) material stock ❑ Review BMP progress map ❑ Other:_____ ❑ _____ ❑ _____
❑ Material storage areas	❑ Material under cover or in sheds (ex: treated woods and metals) ❑ Perimeter control around stockpiles ❑ Other:_____ ❑ _____ ❑ _____
❑ Waste management areas	❑ Dumpsters closed ❑ Drain holes plugged ❑ Recycling bins covered ❑ Sanitary stations bermed and protected from tipping ❑ Other:_____ ❑ _____ ❑ _____
❑ Trade operations	❑ Exterior operations shut down for event (e.g., no concrete pours or paving) ❑ Soil treatments (e.g.,: fertilizer) ceased within 24 hours of event ❑ Materials and equipment (ex: tools) properly stored and covered ❑ Waste and debris disposed in covered dumpsters or removed from site ❑ Trenches and excavations protected ❑ Perimeter controls around disturbed areas ❑ Fueling and repair areas covered and bermed ❑ Other:_____ ❑ _____ ❑ _____
❑ Site ESC BMPs	❑ Adequate capacity in sediment basins and traps ❑ Site perimeter controls in place ❑ Catch basin and drop inlet protection in place and cleaned ❑ Temporary erosion controls deployed ❑ Temporary perimeter controls deployed around disturbed areas and stockpiles ❑ Roads swept; site ingress and egress points stabilized ❑ Other:_____ ❑ _____ ❑ _____
❑ Concrete rinse out area	❑ Adequate capacity for rain ❑ Wash-out bins covered ❑ Other:_____ ❑ _____ ❑ _____
❑ Spill and drips	❑ All incident spills and drips, including paint, stucco, fuel, and oil cleaned ❑ Drip pans emptied ❑ Other:_____ ❑ _____ ❑ _____

Continued on next page.

❑ Other / Discussion / Diagrams	❑ _____ ❑ _____

	❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____	

Attach a printout of the weather forecast from the NOAA website to the REAP.

I certify under penalty of law that this Rain Event Action Plan (REAP) will be performed in accordance with the General Permit by me or under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____Date: _____

Qualified SWPPP Practitioner (Use ink please)

Appendix K: Training Reporting Form

Trained Contractor Personnel Log

Stormwater Management Training Log and Documentation

Project Name: Fisher Basin
WDID #: _____

Stormwater Management Topic: (check as appropriate)

☐ Erosion Control ☐ Sediment Control
☐ Wind Erosion Control ☐ Tracking Control
☐ Non-Stormwater Management ☐ Waste Management and Materials Pollution Control
☐ Stormwater Sampling

Specific Training Objective: _____

Location: _____ Date: _____

Instructor:_____ Telephone: _____

Course Length (hours): _____

Attendee Roster (Attach additional forms if necessary)

Name	Company	Phone

As needed, add proof of external training (e.g., course completion certificates, credentials for QSP, QSD).

Appendix L: Responsible Parties

Authorization of Approved Signatories

Project Name: _____

WDID #: _____

Name of Personnel	Project Role	Company	Signature	Date

_____ _____

LRP's Signature Date

_____ _____

LRP Name and Title Telephone Number

Identification of QSP

Project Name: Fisher Basin

WDID #: _____

The following are QSPs associated with this project

Name of Personnel(1)	Company	Date

(1) If additional QSPs are required on the job site add additional lines and include information here

OPTIONAL

Authorization of Data Submitters

Project Name: Fisher Basin

WDID #: _____

Name of Personnel	Project Role	Company	Signature	Date

_____ _____

Approved Signatory's Signature Date

_____ _____

Approved Signatory Telephone Number

Name and Title

Appendix M:Contractors and Subcontractors

Appendix N: Construction General Permit

Appendix O: Spill Prevention and Control

Spill Prevention and Control

- Define a “significant spill”
- Different materials pollute in different amounts. Make sure that each employee knows what a “significant spill” is for each material they use, and what is the appropriate response for a “significant” and “insignificant” spill.
- Place a stockpile of spill cleanup material where it will be readily accessible.
- Clean up leaks and spill immediately.
    - On paved surfaces, clean up spills with as little water as possible.
    - Use a rag for small spills, a damp mop for general clean up, an absorbent material for larger spills.
    - If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
- Notify the State Office of Emergency Services at (800) 852-7550 when a hazardous spill occurs. For spills of federal reportable quantities, also notify the National Response Center at (800) 424-8802.

TECHNICAL MEMORANDUM

To: Chris Ghione
Public Services Director
City of Morgan Hill
Community Services, Engineering and Utilities
17575 Peak Avenue
Morgan Hill, California 95037
Email: chris.ghione@morganhill.ca.gov

From: Craig Riddle, PG
Joseph Zilles, PG

Date: April 1, 2020

File: 20203748.001A

RE: Fisher Creek Basin Soil and Groundwater Characterization
City of Morgan Hill
Morgan Hill, California

It is our understanding the City of Morgan Hill wishes to expand the stormwater capacity at the Fisher Creek Basin located at the Fisher Creek Basin in Morgan Hill, California (Figure 1). Currently, the ground surface elevation at the basin is approximately 357 feet with an estimated depth to groundwater of 24.05 feet (AKEL). This memorandum outlines results of the soil and groundwater occurrence characterization for the purpose of planning for the handling of excavated soil for the expansion of the stormwater detention basin. The work was conducted in accordance with Kleinfelder's proposal for services dated November 13, 2019 and general industry standards.

FIELD EXPLORATION

Prior to mobilizing to the field, Kleinfelder obtained Underground Service Alert (USA) tickets for the proposed explorations. Eight exploration locations were selected and marked in consultation with the City of Morgan Hill staff (Figure 2). Field work was conducted under Kleinfelder's health and safety plan prepared for the tasks.

On February 20 and 21, Kleinfelder mobilized to the site for the field exploration. Kleinfelder retained Cascade Environmental, a California licensed C-57 contractor, to advance 8 soil borings to a depth of up to 30 feet below ground surface (bgs). The top 5 feet of each boring were advanced by hand auger to clear for potential utilities. The borings were then advanced with direct push technology, allowing continuous sampling of the soil profile within clear acetate sleeves (1.125-inch outside diameter). Borings B-1, B-2, B-3, B-4, B-5, B-7, and B-8 were terminated at 20 feet bgs due to refusal in well graded gravel to sandy lean clay. Boring B-6 was terminated at 28 feet bgs. The soil profile was classified by ASTM standards by a Kleinfelder professional under

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the supervision of a California licensed geologist. During drilling a photo-ionization detector (PID) was used to provide a qualitative screening of the soil for ionizing compounds. Boring logs and PID readings are presented in Attachment A.

Soil samples were collected from each boring at approximate 4-5 feet intervals. Samples were placed in laboratory prepared glass jars, given a unique identifier, and transported in a cooler with ice under chain of custody protocol to McCampbell Analytical, a State certified environmental laboratory. A total of 32 soil samples were analyzed by the noted method for the following:

- Total petroleum hydrocarbons purgeable as gasoline and extractable as diesel and motor oil by EPA Method 8015 modified
- Volatile organic compounds by EPA Method 8260B
- Organochlorine pesticides (OCPs) by EPA Methods 8081A
- CAM 17 Metals by EPA Method 6020
- Semi-Volatile organic compounds (SVOCs) by EPA Method 8270
- Polychlorinated biphenyls by EPA Methods 8082
- Asbestos by PLM Point Count
- pH by SM4500

Additional analyses were conducted on metals samples which showed concentrations of total concentrations exceeding 10-times the Soluble Total Limit Concentration (STLC).

After completion of the soil collection, depth to groundwater was measured in each boring using a conductivity-based water meter. At boring B-4, a temporary well casing was installed and allowed to recharge overnight to measure the depth to groundwater.

Upon the completion, each boring was backfilled with neat cement grout to within a few feet of ground surface. The last few feet were backfilled with hand tools using excess soil cuttings.

RESULTS

Soil

Soil lithology comprised primarily of interbedded clay, sands and gravels. Borings B-1, B-2, B-3, B-4, B-5, B-7, and B-8 were terminated at 20 feet bgs due to refusal. Boring B-6 which was terminated at 28 feet bgs.

Groundwater

Although water was not detected in any boring upon immediate completion of drilling, each boring was allowed to remain open for 10-15 minutes with the drill rods pulled out to allow for groundwater to recharge into the open borehole. Groundwater was not detected in any of the borings after waiting to recharge. At boring B-4, a temporary well casing was installed to assess groundwater recharge or seepage overnight. Water was not detected in the temporary well the

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following day and the temporary casing was removed and the borehole closed with neat cement and native soil.

Publicly available recent data (California Department of Water Resources) in the vicinity indicates that groundwater near the basin fluctuates between approximately 10 to 30 feet but may be as much as 55 feet bgs.

Laboratory Analysis (Soils)

A total of 32 soil samples were submitted for laboratory analysis. Soil sample results were evaluated against Total Threshold Limit Concentrations (TTLCs). Waste is classified as hazardous when constituent concentrations exceed TTLCs. In addition, where applicable, constituent concentrations which exceeded ten times the STLC, additional analyses were required to evaluate potential for leaching and further hazardous waste classification. For this investigation additional analyses were conducted on samples which showed concentrations of total chromium exceeding 10-times the STLC value of 5 mg/kg. A total of 27 soil samples were additionally analyzed for STLC chromium. All 27 samples showed non-detectable concentrations of soluble chromium above the limit of 0.10 mg/kg. No other analytes exceeded 10-times STLC limits.

Results were also were also evaluated against Tier 1 Environmental Screening Levels (2019 San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Environmental Screening Levels [ESLs]). ESLs are not regulatory thresholds or used in the classification of hazardous waste but are intended as a general guideline for the health and safety of the public and the environment.

The results of the soil sampling are presented in the following narrative:

- One or more SVOCs were detected above laboratory reporting limits in one or more samples in each of the 8 borings. None of the detected concentrations exceeded TTLCs. One detected concentration of benzo (a) pyrene in sample B-1_16-17 was equal to its respective Tier 1 ESL of 0.11 milligrams per kilogram (mg/kg).
- One or more OCPs were detected above laboratory reporting limits in one or more samples in borings B-2, B-4 and B-6. None of the detected concentrations exceeded TTLCs. One detected concentration of dichloro-diphenyl-trichloroethane (DDT) in sample B-2_5-6 exceeded the Tier 1 ESL of 0.0011 mg/kg.
- pH values in each sample were between 6 and 8.
- One or more metals were detected above laboratory reporting limits in one or more samples in each of the 8 borings. None of the detected concentrations exceeded TTLCs or STLCs after performing additional STLC analyses as needed for chromium. Detected concentrations of arsenic and vanadium exceeded their respective Tier 1 ESLs of 0.067 mg/kg and 18 mg/kg, respectively, in each sample in each boring. Detected concentrations of nickel exceeded its respective Tier 1 ESL of 86 mg/kg in 7 of the 32 samples.
- Each of the other analyses tested for were not detected above laboratory reporting limits.

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A total of 32 soil samples were submitted for analysis. Results of the laboratory analysis are summarized in Tables 1 and 2. A copy of the laboratory analysis report is included as Attachment B.

CONCLUSIONS AND RECOMMENDATIONS

Soils observed consisted primarily of clays, sands and gravels.

Soil sampling analytical results indicated that detectable concentrations of SVOCs, OCPs, and metals are present at the site. The concentrations of benzo (a) pyrene, DDT, arsenic, nickel and vanadium were equal to or exceeded their respective Tier 1 ESLs in one or more samples. ESLs are not regulatory thresholds or used in the classification of hazardous waste but are intended as a general guideline for the health and safety of the public and the environment. Additionally, concentrations of each analyte detected did not exceed federal thresholds for hazardous waste (TTLC and STLC).

We anticipate that the site soils may be re-used on site or disposed of off-site as non-hazardous waste at an accepting landfill, recycling facility or other recipient. The analytical results in this report should be provided to any accepting facility or other recipient.

Groundwater was not observed in any of the 8 exploration locations during this investigation. However, data suggests groundwater may exist as shallow as 10 feet bgs, thus the potential exists that groundwater may encroach to within the bottom of the existing basin. If long term groundwater trend information is required we recommend a piezometer be installed at the site.

LIMITATIONS

Conclusions and recommendations contained in this technical memorandum are based on the field explorations and our understanding of the proposed project. The investigation or analyses were performed using a mutually agreed upon scope of services. It is our opinion that this study was a cost-effective method to explore the subject site and evaluate the potential hydrogeologic concerns.

The data used in the preparation of this memo were obtained from borings installed at the project site as part of this study. It is likely that variations in soil and groundwater conditions exist between the points explored and the actual excavation. The nature and extent of these variations may not be evident until construction occurs. If soil or groundwater conditions are encountered at this site that are different from those described in this report, our firm should be immediately notified so that we may make any necessary revisions to our recommendations.

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REFERENCES

AKEL Engineering Group, Fisher Creek Basin Storage Capacity Analysis (Preliminary), November 2019.

San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels, Tier 1, 2019.

California Department of Water Resources (DWR), Water Data Library, Station 371343N1216641W001, 2020.

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TABLES

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Table 1
Summary of Metals Sampling Results
City of Morgan Hill Fisher Creek Basin
Kleinfelder Project Number: 20203748.001A

Sample Location	Sample I.D.	Sample Date	Sample Type	Sample Interval (feet)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium[4]	STLC Chromium	Cobalt	Copper	Lead	Mercury[5]	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
TTLC (mg/kg)[1]					500	50	10,000	75	100	2,500	NA	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000
STLC (mg/L)[2]					15	5	100	0.75	1	5	5	80	25	5	0.20	350	20	1	5	7	24	250
Tier 1 ESLs - Soil - (mg/kg)[3]					11	0.067	390	5	1.90	160	NE	23	180	32	13	6.9	86	2.4	25	78	18	340
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B-1	B-1_2-3	2/20/2020	Soil	3.0	0.59	**6.8**	190	<0.5	<0.25	47	-	9.9	24	7.6	<0.05	<0.5	66	<0.5	<0.5	<0.5	**42**	51
	B-1_6-7		Soil	7.0	0.83	**11**	220	0.54	<0.25	57	<0.10	15	32	11	0.067	0.89	**89**	<0.5	<0.5	<0.5	**50**	67
	B-1_12-13		Soil	13.0	1.1	**12**	330	0.76	<0.25	76	<0.10	15	39	12	0.054	0.67	**120**	<0.5	<0.5	<0.5	**56**	76
	B-1_16-17		Soil	17.0	0.96	**11**	290	0.70	<0.25	64	<0.10	14	37	11	0.096	0.60	**98**	<0.5	<0.5	<0.5	**52**	76
B-2	B-2_1-2	2/20/2020	Soil	2.0	0.65	**6.6**	190	0.56	<0.25	53	<0.10	12	23	8.5	<0.05	0.50	56	<0.5	<0.5	<0.5	**43**	50
	B-2_5-6		Soil	6.0	<0.5	**6.1**	210	<0.5	<0.25	44	-	11	21	16	0.056	0.52	52	<0.5	<0.5	<0.5	**39**	45
	B-2_11-12		Soil	12.0	1.0	**12**	300	0.76	<0.25	74	<0.10	15	36	11	0.10	0.70	**110**	<0.5	<0.5	<0.5	**55**	67
	B-2_15-16		Soil	16.0	0.85	**13**	250	0.60	<0.25	75	<0.10	12	36	9.3	0.13	0.79	**94**	1.3	<0.5	<0.5	**53**	76
B-3	B-3_2-3	2/20/2020	Soil	3.0	<0.5	**5.5**	210	<0.5	<0.25	46	-	12	21	10	<0.05	0.56	54	0.91	<0.5	<0.5	**39**	52
	B-3_6-7		Soil	7.0	0.74	**9.4**	180	0.60	<0.25	64	<0.10	13	31	9.3	<0.05	0.67	85	1.2	<0.5	<0.5	**54**	70
	B-3_12-13		Soil	13.0	0.77	**9.5**	240	0.58	<0.25	57	<0.10	12	32	8.6	0.076	0.59	**88**	1.0	<0.5	<0.5	**46**	70
	B-3_16-17		Soil	17.0	0.77	**10**	240	0.62	<0.25	72	<0.10	14	34	9.9	0.067	0.61	**87**	1.3	<0.5	<0.5	**53**	69
B-4	B-4_1-2	2/20/2020	Soil	2.0	0.59	**7.1**	190	<0.5	<0.25	50	-	13	24	9.3	<0.05	<0.5	62	0.98	<0.5	<0.5	**44**	56
	B-4_5-6		Soil	6.0	0.62	**7.4**	220	0.52	<0.25	54	<0.10	13	26	11	0.058	<0.5	71	0.92	<0.5	<0.5	**47**	63
	B-4_11-12		Soil	12.0	0.63	**8.1**	200	<0.5	<0.25	56	<0.10	13	28	7.8	0.050	<0.5	75	0.96	<0.5	<0.5	**46**	60
	B-4_15-16		Soil	16.0	0.81	**11**	220	0.57	<0.25	61	<0.10	12	34	8.9	0.098	<0.5	**97**	1.1	<0.5	<0.5	**47**	66
B-5	B-5_2-3	2/21/2020	Soil	3.0	0.67	**9.0**	210	0.54	<0.25	70	<0.10	11	31	7.9	<0.05	<0.5	82	1.1	<0.5	<0.5	**51**	69
	B-5_6-7		Soil	7.0	0.96	**11**	250	0.65	<0.25	59	<0.10	23	35	14	0.062	0.66	**110**	1.2	<0.5	<0.5	**51**	72
	B-5_12-13		Soil	13.0	0.61	**12**	210	0.58	<0.25	59	<0.10	15	32	8.9	<0.05	0.72	80	1.1	<0.5	<0.5	**51**	70
	B-5_16-17		Soil	17.0	0.72	**11**	290	0.58	<0.25	67	<0.10	11	33	9.2	0.11	0.50	**100**	1.6	<0.5	<0.5	**56**	65
B-6	B-6_1-2	2/20/2020	Soil	2.0	0.58	**7.4**	230	<0.5	<0.25	67	<0.10	13	29	11	0.050	<0.5	72	1.3	<0.5	<0.5	**48**	71
	B-6_5-6		Soil	6.0	0.73	**9.5**	250	0.64	<0.25	69	<0.10	12	31	9.4	0.063	<0.5	**89**	1.6	<0.5	<0.5	**55**	74
	B-6_11-12		Soil	12.0	0.84	**11**	270	0.61	<0.25	66	<0.10	14	36	10	0.067	<0.5	**93**	1.3	<0.5	<0.5	**55**	79
	B-6_15-16		Soil	16.0	0.79	**9.6**	180	0.54	<0.25	60	<0.10	13	50	7.8	0.057	<0.5	73	1.0	<0.5	<0.5	**46**	61
B-7	B-7_2-3	2/20/2020	Soil	3.0	0.74	**8.7**	250	0.63	<0.25	66	<0.10	19	29	9.8	0.053	<0.5	78	1.3	<0.5	<0.5	**51**	69
	B-7_6-7		Soil	7.0	0.76	**9.7**	240	0.61	<0.25	68	<0.10	10	33	9.3	<0.05	0.58	79	1.2	<0.5	<0.5	**52**	76
	B-7_12-13		Soil	13.0	0.79	**13**	280	0.71	<0.25	85	<0.10	16	48	11	0.10	0.68	**120**	1.5	<0.5	<0.5	**66**	98
	B-7_16-17		Soil	17.0	0.54	**6.0**	140	<0.5	<0.25	39	-	11	21	6.7	<0.05	<0.5	54	<0.5	<0.5	<0.5	**34**	47
B-8	B-8_1-2	2/20/2020	Soil	2.0	0.95	**11**	250	0.66	<0.25	74	<0.10	9.7	34	9.3	0.14	0.56	**100**	<0.5	<0.5	<0.5	**53**	61
	B-8_5-6		Soil	6.0	0.69	**10**	270	0.56	<0.25	67	<0.10	11	40	9.0	0.12	0.60	82	<0.5	<0.5	<0.5	**54**	77
	B-8_11-12		Soil	12.0	0.94	**11**	250	0.68	<0.25	75	<0.10	13	41	10	0.092	0.62	**100**	<0.5	<0.5	<0.5	**59**	81
	B-8_15-16		Soil	16.0	0.64	**8.8**	220	0.52	<0.25	63	<0.10	9.3	36	7.9	0.13	0.90	75	<0.5	<0.5	<0.5	**56**	79

Notes:

mg/kg: Miligrams per kilogram (parts per million)
mg/L: Miligrams per liter
NA: Not Applicable
NE: Not Established
1 Total Threshold Limit Concentrations
2 STLC based on California Code of Regulations Title 22 listing
3 Tier 1 ESL from 2019 (Rev. 2) San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels, Tier 1 ESL
4 Chromium (total)
5 Mercury (elemental)

Bold Type Concentration is equal to or exceeds Tier 1 ESL

Table 2
Summary of Non-Metals Sampling Results
City of Morgan Hill Fisher Creek Basin
Kleinfelder Project Number: 20203748.001A

Sample Location	Sample I.D.	Sample Date	Sample Type	Sample Interval (feet)	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Bis (2-ethylhexyl) Phthalate	Chrysene	Dibenzo (a,h) anthracene	Di-n-butyl Phthalate	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	p,p-DDD	p,p-DDE	p,p-DDT	Phenanthrene	Pyrene	Toxaphene
TTLC (mg/kg)[1]					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	1.0	1.0	-	-	5.0
Tier 1 ESLs - Soil - (mg/kg)[2]					0.88	0.88	12.00	1.90	0.63	0.110	1.10	2.50	2.80	0.80	2.20	0.11	-	0.69	6.00	0.48	0.04	2.70	0.33	0.0011	7.80	45.00	0.51
				Units	mg/kg																						
B-1	B-1_2-3	2/20/2020	Soil	3.0	<0.0013	<0.0025	0.0017	0.0041	0.010	0.0045	<0.0063	0.0032	0.0031	0.0093	0.0068	<0.0025	0.0069	0.016	<0.0025	0.0035	<0.005	<0.001	<0.001	<0.001	0.017	0.012	<0.05
	B-1_6-7		Soil	7.0	<0.0013	<0.0025	0.0029	0.0091	0.014	0.0074	0.0091	0.0046	0.0045	<0.005	0.013	<0.0025	0.0058	0.029	0.0049	0.0045	<0.005	<0.001	<0.001	<0.001	0.038	0.025	<0.05
	B-1_12-13		Soil	13.0	<0.0013	<0.0025	0.0016	0.0046	0.0094	0.0040	<0.0063	0.0025	0.0025	0.0063	0.0061	<0.0025	<0.005	0.015	<0.0025	0.0030	<0.005	<0.001	<0.001	<0.001	0.019	0.012	<0.05
	B-1_16-17		Soil	17.0	0.0068	0.0096	0.055	0.14	0.19	**0.11**	0.15	0.052	0.066	0.0093	0.21	0.014	0.0053	0.48	0.069	0.039	0.018	<0.001	<0.001	<0.001	0.46	0.36	<0.05
B-2	B-2_1-2	2/20/2020	Soil	2.0	<0.0013	<0.0025	<0.0013	0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	0.0076	<0.0025	<0.0025	0.0056	0.0058	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	0.0058	0.0043	<0.05
	B-2_5-6		Soil	6.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	0.0023	0.25	**0.019**	<0.005	<0.0025	0.32
	B-2_11-12		Soil	12.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-2_15-16		Soil	16.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
B-3	B-3_2-3	2/20/2020	Soil	3.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-3_6-7		Soil	7.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-3_12-13		Soil	13.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	0.0052	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-3_16-17		Soil	17.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
B-4	B-4_1-2	2/20/2020	Soil	2.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	0.0050	<0.0013	<0.0025	<0.0025	<0.005	<0.001	0.013	0.0010	<0.005	<0.0025	<0.05
	B-4_5-6		Soil	6.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	0.0051	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-4_11-12		Soil	12.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-4_15-16		Soil	16.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
B-5	B-5_2-3	2/21/2020	Soil	3.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-5_6-7		Soil	7.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-5_12-13		Soil	13.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-5_16-17		Soil	17.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	0.0053	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
B-6	B-6_1-2	2/20/2020	Soil	2.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	0.0056	<0.0025	<0.0025	<0.005	0.0049	<0.0025	<0.0025	<0.005	<0.001	0.0086	<0.001	0.0055	0.0040	<0.05
	B-6_5-6		Soil	6.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-6_11-12		Soil	12.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	0.0014	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-6_15-16		Soil	16.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	0.0016	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
B-7	B-7_2-3	2/20/2020	Soil	3.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	0.0014	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-7_6-7		Soil	7.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	0.0053	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-7_12-13		Soil	13.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	0.0066	<0.0025	<0.05
	B-7_16-17		Soil	17.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	0.0053	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
B-8	B-8_1-2	2/20/2020	Soil	2.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	0.0052	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-8_5-6		Soil	6.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	0.0028	<0.0025	<0.005	0.0015	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	0.011	<0.0025	<0.05
	B-8_11-12		Soil	12.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05
	B-8_15-16		Soil	16.0	<0.0013	<0.0025	<0.0013	<0.0013	<0.005	<0.0025	<0.0063	<0.0025	<0.0013	<0.005	<0.0025	<0.0025	<0.005	<0.0013	<0.0025	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.005	<0.0025	<0.05

Notes:

mg/kg: Miligrams per kilogram (parts per million)

\- Not Established

1 Total Threshold Limit Concentrations

2 Tier 1 ESL from 2019 (Rev. 2) San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels, Tier 1 ESL

Bold Type Bold Type = Concentration is equal to or exceeds Tier 1 ESL

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Appendix B

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PROJECT NO.	20203748.001A
DRAWN:	3/25/2020
DRAWN BY:	D. Ross
CHECKED BY:	C. Riddle
FILE NAME:	20203748_1.mxd

SITE VICINITY MAP

Morgan Hill - Fisher Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
1

Document Path: K:\2020 PROJECTS\20203748.001A Morgan Hill-fisher Basin\cad\20203748_1.mxd

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PROJECT NO.	20203748.001A
DRAWN:	03/25/2020
DRAWN BY:	D. Ross
CHECKED BY:	C. Riddle
FILE NAME:	20203748_2.dwg

BORING LOCATION MAP

Morgan Hill - Fisher Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
2

PLOTTED: 25 Mar 2020, 11:59am, DRoss
CAD FILE: K:\2020 PROJECTS\20203748.001A Morgan Hill-fisher Basin\cad\ LAYOUT: Layout1

ATTACHMENT A
SOIL BORING LOGS

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SAMPLE/SAMPLER TYPE GRAPHICS

BULK SAMPLE

GEOPROBE SAMPLER

WELL MATERIAL GRAPHICS

WELL BACKFILL MATERIAL GRAPHICS

GROUND WATER GRAPHICS

WATER LEVEL (level where first observed)

WATER LEVEL (level after exploration completion)

WATER LEVEL (additional levels after exploration)

OBSERVED SEEPAGE

NOTES

- The report and graphics key are an integral part of these logs. All data and interpretations in this log are subject to the explanations and limitations stated in the report.
- Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual or differ from those shown.
- No warranty is provided as to the continuity of soil or rock conditions between individual sample locations.
- Logs represent general soil or rock conditions observed at the point of exploration on the date indicated.
- In general, Unified Soil Classification System designations presented on the logs were based on visual classification in the field and were modified where appropriate based on gradation and index property testing.
- Fine grained soils that plot within the hatched area on the Plasticity Chart, and coarse grained soils with between 5% and 12% passing the No. 200 sieve require dual USCS symbols, ie., GW-GM, GP-GM, GW-GC, GP-GC, GC-GM, SW-SM, SP-SM, SW-SC, SP-SC, SC-SM.

ABBREVIATIONS

WOH - Weight of Hammer
WOR - Weight of Rod

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

COARSE GRAINED SOILS (More than half of material is larger than the #200 sieve)	**GRAVELS** (More than half of coarse fraction is larger than the #4 sieve)	CLEAN GRAVEL WITH <5% FINES	Cu≥4 and 1≤Cc≤3		**GW**	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			Cu<4 and/ or 1>Cc>3		**GP**	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		GRAVELS WITH 5% TO 12% FINES	Cu≥4 and 1≤Cc≤3		**GW-GM**	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
					GW-GC	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
			Cu<4 and/ or 1>Cc>3		**GP-GM**	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
					GP-GC	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
		GRAVELS WITH > 12% FINES			**GM**	SILTY GRAVELS, GRAVEL-SILT-SAND MIXTURES
					GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
					GC-GM	CLAYEY GRAVELS, GRAVEL-SAND-CLAY-SILT MIXTURES
	SANDS (Half or more of coarse fraction is smaller than the #4 sieve)	CLEAN SANDS WITH <5% FINES	Cu≥6 and 1≤Cc≤3		**SW**	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
			Cu<6 and/ or 1>Cc>3		**SP**	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
		SANDS WITH 5% TO 12% FINES	Cu≥6 and 1≤Cc≤3		**SW-SM**	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
					SW-SC	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
			Cu<6 and/ or 1>Cc>3		**SP-SM**	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
					SP-SC	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
		SANDS WITH > 12% FINES			**SM**	SILTY SANDS, SAND-GRAVEL-SILT MIXTURES
					SC	CLAYEY SANDS, SAND-GRAVEL-CLAY MIXTURES
					SC-SM	CLAYEY SANDS, SAND-SILT-CLAY MIXTURES

FINE GRAINED SOILS (Half or more of material is smaller than the #200 sieve)	SILTS AND CLAYS (Liquid Limit less than 50)	**ML**	INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		CL-ML	INORGANIC CLAYS-SILTS OF LOW PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (Liquid Limit 50 or greater)	**MH**	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT
		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
		OH	ORGANIC CLAYS & ORGANIC SILTS OF MEDIUM-TO-HIGH PLASTICITY

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DRAWN BY: DR
CHECKED BY: CR
DATE: 3/26/2020

GRAPHICS KEY

Fisher Creek Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
A-1

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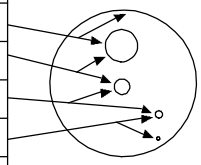
GRAIN SIZE

DESCRIPTION		SIEVE SIZE	GRAIN SIZE	APPROXIMATE SIZE
Boulders		>12 in. (304.8 mm.)	>12 in. (304.8 mm.)	Larger than basketball-sized
Cobbles		3 - 12 in. (76.2 - 304.8 mm.)	3 - 12 in. (76.2 - 304.8 mm.)	Fist-sized to basketball-sized
Gravel	coarse	3/4 -3 in. (19 - 76.2 mm.)	3/4 -3 in. (19 - 76.2 mm.)	Thumb-sized to fist-sized
	fine	#4 - 3/4 in. (#4 - 19 mm.)	0.19 - 0.75 in. (4.8 - 19 mm.)	Pea-sized to thumb-sized
Sand	coarse	#10 - #4	0.079 - 0.19 in. (2 - 4.9 mm.)	Rock salt-sized to pea-sized
	medium	#40 - #10	0.017 - 0.079 in. (0.43 - 2 mm.)	Sugar-sized to rock salt-sized
	fine	#200 - #40	0.0029 - 0.017 in. (0.07 - 0.43 mm.)	Flour-sized to sugar-sized
Fines		Passing #200	<0.0029 in. (<0.07 mm.)	Flour-sized and smaller



SECONDARY CONSTITUENT

	AMOUNT	
Term of Use	Secondary Constituent is Fine Grained	Secondary Constituent is Coarse Grained
Trace	<5%	<15%
With	≥5 to <15%	≥15 to <30%
Modifier	≥15%	≥30%

MOISTURE CONTENT

DESCRIPTION	FIELD TEST
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

CEMENTATION

DESCRIPTION	FIELD TEST
Weakly	Crumbles or breaks with handling or slight finger pressure
Moderately	Crumbles or breaks with considerable finger pressure
Strongly	Will not crumble or break with finger pressure

CONSISTENCY - FINE-GRAINED SOIL

CONSISTENCY	SPT - N_{60} (# blows / ft)	Pocket Pen (tsf)	UNCONFINED COMPRESSIVE STRENGTH (Q_u)(psf)	VISUAL / MANUAL CRITERIA
Very Soft	<2	PP < 0.25	<500	Thumb will penetrate more than 1 inch (25 mm). Extrudes between fingers when squeezed.
Soft	2 - 4	0.25 ≤ PP <0.5	500 - 1000	Thumb will penetrate soil about 1 inch (25 mm). Remolded by light finger pressure.
Medium Stiff	4 - 8	0.5 ≤ PP <1	1000 - 2000	Thumb will penetrate soil about 1/4 inch (6 mm). Remolded by strong finger pressure.
Stiff	8 - 15	1 ≤ PP <2	2000 - 4000	Can be imprinted with considerable pressure from thumb.
Very Stiff	15 - 30	2 ≤ PP <4	4000 - 8000	Thumb will not indent soil but readily indented with thumbnail.
Hard	>30	4 ≤ PP	>8000	Thumbnail will not indent soil.

FROM TERZAGHI AND PECK, 1948; LAMBE AND WHITMAN, 1969; FHWA, 2002; AND ASTM D2488

REACTION WITH HYDROCHLORIC ACID

DESCRIPTION	FIELD TEST
None	No visible reaction
Weak	Some reaction, with bubbles forming slowly
Strong	Violent reaction, with bubbles forming immediately

APPARENT / RELATIVE DENSITY - COARSE-GRAINED SOIL

APPARENT DENSITY	SPT-N_{60} (# blows/ft)	MODIFIED CA SAMPLER (# blows/ft)	CALIFORNIA SAMPLER (# blows/ft)	RELATIVE DENSITY (%)
Very Loose	<4	<4	<5	0 - 15
Loose	4 - 10	5 - 12	5 - 15	15 - 35
Medium Dense	10 - 30	12 - 35	15 - 40	35 - 65
Dense	30 - 50	35 - 60	40 - 70	65 - 85
Very Dense	>50	>60	>70	85 - 100

FROM TERZAGHI AND PECK, 1948

PLASTICITY

DESCRIPTION	LL	FIELD TEST
Non-plastic	NP	A 1/8-in. (3 mm.) thread cannot be rolled at any water content.
Low (L)	< 30	The thread can barely be rolled and the lump or thread cannot be formed when drier than the plastic limit.
Medium (M)	30 - 50	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump or thread crumbles when drier than the plastic limit.
High (H)	> 50	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump or thread can be formed without crumbling when drier than the plastic limit.

STRUCTURE

DESCRIPTION	CRITERIA
Stratified	Alternating layers of varying material or color with layers at least 1/4-in. thick, note thickness.
Laminated	Alternating layers of varying material or color with the layer less than 1/4-in. thick, note thickness.
Fissured	Breaks along definite planes of fracture with little resistance to fracturing.
Slickensided	Fracture planes appear polished or glossy, sometimes striated.
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown.
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay; note thickness.

ANGULARITY

DESCRIPTION	CRITERIA
Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces.
Subangular	Particles are similar to angular description but have rounded edges.
Subrounded	Particles have nearly plane sides but have well-rounded corners and edges.
Rounded	Particles have smoothly curved sides and no edges.

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DATE: 3/26/2020

SOIL DESCRIPTION KEY

Fisher Creek Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
A-2

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BORING LOG B-1

Date Begin - End:	2/20/2020	**Drilling Company:**	Cascade Drilling
Logged By:	V. Golston	**Drill Crew:**	L. Lopez, Avillegas
Hor.-Vert. Datum:	NAD83 -	**Drilling Equipment:**	6620DT GeoProbe
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	Sunny	**Auger Diameter:**	3.5 in./2.25 in. O.D.

FIELD EXPLORATION

Latitude: 37.14183°
Longitude: -121.66230°
Surface Condition: Grass

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
0	Hand Auger				0.6		**Sandy Lean CLAY (CL)**: brown, moist, very soft, trace organics
					0.0		
					0.2		no organics, trace fine to coarse gravel
			2-3		0.1		
					0.1		cobbles at 3'
					0.0		
5					0.0		**Poorly Graded SAND with Gravel (SP)**: yellowish brown, moist, loose, fine to coarse subangular gravel
			6-7		0.0		
					0.0		
					0.0		**Sandy Lean CLAY (CL)**: brown, moist, very soft
					0.0		
					0.0		**Poorly Graded SAND (SP)**: brown, moist, loose
					0.0		
					0.0		
10					0.0		**Sandy Lean CLAY (CL)**: brown, moist, very stiff
	Direct Push				0.0		
					0.0		
			12-13		0.0		
					0.0		
					0.0		
					0.0		
					0.0		medium stiff
15					0.0		
					0.0		
			16-17		0.0		black staininng
					0.0		
					0.0		
					0.0		
					0.0		**Well-Graded GRAVEL with Sand (GW)**: brown, moist, little black staining at 20'
					0.0		
					0.0		
20					0.0		

The borehole was terminated because of refusal at approximately 20 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The boring was backfilled with grout

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PROJECT NO.:	20203748.001A
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DATE:	3/26/2020

BORING LOG B-1

Fisher Creek Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
A-3

PAGE: 1 of 1

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BORING LOG B-2

Date Begin - End:	2/20/2020	**Drilling Company:**	Cascade Drilling
Logged By:	V. Golston	**Drill Crew:**	L. Lopez, Avillegas
Hor.-Vert. Datum:	NAD83 -	**Drilling Equipment:**	6620DT GeoProbe
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	Sunny	**Auger Diameter:**	3.5 in./2.25 in. O.D.

FIELD EXPLORATION

Latitude: 37.14097°
Longitude: -121.66185°
Surface Condition: Grass

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
0	Hand Auger				0.2		**Sandy Lean CLAY (CL)**: brown, moist, very soft, trace organics
			1-2		0.3		no organics
					0.4		
					0.5		
					0.9		
5			5-6		0.0		
					0.0		
					0.0		
					0.0		medium stiff, iron oxide
					0.0		
					0.0		**Poorly Graded SAND (SP)**: yellowish brown, moist, loose, fine sand
					0.0		
					0.0		
					0.0		
10					0.0		**Sandy Lean CLAY (CL)**: yellowish brown, moist, iron oxide, little black staining
					0.0		
	Direct Push		11-12		0.0		
					0.0		
					0.0		medium stiff, no iron oxide, no black staining
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
15			15-16		0.0		
					0.0		
					0.0		**Poorly Graded SAND with Gravel (SP)**: reddish brown, moist, loose
					0.0		
					0.0		
					0.0		
					0.0		**Sandy Lean CLAY (CL)**: brown, moist, soft
					0.0		
					0.0		
					0.0		
20					0.0		

The borehole was terminated because of refusal at approximately 20 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The boring was backfilled with grout

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PROJECT NO.:	20203748.001A
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DATE:	3/26/2020

BORING LOG B-2

Fisher Creek Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
A-4

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BORING LOG B-3

Date Begin - End:	2/20/2020	**Drilling Company:**	Cascade Drilling
Logged By:	V. Golston	**Drill Crew:**	L. Lopez, Avillegas
Hor.-Vert. Datum:	NAD83 -	**Drilling Equipment:**	6620DT GeoProbe
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	Sunny	**Auger Diameter:**	3.5 in./2.25 in. O.D.

FIELD EXPLORATION

Latitude: 37.14058°
Longitude: -121.66145°
Surface Condition: Grass

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
0	Hand Auger				0.2		**Sandy Lean CLAY (CL)**: brown, dry, very soft
					0.0		
			2-3		0.1		
					0.0		
					0.0		
5					0.0		very stiff
					0.0		
			6-7		0.0		
					0.0		
					0.0		
					0.0		
					0.0		medium stiff
					0.0		
					0.0		
10					0.0		
					0.0		
					0.0		
					0.0		
	Direct Push		12-13		0.0		
					0.0		
					0.0		
					0.0		
					0.0		soft
					0.0		
15					0.0		
					0.0		
			16-17		0.0		very stiff, trace fine to coarse gravel
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
20					0.0		

The borehole was terminated because of refusal at approximately 20 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The boring was backfilled with grout

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BORING LOG B-3

Fisher Creek Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
A-5

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BORING LOG B-4

Date Begin - End:	2/20/2020	**Drilling Company:**	Cascade Drilling
Logged By:	V. Golston	**Drill Crew:**	L. Lopez, Avillegas
Hor.-Vert. Datum:	NAD83 -	**Drilling Equipment:**	6620DT GeoProbe
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	Sunny	**Auger Diameter:**	3.5 in./2.25 in. O.D.

FIELD EXPLORATION

Latitude: 37.14065°
Longitude: -121.66063°
Surface Condition: Grass

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
0	Hand Auger				0.2		**Sandy Lean CLAY (CL)**: brown, moist, very soft, organics top 1'
			1-2		0.0		
					0.1		
					0.0		
					0.0		
5			5-6		0.0		
					0.0		
					0.0		
					0.0		yellowish brown, medium stiff, iron oxide
					0.0		
					0.0		
					0.0		brown, soft, no iron oxide
					0.0		
					0.0		
					0.0		
10					0.0		
					0.0		
					0.0		
	Direct Push		11-12		0.0		
					0.0		little black staining
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		medium stiff, trace fine gravel, no black staining
15					0.0		
			15-16		0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
20					0.0		

The borehole was terminated at approximately 20 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The boring was backfilled with grout

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PROJECT NO.:	20203748.001A
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CHECKED BY:	CR
DATE:	3/26/2020

BORING LOG B-4

Fisher Creek Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
A-6

PAGE: 1 of 1

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BORING LOG B-5

Date Begin - End:	2/20/2020	**Drilling Company:**	Cascade Drilling
Logged By:	V. Golston	**Drill Crew:**	L. Lopez, Avillegas
Hor.-Vert. Datum:	NAD83 -	**Drilling Equipment:**	6620DT GeoProbe
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	Sunny	**Auger Diameter:**	3.5 in./2.25 in. O.D.

FIELD EXPLORATION

Latitude: 37.14152°
Longitude: -121.66063°
Surface Condition: Grass

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
0	Hand Auger				0.2		**Sandy Lean CLAY (CL)**: brown, moist, very soft, little fine to coarse gravel
					0.0		
			2-3		0.0		
					0.0		
					0.0		
5					0.0		yellowish brown, medium stiff, little black staining, no gravel
					0.0		
			6-7		0.0		
					0.0		
					0.0		brown
					0.0		
					0.0		very soft, no black staining
					0.0		
					0.0		
10					0.1		
					0.0		
					0.0		
					0.0		
					0.0		
	Direct Push		12-13		0.0		soft, little black staining
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
15					0.0		**Poorly Graded SAND with Gravel (SP)**: yellowish brown, moist, fine to coarse gravel, trace clay
					0.0		
			16-17		0.0		
					0.0		
					0.0		
					0.0		
					0.0		**Sandy Lean CLAY (CL)**: dark reddish brown, moist
					0.0		**Poorly Graded SAND with Gravel (SP)**: yellowish brown, moist, fine to coarse gravel, trace clay
					0.0		
					0.0		
20					0.0		

The borehole was terminated at approximately 20 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The boring was backfilled with grout

KLEINFELDER
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PROJECT NO.:	20203748.001A
DRAWN BY:	DR
CHECKED BY:	CR
DATE:	3/26/2020

BORING LOG B-5

Fisher Creek Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
A-7

PAGE: 1 of 1

PLOTTED: 03/27/2020 07:56 AM BY: DRoss
OFFICE FILTER: SACRAMENTO
PROJECT NUMBER: 20203748.001A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_ENVIRONMENTAL LOG]

BORING LOG B-6

Date Begin - End:	2/20/2020	**Drilling Company:**	Cascade Drilling
Logged By:	V. Golston	**Drill Crew:**	L. Lopez, Avillegas
Hor.-Vert. Datum:	NAD83 -	**Drilling Equipment:**	6620DT GeoProbe
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	Sunny	**Auger Diameter:**	3.5 in./2.25 in. O.D.

FIELD EXPLORATION

Latitude: 37.14152°
Longitude: -121.66051°
Surface Condition: Grass

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
	Hand Auger				0.3		**Sandy Lean CLAY (CL)**: brown, moist, very soft, trace organics
			1-2		0.6		
					0.5		
					0.5		no organics
					0.5		
5			5-6		0.0		soft to medium stiff
					0.0		
					0.0		
					0.0		
					0.0		**Sandy Lean CLAY with Gravel (CL)**: brown, moist, medium stiff, fine to coarse gravel
					0.0		
					0.0		**Sandy Lean CLAY (CL)**: brown, moist, very stiff
					0.0		
					0.0		
					0.0		
10					0.0		
					0.0		
			11-12		0.0		soft
	Direct Push				0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
15			15-16		0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
20					0.0		
					0.0		
					0.0		dark reddish brown, medium stiff, trace fine gravel
					0.0		

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PROJECT NO.:	20203748.001A
DRAWN BY:	DR
CHECKED BY:	CR
DATE:	3/26/2020

BORING LOG B-6

Fisher Creek Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
A-8

PLOTTED: 03/27/2020 07:56 AM BY: DRoss
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PROJECT NUMBER: 20203748.001A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_ENVIRONMENTAL LOG]

BORING LOG B-6

Date Begin - End:	2/20/2020	**Drilling Company:**	Cascade Drilling
Logged By:	V. Golston	**Drill Crew:**	L. Lopez, Avillegas
Hor.-Vert. Datum:	NAD83 -	**Drilling Equipment:**	6620DT GeoProbe
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	Sunny	**Auger Diameter:**	3.5 in./2.25 in. O.D.

FIELD EXPLORATION

Latitude: 37.14152°
Longitude: -121.66051°
Surface Condition: Grass

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
0					0.0		**Sandy Lean CLAY (CL)**: reddish brown, moist, medium stiff, trace fine gravel
					0.0		
					0.0		
					0.0		
					0.0		**Well-Graded SAND with Gravel (SW)**: brown, moist, medium stiff, fine to coarse gravel
25	Direct Push				0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
30							
35							
40							

The borehole was terminated because of refusal at approximately 28 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The boring was backfilled with grout

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PROJECT NO.:	20203748.001A
DRAWN BY:	DR
CHECKED BY:	CR
DATE:	3/26/2020

BORING LOG B-6

Fisher Creek Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
A-8

PLOTTED: 03/27/2020 07:56 AM BY: DRoss
OFFICE FILTER: SACRAMENTO
PROJECT NUMBER: 20203748.001A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_ENVIRONMENTAL LOG]

BORING LOG B-7

Date Begin - End:	2/20/2020	**Drilling Company:**	Cascade Drilling
Logged By:	V. Golston	**Drill Crew:**	L. Lopez, Avillegas
Hor.-Vert. Datum:	NAD83 -	**Drilling Equipment:**	6620DT GeoProbe
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	Sunny	**Auger Diameter:**	3.5 in./2.25 in. O.D.

FIELD EXPLORATION

Latitude: 37.14205°
Longitude: -121.66095°
Surface Condition: Grass

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
0					0.4		**Sandy Lean CLAY (CL)**: brown, moist, very soft, trace organics top 2'
					0.5		
	Hand Auger		2-3		1.7		
					0.6		
					0.5		
5					0.0		medium stiff
					0.0		
			6-7		0.0		
					0.0		
					0.0		
					0.0		
					0.0		hard
					0.0		
					0.0		
10					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
	Direct Push		12-13		0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
15					0.0		**Sandy Lean CLAY with Gravel (CL)**: brown, moist, soft, fine gravel
					0.0		
			16-17		0.0		**Sandy Lean CLAY (CL)**: brown, moist, soft
					0.0		
					0.0		
					0.0		
					0.0		hard
					0.0		
					0.0		
20					0.0		

The borehole was terminated at approximately 20 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The boring was backfilled with grout

KLEINFELDER
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PROJECT NO.:	20203748.001A
DRAWN BY:	DR
CHECKED BY:	CR
DATE:	3/26/2020

BORING LOG B-7

Fisher Creek Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
A-9

PAGE: 1 of 1

PLOTTED: 03/27/2020 07:56 AM BY: DRoss
OFFICE FILTER: SACRAMENTO
PROJECT NUMBER: 20203748.001A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_ENVIRONMENTAL LOG]

BORING LOG B-8

Date Begin - End:	2/20/2020	**Drilling Company:**	Cascade Drilling
Logged By:	V. Golston	**Drill Crew:**	L. Lopez, Avillegas
Hor.-Vert. Datum:	NAD83 -	**Drilling Equipment:**	6620DT GeoProbe
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	Sunny	**Auger Diameter:**	3.5 in./2.25 in. O.D.

FIELD EXPLORATION

Latitude: 37.14218°
Longitude: -121.66196°
Surface Condition: Grass

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
0	Hand Auger				1.1		**Sandy Lean CLAY (CL)**: brown, moist, very soft
			1-2		0.8		
					0.3		
					0.1		
					0.0		
5			5-6		0.0		medium stiff, trace fine to coarse gravel
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
10					0.0		
					0.0		
					0.0		
	Direct Push		11-12		0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		reddish brown, soft to medium stiff, trace fine to coarse gravel
					0.0		
					0.0		**Sandy Lean CLAY with Gravel (CL)**: reddish brown, moist, medium stiff, fine to coarse gravel, little black staining, no odors
15			15-16		0.0		
					0.0		
					0.0		**Poorly Graded SAND with Gravel (SP)**: brown, moist, loose, fine to coarse gravel
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		
					0.0		**Sandy Lean CLAY (CL)**: brown, moist, medium stiff
20					0.0		

The borehole was terminated because of refusal at approximately 20 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The boring was backfilled with grout

KLEINFELDER
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PROJECT NO.:	20203748.001A
DRAWN BY:	DR
CHECKED BY:	CR
DATE:	3/26/2020

BORING LOG B-8

Fisher Creek Basin
Monterey Road and Jarvis Drive
Morgan Hill, California

FIGURE
A-10

PLOTTED: 03/27/2020 07:56 AM BY: DRoss
OFFICE FILTER: SACRAMENTO
PROJECT NUMBER: 20203748.001A
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gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_ENVIRONMENTAL LOG]

ATTACHMENT B

LABORATORY RESULTS REPORT

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McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 2002901

Report Created for: Kleinfelder, Inc.

380 North 1st Street
San Jose, CA 95132

Project Contact: Craig Riddle
Project P.O.:
Project: 20203748.001A; Morgan Hill Fisher Basin

Project Received: 02/24/2020

Analytical Report reviewed & approved for release on 03/03/2020 by:

Yen Cao
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.

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CA ELAP 1644 ♦ NELAP 4033 ORELAP

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Kleinfelder, Inc.
Project: 20203748.001A; Morgan Hill Fisher Basin
WorkOrder: 2002901

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Glossary of Terms & Qualifier Definitions

Client: Kleinfelder, Inc.
Project: 20203748.001A; Morgan Hill Fisher Basin
WorkOrder: 2002901

Analytical Qualifiers

B	Analyte detected in the associated Method Blank and in the sample.
J	Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.
k10	CARB 435 Exception 1 - No asbestos detected. The limit of quantitation (LOQ) = 0.25%.

Quality Control Qualifiers

F1	MS/MSD recovery and/or RPD is out of acceptance criteria; LCS validates the prep batch.
F2	LCS/LCSD recovery and/or RPD/RSD is out of acceptance criteria.
F3	The surrogate standard recovery and/or RPD is outside of acceptance limits.

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_2-3	2002901-001A	Soil	02/21/2020 13:35	GC23 02252059.d	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 06:03
a-BHC	ND	0.0010	1	02/26/2020 06:03
b-BHC	ND	0.0010	1	02/26/2020 06:03
d-BHC	ND	0.0010	1	02/26/2020 06:03
g-BHC	ND	0.0010	1	02/26/2020 06:03
Chlordane (Technical)	ND	0.025	1	02/26/2020 06:03
a-Chlordane	ND	0.0010	1	02/26/2020 06:03
g-Chlordane	ND	0.0010	1	02/26/2020 06:03
p,p-DDD	ND	0.0010	1	02/26/2020 06:03
p,p-DDE	ND	0.0010	1	02/26/2020 06:03
p,p-DDT	ND	0.0010	1	02/26/2020 06:03
Dieldrin	ND	0.0010	1	02/26/2020 06:03
Endosulfan I	ND	0.0010	1	02/26/2020 06:03
Endosulfan II	ND	0.0010	1	02/26/2020 06:03
Endosulfan sulfate	ND	0.0010	1	02/26/2020 06:03
Endrin	ND	0.0010	1	02/26/2020 06:03
Endrin aldehyde	ND	0.0010	1	02/26/2020 06:03
Endrin ketone	ND	0.0010	1	02/26/2020 06:03
Heptachlor	ND	0.0010	1	02/26/2020 06:03
Heptachlor epoxide	ND	0.0010	1	02/26/2020 06:03
Hexachlorobenzene	ND	0.010	1	02/26/2020 06:03
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 06:03
Methoxychlor	ND	0.0010	1	02/26/2020 06:03
Toxaphene	ND	0.050	1	02/26/2020 06:03
Aroclor1016	ND	0.050	1	02/26/2020 06:03
Aroclor1221	ND	0.050	1	02/26/2020 06:03
Aroclor1232	ND	0.050	1	02/26/2020 06:03
Aroclor1242	ND	0.050	1	02/26/2020 06:03
Aroclor1248	ND	0.050	1	02/26/2020 06:03
Aroclor1254	ND	0.050	1	02/26/2020 06:03
Aroclor1260	ND	0.050	1	02/26/2020 06:03
PCBs, total	ND	0.050	1	02/26/2020 06:03

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	88	69-143	02/26/2020 06:03

Analyst(s): LT

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	GC23 02252060.d	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 06:19
a-BHC	ND	0.0010	1	02/26/2020 06:19
b-BHC	ND	0.0010	1	02/26/2020 06:19
d-BHC	ND	0.0010	1	02/26/2020 06:19
g-BHC	ND	0.0010	1	02/26/2020 06:19
Chlordane (Technical)	ND	0.025	1	02/26/2020 06:19
a-Chlordane	ND	0.0010	1	02/26/2020 06:19
g-Chlordane	ND	0.0010	1	02/26/2020 06:19
p,p-DDD	ND	0.0010	1	02/26/2020 06:19
p,p-DDE	ND	0.0010	1	02/26/2020 06:19
p,p-DDT	ND	0.0010	1	02/26/2020 06:19
Dieldrin	ND	0.0010	1	02/26/2020 06:19
Endosulfan I	ND	0.0010	1	02/26/2020 06:19
Endosulfan II	ND	0.0010	1	02/26/2020 06:19
Endosulfan sulfate	ND	0.0010	1	02/26/2020 06:19
Endrin	ND	0.0010	1	02/26/2020 06:19
Endrin aldehyde	ND	0.0010	1	02/26/2020 06:19
Endrin ketone	ND	0.0010	1	02/26/2020 06:19
Heptachlor	ND	0.0010	1	02/26/2020 06:19
Heptachlor epoxide	ND	0.0010	1	02/26/2020 06:19
Hexachlorobenzene	ND	0.010	1	02/26/2020 06:19
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 06:19
Methoxychlor	ND	0.0010	1	02/26/2020 06:19
Toxaphene	ND	0.050	1	02/26/2020 06:19
Aroclor1016	ND	0.050	1	02/26/2020 06:19
Aroclor1221	ND	0.050	1	02/26/2020 06:19
Aroclor1232	ND	0.050	1	02/26/2020 06:19
Aroclor1242	ND	0.050	1	02/26/2020 06:19
Aroclor1248	ND	0.050	1	02/26/2020 06:19
Aroclor1254	ND	0.050	1	02/26/2020 06:19
Aroclor1260	ND	0.050	1	02/26/2020 06:19
PCBs, total	ND	0.050	1	02/26/2020 06:19

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	87	69-143	02/26/2020 06:19

Analyst(s): LT

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	2002901-003A	Soil	02/20/2020 14:00	GC23 02252075.d	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 10:15
a-BHC	ND	0.0010	1	02/26/2020 10:15
b-BHC	ND	0.0010	1	02/26/2020 10:15
d-BHC	ND	0.0010	1	02/26/2020 10:15
g-BHC	ND	0.0010	1	02/26/2020 10:15
Chlordane (Technical)	ND	0.025	1	02/26/2020 10:15
a-Chlordane	ND	0.0010	1	02/26/2020 10:15
g-Chlordane	ND	0.0010	1	02/26/2020 10:15
p,p-DDD	ND	0.0010	1	02/26/2020 10:15
p,p-DDE	ND	0.0010	1	02/26/2020 10:15
p,p-DDT	ND	0.0010	1	02/26/2020 10:15
Dieldrin	ND	0.0010	1	02/26/2020 10:15
Endosulfan I	ND	0.0010	1	02/26/2020 10:15
Endosulfan II	ND	0.0010	1	02/26/2020 10:15
Endosulfan sulfate	ND	0.0010	1	02/26/2020 10:15
Endrin	ND	0.0010	1	02/26/2020 10:15
Endrin aldehyde	ND	0.0010	1	02/26/2020 10:15
Endrin ketone	ND	0.0010	1	02/26/2020 10:15
Heptachlor	ND	0.0010	1	02/26/2020 10:15
Heptachlor epoxide	ND	0.0010	1	02/26/2020 10:15
Hexachlorobenzene	ND	0.010	1	02/26/2020 10:15
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 10:15
Methoxychlor	ND	0.0010	1	02/26/2020 10:15
Toxaphene	ND	0.050	1	02/26/2020 10:15
Aroclor1016	ND	0.050	1	02/26/2020 10:15
Aroclor1221	ND	0.050	1	02/26/2020 10:15
Aroclor1232	ND	0.050	1	02/26/2020 10:15
Aroclor1242	ND	0.050	1	02/26/2020 10:15
Aroclor1248	ND	0.050	1	02/26/2020 10:15
Aroclor1254	ND	0.050	1	02/26/2020 10:15
Aroclor1260	ND	0.050	1	02/26/2020 10:15
PCBs, total	ND	0.050	1	02/26/2020 10:15

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	91	69-143	02/26/2020 10:15

Analyst(s): LT

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	2002901-004A	Soil	02/20/2020 14:05	GC23 02252076.d	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 10:31
a-BHC	ND	0.0010	1	02/26/2020 10:31
b-BHC	ND	0.0010	1	02/26/2020 10:31
d-BHC	ND	0.0010	1	02/26/2020 10:31
g-BHC	ND	0.0010	1	02/26/2020 10:31
Chlordane (Technical)	ND	0.025	1	02/26/2020 10:31
a-Chlordane	ND	0.0010	1	02/26/2020 10:31
g-Chlordane	ND	0.0010	1	02/26/2020 10:31
p,p-DDD	ND	0.0010	1	02/26/2020 10:31
p,p-DDE	ND	0.0010	1	02/26/2020 10:31
p,p-DDT	ND	0.0010	1	02/26/2020 10:31
Dieldrin	ND	0.0010	1	02/26/2020 10:31
Endosulfan I	ND	0.0010	1	02/26/2020 10:31
Endosulfan II	ND	0.0010	1	02/26/2020 10:31
Endosulfan sulfate	ND	0.0010	1	02/26/2020 10:31
Endrin	ND	0.0010	1	02/26/2020 10:31
Endrin aldehyde	ND	0.0010	1	02/26/2020 10:31
Endrin ketone	ND	0.0010	1	02/26/2020 10:31
Heptachlor	ND	0.0010	1	02/26/2020 10:31
Heptachlor epoxide	ND	0.0010	1	02/26/2020 10:31
Hexachlorobenzene	ND	0.010	1	02/26/2020 10:31
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 10:31
Methoxychlor	ND	0.0010	1	02/26/2020 10:31
Toxaphene	ND	0.050	1	02/26/2020 10:31
Aroclor1016	ND	0.050	1	02/26/2020 10:31
Aroclor1221	ND	0.050	1	02/26/2020 10:31
Aroclor1232	ND	0.050	1	02/26/2020 10:31
Aroclor1242	ND	0.050	1	02/26/2020 10:31
Aroclor1248	ND	0.050	1	02/26/2020 10:31
Aroclor1254	ND	0.050	1	02/26/2020 10:31
Aroclor1260	ND	0.050	1	02/26/2020 10:31
PCBs, total	ND	0.050	1	02/26/2020 10:31

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	91	69-143	02/26/2020 10:31

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	GC23 02252077.d	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 10:47
a-BHC	ND	0.0010	1	02/26/2020 10:47
b-BHC	ND	0.0010	1	02/26/2020 10:47
d-BHC	ND	0.0010	1	02/26/2020 10:47
g-BHC	ND	0.0010	1	02/26/2020 10:47
Chlordane (Technical)	ND	0.025	1	02/26/2020 10:47
a-Chlordane	ND	0.0010	1	02/26/2020 10:47
g-Chlordane	ND	0.0010	1	02/26/2020 10:47
p,p-DDD	ND	0.0010	1	02/26/2020 10:47
p,p-DDE	ND	0.0010	1	02/26/2020 10:47
p,p-DDT	ND	0.0010	1	02/26/2020 10:47
Dieldrin	ND	0.0010	1	02/26/2020 10:47
Endosulfan I	ND	0.0010	1	02/26/2020 10:47
Endosulfan II	ND	0.0010	1	02/26/2020 10:47
Endosulfan sulfate	ND	0.0010	1	02/26/2020 10:47
Endrin	ND	0.0010	1	02/26/2020 10:47
Endrin aldehyde	ND	0.0010	1	02/26/2020 10:47
Endrin ketone	ND	0.0010	1	02/26/2020 10:47
Heptachlor	ND	0.0010	1	02/26/2020 10:47
Heptachlor epoxide	ND	0.0010	1	02/26/2020 10:47
Hexachlorobenzene	ND	0.010	1	02/26/2020 10:47
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 10:47
Methoxychlor	ND	0.0010	1	02/26/2020 10:47
Toxaphene	ND	0.050	1	02/26/2020 10:47
Aroclor1016	ND	0.050	1	02/26/2020 10:47
Aroclor1221	ND	0.050	1	02/26/2020 10:47
Aroclor1232	ND	0.050	1	02/26/2020 10:47
Aroclor1242	ND	0.050	1	02/26/2020 10:47
Aroclor1248	ND	0.050	1	02/26/2020 10:47
Aroclor1254	ND	0.050	1	02/26/2020 10:47
Aroclor1260	ND	0.050	1	02/26/2020 10:47
PCBs, total	ND	0.050	1	02/26/2020 10:47

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	93	69-143	02/26/2020 10:47

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_5-6	2002901-006A	Soil	02/20/2020 14:25	GC23 02252078.d	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 11:02
a-BHC	ND	0.0010	1	02/26/2020 11:02
b-BHC	ND	0.0010	1	02/26/2020 11:02
d-BHC	ND	0.0010	1	02/26/2020 11:02
g-BHC	ND	0.0010	1	02/26/2020 11:02
Chlordane (Technical)	ND	0.025	1	02/26/2020 11:02
a-Chlordane	ND	0.0010	1	02/26/2020 11:02
g-Chlordane	ND	0.0010	1	02/26/2020 11:02
p,p-DDD	**0.0023**	0.0010	1	02/26/2020 11:02
p,p-DDE	**0.25**	0.0050	5	02/27/2020 08:07
p,p-DDT	**0.019**	0.0010	1	02/26/2020 11:02
Dieldrin	ND	0.0010	1	02/26/2020 11:02
Endosulfan I	ND	0.0010	1	02/26/2020 11:02
Endosulfan II	ND	0.0010	1	02/26/2020 11:02
Endosulfan sulfate	ND	0.0010	1	02/26/2020 11:02
Endrin	ND	0.0010	1	02/26/2020 11:02
Endrin aldehyde	ND	0.0010	1	02/26/2020 11:02
Endrin ketone	ND	0.0010	1	02/26/2020 11:02
Heptachlor	ND	0.0010	1	02/26/2020 11:02
Heptachlor epoxide	ND	0.0010	1	02/26/2020 11:02
Hexachlorobenzene	ND	0.010	1	02/26/2020 11:02
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 11:02
Methoxychlor	ND	0.0010	1	02/26/2020 11:02
Toxaphene	**0.32**	0.050	1	02/26/2020 11:02
Aroclor1016	ND	0.050	1	02/26/2020 11:02
Aroclor1221	ND	0.050	1	02/26/2020 11:02
Aroclor1232	ND	0.050	1	02/26/2020 11:02
Aroclor1242	ND	0.050	1	02/26/2020 11:02
Aroclor1248	ND	0.050	1	02/26/2020 11:02
Aroclor1254	ND	0.050	1	02/26/2020 11:02
Aroclor1260	ND	0.050	1	02/26/2020 11:02
PCBs, total	ND	0.050	1	02/26/2020 11:02

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	92	69-143	02/26/2020 11:02

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	2002901-007A	Soil	02/20/2020 14:35	GC23 02252079.d	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 11:18
a-BHC	ND	0.0010	1	02/26/2020 11:18
b-BHC	ND	0.0010	1	02/26/2020 11:18
d-BHC	ND	0.0010	1	02/26/2020 11:18
g-BHC	ND	0.0010	1	02/26/2020 11:18
Chlordane (Technical)	ND	0.025	1	02/26/2020 11:18
a-Chlordane	ND	0.0010	1	02/26/2020 11:18
g-Chlordane	ND	0.0010	1	02/26/2020 11:18
p,p-DDD	ND	0.0010	1	02/26/2020 11:18
p,p-DDE	ND	0.0010	1	02/26/2020 11:18
p,p-DDT	ND	0.0010	1	02/26/2020 11:18
Dieldrin	ND	0.0010	1	02/26/2020 11:18
Endosulfan I	ND	0.0010	1	02/26/2020 11:18
Endosulfan II	ND	0.0010	1	02/26/2020 11:18
Endosulfan sulfate	ND	0.0010	1	02/26/2020 11:18
Endrin	ND	0.0010	1	02/26/2020 11:18
Endrin aldehyde	ND	0.0010	1	02/26/2020 11:18
Endrin ketone	ND	0.0010	1	02/26/2020 11:18
Heptachlor	ND	0.0010	1	02/26/2020 11:18
Heptachlor epoxide	ND	0.0010	1	02/26/2020 11:18
Hexachlorobenzene	ND	0.010	1	02/26/2020 11:18
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 11:18
Methoxychlor	ND	0.0010	1	02/26/2020 11:18
Toxaphene	ND	0.050	1	02/26/2020 11:18
Aroclor1016	ND	0.050	1	02/26/2020 11:18
Aroclor1221	ND	0.050	1	02/26/2020 11:18
Aroclor1232	ND	0.050	1	02/26/2020 11:18
Aroclor1242	ND	0.050	1	02/26/2020 11:18
Aroclor1248	ND	0.050	1	02/26/2020 11:18
Aroclor1254	ND	0.050	1	02/26/2020 11:18
Aroclor1260	ND	0.050	1	02/26/2020 11:18
PCBs, total	ND	0.050	1	02/26/2020 11:18

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	96	69-143	02/26/2020 11:18

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	2002901-008A	Soil	02/20/2020 14:40	GC23 02252080.d	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 11:34
a-BHC	ND	0.0010	1	02/26/2020 11:34
b-BHC	ND	0.0010	1	02/26/2020 11:34
d-BHC	ND	0.0010	1	02/26/2020 11:34
g-BHC	ND	0.0010	1	02/26/2020 11:34
Chlordane (Technical)	ND	0.025	1	02/26/2020 11:34
a-Chlordane	ND	0.0010	1	02/26/2020 11:34
g-Chlordane	ND	0.0010	1	02/26/2020 11:34
p,p-DDD	ND	0.0010	1	02/26/2020 11:34
p,p-DDE	ND	0.0010	1	02/26/2020 11:34
p,p-DDT	ND	0.0010	1	02/26/2020 11:34
Dieldrin	ND	0.0010	1	02/26/2020 11:34
Endosulfan I	ND	0.0010	1	02/26/2020 11:34
Endosulfan II	ND	0.0010	1	02/26/2020 11:34
Endosulfan sulfate	ND	0.0010	1	02/26/2020 11:34
Endrin	ND	0.0010	1	02/26/2020 11:34
Endrin aldehyde	ND	0.0010	1	02/26/2020 11:34
Endrin ketone	ND	0.0010	1	02/26/2020 11:34
Heptachlor	ND	0.0010	1	02/26/2020 11:34
Heptachlor epoxide	ND	0.0010	1	02/26/2020 11:34
Hexachlorobenzene	ND	0.010	1	02/26/2020 11:34
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 11:34
Methoxychlor	ND	0.0010	1	02/26/2020 11:34
Toxaphene	ND	0.050	1	02/26/2020 11:34
Aroclor1016	ND	0.050	1	02/26/2020 11:34
Aroclor1221	ND	0.050	1	02/26/2020 11:34
Aroclor1232	ND	0.050	1	02/26/2020 11:34
Aroclor1242	ND	0.050	1	02/26/2020 11:34
Aroclor1248	ND	0.050	1	02/26/2020 11:34
Aroclor1254	ND	0.050	1	02/26/2020 11:34
Aroclor1260	ND	0.050	1	02/26/2020 11:34
PCBs, total	ND	0.050	1	02/26/2020 11:34

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	96	69-143	02/26/2020 11:34

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_2-3	2002901-009A	Soil	02/20/2020 15:25	GC23 02252081.d	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 11:50
a-BHC	ND	0.0010	1	02/26/2020 11:50
b-BHC	ND	0.0010	1	02/26/2020 11:50
d-BHC	ND	0.0010	1	02/26/2020 11:50
g-BHC	ND	0.0010	1	02/26/2020 11:50
Chlordane (Technical)	ND	0.025	1	02/26/2020 11:50
a-Chlordane	ND	0.0010	1	02/26/2020 11:50
g-Chlordane	ND	0.0010	1	02/26/2020 11:50
p,p-DDD	ND	0.0010	1	02/26/2020 11:50
p,p-DDE	ND	0.0010	1	02/26/2020 11:50
p,p-DDT	ND	0.0010	1	02/26/2020 11:50
Dieldrin	ND	0.0010	1	02/26/2020 11:50
Endosulfan I	ND	0.0010	1	02/26/2020 11:50
Endosulfan II	ND	0.0010	1	02/26/2020 11:50
Endosulfan sulfate	ND	0.0010	1	02/26/2020 11:50
Endrin	ND	0.0010	1	02/26/2020 11:50
Endrin aldehyde	ND	0.0010	1	02/26/2020 11:50
Endrin ketone	ND	0.0010	1	02/26/2020 11:50
Heptachlor	ND	0.0010	1	02/26/2020 11:50
Heptachlor epoxide	ND	0.0010	1	02/26/2020 11:50
Hexachlorobenzene	ND	0.010	1	02/26/2020 11:50
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 11:50
Methoxychlor	ND	0.0010	1	02/26/2020 11:50
Toxaphene	ND	0.050	1	02/26/2020 11:50
Aroclor1016	ND	0.050	1	02/26/2020 11:50
Aroclor1221	ND	0.050	1	02/26/2020 11:50
Aroclor1232	ND	0.050	1	02/26/2020 11:50
Aroclor1242	ND	0.050	1	02/26/2020 11:50
Aroclor1248	ND	0.050	1	02/26/2020 11:50
Aroclor1254	ND	0.050	1	02/26/2020 11:50
Aroclor1260	ND	0.050	1	02/26/2020 11:50
PCBs, total	ND	0.050	1	02/26/2020 11:50

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	94	69-143	02/26/2020 11:50

Analyst(s): LT

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	GC23 02252082.d	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 12:05
a-BHC	ND	0.0010	1	02/26/2020 12:05
b-BHC	ND	0.0010	1	02/26/2020 12:05
d-BHC	ND	0.0010	1	02/26/2020 12:05
g-BHC	ND	0.0010	1	02/26/2020 12:05
Chlordane (Technical)	ND	0.025	1	02/26/2020 12:05
a-Chlordane	ND	0.0010	1	02/26/2020 12:05
g-Chlordane	ND	0.0010	1	02/26/2020 12:05
p,p-DDD	ND	0.0010	1	02/26/2020 12:05
p,p-DDE	ND	0.0010	1	02/26/2020 12:05
p,p-DDT	ND	0.0010	1	02/26/2020 12:05
Dieldrin	ND	0.0010	1	02/26/2020 12:05
Endosulfan I	ND	0.0010	1	02/26/2020 12:05
Endosulfan II	ND	0.0010	1	02/26/2020 12:05
Endosulfan sulfate	ND	0.0010	1	02/26/2020 12:05
Endrin	ND	0.0010	1	02/26/2020 12:05
Endrin aldehyde	ND	0.0010	1	02/26/2020 12:05
Endrin ketone	ND	0.0010	1	02/26/2020 12:05
Heptachlor	ND	0.0010	1	02/26/2020 12:05
Heptachlor epoxide	ND	0.0010	1	02/26/2020 12:05
Hexachlorobenzene	ND	0.010	1	02/26/2020 12:05
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 12:05
Methoxychlor	ND	0.0010	1	02/26/2020 12:05
Toxaphene	ND	0.050	1	02/26/2020 12:05
Aroclor1016	ND	0.050	1	02/26/2020 12:05
Aroclor1221	ND	0.050	1	02/26/2020 12:05
Aroclor1232	ND	0.050	1	02/26/2020 12:05
Aroclor1242	ND	0.050	1	02/26/2020 12:05
Aroclor1248	ND	0.050	1	02/26/2020 12:05
Aroclor1254	ND	0.050	1	02/26/2020 12:05
Aroclor1260	ND	0.050	1	02/26/2020 12:05
PCBs, total	ND	0.050	1	02/26/2020 12:05

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	95	69-143	02/26/2020 12:05

Analyst(s): LT

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	2002901-011A	Soil	02/20/2020 15:35	GC23 02252083.d	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 12:21
a-BHC	ND	0.0010	1	02/26/2020 12:21
b-BHC	ND	0.0010	1	02/26/2020 12:21
d-BHC	ND	0.0010	1	02/26/2020 12:21
g-BHC	ND	0.0010	1	02/26/2020 12:21
Chlordane (Technical)	ND	0.025	1	02/26/2020 12:21
a-Chlordane	ND	0.0010	1	02/26/2020 12:21
g-Chlordane	ND	0.0010	1	02/26/2020 12:21
p,p-DDD	ND	0.0010	1	02/26/2020 12:21
p,p-DDE	ND	0.0010	1	02/26/2020 12:21
p,p-DDT	ND	0.0010	1	02/26/2020 12:21
Dieldrin	ND	0.0010	1	02/26/2020 12:21
Endosulfan I	ND	0.0010	1	02/26/2020 12:21
Endosulfan II	ND	0.0010	1	02/26/2020 12:21
Endosulfan sulfate	ND	0.0010	1	02/26/2020 12:21
Endrin	ND	0.0010	1	02/26/2020 12:21
Endrin aldehyde	ND	0.0010	1	02/26/2020 12:21
Endrin ketone	ND	0.0010	1	02/26/2020 12:21
Heptachlor	ND	0.0010	1	02/26/2020 12:21
Heptachlor epoxide	ND	0.0010	1	02/26/2020 12:21
Hexachlorobenzene	ND	0.010	1	02/26/2020 12:21
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 12:21
Methoxychlor	ND	0.0010	1	02/26/2020 12:21
Toxaphene	ND	0.050	1	02/26/2020 12:21
Aroclor1016	ND	0.050	1	02/26/2020 12:21
Aroclor1221	ND	0.050	1	02/26/2020 12:21
Aroclor1232	ND	0.050	1	02/26/2020 12:21
Aroclor1242	ND	0.050	1	02/26/2020 12:21
Aroclor1248	ND	0.050	1	02/26/2020 12:21
Aroclor1254	ND	0.050	1	02/26/2020 12:21
Aroclor1260	ND	0.050	1	02/26/2020 12:21
PCBs, total	ND	0.050	1	02/26/2020 12:21

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	93	69-143	02/26/2020 12:21

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	GC23 02252084.d	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 12:37
a-BHC	ND	0.0010	1	02/26/2020 12:37
b-BHC	ND	0.0010	1	02/26/2020 12:37
d-BHC	ND	0.0010	1	02/26/2020 12:37
g-BHC	ND	0.0010	1	02/26/2020 12:37
Chlordane (Technical)	ND	0.025	1	02/26/2020 12:37
a-Chlordane	ND	0.0010	1	02/26/2020 12:37
g-Chlordane	ND	0.0010	1	02/26/2020 12:37
p,p-DDD	ND	0.0010	1	02/26/2020 12:37
p,p-DDE	ND	0.0010	1	02/26/2020 12:37
p,p-DDT	ND	0.0010	1	02/26/2020 12:37
Dieldrin	ND	0.0010	1	02/26/2020 12:37
Endosulfan I	ND	0.0010	1	02/26/2020 12:37
Endosulfan II	ND	0.0010	1	02/26/2020 12:37
Endosulfan sulfate	ND	0.0010	1	02/26/2020 12:37
Endrin	ND	0.0010	1	02/26/2020 12:37
Endrin aldehyde	ND	0.0010	1	02/26/2020 12:37
Endrin ketone	ND	0.0010	1	02/26/2020 12:37
Heptachlor	ND	0.0010	1	02/26/2020 12:37
Heptachlor epoxide	ND	0.0010	1	02/26/2020 12:37
Hexachlorobenzene	ND	0.010	1	02/26/2020 12:37
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 12:37
Methoxychlor	ND	0.0010	1	02/26/2020 12:37
Toxaphene	ND	0.050	1	02/26/2020 12:37
Aroclor1016	ND	0.050	1	02/26/2020 12:37
Aroclor1221	ND	0.050	1	02/26/2020 12:37
Aroclor1232	ND	0.050	1	02/26/2020 12:37
Aroclor1242	ND	0.050	1	02/26/2020 12:37
Aroclor1248	ND	0.050	1	02/26/2020 12:37
Aroclor1254	ND	0.050	1	02/26/2020 12:37
Aroclor1260	ND	0.050	1	02/26/2020 12:37
PCBs, total	ND	0.050	1	02/26/2020 12:37

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	96	69-143	02/26/2020 12:37

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_1-2	2002901-013A	Soil	02/20/2020 16:00	GC20 02252011.D	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/25/2020 20:13
a-BHC	ND	0.0010	1	02/25/2020 20:13
b-BHC	ND	0.0010	1	02/25/2020 20:13
d-BHC	ND	0.0010	1	02/25/2020 20:13
g-BHC	ND	0.0010	1	02/25/2020 20:13
Chlordane (Technical)	ND	0.025	1	02/25/2020 20:13
a-Chlordane	ND	0.0010	1	02/25/2020 20:13
g-Chlordane	ND	0.0010	1	02/25/2020 20:13
p,p-DDD	ND	0.0010	1	02/25/2020 20:13
p,p-DDE	**0.013**	0.0010	1	02/25/2020 20:13
p,p-DDT	**0.0010**	0.0010	1	02/25/2020 20:13
Dieldrin	ND	0.0010	1	02/25/2020 20:13
Endosulfan I	ND	0.0010	1	02/25/2020 20:13
Endosulfan II	ND	0.0010	1	02/25/2020 20:13
Endosulfan sulfate	ND	0.0010	1	02/25/2020 20:13
Endrin	ND	0.0010	1	02/25/2020 20:13
Endrin aldehyde	ND	0.0010	1	02/25/2020 20:13
Endrin ketone	ND	0.0010	1	02/25/2020 20:13
Heptachlor	ND	0.0010	1	02/25/2020 20:13
Heptachlor epoxide	ND	0.0010	1	02/25/2020 20:13
Hexachlorobenzene	ND	0.010	1	02/25/2020 20:13
Hexachlorocyclopentadiene	ND	0.020	1	02/25/2020 20:13
Methoxychlor	ND	0.0010	1	02/25/2020 20:13
Toxaphene	ND	0.050	1	02/25/2020 20:13
Aroclor1016	ND	0.050	1	02/25/2020 20:13
Aroclor1221	ND	0.050	1	02/25/2020 20:13
Aroclor1232	ND	0.050	1	02/25/2020 20:13
Aroclor1242	ND	0.050	1	02/25/2020 20:13
Aroclor1248	ND	0.050	1	02/25/2020 20:13
Aroclor1254	ND	0.050	1	02/25/2020 20:13
Aroclor1260	ND	0.050	1	02/25/2020 20:13
PCBs, total	ND	0.050	1	02/25/2020 20:13

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	98	69-143	02/25/2020 20:13

Analyst(s): CN

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	GC20 02252012.D	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/25/2020 20:29
a-BHC	ND	0.0010	1	02/25/2020 20:29
b-BHC	ND	0.0010	1	02/25/2020 20:29
d-BHC	ND	0.0010	1	02/25/2020 20:29
g-BHC	ND	0.0010	1	02/25/2020 20:29
Chlordane (Technical)	ND	0.025	1	02/25/2020 20:29
a-Chlordane	ND	0.0010	1	02/25/2020 20:29
g-Chlordane	ND	0.0010	1	02/25/2020 20:29
p,p-DDD	ND	0.0010	1	02/25/2020 20:29
p,p-DDE	ND	0.0010	1	02/25/2020 20:29
p,p-DDT	ND	0.0010	1	02/25/2020 20:29
Dieldrin	ND	0.0010	1	02/25/2020 20:29
Endosulfan I	ND	0.0010	1	02/25/2020 20:29
Endosulfan II	ND	0.0010	1	02/25/2020 20:29
Endosulfan sulfate	ND	0.0010	1	02/25/2020 20:29
Endrin	ND	0.0010	1	02/25/2020 20:29
Endrin aldehyde	ND	0.0010	1	02/25/2020 20:29
Endrin ketone	ND	0.0010	1	02/25/2020 20:29
Heptachlor	ND	0.0010	1	02/25/2020 20:29
Heptachlor epoxide	ND	0.0010	1	02/25/2020 20:29
Hexachlorobenzene	ND	0.010	1	02/25/2020 20:29
Hexachlorocyclopentadiene	ND	0.020	1	02/25/2020 20:29
Methoxychlor	ND	0.0010	1	02/25/2020 20:29
Toxaphene	ND	0.050	1	02/25/2020 20:29
Aroclor1016	ND	0.050	1	02/25/2020 20:29
Aroclor1221	ND	0.050	1	02/25/2020 20:29
Aroclor1232	ND	0.050	1	02/25/2020 20:29
Aroclor1242	ND	0.050	1	02/25/2020 20:29
Aroclor1248	ND	0.050	1	02/25/2020 20:29
Aroclor1254	ND	0.050	1	02/25/2020 20:29
Aroclor1260	ND	0.050	1	02/25/2020 20:29
PCBs, total	ND	0.050	1	02/25/2020 20:29

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	100	69-143	02/25/2020 20:29

Analyst(s): CN

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	2002901-015A	Soil	02/20/2020 16:15	GC20 02252013.D	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/25/2020 20:44
a-BHC	ND	0.0010	1	02/25/2020 20:44
b-BHC	ND	0.0010	1	02/25/2020 20:44
d-BHC	ND	0.0010	1	02/25/2020 20:44
g-BHC	ND	0.0010	1	02/25/2020 20:44
Chlordane (Technical)	ND	0.025	1	02/25/2020 20:44
a-Chlordane	ND	0.0010	1	02/25/2020 20:44
g-Chlordane	ND	0.0010	1	02/25/2020 20:44
p,p-DDD	ND	0.0010	1	02/25/2020 20:44
p,p-DDE	ND	0.0010	1	02/25/2020 20:44
p,p-DDT	ND	0.0010	1	02/25/2020 20:44
Dieldrin	ND	0.0010	1	02/25/2020 20:44
Endosulfan I	ND	0.0010	1	02/25/2020 20:44
Endosulfan II	ND	0.0010	1	02/25/2020 20:44
Endosulfan sulfate	ND	0.0010	1	02/25/2020 20:44
Endrin	ND	0.0010	1	02/25/2020 20:44
Endrin aldehyde	ND	0.0010	1	02/25/2020 20:44
Endrin ketone	ND	0.0010	1	02/25/2020 20:44
Heptachlor	ND	0.0010	1	02/25/2020 20:44
Heptachlor epoxide	ND	0.0010	1	02/25/2020 20:44
Hexachlorobenzene	ND	0.010	1	02/25/2020 20:44
Hexachlorocyclopentadiene	ND	0.020	1	02/25/2020 20:44
Methoxychlor	ND	0.0010	1	02/25/2020 20:44
Toxaphene	ND	0.050	1	02/25/2020 20:44
Aroclor1016	ND	0.050	1	02/25/2020 20:44
Aroclor1221	ND	0.050	1	02/25/2020 20:44
Aroclor1232	ND	0.050	1	02/25/2020 20:44
Aroclor1242	ND	0.050	1	02/25/2020 20:44
Aroclor1248	ND	0.050	1	02/25/2020 20:44
Aroclor1254	ND	0.050	1	02/25/2020 20:44
Aroclor1260	ND	0.050	1	02/25/2020 20:44
PCBs, total	ND	0.050	1	02/25/2020 20:44

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	99	69-143	02/25/2020 20:44

Analyst(s): CN

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	2002901-016A	Soil	02/20/2020 16:20	GC20 02252014.D	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/25/2020 20:58
a-BHC	ND	0.0010	1	02/25/2020 20:58
b-BHC	ND	0.0010	1	02/25/2020 20:58
d-BHC	ND	0.0010	1	02/25/2020 20:58
g-BHC	ND	0.0010	1	02/25/2020 20:58
Chlordane (Technical)	ND	0.025	1	02/25/2020 20:58
a-Chlordane	ND	0.0010	1	02/25/2020 20:58
g-Chlordane	ND	0.0010	1	02/25/2020 20:58
p,p-DDD	ND	0.0010	1	02/25/2020 20:58
p,p-DDE	ND	0.0010	1	02/25/2020 20:58
p,p-DDT	ND	0.0010	1	02/25/2020 20:58
Dieldrin	ND	0.0010	1	02/25/2020 20:58
Endosulfan I	ND	0.0010	1	02/25/2020 20:58
Endosulfan II	ND	0.0010	1	02/25/2020 20:58
Endosulfan sulfate	ND	0.0010	1	02/25/2020 20:58
Endrin	ND	0.0010	1	02/25/2020 20:58
Endrin aldehyde	ND	0.0010	1	02/25/2020 20:58
Endrin ketone	ND	0.0010	1	02/25/2020 20:58
Heptachlor	ND	0.0010	1	02/25/2020 20:58
Heptachlor epoxide	ND	0.0010	1	02/25/2020 20:58
Hexachlorobenzene	ND	0.010	1	02/25/2020 20:58
Hexachlorocyclopentadiene	ND	0.020	1	02/25/2020 20:58
Methoxychlor	ND	0.0010	1	02/25/2020 20:58
Toxaphene	ND	0.050	1	02/25/2020 20:58
Aroclor1016	ND	0.050	1	02/25/2020 20:58
Aroclor1221	ND	0.050	1	02/25/2020 20:58
Aroclor1232	ND	0.050	1	02/25/2020 20:58
Aroclor1242	ND	0.050	1	02/25/2020 20:58
Aroclor1248	ND	0.050	1	02/25/2020 20:58
Aroclor1254	ND	0.050	1	02/25/2020 20:58
Aroclor1260	ND	0.050	1	02/25/2020 20:58
PCBs, total	ND	0.050	1	02/25/2020 20:58

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	100	69-143	02/25/2020 20:58

Analyst(s): CN

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	GC20 02252015.D	194497

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/25/2020 21:13
a-BHC	ND	0.0010	1	02/25/2020 21:13
b-BHC	ND	0.0010	1	02/25/2020 21:13
d-BHC	ND	0.0010	1	02/25/2020 21:13
g-BHC	ND	0.0010	1	02/25/2020 21:13
Chlordane (Technical)	ND	0.025	1	02/25/2020 21:13
a-Chlordane	ND	0.0010	1	02/25/2020 21:13
g-Chlordane	ND	0.0010	1	02/25/2020 21:13
p,p-DDD	ND	0.0010	1	02/25/2020 21:13
p,p-DDE	ND	0.0010	1	02/25/2020 21:13
p,p-DDT	ND	0.0010	1	02/25/2020 21:13
Dieldrin	ND	0.0010	1	02/25/2020 21:13
Endosulfan I	ND	0.0010	1	02/25/2020 21:13
Endosulfan II	ND	0.0010	1	02/25/2020 21:13
Endosulfan sulfate	ND	0.0010	1	02/25/2020 21:13
Endrin	ND	0.0010	1	02/25/2020 21:13
Endrin aldehyde	ND	0.0010	1	02/25/2020 21:13
Endrin ketone	ND	0.0010	1	02/25/2020 21:13
Heptachlor	ND	0.0010	1	02/25/2020 21:13
Heptachlor epoxide	ND	0.0010	1	02/25/2020 21:13
Hexachlorobenzene	ND	0.010	1	02/25/2020 21:13
Hexachlorocyclopentadiene	ND	0.020	1	02/25/2020 21:13
Methoxychlor	ND	0.0010	1	02/25/2020 21:13
Toxaphene	ND	0.050	1	02/25/2020 21:13
Aroclor1016	ND	0.050	1	02/25/2020 21:13
Aroclor1221	ND	0.050	1	02/25/2020 21:13
Aroclor1232	ND	0.050	1	02/25/2020 21:13
Aroclor1242	ND	0.050	1	02/25/2020 21:13
Aroclor1248	ND	0.050	1	02/25/2020 21:13
Aroclor1254	ND	0.050	1	02/25/2020 21:13
Aroclor1260	ND	0.050	1	02/25/2020 21:13
PCBs, total	ND	0.050	1	02/25/2020 21:13

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	103	69-143	02/25/2020 21:13

Analyst(s): CN

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	GC23 02252061.d	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/26/2020 06:35
a-BHC	ND	0.0010	1	02/26/2020 06:35
b-BHC	ND	0.0010	1	02/26/2020 06:35
d-BHC	ND	0.0010	1	02/26/2020 06:35
g-BHC	ND	0.0010	1	02/26/2020 06:35
Chlordane (Technical)	ND	0.025	1	02/26/2020 06:35
a-Chlordane	ND	0.0010	1	02/26/2020 06:35
g-Chlordane	ND	0.0010	1	02/26/2020 06:35
p,p-DDD	ND	0.0010	1	02/26/2020 06:35
p,p-DDE	ND	0.0010	1	02/26/2020 06:35
p,p-DDT	ND	0.0010	1	02/26/2020 06:35
Dieldrin	ND	0.0010	1	02/26/2020 06:35
Endosulfan I	ND	0.0010	1	02/26/2020 06:35
Endosulfan II	ND	0.0010	1	02/26/2020 06:35
Endosulfan sulfate	ND	0.0010	1	02/26/2020 06:35
Endrin	ND	0.0010	1	02/26/2020 06:35
Endrin aldehyde	ND	0.0010	1	02/26/2020 06:35
Endrin ketone	ND	0.0010	1	02/26/2020 06:35
Heptachlor	ND	0.0010	1	02/26/2020 06:35
Heptachlor epoxide	ND	0.0010	1	02/26/2020 06:35
Hexachlorobenzene	ND	0.010	1	02/26/2020 06:35
Hexachlorocyclopentadiene	ND	0.020	1	02/26/2020 06:35
Methoxychlor	ND	0.0010	1	02/26/2020 06:35
Toxaphene	ND	0.050	1	02/26/2020 06:35
Aroclor1016	ND	0.050	1	02/26/2020 06:35
Aroclor1221	ND	0.050	1	02/26/2020 06:35
Aroclor1232	ND	0.050	1	02/26/2020 06:35
Aroclor1242	ND	0.050	1	02/26/2020 06:35
Aroclor1248	ND	0.050	1	02/26/2020 06:35
Aroclor1254	ND	0.050	1	02/26/2020 06:35
Aroclor1260	ND	0.050	1	02/26/2020 06:35
PCBs, total	ND	0.050	1	02/26/2020 06:35

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	92	69-143	02/26/2020 06:35

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	2002901-019A	Soil	02/21/2020 09:55	GC20 02252016.D	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/25/2020 21:29
a-BHC	ND	0.0010	1	02/25/2020 21:29
b-BHC	ND	0.0010	1	02/25/2020 21:29
d-BHC	ND	0.0010	1	02/25/2020 21:29
g-BHC	ND	0.0010	1	02/25/2020 21:29
Chlordane (Technical)	ND	0.025	1	02/25/2020 21:29
a-Chlordane	ND	0.0010	1	02/25/2020 21:29
g-Chlordane	ND	0.0010	1	02/25/2020 21:29
p,p-DDD	ND	0.0010	1	02/25/2020 21:29
p,p-DDE	ND	0.0010	1	02/25/2020 21:29
p,p-DDT	ND	0.0010	1	02/25/2020 21:29
Dieldrin	ND	0.0010	1	02/25/2020 21:29
Endosulfan I	ND	0.0010	1	02/25/2020 21:29
Endosulfan II	ND	0.0010	1	02/25/2020 21:29
Endosulfan sulfate	ND	0.0010	1	02/25/2020 21:29
Endrin	ND	0.0010	1	02/25/2020 21:29
Endrin aldehyde	ND	0.0010	1	02/25/2020 21:29
Endrin ketone	ND	0.0010	1	02/25/2020 21:29
Heptachlor	ND	0.0010	1	02/25/2020 21:29
Heptachlor epoxide	ND	0.0010	1	02/25/2020 21:29
Hexachlorobenzene	ND	0.010	1	02/25/2020 21:29
Hexachlorocyclopentadiene	ND	0.020	1	02/25/2020 21:29
Methoxychlor	ND	0.0010	1	02/25/2020 21:29
Toxaphene	ND	0.050	1	02/25/2020 21:29
Aroclor1016	ND	0.050	1	02/25/2020 21:29
Aroclor1221	ND	0.050	1	02/25/2020 21:29
Aroclor1232	ND	0.050	1	02/25/2020 21:29
Aroclor1242	ND	0.050	1	02/25/2020 21:29
Aroclor1248	ND	0.050	1	02/25/2020 21:29
Aroclor1254	ND	0.050	1	02/25/2020 21:29
Aroclor1260	ND	0.050	1	02/25/2020 21:29
PCBs, total	ND	0.050	1	02/25/2020 21:29

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	98	69-143	02/25/2020 21:29

Analyst(s): CN

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	2002901-020A	Soil	02/21/2020 10:00	GC20 02252017.D	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/25/2020 21:44
a-BHC	ND	0.0010	1	02/25/2020 21:44
b-BHC	ND	0.0010	1	02/25/2020 21:44
d-BHC	ND	0.0010	1	02/25/2020 21:44
g-BHC	ND	0.0010	1	02/25/2020 21:44
Chlordane (Technical)	ND	0.025	1	02/25/2020 21:44
a-Chlordane	ND	0.0010	1	02/25/2020 21:44
g-Chlordane	ND	0.0010	1	02/25/2020 21:44
p,p-DDD	ND	0.0010	1	02/25/2020 21:44
p,p-DDE	ND	0.0010	1	02/25/2020 21:44
p,p-DDT	ND	0.0010	1	02/25/2020 21:44
Dieldrin	ND	0.0010	1	02/25/2020 21:44
Endosulfan I	ND	0.0010	1	02/25/2020 21:44
Endosulfan II	ND	0.0010	1	02/25/2020 21:44
Endosulfan sulfate	ND	0.0010	1	02/25/2020 21:44
Endrin	ND	0.0010	1	02/25/2020 21:44
Endrin aldehyde	ND	0.0010	1	02/25/2020 21:44
Endrin ketone	ND	0.0010	1	02/25/2020 21:44
Heptachlor	ND	0.0010	1	02/25/2020 21:44
Heptachlor epoxide	ND	0.0010	1	02/25/2020 21:44
Hexachlorobenzene	ND	0.010	1	02/25/2020 21:44
Hexachlorocyclopentadiene	ND	0.020	1	02/25/2020 21:44
Methoxychlor	ND	0.0010	1	02/25/2020 21:44
Toxaphene	ND	0.050	1	02/25/2020 21:44
Aroclor1016	ND	0.050	1	02/25/2020 21:44
Aroclor1221	ND	0.050	1	02/25/2020 21:44
Aroclor1232	ND	0.050	1	02/25/2020 21:44
Aroclor1242	ND	0.050	1	02/25/2020 21:44
Aroclor1248	ND	0.050	1	02/25/2020 21:44
Aroclor1254	ND	0.050	1	02/25/2020 21:44
Aroclor1260	ND	0.050	1	02/25/2020 21:44
PCBs, total	ND	0.050	1	02/25/2020 21:44

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	101	69-143	02/25/2020 21:44

Analyst(s): CN

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	GC20 02252018.D	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/25/2020 21:59
a-BHC	ND	0.0010	1	02/25/2020 21:59
b-BHC	ND	0.0010	1	02/25/2020 21:59
d-BHC	ND	0.0010	1	02/25/2020 21:59
g-BHC	ND	0.0010	1	02/25/2020 21:59
Chlordane (Technical)	ND	0.025	1	02/25/2020 21:59
a-Chlordane	ND	0.0010	1	02/25/2020 21:59
g-Chlordane	ND	0.0010	1	02/25/2020 21:59
p,p-DDD	ND	0.0010	1	02/25/2020 21:59
p,p-DDE	**0.0086**	0.0010	1	02/25/2020 21:59
p,p-DDT	ND	0.0010	1	02/25/2020 21:59
Dieldrin	ND	0.0010	1	02/25/2020 21:59
Endosulfan I	ND	0.0010	1	02/25/2020 21:59
Endosulfan II	ND	0.0010	1	02/25/2020 21:59
Endosulfan sulfate	ND	0.0010	1	02/25/2020 21:59
Endrin	ND	0.0010	1	02/25/2020 21:59
Endrin aldehyde	ND	0.0010	1	02/25/2020 21:59
Endrin ketone	ND	0.0010	1	02/25/2020 21:59
Heptachlor	ND	0.0010	1	02/25/2020 21:59
Heptachlor epoxide	ND	0.0010	1	02/25/2020 21:59
Hexachlorobenzene	ND	0.010	1	02/25/2020 21:59
Hexachlorocyclopentadiene	ND	0.020	1	02/25/2020 21:59
Methoxychlor	ND	0.0010	1	02/25/2020 21:59
Toxaphene	ND	0.050	1	02/25/2020 21:59
Aroclor1016	ND	0.050	1	02/25/2020 21:59
Aroclor1221	ND	0.050	1	02/25/2020 21:59
Aroclor1232	ND	0.050	1	02/25/2020 21:59
Aroclor1242	ND	0.050	1	02/25/2020 21:59
Aroclor1248	ND	0.050	1	02/25/2020 21:59
Aroclor1254	ND	0.050	1	02/25/2020 21:59
Aroclor1260	ND	0.050	1	02/25/2020 21:59
PCBs, total	ND	0.050	1	02/25/2020 21:59

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	100	69-143	02/25/2020 21:59

Analyst(s): CN

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	GC20 02252019.D	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/25/2020 22:13
a-BHC	ND	0.0010	1	02/25/2020 22:13
b-BHC	ND	0.0010	1	02/25/2020 22:13
d-BHC	ND	0.0010	1	02/25/2020 22:13
g-BHC	ND	0.0010	1	02/25/2020 22:13
Chlordane (Technical)	ND	0.025	1	02/25/2020 22:13
a-Chlordane	ND	0.0010	1	02/25/2020 22:13
g-Chlordane	ND	0.0010	1	02/25/2020 22:13
p,p-DDD	ND	0.0010	1	02/25/2020 22:13
p,p-DDE	ND	0.0010	1	02/25/2020 22:13
p,p-DDT	ND	0.0010	1	02/25/2020 22:13
Dieldrin	ND	0.0010	1	02/25/2020 22:13
Endosulfan I	ND	0.0010	1	02/25/2020 22:13
Endosulfan II	ND	0.0010	1	02/25/2020 22:13
Endosulfan sulfate	ND	0.0010	1	02/25/2020 22:13
Endrin	ND	0.0010	1	02/25/2020 22:13
Endrin aldehyde	ND	0.0010	1	02/25/2020 22:13
Endrin ketone	ND	0.0010	1	02/25/2020 22:13
Heptachlor	ND	0.0010	1	02/25/2020 22:13
Heptachlor epoxide	ND	0.0010	1	02/25/2020 22:13
Hexachlorobenzene	ND	0.010	1	02/25/2020 22:13
Hexachlorocyclopentadiene	ND	0.020	1	02/25/2020 22:13
Methoxychlor	ND	0.0010	1	02/25/2020 22:13
Toxaphene	ND	0.050	1	02/25/2020 22:13
Aroclor1016	ND	0.050	1	02/25/2020 22:13
Aroclor1221	ND	0.050	1	02/25/2020 22:13
Aroclor1232	ND	0.050	1	02/25/2020 22:13
Aroclor1242	ND	0.050	1	02/25/2020 22:13
Aroclor1248	ND	0.050	1	02/25/2020 22:13
Aroclor1254	ND	0.050	1	02/25/2020 22:13
Aroclor1260	ND	0.050	1	02/25/2020 22:13
PCBs, total	ND	0.050	1	02/25/2020 22:13

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	98	69-143	02/25/2020 22:13

Analyst(s): CN

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	GC20 02252020.D	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/25/2020 22:29
a-BHC	ND	0.0010	1	02/25/2020 22:29
b-BHC	ND	0.0010	1	02/25/2020 22:29
d-BHC	ND	0.0010	1	02/25/2020 22:29
g-BHC	ND	0.0010	1	02/25/2020 22:29
Chlordane (Technical)	ND	0.025	1	02/25/2020 22:29
a-Chlordane	ND	0.0010	1	02/25/2020 22:29
g-Chlordane	ND	0.0010	1	02/25/2020 22:29
p,p-DDD	ND	0.0010	1	02/25/2020 22:29
p,p-DDE	ND	0.0010	1	02/25/2020 22:29
p,p-DDT	ND	0.0010	1	02/25/2020 22:29
Dieldrin	ND	0.0010	1	02/25/2020 22:29
Endosulfan I	ND	0.0010	1	02/25/2020 22:29
Endosulfan II	ND	0.0010	1	02/25/2020 22:29
Endosulfan sulfate	ND	0.0010	1	02/25/2020 22:29
Endrin	ND	0.0010	1	02/25/2020 22:29
Endrin aldehyde	ND	0.0010	1	02/25/2020 22:29
Endrin ketone	ND	0.0010	1	02/25/2020 22:29
Heptachlor	ND	0.0010	1	02/25/2020 22:29
Heptachlor epoxide	ND	0.0010	1	02/25/2020 22:29
Hexachlorobenzene	ND	0.010	1	02/25/2020 22:29
Hexachlorocyclopentadiene	ND	0.020	1	02/25/2020 22:29
Methoxychlor	ND	0.0010	1	02/25/2020 22:29
Toxaphene	ND	0.050	1	02/25/2020 22:29
Aroclor1016	ND	0.050	1	02/25/2020 22:29
Aroclor1221	ND	0.050	1	02/25/2020 22:29
Aroclor1232	ND	0.050	1	02/25/2020 22:29
Aroclor1242	ND	0.050	1	02/25/2020 22:29
Aroclor1248	ND	0.050	1	02/25/2020 22:29
Aroclor1254	ND	0.050	1	02/25/2020 22:29
Aroclor1260	ND	0.050	1	02/25/2020 22:29
PCBs, total	ND	0.050	1	02/25/2020 22:29

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	96	69-143	02/25/2020 22:29

Analyst(s): CN

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	GC40 02272022.d	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/27/2020 18:21
a-BHC	ND	0.0010	1	02/27/2020 18:21
b-BHC	ND	0.0010	1	02/27/2020 18:21
d-BHC	ND	0.0010	1	02/27/2020 18:21
g-BHC	ND	0.0010	1	02/27/2020 18:21
Chlordane (Technical)	ND	0.025	1	02/27/2020 18:21
a-Chlordane	ND	0.0010	1	02/27/2020 18:21
g-Chlordane	ND	0.0010	1	02/27/2020 18:21
p,p-DDD	ND	0.0010	1	02/27/2020 18:21
p,p-DDE	ND	0.0010	1	02/27/2020 18:21
p,p-DDT	ND	0.0010	1	02/27/2020 18:21
Dieldrin	ND	0.0010	1	02/27/2020 18:21
Endosulfan I	ND	0.0010	1	02/27/2020 18:21
Endosulfan II	ND	0.0010	1	02/27/2020 18:21
Endosulfan sulfate	ND	0.0010	1	02/27/2020 18:21
Endrin	ND	0.0010	1	02/27/2020 18:21
Endrin aldehyde	ND	0.0010	1	02/27/2020 18:21
Endrin ketone	ND	0.0010	1	02/27/2020 18:21
Heptachlor	ND	0.0010	1	02/27/2020 18:21
Heptachlor epoxide	ND	0.0010	1	02/27/2020 18:21
Hexachlorobenzene	ND	0.010	1	02/27/2020 18:21
Hexachlorocyclopentadiene	ND	0.020	1	02/27/2020 18:21
Methoxychlor	ND	0.0010	1	02/27/2020 18:21
Toxaphene	ND	0.050	1	02/27/2020 18:21
Aroclor1016	ND	0.050	1	02/27/2020 18:21
Aroclor1221	ND	0.050	1	02/27/2020 18:21
Aroclor1232	ND	0.050	1	02/27/2020 18:21
Aroclor1242	ND	0.050	1	02/27/2020 18:21
Aroclor1248	ND	0.050	1	02/27/2020 18:21
Aroclor1254	ND	0.050	1	02/27/2020 18:21
Aroclor1260	ND	0.050	1	02/27/2020 18:21
PCBs, total	ND	0.050	1	02/27/2020 18:21

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	92	69-143	02/27/2020 18:21

Analyst(s): CN

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	GC23 02262053.d	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/27/2020 08:23
a-BHC	ND	0.0010	1	02/27/2020 08:23
b-BHC	ND	0.0010	1	02/27/2020 08:23
d-BHC	ND	0.0010	1	02/27/2020 08:23
g-BHC	ND	0.0010	1	02/27/2020 08:23
Chlordane (Technical)	ND	0.025	1	02/27/2020 08:23
a-Chlordane	ND	0.0010	1	02/27/2020 08:23
g-Chlordane	ND	0.0010	1	02/27/2020 08:23
p,p-DDD	ND	0.0010	1	02/27/2020 08:23
p,p-DDE	ND	0.0010	1	02/27/2020 08:23
p,p-DDT	ND	0.0010	1	02/27/2020 08:23
Dieldrin	ND	0.0010	1	02/27/2020 08:23
Endosulfan I	ND	0.0010	1	02/27/2020 08:23
Endosulfan II	ND	0.0010	1	02/27/2020 08:23
Endosulfan sulfate	ND	0.0010	1	02/27/2020 08:23
Endrin	ND	0.0010	1	02/27/2020 08:23
Endrin aldehyde	ND	0.0010	1	02/27/2020 08:23
Endrin ketone	ND	0.0010	1	02/27/2020 08:23
Heptachlor	ND	0.0010	1	02/27/2020 08:23
Heptachlor epoxide	ND	0.0010	1	02/27/2020 08:23
Hexachlorobenzene	ND	0.010	1	02/27/2020 08:23
Hexachlorocyclopentadiene	ND	0.020	1	02/27/2020 08:23
Methoxychlor	ND	0.0010	1	02/27/2020 08:23
Toxaphene	ND	0.050	1	02/27/2020 08:23
Aroclor1016	ND	0.050	1	02/27/2020 08:23
Aroclor1221	ND	0.050	1	02/27/2020 08:23
Aroclor1232	ND	0.050	1	02/27/2020 08:23
Aroclor1242	ND	0.050	1	02/27/2020 08:23
Aroclor1248	ND	0.050	1	02/27/2020 08:23
Aroclor1254	ND	0.050	1	02/27/2020 08:23
Aroclor1260	ND	0.050	1	02/27/2020 08:23
PCBs, total	ND	0.050	1	02/27/2020 08:23

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	79	69-143	02/27/2020 08:23

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	GC23 02262054.d	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/27/2020 08:38
a-BHC	ND	0.0010	1	02/27/2020 08:38
b-BHC	ND	0.0010	1	02/27/2020 08:38
d-BHC	ND	0.0010	1	02/27/2020 08:38
g-BHC	ND	0.0010	1	02/27/2020 08:38
Chlordane (Technical)	ND	0.025	1	02/27/2020 08:38
a-Chlordane	ND	0.0010	1	02/27/2020 08:38
g-Chlordane	ND	0.0010	1	02/27/2020 08:38
p,p-DDD	ND	0.0010	1	02/27/2020 08:38
p,p-DDE	ND	0.0010	1	02/27/2020 08:38
p,p-DDT	ND	0.0010	1	02/27/2020 08:38
Dieldrin	ND	0.0010	1	02/27/2020 08:38
Endosulfan I	ND	0.0010	1	02/27/2020 08:38
Endosulfan II	ND	0.0010	1	02/27/2020 08:38
Endosulfan sulfate	ND	0.0010	1	02/27/2020 08:38
Endrin	ND	0.0010	1	02/27/2020 08:38
Endrin aldehyde	ND	0.0010	1	02/27/2020 08:38
Endrin ketone	ND	0.0010	1	02/27/2020 08:38
Heptachlor	ND	0.0010	1	02/27/2020 08:38
Heptachlor epoxide	ND	0.0010	1	02/27/2020 08:38
Hexachlorobenzene	ND	0.010	1	02/27/2020 08:38
Hexachlorocyclopentadiene	ND	0.020	1	02/27/2020 08:38
Methoxychlor	ND	0.0010	1	02/27/2020 08:38
Toxaphene	ND	0.050	1	02/27/2020 08:38
Aroclor1016	ND	0.050	1	02/27/2020 08:38
Aroclor1221	ND	0.050	1	02/27/2020 08:38
Aroclor1232	ND	0.050	1	02/27/2020 08:38
Aroclor1242	ND	0.050	1	02/27/2020 08:38
Aroclor1248	ND	0.050	1	02/27/2020 08:38
Aroclor1254	ND	0.050	1	02/27/2020 08:38
Aroclor1260	ND	0.050	1	02/27/2020 08:38
PCBs, total	ND	0.050	1	02/27/2020 08:38

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	86	69-143	02/27/2020 08:38

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	GC23 02262066.d	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/27/2020 11:47
a-BHC	ND	0.0010	1	02/27/2020 11:47
b-BHC	ND	0.0010	1	02/27/2020 11:47
d-BHC	ND	0.0010	1	02/27/2020 11:47
g-BHC	ND	0.0010	1	02/27/2020 11:47
Chlordane (Technical)	ND	0.025	1	02/27/2020 11:47
a-Chlordane	ND	0.0010	1	02/27/2020 11:47
g-Chlordane	ND	0.0010	1	02/27/2020 11:47
p,p-DDD	ND	0.0010	1	02/27/2020 11:47
p,p-DDE	ND	0.0010	1	02/27/2020 11:47
p,p-DDT	ND	0.0010	1	02/27/2020 11:47
Dieldrin	ND	0.0010	1	02/27/2020 11:47
Endosulfan I	ND	0.0010	1	02/27/2020 11:47
Endosulfan II	ND	0.0010	1	02/27/2020 11:47
Endosulfan sulfate	ND	0.0010	1	02/27/2020 11:47
Endrin	ND	0.0010	1	02/27/2020 11:47
Endrin aldehyde	ND	0.0010	1	02/27/2020 11:47
Endrin ketone	ND	0.0010	1	02/27/2020 11:47
Heptachlor	ND	0.0010	1	02/27/2020 11:47
Heptachlor epoxide	ND	0.0010	1	02/27/2020 11:47
Hexachlorobenzene	ND	0.010	1	02/27/2020 11:47
Hexachlorocyclopentadiene	ND	0.020	1	02/27/2020 11:47
Methoxychlor	ND	0.0010	1	02/27/2020 11:47
Toxaphene	ND	0.050	1	02/27/2020 11:47
Aroclor1016	ND	0.050	1	02/27/2020 11:47
Aroclor1221	ND	0.050	1	02/27/2020 11:47
Aroclor1232	ND	0.050	1	02/27/2020 11:47
Aroclor1242	ND	0.050	1	02/27/2020 11:47
Aroclor1248	ND	0.050	1	02/27/2020 11:47
Aroclor1254	ND	0.050	1	02/27/2020 11:47
Aroclor1260	ND	0.050	1	02/27/2020 11:47
PCBs, total	ND	0.050	1	02/27/2020 11:47

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	84	69-143	02/27/2020 11:47

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_16-17	2002901-028A	Soil	02/20/2020 11:20	GC23 02262067.d	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/27/2020 12:03
a-BHC	ND	0.0010	1	02/27/2020 12:03
b-BHC	ND	0.0010	1	02/27/2020 12:03
d-BHC	ND	0.0010	1	02/27/2020 12:03
g-BHC	ND	0.0010	1	02/27/2020 12:03
Chlordane (Technical)	ND	0.025	1	02/27/2020 12:03
a-Chlordane	ND	0.0010	1	02/27/2020 12:03
g-Chlordane	ND	0.0010	1	02/27/2020 12:03
p,p-DDD	ND	0.0010	1	02/27/2020 12:03
p,p-DDE	ND	0.0010	1	02/27/2020 12:03
p,p-DDT	ND	0.0010	1	02/27/2020 12:03
Dieldrin	ND	0.0010	1	02/27/2020 12:03
Endosulfan I	ND	0.0010	1	02/27/2020 12:03
Endosulfan II	ND	0.0010	1	02/27/2020 12:03
Endosulfan sulfate	ND	0.0010	1	02/27/2020 12:03
Endrin	ND	0.0010	1	02/27/2020 12:03
Endrin aldehyde	ND	0.0010	1	02/27/2020 12:03
Endrin ketone	ND	0.0010	1	02/27/2020 12:03
Heptachlor	ND	0.0010	1	02/27/2020 12:03
Heptachlor epoxide	ND	0.0010	1	02/27/2020 12:03
Hexachlorobenzene	ND	0.010	1	02/27/2020 12:03
Hexachlorocyclopentadiene	ND	0.020	1	02/27/2020 12:03
Methoxychlor	ND	0.0010	1	02/27/2020 12:03
Toxaphene	ND	0.050	1	02/27/2020 12:03
Aroclor1016	ND	0.050	1	02/27/2020 12:03
Aroclor1221	ND	0.050	1	02/27/2020 12:03
Aroclor1232	ND	0.050	1	02/27/2020 12:03
Aroclor1242	ND	0.050	1	02/27/2020 12:03
Aroclor1248	ND	0.050	1	02/27/2020 12:03
Aroclor1254	ND	0.050	1	02/27/2020 12:03
Aroclor1260	ND	0.050	1	02/27/2020 12:03
PCBs, total	ND	0.050	1	02/27/2020 12:03

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	87	69-143	02/27/2020 12:03

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	GC23 02262068.d	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/27/2020 12:19
a-BHC	ND	0.0010	1	02/27/2020 12:19
b-BHC	ND	0.0010	1	02/27/2020 12:19
d-BHC	ND	0.0010	1	02/27/2020 12:19
g-BHC	ND	0.0010	1	02/27/2020 12:19
Chlordane (Technical)	ND	0.025	1	02/27/2020 12:19
a-Chlordane	ND	0.0010	1	02/27/2020 12:19
g-Chlordane	ND	0.0010	1	02/27/2020 12:19
p,p-DDD	ND	0.0010	1	02/27/2020 12:19
p,p-DDE	ND	0.0010	1	02/27/2020 12:19
p,p-DDT	ND	0.0010	1	02/27/2020 12:19
Dieldrin	ND	0.0010	1	02/27/2020 12:19
Endosulfan I	ND	0.0010	1	02/27/2020 12:19
Endosulfan II	ND	0.0010	1	02/27/2020 12:19
Endosulfan sulfate	ND	0.0010	1	02/27/2020 12:19
Endrin	ND	0.0010	1	02/27/2020 12:19
Endrin aldehyde	ND	0.0010	1	02/27/2020 12:19
Endrin ketone	ND	0.0010	1	02/27/2020 12:19
Heptachlor	ND	0.0010	1	02/27/2020 12:19
Heptachlor epoxide	ND	0.0010	1	02/27/2020 12:19
Hexachlorobenzene	ND	0.010	1	02/27/2020 12:19
Hexachlorocyclopentadiene	ND	0.020	1	02/27/2020 12:19
Methoxychlor	ND	0.0010	1	02/27/2020 12:19
Toxaphene	ND	0.050	1	02/27/2020 12:19
Aroclor1016	ND	0.050	1	02/27/2020 12:19
Aroclor1221	ND	0.050	1	02/27/2020 12:19
Aroclor1232	ND	0.050	1	02/27/2020 12:19
Aroclor1242	ND	0.050	1	02/27/2020 12:19
Aroclor1248	ND	0.050	1	02/27/2020 12:19
Aroclor1254	ND	0.050	1	02/27/2020 12:19
Aroclor1260	ND	0.050	1	02/27/2020 12:19
PCBs, total	ND	0.050	1	02/27/2020 12:19

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	88	69-143	02/27/2020 12:19

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	GC23 02272034.d	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/28/2020 05:05
a-BHC	ND	0.0010	1	02/28/2020 05:05
b-BHC	ND	0.0010	1	02/28/2020 05:05
d-BHC	ND	0.0010	1	02/28/2020 05:05
g-BHC	ND	0.0010	1	02/28/2020 05:05
Chlordane (Technical)	ND	0.025	1	02/28/2020 05:05
a-Chlordane	ND	0.0010	1	02/28/2020 05:05
g-Chlordane	ND	0.0010	1	02/28/2020 05:05
p,p-DDD	ND	0.0010	1	02/28/2020 05:05
p,p-DDE	ND	0.0010	1	02/28/2020 05:05
p,p-DDT	ND	0.0010	1	02/28/2020 05:05
Dieldrin	ND	0.0010	1	02/28/2020 05:05
Endosulfan I	ND	0.0010	1	02/28/2020 05:05
Endosulfan II	ND	0.0010	1	02/28/2020 05:05
Endosulfan sulfate	ND	0.0010	1	02/28/2020 05:05
Endrin	ND	0.0010	1	02/28/2020 05:05
Endrin aldehyde	ND	0.0010	1	02/28/2020 05:05
Endrin ketone	ND	0.0010	1	02/28/2020 05:05
Heptachlor	ND	0.0010	1	02/28/2020 05:05
Heptachlor epoxide	ND	0.0010	1	02/28/2020 05:05
Hexachlorobenzene	ND	0.010	1	02/28/2020 05:05
Hexachlorocyclopentadiene	ND	0.020	1	02/28/2020 05:05
Methoxychlor	ND	0.0010	1	02/28/2020 05:05
Toxaphene	ND	0.050	1	02/28/2020 05:05
Aroclor1016	ND	0.050	1	02/28/2020 05:05
Aroclor1221	ND	0.050	1	02/28/2020 05:05
Aroclor1232	ND	0.050	1	02/28/2020 05:05
Aroclor1242	ND	0.050	1	02/28/2020 05:05
Aroclor1248	ND	0.050	1	02/28/2020 05:05
Aroclor1254	ND	0.050	1	02/28/2020 05:05
Aroclor1260	ND	0.050	1	02/28/2020 05:05
PCBs, total	ND	0.050	1	02/28/2020 05:05

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	73	69-143	02/28/2020 05:05

Analyst(s): LT

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	2002901-031A	Soil	02/20/2020 11:50	GC23 02272035.d	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/28/2020 05:20
a-BHC	ND	0.0010	1	02/28/2020 05:20
b-BHC	ND	0.0010	1	02/28/2020 05:20
d-BHC	ND	0.0010	1	02/28/2020 05:20
g-BHC	ND	0.0010	1	02/28/2020 05:20
Chlordane (Technical)	ND	0.025	1	02/28/2020 05:20
a-Chlordane	ND	0.0010	1	02/28/2020 05:20
g-Chlordane	ND	0.0010	1	02/28/2020 05:20
p,p-DDD	ND	0.0010	1	02/28/2020 05:20
p,p-DDE	ND	0.0010	1	02/28/2020 05:20
p,p-DDT	ND	0.0010	1	02/28/2020 05:20
Dieldrin	ND	0.0010	1	02/28/2020 05:20
Endosulfan I	ND	0.0010	1	02/28/2020 05:20
Endosulfan II	ND	0.0010	1	02/28/2020 05:20
Endosulfan sulfate	ND	0.0010	1	02/28/2020 05:20
Endrin	ND	0.0010	1	02/28/2020 05:20
Endrin aldehyde	ND	0.0010	1	02/28/2020 05:20
Endrin ketone	ND	0.0010	1	02/28/2020 05:20
Heptachlor	ND	0.0010	1	02/28/2020 05:20
Heptachlor epoxide	ND	0.0010	1	02/28/2020 05:20
Hexachlorobenzene	ND	0.010	1	02/28/2020 05:20
Hexachlorocyclopentadiene	ND	0.020	1	02/28/2020 05:20
Methoxychlor	ND	0.0010	1	02/28/2020 05:20
Toxaphene	ND	0.050	1	02/28/2020 05:20
Aroclor1016	ND	0.050	1	02/28/2020 05:20
Aroclor1221	ND	0.050	1	02/28/2020 05:20
Aroclor1232	ND	0.050	1	02/28/2020 05:20
Aroclor1242	ND	0.050	1	02/28/2020 05:20
Aroclor1248	ND	0.050	1	02/28/2020 05:20
Aroclor1254	ND	0.050	1	02/28/2020 05:20
Aroclor1260	ND	0.050	1	02/28/2020 05:20
PCBs, total	ND	0.050	1	02/28/2020 05:20

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	90	69-143	02/28/2020 05:20

Analyst(s): LT

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8081A/8082
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	2002901-032A	Soil	02/20/2020 11:55	GC23 02262071.d	194538

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	02/27/2020 13:19
a-BHC	ND	0.0010	1	02/27/2020 13:19
b-BHC	ND	0.0010	1	02/27/2020 13:19
d-BHC	ND	0.0010	1	02/27/2020 13:19
g-BHC	ND	0.0010	1	02/27/2020 13:19
Chlordane (Technical)	ND	0.025	1	02/27/2020 13:19
a-Chlordane	ND	0.0010	1	02/27/2020 13:19
g-Chlordane	ND	0.0010	1	02/27/2020 13:19
p,p-DDD	ND	0.0010	1	02/27/2020 13:19
p,p-DDE	ND	0.0010	1	02/27/2020 13:19
p,p-DDT	ND	0.0010	1	02/27/2020 13:19
Dieldrin	ND	0.0010	1	02/27/2020 13:19
Endosulfan I	ND	0.0010	1	02/27/2020 13:19
Endosulfan II	ND	0.0010	1	02/27/2020 13:19
Endosulfan sulfate	ND	0.0010	1	02/27/2020 13:19
Endrin	ND	0.0010	1	02/27/2020 13:19
Endrin aldehyde	ND	0.0010	1	02/27/2020 13:19
Endrin ketone	ND	0.0010	1	02/27/2020 13:19
Heptachlor	ND	0.0010	1	02/27/2020 13:19
Heptachlor epoxide	ND	0.0010	1	02/27/2020 13:19
Hexachlorobenzene	ND	0.010	1	02/27/2020 13:19
Hexachlorocyclopentadiene	ND	0.020	1	02/27/2020 13:19
Methoxychlor	ND	0.0010	1	02/27/2020 13:19
Toxaphene	ND	0.050	1	02/27/2020 13:19
Aroclor1016	ND	0.050	1	02/27/2020 13:19
Aroclor1221	ND	0.050	1	02/27/2020 13:19
Aroclor1232	ND	0.050	1	02/27/2020 13:19
Aroclor1242	ND	0.050	1	02/27/2020 13:19
Aroclor1248	ND	0.050	1	02/27/2020 13:19
Aroclor1254	ND	0.050	1	02/27/2020 13:19
Aroclor1260	ND	0.050	1	02/27/2020 13:19
PCBs, total	ND	0.050	1	02/27/2020 13:19

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	79	69-143	02/27/2020 13:19

Analyst(s): CN

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_2-3	2002901-001A	Soil	02/21/2020 13:35	GC38 02282030.D	194475

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 01:27
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 01:27
Benzene	ND	0.0050	1	02/29/2020 01:27
Bromobenzene	ND	0.0050	1	02/29/2020 01:27
Bromochloromethane	ND	0.0050	1	02/29/2020 01:27
Bromodichloromethane	ND	0.0050	1	02/29/2020 01:27
Bromoform	ND	0.0050	1	02/29/2020 01:27
Bromomethane	ND	0.0050	1	02/29/2020 01:27
2-Butanone (MEK)	ND	0.050	1	02/29/2020 01:27
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 01:27
n-Butyl benzene	ND	0.0050	1	02/29/2020 01:27
sec-Butyl benzene	ND	0.0050	1	02/29/2020 01:27
tert-Butyl benzene	ND	0.0050	1	02/29/2020 01:27
Carbon Disulfide	ND	0.0050	1	02/29/2020 01:27
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 01:27
Chlorobenzene	ND	0.0050	1	02/29/2020 01:27
Chloroethane	ND	0.0050	1	02/29/2020 01:27
Chloroform	ND	0.0050	1	02/29/2020 01:27
Chloromethane	ND	0.0050	1	02/29/2020 01:27
2-Chlorotoluene	ND	0.0050	1	02/29/2020 01:27
4-Chlorotoluene	ND	0.0050	1	02/29/2020 01:27
Dibromochloromethane	ND	0.0050	1	02/29/2020 01:27
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 01:27
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 01:27
Dibromomethane	ND	0.0050	1	02/29/2020 01:27
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 01:27
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 01:27
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 01:27
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 01:27
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 01:27
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 01:27
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 01:27
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 01:27
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 01:27
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 01:27
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 01:27
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 01:27

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_2-3	2002901-001A	Soil	02/21/2020 13:35	GC38 02282030.D	194475

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 01:27
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 01:27
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 01:27
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 01:27
Ethylbenzene	ND	0.0050	1	02/29/2020 01:27
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 01:27
Freon 113	ND	0.0050	1	02/29/2020 01:27
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 01:27
Hexachloroethane	ND	0.0050	1	02/29/2020 01:27
2-Hexanone	ND	0.0050	1	02/29/2020 01:27
Isopropylbenzene	ND	0.0050	1	02/29/2020 01:27
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 01:27
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 01:27
Methylene chloride	ND	0.020	1	02/29/2020 01:27
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 01:27
Naphthalene	ND	0.0050	1	02/29/2020 01:27
n-Propyl benzene	ND	0.0050	1	02/29/2020 01:27
Styrene	ND	0.0050	1	02/29/2020 01:27
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 01:27
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 01:27
Tetrachloroethene	ND	0.0050	1	02/29/2020 01:27
Toluene	ND	0.0050	1	02/29/2020 01:27
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 01:27
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 01:27
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 01:27
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 01:27
Trichloroethene	ND	0.0050	1	02/29/2020 01:27
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 01:27
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 01:27
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 01:27
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 01:27
Vinyl Chloride	ND	0.0050	1	02/29/2020 01:27
m,p-Xylene	ND	0.0050	1	02/29/2020 01:27
o-Xylene	ND	0.0050	1	02/29/2020 01:27
Xylenes, Total	ND	0.0050	1	02/29/2020 01:27

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_2-3	2002901-001A	Soil	02/21/2020 13:35	GC38 02282030.D	194475

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	102	66-116		02/29/2020 01:27
Toluene-d8	101	86-110		02/29/2020 01:27
4-BFB	87	71-114		02/29/2020 01:27
Benzene-d6	84	62-122		02/29/2020 01:27
Ethylbenzene-d10	89	69-130		02/29/2020 01:27
1,2-DCB-d4	76	55-108		02/29/2020 01:27

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	GC38 02282031.D	194475

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 02:05
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 02:05
Benzene	ND	0.0050	1	02/29/2020 02:05
Bromobenzene	ND	0.0050	1	02/29/2020 02:05
Bromochloromethane	ND	0.0050	1	02/29/2020 02:05
Bromodichloromethane	ND	0.0050	1	02/29/2020 02:05
Bromoform	ND	0.0050	1	02/29/2020 02:05
Bromomethane	ND	0.0050	1	02/29/2020 02:05
2-Butanone (MEK)	ND	0.050	1	02/29/2020 02:05
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 02:05
n-Butyl benzene	ND	0.0050	1	02/29/2020 02:05
sec-Butyl benzene	ND	0.0050	1	02/29/2020 02:05
tert-Butyl benzene	ND	0.0050	1	02/29/2020 02:05
Carbon Disulfide	ND	0.0050	1	02/29/2020 02:05
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 02:05
Chlorobenzene	ND	0.0050	1	02/29/2020 02:05
Chloroethane	ND	0.0050	1	02/29/2020 02:05
Chloroform	ND	0.0050	1	02/29/2020 02:05
Chloromethane	ND	0.0050	1	02/29/2020 02:05
2-Chlorotoluene	ND	0.0050	1	02/29/2020 02:05
4-Chlorotoluene	ND	0.0050	1	02/29/2020 02:05
Dibromochloromethane	ND	0.0050	1	02/29/2020 02:05
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 02:05
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 02:05
Dibromomethane	ND	0.0050	1	02/29/2020 02:05
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 02:05
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 02:05
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 02:05
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 02:05
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 02:05
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 02:05
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 02:05
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 02:05
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 02:05
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 02:05
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 02:05
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 02:05

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	GC38 02282031.D	194475

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 02:05
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 02:05
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 02:05
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 02:05
Ethylbenzene	ND	0.0050	1	02/29/2020 02:05
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 02:05
Freon 113	ND	0.0050	1	02/29/2020 02:05
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 02:05
Hexachloroethane	ND	0.0050	1	02/29/2020 02:05
2-Hexanone	ND	0.0050	1	02/29/2020 02:05
Isopropylbenzene	ND	0.0050	1	02/29/2020 02:05
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 02:05
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 02:05
Methylene chloride	ND	0.020	1	02/29/2020 02:05
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 02:05
Naphthalene	ND	0.0050	1	02/29/2020 02:05
n-Propyl benzene	ND	0.0050	1	02/29/2020 02:05
Styrene	ND	0.0050	1	02/29/2020 02:05
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 02:05
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 02:05
Tetrachloroethene	ND	0.0050	1	02/29/2020 02:05
Toluene	ND	0.0050	1	02/29/2020 02:05
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 02:05
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 02:05
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 02:05
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 02:05
Trichloroethene	ND	0.0050	1	02/29/2020 02:05
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 02:05
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 02:05
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 02:05
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 02:05
Vinyl Chloride	ND	0.0050	1	02/29/2020 02:05
m,p-Xylene	ND	0.0050	1	02/29/2020 02:05
o-Xylene	ND	0.0050	1	02/29/2020 02:05
Xylenes, Total	ND	0.0050	1	02/29/2020 02:05

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	GC38 02282031.D	194475

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	108	66-116		02/29/2020 02:05
Toluene-d8	102	86-110		02/29/2020 02:05
4-BFB	86	71-114		02/29/2020 02:05
Benzene-d6	89	62-122		02/29/2020 02:05
Ethylbenzene-d10	96	69-130		02/29/2020 02:05
1,2-DCB-d4	79	55-108		02/29/2020 02:05

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	2002901-003A	Soil	02/20/2020 14:00	GC38 02282032.D	194475

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 02:42
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 02:42
Benzene	ND	0.0050	1	02/29/2020 02:42
Bromobenzene	ND	0.0050	1	02/29/2020 02:42
Bromochloromethane	ND	0.0050	1	02/29/2020 02:42
Bromodichloromethane	ND	0.0050	1	02/29/2020 02:42
Bromoform	ND	0.0050	1	02/29/2020 02:42
Bromomethane	ND	0.0050	1	02/29/2020 02:42
2-Butanone (MEK)	ND	0.050	1	02/29/2020 02:42
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 02:42
n-Butyl benzene	ND	0.0050	1	02/29/2020 02:42
sec-Butyl benzene	ND	0.0050	1	02/29/2020 02:42
tert-Butyl benzene	ND	0.0050	1	02/29/2020 02:42
Carbon Disulfide	ND	0.0050	1	02/29/2020 02:42
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 02:42
Chlorobenzene	ND	0.0050	1	02/29/2020 02:42
Chloroethane	ND	0.0050	1	02/29/2020 02:42
Chloroform	ND	0.0050	1	02/29/2020 02:42
Chloromethane	ND	0.0050	1	02/29/2020 02:42
2-Chlorotoluene	ND	0.0050	1	02/29/2020 02:42
4-Chlorotoluene	ND	0.0050	1	02/29/2020 02:42
Dibromochloromethane	ND	0.0050	1	02/29/2020 02:42
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 02:42
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 02:42
Dibromomethane	ND	0.0050	1	02/29/2020 02:42
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 02:42
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 02:42
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 02:42
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 02:42
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 02:42
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 02:42
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 02:42
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 02:42
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 02:42
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 02:42
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 02:42
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 02:42

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	2002901-003A	Soil	02/20/2020 14:00	GC38 02282032.D	194475

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 02:42
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 02:42
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 02:42
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 02:42
Ethylbenzene	ND	0.0050	1	02/29/2020 02:42
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 02:42
Freon 113	ND	0.0050	1	02/29/2020 02:42
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 02:42
Hexachloroethane	ND	0.0050	1	02/29/2020 02:42
2-Hexanone	ND	0.0050	1	02/29/2020 02:42
Isopropylbenzene	ND	0.0050	1	02/29/2020 02:42
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 02:42
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 02:42
Methylene chloride	ND	0.020	1	02/29/2020 02:42
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 02:42
Naphthalene	ND	0.0050	1	02/29/2020 02:42
n-Propyl benzene	ND	0.0050	1	02/29/2020 02:42
Styrene	ND	0.0050	1	02/29/2020 02:42
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 02:42
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 02:42
Tetrachloroethene	ND	0.0050	1	02/29/2020 02:42
Toluene	ND	0.0050	1	02/29/2020 02:42
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 02:42
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 02:42
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 02:42
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 02:42
Trichloroethene	ND	0.0050	1	02/29/2020 02:42
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 02:42
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 02:42
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 02:42
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 02:42
Vinyl Chloride	ND	0.0050	1	02/29/2020 02:42
m,p-Xylene	ND	0.0050	1	02/29/2020 02:42
o-Xylene	ND	0.0050	1	02/29/2020 02:42
Xylenes, Total	ND	0.0050	1	02/29/2020 02:42

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	**2002901-003A**	**Soil**	**02/20/2020 14:00**	**GC38 02282032.D**	**194475**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	98	66-116		02/29/2020 02:42
Toluene-d8	101	86-110		02/29/2020 02:42
4-BFB	88	71-114		02/29/2020 02:42
Benzene-d6	81	62-122		02/29/2020 02:42
Ethylbenzene-d10	94	69-130		02/29/2020 02:42
1,2-DCB-d4	79	55-108		02/29/2020 02:42

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	2002901-004A	Soil	02/20/2020 14:05	GC38 02282033.D	194475

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 03:20
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 03:20
Benzene	ND	0.0050	1	02/29/2020 03:20
Bromobenzene	ND	0.0050	1	02/29/2020 03:20
Bromochloromethane	ND	0.0050	1	02/29/2020 03:20
Bromodichloromethane	ND	0.0050	1	02/29/2020 03:20
Bromoform	ND	0.0050	1	02/29/2020 03:20
Bromomethane	ND	0.0050	1	02/29/2020 03:20
2-Butanone (MEK)	ND	0.050	1	02/29/2020 03:20
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 03:20
n-Butyl benzene	ND	0.0050	1	02/29/2020 03:20
sec-Butyl benzene	ND	0.0050	1	02/29/2020 03:20
tert-Butyl benzene	ND	0.0050	1	02/29/2020 03:20
Carbon Disulfide	ND	0.0050	1	02/29/2020 03:20
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 03:20
Chlorobenzene	ND	0.0050	1	02/29/2020 03:20
Chloroethane	ND	0.0050	1	02/29/2020 03:20
Chloroform	ND	0.0050	1	02/29/2020 03:20
Chloromethane	ND	0.0050	1	02/29/2020 03:20
2-Chlorotoluene	ND	0.0050	1	02/29/2020 03:20
4-Chlorotoluene	ND	0.0050	1	02/29/2020 03:20
Dibromochloromethane	ND	0.0050	1	02/29/2020 03:20
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 03:20
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 03:20
Dibromomethane	ND	0.0050	1	02/29/2020 03:20
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 03:20
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 03:20
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 03:20
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 03:20
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 03:20
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 03:20
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 03:20
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 03:20
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 03:20
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 03:20
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 03:20
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 03:20

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	2002901-004A	Soil	02/20/2020 14:05	GC38 02282033.D	194475

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 03:20
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 03:20
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 03:20
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 03:20
Ethylbenzene	ND	0.0050	1	02/29/2020 03:20
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 03:20
Freon 113	ND	0.0050	1	02/29/2020 03:20
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 03:20
Hexachloroethane	ND	0.0050	1	02/29/2020 03:20
2-Hexanone	ND	0.0050	1	02/29/2020 03:20
Isopropylbenzene	ND	0.0050	1	02/29/2020 03:20
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 03:20
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 03:20
Methylene chloride	ND	0.020	1	02/29/2020 03:20
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 03:20
Naphthalene	ND	0.0050	1	02/29/2020 03:20
n-Propyl benzene	ND	0.0050	1	02/29/2020 03:20
Styrene	ND	0.0050	1	02/29/2020 03:20
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 03:20
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 03:20
Tetrachloroethene	ND	0.0050	1	02/29/2020 03:20
Toluene	ND	0.0050	1	02/29/2020 03:20
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 03:20
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 03:20
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 03:20
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 03:20
Trichloroethene	ND	0.0050	1	02/29/2020 03:20
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 03:20
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 03:20
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 03:20
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 03:20
Vinyl Chloride	ND	0.0050	1	02/29/2020 03:20
m,p-Xylene	ND	0.0050	1	02/29/2020 03:20
o-Xylene	ND	0.0050	1	02/29/2020 03:20
Xylenes, Total	ND	0.0050	1	02/29/2020 03:20

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	**2002901-004A**	**Soil**	**02/20/2020 14:05**	**GC38 02282033.D**	**194475**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	98	66-116		02/29/2020 03:20
Toluene-d8	101	86-110		02/29/2020 03:20
4-BFB	85	71-114		02/29/2020 03:20
Benzene-d6	78	62-122		02/29/2020 03:20
Ethylbenzene-d10	91	69-130		02/29/2020 03:20
1,2-DCB-d4	77	55-108		02/29/2020 03:20

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	GC38 02282034.D	194475

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 03:57
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 03:57
Benzene	ND	0.0050	1	02/29/2020 03:57
Bromobenzene	ND	0.0050	1	02/29/2020 03:57
Bromochloromethane	ND	0.0050	1	02/29/2020 03:57
Bromodichloromethane	ND	0.0050	1	02/29/2020 03:57
Bromoform	ND	0.0050	1	02/29/2020 03:57
Bromomethane	ND	0.0050	1	02/29/2020 03:57
2-Butanone (MEK)	ND	0.050	1	02/29/2020 03:57
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 03:57
n-Butyl benzene	ND	0.0050	1	02/29/2020 03:57
sec-Butyl benzene	ND	0.0050	1	02/29/2020 03:57
tert-Butyl benzene	ND	0.0050	1	02/29/2020 03:57
Carbon Disulfide	ND	0.0050	1	02/29/2020 03:57
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 03:57
Chlorobenzene	ND	0.0050	1	02/29/2020 03:57
Chloroethane	ND	0.0050	1	02/29/2020 03:57
Chloroform	ND	0.0050	1	02/29/2020 03:57
Chloromethane	ND	0.0050	1	02/29/2020 03:57
2-Chlorotoluene	ND	0.0050	1	02/29/2020 03:57
4-Chlorotoluene	ND	0.0050	1	02/29/2020 03:57
Dibromochloromethane	ND	0.0050	1	02/29/2020 03:57
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 03:57
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 03:57
Dibromomethane	ND	0.0050	1	02/29/2020 03:57
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 03:57
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 03:57
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 03:57
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 03:57
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 03:57
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 03:57
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 03:57
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 03:57
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 03:57
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 03:57
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 03:57
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 03:57

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	GC38 02282034.D	194475

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 03:57
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 03:57
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 03:57
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 03:57
Ethylbenzene	ND	0.0050	1	02/29/2020 03:57
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 03:57
Freon 113	ND	0.0050	1	02/29/2020 03:57
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 03:57
Hexachloroethane	ND	0.0050	1	02/29/2020 03:57
2-Hexanone	ND	0.0050	1	02/29/2020 03:57
Isopropylbenzene	ND	0.0050	1	02/29/2020 03:57
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 03:57
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 03:57
Methylene chloride	ND	0.020	1	02/29/2020 03:57
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 03:57
Naphthalene	ND	0.0050	1	02/29/2020 03:57
n-Propyl benzene	ND	0.0050	1	02/29/2020 03:57
Styrene	ND	0.0050	1	02/29/2020 03:57
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 03:57
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 03:57
Tetrachloroethene	ND	0.0050	1	02/29/2020 03:57
Toluene	ND	0.0050	1	02/29/2020 03:57
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 03:57
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 03:57
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 03:57
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 03:57
Trichloroethene	ND	0.0050	1	02/29/2020 03:57
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 03:57
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 03:57
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 03:57
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 03:57
Vinyl Chloride	ND	0.0050	1	02/29/2020 03:57
m,p-Xylene	ND	0.0050	1	02/29/2020 03:57
o-Xylene	ND	0.0050	1	02/29/2020 03:57
Xylenes, Total	ND	0.0050	1	02/29/2020 03:57

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	GC38 02282034.D	194475

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	99	66-116		02/29/2020 03:57
Toluene-d8	101	86-110		02/29/2020 03:57
4-BFB	86	71-114		02/29/2020 03:57
Benzene-d6	77	62-122		02/29/2020 03:57
Ethylbenzene-d10	89	69-130		02/29/2020 03:57
1,2-DCB-d4	75	55-108		02/29/2020 03:57

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_5-6	2002901-006A	Soil	02/20/2020 14:25	GC10 02292013.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 19:21
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 19:21
Benzene	ND	0.0050	1	02/29/2020 19:21
Bromobenzene	ND	0.0050	1	02/29/2020 19:21
Bromochloromethane	ND	0.0050	1	02/29/2020 19:21
Bromodichloromethane	ND	0.0050	1	02/29/2020 19:21
Bromoform	ND	0.0050	1	02/29/2020 19:21
Bromomethane	ND	0.0050	1	02/29/2020 19:21
2-Butanone (MEK)	ND	0.050	1	02/29/2020 19:21
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 19:21
n-Butyl benzene	ND	0.0050	1	02/29/2020 19:21
sec-Butyl benzene	ND	0.0050	1	02/29/2020 19:21
tert-Butyl benzene	ND	0.0050	1	02/29/2020 19:21
Carbon Disulfide	ND	0.0050	1	02/29/2020 19:21
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 19:21
Chlorobenzene	ND	0.0050	1	02/29/2020 19:21
Chloroethane	ND	0.0050	1	02/29/2020 19:21
Chloroform	ND	0.0050	1	02/29/2020 19:21
Chloromethane	ND	0.0050	1	02/29/2020 19:21
2-Chlorotoluene	ND	0.0050	1	02/29/2020 19:21
4-Chlorotoluene	ND	0.0050	1	02/29/2020 19:21
Dibromochloromethane	ND	0.0050	1	02/29/2020 19:21
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 19:21
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 19:21
Dibromomethane	ND	0.0050	1	02/29/2020 19:21
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 19:21
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 19:21
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 19:21
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 19:21
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 19:21
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 19:21
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 19:21
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 19:21
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 19:21
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 19:21
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 19:21
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 19:21

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_5-6	2002901-006A	Soil	02/20/2020 14:25	GC10 02292013.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 19:21
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 19:21
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 19:21
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 19:21
Ethylbenzene	ND	0.0050	1	02/29/2020 19:21
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 19:21
Freon 113	ND	0.0050	1	02/29/2020 19:21
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 19:21
Hexachloroethane	ND	0.0050	1	02/29/2020 19:21
2-Hexanone	ND	0.0050	1	02/29/2020 19:21
Isopropylbenzene	ND	0.0050	1	02/29/2020 19:21
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 19:21
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 19:21
Methylene chloride	ND	0.020	1	02/29/2020 19:21
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 19:21
Naphthalene	ND	0.0050	1	02/29/2020 19:21
n-Propyl benzene	ND	0.0050	1	02/29/2020 19:21
Styrene	ND	0.0050	1	02/29/2020 19:21
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 19:21
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 19:21
Tetrachloroethene	ND	0.0050	1	02/29/2020 19:21
Toluene	ND	0.0050	1	02/29/2020 19:21
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 19:21
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 19:21
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 19:21
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 19:21
Trichloroethene	ND	0.0050	1	02/29/2020 19:21
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 19:21
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 19:21
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 19:21
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 19:21
Vinyl Chloride	ND	0.0050	1	02/29/2020 19:21
m,p-Xylene	ND	0.0050	1	02/29/2020 19:21
o-Xylene	ND	0.0050	1	02/29/2020 19:21
Xylenes, Total	ND	0.0050	1	02/29/2020 19:21

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_5-6	2002901-006A	Soil	02/20/2020 14:25	GC10 02292013.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	88	66-116		02/29/2020 19:21
Toluene-d8	105	86-110		02/29/2020 19:21
4-BFB	100	71-114		02/29/2020 19:21
Benzene-d6	73	62-122		02/29/2020 19:21
Ethylbenzene-d10	85	69-130		02/29/2020 19:21
1,2-DCB-d4	71	55-108		02/29/2020 19:21

Analyst(s): TK

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	2002901-007A	Soil	02/20/2020 14:35	GC38 02282035.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 04:34
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 04:34
Benzene	ND	0.0050	1	02/29/2020 04:34
Bromobenzene	ND	0.0050	1	02/29/2020 04:34
Bromochloromethane	ND	0.0050	1	02/29/2020 04:34
Bromodichloromethane	ND	0.0050	1	02/29/2020 04:34
Bromoform	ND	0.0050	1	02/29/2020 04:34
Bromomethane	ND	0.0050	1	02/29/2020 04:34
2-Butanone (MEK)	ND	0.050	1	02/29/2020 04:34
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 04:34
n-Butyl benzene	ND	0.0050	1	02/29/2020 04:34
sec-Butyl benzene	ND	0.0050	1	02/29/2020 04:34
tert-Butyl benzene	ND	0.0050	1	02/29/2020 04:34
Carbon Disulfide	ND	0.0050	1	02/29/2020 04:34
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 04:34
Chlorobenzene	ND	0.0050	1	02/29/2020 04:34
Chloroethane	ND	0.0050	1	02/29/2020 04:34
Chloroform	ND	0.0050	1	02/29/2020 04:34
Chloromethane	ND	0.0050	1	02/29/2020 04:34
2-Chlorotoluene	ND	0.0050	1	02/29/2020 04:34
4-Chlorotoluene	ND	0.0050	1	02/29/2020 04:34
Dibromochloromethane	ND	0.0050	1	02/29/2020 04:34
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 04:34
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 04:34
Dibromomethane	ND	0.0050	1	02/29/2020 04:34
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 04:34
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 04:34
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 04:34
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 04:34
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 04:34
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 04:34
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 04:34
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 04:34
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 04:34
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 04:34
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 04:34
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 04:34

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	2002901-007A	Soil	02/20/2020 14:35	GC38 02282035.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 04:34
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 04:34
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 04:34
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 04:34
Ethylbenzene	ND	0.0050	1	02/29/2020 04:34
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 04:34
Freon 113	ND	0.0050	1	02/29/2020 04:34
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 04:34
Hexachloroethane	ND	0.0050	1	02/29/2020 04:34
2-Hexanone	ND	0.0050	1	02/29/2020 04:34
Isopropylbenzene	ND	0.0050	1	02/29/2020 04:34
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 04:34
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 04:34
Methylene chloride	ND	0.020	1	02/29/2020 04:34
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 04:34
Naphthalene	ND	0.0050	1	02/29/2020 04:34
n-Propyl benzene	ND	0.0050	1	02/29/2020 04:34
Styrene	ND	0.0050	1	02/29/2020 04:34
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 04:34
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 04:34
Tetrachloroethene	ND	0.0050	1	02/29/2020 04:34
Toluene	ND	0.0050	1	02/29/2020 04:34
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 04:34
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 04:34
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 04:34
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 04:34
Trichloroethene	ND	0.0050	1	02/29/2020 04:34
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 04:34
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 04:34
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 04:34
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 04:34
Vinyl Chloride	ND	0.0050	1	02/29/2020 04:34
m,p-Xylene	ND	0.0050	1	02/29/2020 04:34
o-Xylene	ND	0.0050	1	02/29/2020 04:34
Xylenes, Total	ND	0.0050	1	02/29/2020 04:34

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	**2002901-007A**	**Soil**	**02/20/2020 14:35**	**GC38 02282035.D**	**194541**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	99	66-116		02/29/2020 04:34
Toluene-d8	101	86-110		02/29/2020 04:34
4-BFB	86	71-114		02/29/2020 04:34
Benzene-d6	80	62-122		02/29/2020 04:34
Ethylbenzene-d10	94	69-130		02/29/2020 04:34
1,2-DCB-d4	78	55-108		02/29/2020 04:34

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	2002901-008A	Soil	02/20/2020 14:40	GC38 02282036.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 05:12
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 05:12
Benzene	ND	0.0050	1	02/29/2020 05:12
Bromobenzene	ND	0.0050	1	02/29/2020 05:12
Bromochloromethane	ND	0.0050	1	02/29/2020 05:12
Bromodichloromethane	ND	0.0050	1	02/29/2020 05:12
Bromoform	ND	0.0050	1	02/29/2020 05:12
Bromomethane	ND	0.0050	1	02/29/2020 05:12
2-Butanone (MEK)	ND	0.050	1	02/29/2020 05:12
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 05:12
n-Butyl benzene	ND	0.0050	1	02/29/2020 05:12
sec-Butyl benzene	ND	0.0050	1	02/29/2020 05:12
tert-Butyl benzene	ND	0.0050	1	02/29/2020 05:12
Carbon Disulfide	ND	0.0050	1	02/29/2020 05:12
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 05:12
Chlorobenzene	ND	0.0050	1	02/29/2020 05:12
Chloroethane	ND	0.0050	1	02/29/2020 05:12
Chloroform	ND	0.0050	1	02/29/2020 05:12
Chloromethane	ND	0.0050	1	02/29/2020 05:12
2-Chlorotoluene	ND	0.0050	1	02/29/2020 05:12
4-Chlorotoluene	ND	0.0050	1	02/29/2020 05:12
Dibromochloromethane	ND	0.0050	1	02/29/2020 05:12
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 05:12
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 05:12
Dibromomethane	ND	0.0050	1	02/29/2020 05:12
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 05:12
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 05:12
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 05:12
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 05:12
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 05:12
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 05:12
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 05:12
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 05:12
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 05:12
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 05:12
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 05:12
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 05:12

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	2002901-008A	Soil	02/20/2020 14:40	GC38 02282036.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 05:12
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 05:12
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 05:12
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 05:12
Ethylbenzene	ND	0.0050	1	02/29/2020 05:12
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 05:12
Freon 113	ND	0.0050	1	02/29/2020 05:12
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 05:12
Hexachloroethane	ND	0.0050	1	02/29/2020 05:12
2-Hexanone	ND	0.0050	1	02/29/2020 05:12
Isopropylbenzene	ND	0.0050	1	02/29/2020 05:12
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 05:12
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 05:12
Methylene chloride	ND	0.020	1	02/29/2020 05:12
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 05:12
Naphthalene	ND	0.0050	1	02/29/2020 05:12
n-Propyl benzene	ND	0.0050	1	02/29/2020 05:12
Styrene	ND	0.0050	1	02/29/2020 05:12
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 05:12
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 05:12
Tetrachloroethene	ND	0.0050	1	02/29/2020 05:12
Toluene	ND	0.0050	1	02/29/2020 05:12
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 05:12
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 05:12
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 05:12
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 05:12
Trichloroethene	ND	0.0050	1	02/29/2020 05:12
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 05:12
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 05:12
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 05:12
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 05:12
Vinyl Chloride	ND	0.0050	1	02/29/2020 05:12
m,p-Xylene	ND	0.0050	1	02/29/2020 05:12
o-Xylene	ND	0.0050	1	02/29/2020 05:12
Xylenes, Total	ND	0.0050	1	02/29/2020 05:12

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	**2002901-008A**	**Soil**	**02/20/2020 14:40**	**GC38 02282036.D**	**194541**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	99	66-116		02/29/2020 05:12
Toluene-d8	102	86-110		02/29/2020 05:12
4-BFB	87	71-114		02/29/2020 05:12
Benzene-d6	82	62-122		02/29/2020 05:12
Ethylbenzene-d10	95	69-130		02/29/2020 05:12
1,2-DCB-d4	78	55-108		02/29/2020 05:12

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_2-3	2002901-009A	Soil	02/20/2020 15:25	GC38 02282037.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 05:49
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 05:49
Benzene	ND	0.0050	1	02/29/2020 05:49
Bromobenzene	ND	0.0050	1	02/29/2020 05:49
Bromochloromethane	ND	0.0050	1	02/29/2020 05:49
Bromodichloromethane	ND	0.0050	1	02/29/2020 05:49
Bromoform	ND	0.0050	1	02/29/2020 05:49
Bromomethane	ND	0.0050	1	02/29/2020 05:49
2-Butanone (MEK)	ND	0.050	1	02/29/2020 05:49
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 05:49
n-Butyl benzene	ND	0.0050	1	02/29/2020 05:49
sec-Butyl benzene	ND	0.0050	1	02/29/2020 05:49
tert-Butyl benzene	ND	0.0050	1	02/29/2020 05:49
Carbon Disulfide	ND	0.0050	1	02/29/2020 05:49
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 05:49
Chlorobenzene	ND	0.0050	1	02/29/2020 05:49
Chloroethane	ND	0.0050	1	02/29/2020 05:49
Chloroform	ND	0.0050	1	02/29/2020 05:49
Chloromethane	ND	0.0050	1	02/29/2020 05:49
2-Chlorotoluene	ND	0.0050	1	02/29/2020 05:49
4-Chlorotoluene	ND	0.0050	1	02/29/2020 05:49
Dibromochloromethane	ND	0.0050	1	02/29/2020 05:49
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 05:49
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 05:49
Dibromomethane	ND	0.0050	1	02/29/2020 05:49
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 05:49
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 05:49
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 05:49
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 05:49
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 05:49
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 05:49
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 05:49
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 05:49
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 05:49
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 05:49
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 05:49
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 05:49

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_2-3	2002901-009A	Soil	02/20/2020 15:25	GC38 02282037.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 05:49
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 05:49
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 05:49
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 05:49
Ethylbenzene	ND	0.0050	1	02/29/2020 05:49
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 05:49
Freon 113	ND	0.0050	1	02/29/2020 05:49
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 05:49
Hexachloroethane	ND	0.0050	1	02/29/2020 05:49
2-Hexanone	ND	0.0050	1	02/29/2020 05:49
Isopropylbenzene	ND	0.0050	1	02/29/2020 05:49
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 05:49
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 05:49
Methylene chloride	ND	0.020	1	02/29/2020 05:49
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 05:49
Naphthalene	ND	0.0050	1	02/29/2020 05:49
n-Propyl benzene	ND	0.0050	1	02/29/2020 05:49
Styrene	ND	0.0050	1	02/29/2020 05:49
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 05:49
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 05:49
Tetrachloroethene	ND	0.0050	1	02/29/2020 05:49
Toluene	ND	0.0050	1	02/29/2020 05:49
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 05:49
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 05:49
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 05:49
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 05:49
Trichloroethene	ND	0.0050	1	02/29/2020 05:49
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 05:49
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 05:49
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 05:49
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 05:49
Vinyl Chloride	ND	0.0050	1	02/29/2020 05:49
m,p-Xylene	ND	0.0050	1	02/29/2020 05:49
o-Xylene	ND	0.0050	1	02/29/2020 05:49
Xylenes, Total	ND	0.0050	1	02/29/2020 05:49

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_2-3	2002901-009A	Soil	02/20/2020 15:25	GC38 02282037.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	103	66-116		02/29/2020 05:49
Toluene-d8	100	86-110		02/29/2020 05:49
4-BFB	85	71-114		02/29/2020 05:49
Benzene-d6	84	62-122		02/29/2020 05:49
Ethylbenzene-d10	89	69-130		02/29/2020 05:49
1,2-DCB-d4	75	55-108		02/29/2020 05:49

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	GC38 02282038.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 06:27
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 06:27
Benzene	ND	0.0050	1	02/29/2020 06:27
Bromobenzene	ND	0.0050	1	02/29/2020 06:27
Bromochloromethane	ND	0.0050	1	02/29/2020 06:27
Bromodichloromethane	ND	0.0050	1	02/29/2020 06:27
Bromoform	ND	0.0050	1	02/29/2020 06:27
Bromomethane	ND	0.0050	1	02/29/2020 06:27
2-Butanone (MEK)	ND	0.050	1	02/29/2020 06:27
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 06:27
n-Butyl benzene	ND	0.0050	1	02/29/2020 06:27
sec-Butyl benzene	ND	0.0050	1	02/29/2020 06:27
tert-Butyl benzene	ND	0.0050	1	02/29/2020 06:27
Carbon Disulfide	ND	0.0050	1	02/29/2020 06:27
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 06:27
Chlorobenzene	ND	0.0050	1	02/29/2020 06:27
Chloroethane	ND	0.0050	1	02/29/2020 06:27
Chloroform	ND	0.0050	1	02/29/2020 06:27
Chloromethane	ND	0.0050	1	02/29/2020 06:27
2-Chlorotoluene	ND	0.0050	1	02/29/2020 06:27
4-Chlorotoluene	ND	0.0050	1	02/29/2020 06:27
Dibromochloromethane	ND	0.0050	1	02/29/2020 06:27
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 06:27
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 06:27
Dibromomethane	ND	0.0050	1	02/29/2020 06:27
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 06:27
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 06:27
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 06:27
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 06:27
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 06:27
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 06:27
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 06:27
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 06:27
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 06:27
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 06:27
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 06:27
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 06:27

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	GC38 02282038.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 06:27
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 06:27
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 06:27
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 06:27
Ethylbenzene	ND	0.0050	1	02/29/2020 06:27
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 06:27
Freon 113	ND	0.0050	1	02/29/2020 06:27
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 06:27
Hexachloroethane	ND	0.0050	1	02/29/2020 06:27
2-Hexanone	ND	0.0050	1	02/29/2020 06:27
Isopropylbenzene	ND	0.0050	1	02/29/2020 06:27
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 06:27
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 06:27
Methylene chloride	ND	0.020	1	02/29/2020 06:27
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 06:27
Naphthalene	ND	0.0050	1	02/29/2020 06:27
n-Propyl benzene	ND	0.0050	1	02/29/2020 06:27
Styrene	ND	0.0050	1	02/29/2020 06:27
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 06:27
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 06:27
Tetrachloroethene	ND	0.0050	1	02/29/2020 06:27
Toluene	ND	0.0050	1	02/29/2020 06:27
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 06:27
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 06:27
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 06:27
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 06:27
Trichloroethene	ND	0.0050	1	02/29/2020 06:27
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 06:27
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 06:27
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 06:27
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 06:27
Vinyl Chloride	ND	0.0050	1	02/29/2020 06:27
m,p-Xylene	ND	0.0050	1	02/29/2020 06:27
o-Xylene	ND	0.0050	1	02/29/2020 06:27
Xylenes, Total	ND	0.0050	1	02/29/2020 06:27

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	GC38 02282038.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	99	66-116		02/29/2020 06:27
Toluene-d8	101	86-110		02/29/2020 06:27
4-BFB	85	71-114		02/29/2020 06:27
Benzene-d6	81	62-122		02/29/2020 06:27
Ethylbenzene-d10	93	69-130		02/29/2020 06:27
1,2-DCB-d4	76	55-108		02/29/2020 06:27

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	2002901-011A	Soil	02/20/2020 15:35	GC18 02282033.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 04:15
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 04:15
Benzene	ND	0.0050	1	02/29/2020 04:15
Bromobenzene	ND	0.0050	1	02/29/2020 04:15
Bromochloromethane	ND	0.0050	1	02/29/2020 04:15
Bromodichloromethane	ND	0.0050	1	02/29/2020 04:15
Bromoform	ND	0.0050	1	02/29/2020 04:15
Bromomethane	ND	0.0050	1	02/29/2020 04:15
2-Butanone (MEK)	ND	0.050	1	02/29/2020 04:15
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 04:15
n-Butyl benzene	ND	0.0050	1	02/29/2020 04:15
sec-Butyl benzene	ND	0.0050	1	02/29/2020 04:15
tert-Butyl benzene	ND	0.0050	1	02/29/2020 04:15
Carbon Disulfide	ND	0.0050	1	02/29/2020 04:15
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 04:15
Chlorobenzene	ND	0.0050	1	02/29/2020 04:15
Chloroethane	ND	0.0050	1	02/29/2020 04:15
Chloroform	ND	0.0050	1	02/29/2020 04:15
Chloromethane	ND	0.0050	1	02/29/2020 04:15
2-Chlorotoluene	ND	0.0050	1	02/29/2020 04:15
4-Chlorotoluene	ND	0.0050	1	02/29/2020 04:15
Dibromochloromethane	ND	0.0050	1	02/29/2020 04:15
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 04:15
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 04:15
Dibromomethane	ND	0.0050	1	02/29/2020 04:15
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 04:15
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 04:15
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 04:15
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 04:15
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 04:15
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 04:15
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 04:15
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 04:15
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 04:15
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 04:15
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 04:15
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 04:15

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	2002901-011A	Soil	02/20/2020 15:35	GC18 02282033.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 04:15
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 04:15
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 04:15
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 04:15
Ethylbenzene	ND	0.0050	1	02/29/2020 04:15
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 04:15
Freon 113	ND	0.0050	1	02/29/2020 04:15
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 04:15
Hexachloroethane	ND	0.0050	1	02/29/2020 04:15
2-Hexanone	ND	0.0050	1	02/29/2020 04:15
Isopropylbenzene	ND	0.0050	1	02/29/2020 04:15
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 04:15
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 04:15
Methylene chloride	ND	0.020	1	02/29/2020 04:15
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 04:15
Naphthalene	ND	0.0050	1	02/29/2020 04:15
n-Propyl benzene	ND	0.0050	1	02/29/2020 04:15
Styrene	ND	0.0050	1	02/29/2020 04:15
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 04:15
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 04:15
Tetrachloroethene	ND	0.0050	1	02/29/2020 04:15
Toluene	ND	0.0050	1	02/29/2020 04:15
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 04:15
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 04:15
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 04:15
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 04:15
Trichloroethene	ND	0.0050	1	02/29/2020 04:15
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 04:15
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 04:15
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 04:15
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 04:15
Vinyl Chloride	ND	0.0050	1	02/29/2020 04:15
m,p-Xylene	ND	0.0050	1	02/29/2020 04:15
o-Xylene	ND	0.0050	1	02/29/2020 04:15
Xylenes, Total	ND	0.0050	1	02/29/2020 04:15

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	**2002901-011A**	**Soil**	**02/20/2020 15:35**	**GC18 02282033.D**	**194541**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	88	66-116		02/29/2020 04:15
Toluene-d8	101	86-110		02/29/2020 04:15
4-BFB	77	71-114		02/29/2020 04:15
Benzene-d6	86	62-122		02/29/2020 04:15
Ethylbenzene-d10	100	69-130		02/29/2020 04:15
1,2-DCB-d4	77	55-108		02/29/2020 04:15

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	GC18 02282034.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 04:55
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 04:55
Benzene	ND	0.0050	1	02/29/2020 04:55
Bromobenzene	ND	0.0050	1	02/29/2020 04:55
Bromochloromethane	ND	0.0050	1	02/29/2020 04:55
Bromodichloromethane	ND	0.0050	1	02/29/2020 04:55
Bromoform	ND	0.0050	1	02/29/2020 04:55
Bromomethane	ND	0.0050	1	02/29/2020 04:55
2-Butanone (MEK)	ND	0.050	1	02/29/2020 04:55
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 04:55
n-Butyl benzene	ND	0.0050	1	02/29/2020 04:55
sec-Butyl benzene	ND	0.0050	1	02/29/2020 04:55
tert-Butyl benzene	ND	0.0050	1	02/29/2020 04:55
Carbon Disulfide	ND	0.0050	1	02/29/2020 04:55
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 04:55
Chlorobenzene	ND	0.0050	1	02/29/2020 04:55
Chloroethane	ND	0.0050	1	02/29/2020 04:55
Chloroform	ND	0.0050	1	02/29/2020 04:55
Chloromethane	ND	0.0050	1	02/29/2020 04:55
2-Chlorotoluene	ND	0.0050	1	02/29/2020 04:55
4-Chlorotoluene	ND	0.0050	1	02/29/2020 04:55
Dibromochloromethane	ND	0.0050	1	02/29/2020 04:55
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 04:55
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 04:55
Dibromomethane	ND	0.0050	1	02/29/2020 04:55
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 04:55
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 04:55
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 04:55
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 04:55
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 04:55
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 04:55
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 04:55
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 04:55
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 04:55
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 04:55
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 04:55
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 04:55

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	GC18 02282034.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 04:55
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 04:55
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 04:55
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 04:55
Ethylbenzene	ND	0.0050	1	02/29/2020 04:55
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 04:55
Freon 113	ND	0.0050	1	02/29/2020 04:55
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 04:55
Hexachloroethane	ND	0.0050	1	02/29/2020 04:55
2-Hexanone	ND	0.0050	1	02/29/2020 04:55
Isopropylbenzene	ND	0.0050	1	02/29/2020 04:55
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 04:55
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 04:55
Methylene chloride	ND	0.020	1	02/29/2020 04:55
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 04:55
Naphthalene	ND	0.0050	1	02/29/2020 04:55
n-Propyl benzene	ND	0.0050	1	02/29/2020 04:55
Styrene	ND	0.0050	1	02/29/2020 04:55
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 04:55
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 04:55
Tetrachloroethene	ND	0.0050	1	02/29/2020 04:55
Toluene	ND	0.0050	1	02/29/2020 04:55
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 04:55
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 04:55
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 04:55
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 04:55
Trichloroethene	ND	0.0050	1	02/29/2020 04:55
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 04:55
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 04:55
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 04:55
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 04:55
Vinyl Chloride	ND	0.0050	1	02/29/2020 04:55
m,p-Xylene	ND	0.0050	1	02/29/2020 04:55
o-Xylene	ND	0.0050	1	02/29/2020 04:55
Xylenes, Total	ND	0.0050	1	02/29/2020 04:55

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	GC18 02282034.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	88	66-116		02/29/2020 04:55
Toluene-d8	101	86-110		02/29/2020 04:55
4-BFB	75	71-114		02/29/2020 04:55
Benzene-d6	90	62-122		02/29/2020 04:55
Ethylbenzene-d10	107	69-130		02/29/2020 04:55
1,2-DCB-d4	84	55-108		02/29/2020 04:55

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_1-2	2002901-013A	Soil	02/20/2020 16:00	GC18 02282035.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 05:35
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 05:35
Benzene	ND	0.0050	1	02/29/2020 05:35
Bromobenzene	ND	0.0050	1	02/29/2020 05:35
Bromochloromethane	ND	0.0050	1	02/29/2020 05:35
Bromodichloromethane	ND	0.0050	1	02/29/2020 05:35
Bromoform	ND	0.0050	1	02/29/2020 05:35
Bromomethane	ND	0.0050	1	02/29/2020 05:35
2-Butanone (MEK)	ND	0.050	1	02/29/2020 05:35
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 05:35
n-Butyl benzene	ND	0.0050	1	02/29/2020 05:35
sec-Butyl benzene	ND	0.0050	1	02/29/2020 05:35
tert-Butyl benzene	ND	0.0050	1	02/29/2020 05:35
Carbon Disulfide	ND	0.0050	1	02/29/2020 05:35
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 05:35
Chlorobenzene	ND	0.0050	1	02/29/2020 05:35
Chloroethane	ND	0.0050	1	02/29/2020 05:35
Chloroform	ND	0.0050	1	02/29/2020 05:35
Chloromethane	ND	0.0050	1	02/29/2020 05:35
2-Chlorotoluene	ND	0.0050	1	02/29/2020 05:35
4-Chlorotoluene	ND	0.0050	1	02/29/2020 05:35
Dibromochloromethane	ND	0.0050	1	02/29/2020 05:35
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 05:35
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 05:35
Dibromomethane	ND	0.0050	1	02/29/2020 05:35
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 05:35
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 05:35
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 05:35
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 05:35
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 05:35
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 05:35
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 05:35
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 05:35
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 05:35
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 05:35
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 05:35
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 05:35

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_1-2	2002901-013A	Soil	02/20/2020 16:00	GC18 02282035.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 05:35
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 05:35
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 05:35
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 05:35
Ethylbenzene	ND	0.0050	1	02/29/2020 05:35
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 05:35
Freon 113	ND	0.0050	1	02/29/2020 05:35
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 05:35
Hexachloroethane	ND	0.0050	1	02/29/2020 05:35
2-Hexanone	ND	0.0050	1	02/29/2020 05:35
Isopropylbenzene	ND	0.0050	1	02/29/2020 05:35
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 05:35
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 05:35
Methylene chloride	ND	0.020	1	02/29/2020 05:35
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 05:35
Naphthalene	ND	0.0050	1	02/29/2020 05:35
n-Propyl benzene	ND	0.0050	1	02/29/2020 05:35
Styrene	ND	0.0050	1	02/29/2020 05:35
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 05:35
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 05:35
Tetrachloroethene	ND	0.0050	1	02/29/2020 05:35
Toluene	ND	0.0050	1	02/29/2020 05:35
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 05:35
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 05:35
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 05:35
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 05:35
Trichloroethene	ND	0.0050	1	02/29/2020 05:35
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 05:35
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 05:35
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 05:35
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 05:35
Vinyl Chloride	ND	0.0050	1	02/29/2020 05:35
m,p-Xylene	ND	0.0050	1	02/29/2020 05:35
o-Xylene	ND	0.0050	1	02/29/2020 05:35
Xylenes, Total	ND	0.0050	1	02/29/2020 05:35

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_1-2	2002901-013A	Soil	02/20/2020 16:00	GC18 02282035.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	88	66-116		02/29/2020 05:35
Toluene-d8	102	86-110		02/29/2020 05:35
4-BFB	73	71-114		02/29/2020 05:35
Benzene-d6	86	62-122		02/29/2020 05:35
Ethylbenzene-d10	103	69-130		02/29/2020 05:35
1,2-DCB-d4	79	55-108		02/29/2020 05:35

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	GC18 02282036.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 06:14
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 06:14
Benzene	ND	0.0050	1	02/29/2020 06:14
Bromobenzene	ND	0.0050	1	02/29/2020 06:14
Bromochloromethane	ND	0.0050	1	02/29/2020 06:14
Bromodichloromethane	ND	0.0050	1	02/29/2020 06:14
Bromoform	ND	0.0050	1	02/29/2020 06:14
Bromomethane	ND	0.0050	1	02/29/2020 06:14
2-Butanone (MEK)	ND	0.050	1	02/29/2020 06:14
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 06:14
n-Butyl benzene	ND	0.0050	1	02/29/2020 06:14
sec-Butyl benzene	ND	0.0050	1	02/29/2020 06:14
tert-Butyl benzene	ND	0.0050	1	02/29/2020 06:14
Carbon Disulfide	ND	0.0050	1	02/29/2020 06:14
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 06:14
Chlorobenzene	ND	0.0050	1	02/29/2020 06:14
Chloroethane	ND	0.0050	1	02/29/2020 06:14
Chloroform	ND	0.0050	1	02/29/2020 06:14
Chloromethane	ND	0.0050	1	02/29/2020 06:14
2-Chlorotoluene	ND	0.0050	1	02/29/2020 06:14
4-Chlorotoluene	ND	0.0050	1	02/29/2020 06:14
Dibromochloromethane	ND	0.0050	1	02/29/2020 06:14
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 06:14
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 06:14
Dibromomethane	ND	0.0050	1	02/29/2020 06:14
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 06:14
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 06:14
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 06:14
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 06:14
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 06:14
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 06:14
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 06:14
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 06:14
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 06:14
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 06:14
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 06:14
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 06:14

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	GC18 02282036.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 06:14
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 06:14
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 06:14
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 06:14
Ethylbenzene	ND	0.0050	1	02/29/2020 06:14
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 06:14
Freon 113	ND	0.0050	1	02/29/2020 06:14
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 06:14
Hexachloroethane	ND	0.0050	1	02/29/2020 06:14
2-Hexanone	ND	0.0050	1	02/29/2020 06:14
Isopropylbenzene	ND	0.0050	1	02/29/2020 06:14
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 06:14
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 06:14
Methylene chloride	ND	0.020	1	02/29/2020 06:14
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 06:14
Naphthalene	ND	0.0050	1	02/29/2020 06:14
n-Propyl benzene	ND	0.0050	1	02/29/2020 06:14
Styrene	ND	0.0050	1	02/29/2020 06:14
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 06:14
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 06:14
Tetrachloroethene	ND	0.0050	1	02/29/2020 06:14
Toluene	ND	0.0050	1	02/29/2020 06:14
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 06:14
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 06:14
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 06:14
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 06:14
Trichloroethene	ND	0.0050	1	02/29/2020 06:14
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 06:14
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 06:14
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 06:14
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 06:14
Vinyl Chloride	ND	0.0050	1	02/29/2020 06:14
m,p-Xylene	ND	0.0050	1	02/29/2020 06:14
o-Xylene	ND	0.0050	1	02/29/2020 06:14
Xylenes, Total	ND	0.0050	1	02/29/2020 06:14

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	GC18 02282036.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	91	66-116		02/29/2020 06:14
Toluene-d8	103	86-110		02/29/2020 06:14
4-BFB	74	71-114		02/29/2020 06:14
Benzene-d6	88	62-122		02/29/2020 06:14
Ethylbenzene-d10	101	69-130		02/29/2020 06:14
1,2-DCB-d4	79	55-108		02/29/2020 06:14

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	2002901-015A	Soil	02/20/2020 16:15	GC38 03012011.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 17:23
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 17:23
Benzene	ND	0.0050	1	03/01/2020 17:23
Bromobenzene	ND	0.0050	1	03/01/2020 17:23
Bromochloromethane	ND	0.0050	1	03/01/2020 17:23
Bromodichloromethane	ND	0.0050	1	03/01/2020 17:23
Bromoform	ND	0.0050	1	03/01/2020 17:23
Bromomethane	ND	0.0050	1	03/01/2020 17:23
2-Butanone (MEK)	ND	0.050	1	03/01/2020 17:23
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 17:23
n-Butyl benzene	ND	0.0050	1	03/01/2020 17:23
sec-Butyl benzene	ND	0.0050	1	03/01/2020 17:23
tert-Butyl benzene	ND	0.0050	1	03/01/2020 17:23
Carbon Disulfide	ND	0.0050	1	03/01/2020 17:23
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 17:23
Chlorobenzene	ND	0.0050	1	03/01/2020 17:23
Chloroethane	ND	0.0050	1	03/01/2020 17:23
Chloroform	ND	0.0050	1	03/01/2020 17:23
Chloromethane	ND	0.0050	1	03/01/2020 17:23
2-Chlorotoluene	ND	0.0050	1	03/01/2020 17:23
4-Chlorotoluene	ND	0.0050	1	03/01/2020 17:23
Dibromochloromethane	ND	0.0050	1	03/01/2020 17:23
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 17:23
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 17:23
Dibromomethane	ND	0.0050	1	03/01/2020 17:23
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 17:23
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 17:23
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 17:23
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 17:23
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 17:23
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 17:23
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 17:23
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 17:23
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 17:23
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 17:23
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 17:23
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 17:23

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	2002901-015A	Soil	02/20/2020 16:15	GC38 03012011.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 17:23
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 17:23
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 17:23
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 17:23
Ethylbenzene	ND	0.0050	1	03/01/2020 17:23
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 17:23
Freon 113	ND	0.0050	1	03/01/2020 17:23
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 17:23
Hexachloroethane	ND	0.0050	1	03/01/2020 17:23
2-Hexanone	ND	0.0050	1	03/01/2020 17:23
Isopropylbenzene	ND	0.0050	1	03/01/2020 17:23
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 17:23
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 17:23
Methylene chloride	ND	0.020	1	03/01/2020 17:23
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 17:23
Naphthalene	ND	0.0050	1	03/01/2020 17:23
n-Propyl benzene	ND	0.0050	1	03/01/2020 17:23
Styrene	ND	0.0050	1	03/01/2020 17:23
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 17:23
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 17:23
Tetrachloroethene	ND	0.0050	1	03/01/2020 17:23
Toluene	ND	0.0050	1	03/01/2020 17:23
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 17:23
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 17:23
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 17:23
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 17:23
Trichloroethene	ND	0.0050	1	03/01/2020 17:23
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 17:23
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 17:23
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 17:23
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 17:23
Vinyl Chloride	ND	0.0050	1	03/01/2020 17:23
m,p-Xylene	ND	0.0050	1	03/01/2020 17:23
o-Xylene	ND	0.0050	1	03/01/2020 17:23
Xylenes, Total	ND	0.0050	1	03/01/2020 17:23

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	**2002901-015A**	**Soil**	**02/20/2020 16:15**	**GC38 03012011.D**	**194541**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	94	66-116		03/01/2020 17:23
Toluene-d8	99	86-110		03/01/2020 17:23
4-BFB	84	71-114		03/01/2020 17:23
Benzene-d6	74	62-122		03/01/2020 17:23
Ethylbenzene-d10	86	69-130		03/01/2020 17:23
1,2-DCB-d4	72	55-108		03/01/2020 17:23

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	2002901-016A	Soil	02/20/2020 16:20	GC38 03012012.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 18:01
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 18:01
Benzene	ND	0.0050	1	03/01/2020 18:01
Bromobenzene	ND	0.0050	1	03/01/2020 18:01
Bromochloromethane	ND	0.0050	1	03/01/2020 18:01
Bromodichloromethane	ND	0.0050	1	03/01/2020 18:01
Bromoform	ND	0.0050	1	03/01/2020 18:01
Bromomethane	ND	0.0050	1	03/01/2020 18:01
2-Butanone (MEK)	ND	0.050	1	03/01/2020 18:01
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 18:01
n-Butyl benzene	ND	0.0050	1	03/01/2020 18:01
sec-Butyl benzene	ND	0.0050	1	03/01/2020 18:01
tert-Butyl benzene	ND	0.0050	1	03/01/2020 18:01
Carbon Disulfide	ND	0.0050	1	03/01/2020 18:01
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 18:01
Chlorobenzene	ND	0.0050	1	03/01/2020 18:01
Chloroethane	ND	0.0050	1	03/01/2020 18:01
Chloroform	ND	0.0050	1	03/01/2020 18:01
Chloromethane	ND	0.0050	1	03/01/2020 18:01
2-Chlorotoluene	ND	0.0050	1	03/01/2020 18:01
4-Chlorotoluene	ND	0.0050	1	03/01/2020 18:01
Dibromochloromethane	ND	0.0050	1	03/01/2020 18:01
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 18:01
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 18:01
Dibromomethane	ND	0.0050	1	03/01/2020 18:01
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 18:01
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 18:01
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 18:01
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 18:01
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 18:01
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 18:01
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 18:01
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 18:01
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 18:01
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 18:01
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 18:01
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 18:01

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	2002901-016A	Soil	02/20/2020 16:20	GC38 03012012.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 18:01
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 18:01
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 18:01
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 18:01
Ethylbenzene	ND	0.0050	1	03/01/2020 18:01
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 18:01
Freon 113	ND	0.0050	1	03/01/2020 18:01
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 18:01
Hexachloroethane	ND	0.0050	1	03/01/2020 18:01
2-Hexanone	ND	0.0050	1	03/01/2020 18:01
Isopropylbenzene	ND	0.0050	1	03/01/2020 18:01
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 18:01
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 18:01
Methylene chloride	ND	0.020	1	03/01/2020 18:01
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 18:01
Naphthalene	ND	0.0050	1	03/01/2020 18:01
n-Propyl benzene	ND	0.0050	1	03/01/2020 18:01
Styrene	ND	0.0050	1	03/01/2020 18:01
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 18:01
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 18:01
Tetrachloroethene	ND	0.0050	1	03/01/2020 18:01
Toluene	ND	0.0050	1	03/01/2020 18:01
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 18:01
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 18:01
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 18:01
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 18:01
Trichloroethene	ND	0.0050	1	03/01/2020 18:01
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 18:01
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 18:01
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 18:01
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 18:01
Vinyl Chloride	ND	0.0050	1	03/01/2020 18:01
m,p-Xylene	ND	0.0050	1	03/01/2020 18:01
o-Xylene	ND	0.0050	1	03/01/2020 18:01
Xylenes, Total	ND	0.0050	1	03/01/2020 18:01

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Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	**2002901-016A**	**Soil**	**02/20/2020 16:20**	**GC38 03012012.D**	**194541**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	97	66-116		03/01/2020 18:01
Toluene-d8	100	86-110		03/01/2020 18:01
4-BFB	82	71-114		03/01/2020 18:01
Benzene-d6	70	62-122		03/01/2020 18:01
Ethylbenzene-d10	83	69-130		03/01/2020 18:01
1,2-DCB-d4	71	55-108		03/01/2020 18:01

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	GC38 03012013.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 18:38
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 18:38
Benzene	ND	0.0050	1	03/01/2020 18:38
Bromobenzene	ND	0.0050	1	03/01/2020 18:38
Bromochloromethane	ND	0.0050	1	03/01/2020 18:38
Bromodichloromethane	ND	0.0050	1	03/01/2020 18:38
Bromoform	ND	0.0050	1	03/01/2020 18:38
Bromomethane	ND	0.0050	1	03/01/2020 18:38
2-Butanone (MEK)	ND	0.050	1	03/01/2020 18:38
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 18:38
n-Butyl benzene	ND	0.0050	1	03/01/2020 18:38
sec-Butyl benzene	ND	0.0050	1	03/01/2020 18:38
tert-Butyl benzene	ND	0.0050	1	03/01/2020 18:38
Carbon Disulfide	ND	0.0050	1	03/01/2020 18:38
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 18:38
Chlorobenzene	ND	0.0050	1	03/01/2020 18:38
Chloroethane	ND	0.0050	1	03/01/2020 18:38
Chloroform	ND	0.0050	1	03/01/2020 18:38
Chloromethane	ND	0.0050	1	03/01/2020 18:38
2-Chlorotoluene	ND	0.0050	1	03/01/2020 18:38
4-Chlorotoluene	ND	0.0050	1	03/01/2020 18:38
Dibromochloromethane	ND	0.0050	1	03/01/2020 18:38
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 18:38
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 18:38
Dibromomethane	ND	0.0050	1	03/01/2020 18:38
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 18:38
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 18:38
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 18:38
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 18:38
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 18:38
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 18:38
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 18:38
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 18:38
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 18:38
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 18:38
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 18:38
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 18:38

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	GC38 03012013.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 18:38
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 18:38
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 18:38
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 18:38
Ethylbenzene	ND	0.0050	1	03/01/2020 18:38
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 18:38
Freon 113	ND	0.0050	1	03/01/2020 18:38
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 18:38
Hexachloroethane	ND	0.0050	1	03/01/2020 18:38
2-Hexanone	ND	0.0050	1	03/01/2020 18:38
Isopropylbenzene	ND	0.0050	1	03/01/2020 18:38
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 18:38
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 18:38
Methylene chloride	ND	0.020	1	03/01/2020 18:38
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 18:38
Naphthalene	ND	0.0050	1	03/01/2020 18:38
n-Propyl benzene	ND	0.0050	1	03/01/2020 18:38
Styrene	ND	0.0050	1	03/01/2020 18:38
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 18:38
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 18:38
Tetrachloroethene	ND	0.0050	1	03/01/2020 18:38
Toluene	ND	0.0050	1	03/01/2020 18:38
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 18:38
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 18:38
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 18:38
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 18:38
Trichloroethene	ND	0.0050	1	03/01/2020 18:38
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 18:38
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 18:38
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 18:38
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 18:38
Vinyl Chloride	ND	0.0050	1	03/01/2020 18:38
m,p-Xylene	ND	0.0050	1	03/01/2020 18:38
o-Xylene	ND	0.0050	1	03/01/2020 18:38
Xylenes, Total	ND	0.0050	1	03/01/2020 18:38

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	GC38 03012013.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	99	66-116		03/01/2020 18:38
Toluene-d8	99	86-110		03/01/2020 18:38
4-BFB	84	71-114		03/01/2020 18:38
Benzene-d6	74	62-122		03/01/2020 18:38
Ethylbenzene-d10	86	69-130		03/01/2020 18:38
1,2-DCB-d4	72	55-108		03/01/2020 18:38

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	GC38 03012014.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 19:16
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 19:16
Benzene	ND	0.0050	1	03/01/2020 19:16
Bromobenzene	ND	0.0050	1	03/01/2020 19:16
Bromochloromethane	ND	0.0050	1	03/01/2020 19:16
Bromodichloromethane	ND	0.0050	1	03/01/2020 19:16
Bromoform	ND	0.0050	1	03/01/2020 19:16
Bromomethane	ND	0.0050	1	03/01/2020 19:16
2-Butanone (MEK)	ND	0.050	1	03/01/2020 19:16
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 19:16
n-Butyl benzene	ND	0.0050	1	03/01/2020 19:16
sec-Butyl benzene	ND	0.0050	1	03/01/2020 19:16
tert-Butyl benzene	ND	0.0050	1	03/01/2020 19:16
Carbon Disulfide	ND	0.0050	1	03/01/2020 19:16
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 19:16
Chlorobenzene	ND	0.0050	1	03/01/2020 19:16
Chloroethane	ND	0.0050	1	03/01/2020 19:16
Chloroform	ND	0.0050	1	03/01/2020 19:16
Chloromethane	ND	0.0050	1	03/01/2020 19:16
2-Chlorotoluene	ND	0.0050	1	03/01/2020 19:16
4-Chlorotoluene	ND	0.0050	1	03/01/2020 19:16
Dibromochloromethane	ND	0.0050	1	03/01/2020 19:16
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 19:16
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 19:16
Dibromomethane	ND	0.0050	1	03/01/2020 19:16
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 19:16
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 19:16
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 19:16
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 19:16
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 19:16
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 19:16
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 19:16
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 19:16
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 19:16
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 19:16
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 19:16
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 19:16

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	GC38 03012014.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 19:16
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 19:16
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 19:16
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 19:16
Ethylbenzene	ND	0.0050	1	03/01/2020 19:16
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 19:16
Freon 113	ND	0.0050	1	03/01/2020 19:16
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 19:16
Hexachloroethane	ND	0.0050	1	03/01/2020 19:16
2-Hexanone	ND	0.0050	1	03/01/2020 19:16
Isopropylbenzene	ND	0.0050	1	03/01/2020 19:16
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 19:16
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 19:16
Methylene chloride	ND	0.020	1	03/01/2020 19:16
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 19:16
Naphthalene	ND	0.0050	1	03/01/2020 19:16
n-Propyl benzene	ND	0.0050	1	03/01/2020 19:16
Styrene	ND	0.0050	1	03/01/2020 19:16
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 19:16
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 19:16
Tetrachloroethene	ND	0.0050	1	03/01/2020 19:16
Toluene	ND	0.0050	1	03/01/2020 19:16
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 19:16
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 19:16
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 19:16
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 19:16
Trichloroethene	ND	0.0050	1	03/01/2020 19:16
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 19:16
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 19:16
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 19:16
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 19:16
Vinyl Chloride	ND	0.0050	1	03/01/2020 19:16
m,p-Xylene	ND	0.0050	1	03/01/2020 19:16
o-Xylene	ND	0.0050	1	03/01/2020 19:16
Xylenes, Total	ND	0.0050	1	03/01/2020 19:16

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	GC38 03012014.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	95	66-116		03/01/2020 19:16
Toluene-d8	99	86-110		03/01/2020 19:16
4-BFB	83	71-114		03/01/2020 19:16
Benzene-d6	71	62-122		03/01/2020 19:16
Ethylbenzene-d10	82	69-130		03/01/2020 19:16
1,2-DCB-d4	69	55-108		03/01/2020 19:16

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	2002901-019A	Soil	02/21/2020 09:55	GC38 03012015.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 19:53
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 19:53
Benzene	ND	0.0050	1	03/01/2020 19:53
Bromobenzene	ND	0.0050	1	03/01/2020 19:53
Bromochloromethane	ND	0.0050	1	03/01/2020 19:53
Bromodichloromethane	ND	0.0050	1	03/01/2020 19:53
Bromoform	ND	0.0050	1	03/01/2020 19:53
Bromomethane	ND	0.0050	1	03/01/2020 19:53
2-Butanone (MEK)	ND	0.050	1	03/01/2020 19:53
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 19:53
n-Butyl benzene	ND	0.0050	1	03/01/2020 19:53
sec-Butyl benzene	ND	0.0050	1	03/01/2020 19:53
tert-Butyl benzene	ND	0.0050	1	03/01/2020 19:53
Carbon Disulfide	ND	0.0050	1	03/01/2020 19:53
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 19:53
Chlorobenzene	ND	0.0050	1	03/01/2020 19:53
Chloroethane	ND	0.0050	1	03/01/2020 19:53
Chloroform	ND	0.0050	1	03/01/2020 19:53
Chloromethane	ND	0.0050	1	03/01/2020 19:53
2-Chlorotoluene	ND	0.0050	1	03/01/2020 19:53
4-Chlorotoluene	ND	0.0050	1	03/01/2020 19:53
Dibromochloromethane	ND	0.0050	1	03/01/2020 19:53
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 19:53
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 19:53
Dibromomethane	ND	0.0050	1	03/01/2020 19:53
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 19:53
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 19:53
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 19:53
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 19:53
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 19:53
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 19:53
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 19:53
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 19:53
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 19:53
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 19:53
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 19:53
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 19:53

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	2002901-019A	Soil	02/21/2020 09:55	GC38 03012015.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 19:53
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 19:53
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 19:53
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 19:53
Ethylbenzene	ND	0.0050	1	03/01/2020 19:53
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 19:53
Freon 113	ND	0.0050	1	03/01/2020 19:53
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 19:53
Hexachloroethane	ND	0.0050	1	03/01/2020 19:53
2-Hexanone	ND	0.0050	1	03/01/2020 19:53
Isopropylbenzene	ND	0.0050	1	03/01/2020 19:53
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 19:53
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 19:53
Methylene chloride	ND	0.020	1	03/01/2020 19:53
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 19:53
Naphthalene	ND	0.0050	1	03/01/2020 19:53
n-Propyl benzene	ND	0.0050	1	03/01/2020 19:53
Styrene	ND	0.0050	1	03/01/2020 19:53
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 19:53
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 19:53
Tetrachloroethene	ND	0.0050	1	03/01/2020 19:53
Toluene	ND	0.0050	1	03/01/2020 19:53
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 19:53
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 19:53
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 19:53
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 19:53
Trichloroethene	ND	0.0050	1	03/01/2020 19:53
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 19:53
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 19:53
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 19:53
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 19:53
Vinyl Chloride	ND	0.0050	1	03/01/2020 19:53
m,p-Xylene	ND	0.0050	1	03/01/2020 19:53
o-Xylene	ND	0.0050	1	03/01/2020 19:53
Xylenes, Total	ND	0.0050	1	03/01/2020 19:53

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	**2002901-019A**	**Soil**	**02/21/2020 09:55**	**GC38 03012015.D**	**194541**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	94	66-116		03/01/2020 19:53
Toluene-d8	99	86-110		03/01/2020 19:53
4-BFB	83	71-114		03/01/2020 19:53
Benzene-d6	74	62-122		03/01/2020 19:53
Ethylbenzene-d10	87	69-130		03/01/2020 19:53
1,2-DCB-d4	72	55-108		03/01/2020 19:53

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	2002901-020A	Soil	02/21/2020 10:00	GC38 03012016.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 20:31
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 20:31
Benzene	ND	0.0050	1	03/01/2020 20:31
Bromobenzene	ND	0.0050	1	03/01/2020 20:31
Bromochloromethane	ND	0.0050	1	03/01/2020 20:31
Bromodichloromethane	ND	0.0050	1	03/01/2020 20:31
Bromoform	ND	0.0050	1	03/01/2020 20:31
Bromomethane	ND	0.0050	1	03/01/2020 20:31
2-Butanone (MEK)	ND	0.050	1	03/01/2020 20:31
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 20:31
n-Butyl benzene	ND	0.0050	1	03/01/2020 20:31
sec-Butyl benzene	ND	0.0050	1	03/01/2020 20:31
tert-Butyl benzene	ND	0.0050	1	03/01/2020 20:31
Carbon Disulfide	ND	0.0050	1	03/01/2020 20:31
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 20:31
Chlorobenzene	ND	0.0050	1	03/01/2020 20:31
Chloroethane	ND	0.0050	1	03/01/2020 20:31
Chloroform	ND	0.0050	1	03/01/2020 20:31
Chloromethane	ND	0.0050	1	03/01/2020 20:31
2-Chlorotoluene	ND	0.0050	1	03/01/2020 20:31
4-Chlorotoluene	ND	0.0050	1	03/01/2020 20:31
Dibromochloromethane	ND	0.0050	1	03/01/2020 20:31
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 20:31
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 20:31
Dibromomethane	ND	0.0050	1	03/01/2020 20:31
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 20:31
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 20:31
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 20:31
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 20:31
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 20:31
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 20:31
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 20:31
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 20:31
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 20:31
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 20:31
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 20:31
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 20:31

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	2002901-020A	Soil	02/21/2020 10:00	GC38 03012016.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 20:31
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 20:31
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 20:31
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 20:31
Ethylbenzene	ND	0.0050	1	03/01/2020 20:31
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 20:31
Freon 113	ND	0.0050	1	03/01/2020 20:31
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 20:31
Hexachloroethane	ND	0.0050	1	03/01/2020 20:31
2-Hexanone	ND	0.0050	1	03/01/2020 20:31
Isopropylbenzene	ND	0.0050	1	03/01/2020 20:31
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 20:31
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 20:31
Methylene chloride	ND	0.020	1	03/01/2020 20:31
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 20:31
Naphthalene	ND	0.0050	1	03/01/2020 20:31
n-Propyl benzene	ND	0.0050	1	03/01/2020 20:31
Styrene	ND	0.0050	1	03/01/2020 20:31
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 20:31
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 20:31
Tetrachloroethene	ND	0.0050	1	03/01/2020 20:31
Toluene	ND	0.0050	1	03/01/2020 20:31
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 20:31
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 20:31
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 20:31
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 20:31
Trichloroethene	ND	0.0050	1	03/01/2020 20:31
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 20:31
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 20:31
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 20:31
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 20:31
Vinyl Chloride	ND	0.0050	1	03/01/2020 20:31
m,p-Xylene	ND	0.0050	1	03/01/2020 20:31
o-Xylene	ND	0.0050	1	03/01/2020 20:31
Xylenes, Total	ND	0.0050	1	03/01/2020 20:31

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	**2002901-020A**	**Soil**	**02/21/2020 10:00**	**GC38 03012016.D**	**194541**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	102	66-116		03/01/2020 20:31
Toluene-d8	99	86-110		03/01/2020 20:31
4-BFB	82	71-114		03/01/2020 20:31
Benzene-d6	78	62-122		03/01/2020 20:31
Ethylbenzene-d10	84	69-130		03/01/2020 20:31
1,2-DCB-d4	72	55-108		03/01/2020 20:31

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	GC38 03012017.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 21:08
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 21:08
Benzene	ND	0.0050	1	03/01/2020 21:08
Bromobenzene	ND	0.0050	1	03/01/2020 21:08
Bromochloromethane	ND	0.0050	1	03/01/2020 21:08
Bromodichloromethane	ND	0.0050	1	03/01/2020 21:08
Bromoform	ND	0.0050	1	03/01/2020 21:08
Bromomethane	ND	0.0050	1	03/01/2020 21:08
2-Butanone (MEK)	ND	0.050	1	03/01/2020 21:08
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 21:08
n-Butyl benzene	ND	0.0050	1	03/01/2020 21:08
sec-Butyl benzene	ND	0.0050	1	03/01/2020 21:08
tert-Butyl benzene	ND	0.0050	1	03/01/2020 21:08
Carbon Disulfide	ND	0.0050	1	03/01/2020 21:08
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 21:08
Chlorobenzene	ND	0.0050	1	03/01/2020 21:08
Chloroethane	ND	0.0050	1	03/01/2020 21:08
Chloroform	ND	0.0050	1	03/01/2020 21:08
Chloromethane	ND	0.0050	1	03/01/2020 21:08
2-Chlorotoluene	ND	0.0050	1	03/01/2020 21:08
4-Chlorotoluene	ND	0.0050	1	03/01/2020 21:08
Dibromochloromethane	ND	0.0050	1	03/01/2020 21:08
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 21:08
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 21:08
Dibromomethane	ND	0.0050	1	03/01/2020 21:08
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:08
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:08
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:08
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 21:08
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 21:08
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 21:08
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 21:08
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 21:08
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 21:08
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 21:08
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 21:08
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 21:08

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	GC38 03012017.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 21:08
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 21:08
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 21:08
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 21:08
Ethylbenzene	ND	0.0050	1	03/01/2020 21:08
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 21:08
Freon 113	ND	0.0050	1	03/01/2020 21:08
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 21:08
Hexachloroethane	ND	0.0050	1	03/01/2020 21:08
2-Hexanone	ND	0.0050	1	03/01/2020 21:08
Isopropylbenzene	ND	0.0050	1	03/01/2020 21:08
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 21:08
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 21:08
Methylene chloride	ND	0.020	1	03/01/2020 21:08
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 21:08
Naphthalene	ND	0.0050	1	03/01/2020 21:08
n-Propyl benzene	ND	0.0050	1	03/01/2020 21:08
Styrene	ND	0.0050	1	03/01/2020 21:08
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 21:08
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 21:08
Tetrachloroethene	ND	0.0050	1	03/01/2020 21:08
Toluene	ND	0.0050	1	03/01/2020 21:08
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 21:08
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 21:08
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 21:08
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 21:08
Trichloroethene	ND	0.0050	1	03/01/2020 21:08
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 21:08
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 21:08
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 21:08
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 21:08
Vinyl Chloride	ND	0.0050	1	03/01/2020 21:08
m,p-Xylene	ND	0.0050	1	03/01/2020 21:08
o-Xylene	ND	0.0050	1	03/01/2020 21:08
Xylenes, Total	ND	0.0050	1	03/01/2020 21:08

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	GC38 03012017.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	99	66-116		03/01/2020 21:08
Toluene-d8	99	86-110		03/01/2020 21:08
4-BFB	81	71-114		03/01/2020 21:08
Benzene-d6	69	62-122		03/01/2020 21:08
Ethylbenzene-d10	80	69-130		03/01/2020 21:08
1,2-DCB-d4	69	55-108		03/01/2020 21:08

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	GC38 03012018.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 21:46
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 21:46
Benzene	ND	0.0050	1	03/01/2020 21:46
Bromobenzene	ND	0.0050	1	03/01/2020 21:46
Bromochloromethane	ND	0.0050	1	03/01/2020 21:46
Bromodichloromethane	ND	0.0050	1	03/01/2020 21:46
Bromoform	ND	0.0050	1	03/01/2020 21:46
Bromomethane	ND	0.0050	1	03/01/2020 21:46
2-Butanone (MEK)	ND	0.050	1	03/01/2020 21:46
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 21:46
n-Butyl benzene	ND	0.0050	1	03/01/2020 21:46
sec-Butyl benzene	ND	0.0050	1	03/01/2020 21:46
tert-Butyl benzene	ND	0.0050	1	03/01/2020 21:46
Carbon Disulfide	ND	0.0050	1	03/01/2020 21:46
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 21:46
Chlorobenzene	ND	0.0050	1	03/01/2020 21:46
Chloroethane	ND	0.0050	1	03/01/2020 21:46
Chloroform	ND	0.0050	1	03/01/2020 21:46
Chloromethane	ND	0.0050	1	03/01/2020 21:46
2-Chlorotoluene	ND	0.0050	1	03/01/2020 21:46
4-Chlorotoluene	ND	0.0050	1	03/01/2020 21:46
Dibromochloromethane	ND	0.0050	1	03/01/2020 21:46
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 21:46
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 21:46
Dibromomethane	ND	0.0050	1	03/01/2020 21:46
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:46
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:46
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:46
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 21:46
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 21:46
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 21:46
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 21:46
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 21:46
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 21:46
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 21:46
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 21:46
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 21:46

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	GC38 03012018.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 21:46
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 21:46
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 21:46
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 21:46
Ethylbenzene	ND	0.0050	1	03/01/2020 21:46
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 21:46
Freon 113	ND	0.0050	1	03/01/2020 21:46
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 21:46
Hexachloroethane	ND	0.0050	1	03/01/2020 21:46
2-Hexanone	ND	0.0050	1	03/01/2020 21:46
Isopropylbenzene	ND	0.0050	1	03/01/2020 21:46
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 21:46
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 21:46
Methylene chloride	ND	0.020	1	03/01/2020 21:46
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 21:46
Naphthalene	ND	0.0050	1	03/01/2020 21:46
n-Propyl benzene	ND	0.0050	1	03/01/2020 21:46
Styrene	ND	0.0050	1	03/01/2020 21:46
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 21:46
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 21:46
Tetrachloroethene	ND	0.0050	1	03/01/2020 21:46
Toluene	ND	0.0050	1	03/01/2020 21:46
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 21:46
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 21:46
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 21:46
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 21:46
Trichloroethene	ND	0.0050	1	03/01/2020 21:46
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 21:46
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 21:46
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 21:46
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 21:46
Vinyl Chloride	ND	0.0050	1	03/01/2020 21:46
m,p-Xylene	ND	0.0050	1	03/01/2020 21:46
o-Xylene	ND	0.0050	1	03/01/2020 21:46
Xylenes, Total	ND	0.0050	1	03/01/2020 21:46

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	GC38 03012018.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	107	66-116		03/01/2020 21:46
Toluene-d8	100	86-110		03/01/2020 21:46
4-BFB	83	71-114		03/01/2020 21:46
Benzene-d6	79	62-122		03/01/2020 21:46
Ethylbenzene-d10	85	69-130		03/01/2020 21:46
1,2-DCB-d4	72	55-108		03/01/2020 21:46

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	GC38 03012019.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 22:23
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 22:23
Benzene	ND	0.0050	1	03/01/2020 22:23
Bromobenzene	ND	0.0050	1	03/01/2020 22:23
Bromochloromethane	ND	0.0050	1	03/01/2020 22:23
Bromodichloromethane	ND	0.0050	1	03/01/2020 22:23
Bromoform	ND	0.0050	1	03/01/2020 22:23
Bromomethane	ND	0.0050	1	03/01/2020 22:23
2-Butanone (MEK)	ND	0.050	1	03/01/2020 22:23
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 22:23
n-Butyl benzene	ND	0.0050	1	03/01/2020 22:23
sec-Butyl benzene	ND	0.0050	1	03/01/2020 22:23
tert-Butyl benzene	ND	0.0050	1	03/01/2020 22:23
Carbon Disulfide	ND	0.0050	1	03/01/2020 22:23
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 22:23
Chlorobenzene	ND	0.0050	1	03/01/2020 22:23
Chloroethane	ND	0.0050	1	03/01/2020 22:23
Chloroform	ND	0.0050	1	03/01/2020 22:23
Chloromethane	ND	0.0050	1	03/01/2020 22:23
2-Chlorotoluene	ND	0.0050	1	03/01/2020 22:23
4-Chlorotoluene	ND	0.0050	1	03/01/2020 22:23
Dibromochloromethane	ND	0.0050	1	03/01/2020 22:23
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 22:23
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 22:23
Dibromomethane	ND	0.0050	1	03/01/2020 22:23
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 22:23
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 22:23
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 22:23
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 22:23
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 22:23
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 22:23
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 22:23
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 22:23
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 22:23
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 22:23
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 22:23
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 22:23

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	GC38 03012019.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 22:23
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 22:23
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 22:23
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 22:23
Ethylbenzene	ND	0.0050	1	03/01/2020 22:23
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 22:23
Freon 113	ND	0.0050	1	03/01/2020 22:23
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 22:23
Hexachloroethane	ND	0.0050	1	03/01/2020 22:23
2-Hexanone	ND	0.0050	1	03/01/2020 22:23
Isopropylbenzene	ND	0.0050	1	03/01/2020 22:23
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 22:23
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 22:23
Methylene chloride	ND	0.020	1	03/01/2020 22:23
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 22:23
Naphthalene	ND	0.0050	1	03/01/2020 22:23
n-Propyl benzene	ND	0.0050	1	03/01/2020 22:23
Styrene	ND	0.0050	1	03/01/2020 22:23
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 22:23
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 22:23
Tetrachloroethene	ND	0.0050	1	03/01/2020 22:23
Toluene	ND	0.0050	1	03/01/2020 22:23
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 22:23
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 22:23
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 22:23
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 22:23
Trichloroethene	ND	0.0050	1	03/01/2020 22:23
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 22:23
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 22:23
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 22:23
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 22:23
Vinyl Chloride	ND	0.0050	1	03/01/2020 22:23
m,p-Xylene	ND	0.0050	1	03/01/2020 22:23
o-Xylene	ND	0.0050	1	03/01/2020 22:23
Xylenes, Total	ND	0.0050	1	03/01/2020 22:23

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	GC38 03012019.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	94	66-116		03/01/2020 22:23
Toluene-d8	99	86-110		03/01/2020 22:23
4-BFB	82	71-114		03/01/2020 22:23
Benzene-d6	68	62-122		03/01/2020 22:23
Ethylbenzene-d10	80	69-130		03/01/2020 22:23
1,2-DCB-d4	68	55-108		03/01/2020 22:23

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	GC10 03012017.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 21:40
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 21:40
Benzene	ND	0.0050	1	03/01/2020 21:40
Bromobenzene	ND	0.0050	1	03/01/2020 21:40
Bromochloromethane	ND	0.0050	1	03/01/2020 21:40
Bromodichloromethane	ND	0.0050	1	03/01/2020 21:40
Bromoform	ND	0.0050	1	03/01/2020 21:40
Bromomethane	ND	0.0050	1	03/01/2020 21:40
2-Butanone (MEK)	ND	0.050	1	03/01/2020 21:40
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 21:40
n-Butyl benzene	ND	0.0050	1	03/01/2020 21:40
sec-Butyl benzene	ND	0.0050	1	03/01/2020 21:40
tert-Butyl benzene	ND	0.0050	1	03/01/2020 21:40
Carbon Disulfide	ND	0.0050	1	03/01/2020 21:40
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 21:40
Chlorobenzene	ND	0.0050	1	03/01/2020 21:40
Chloroethane	ND	0.0050	1	03/01/2020 21:40
Chloroform	ND	0.0050	1	03/01/2020 21:40
Chloromethane	ND	0.0050	1	03/01/2020 21:40
2-Chlorotoluene	ND	0.0050	1	03/01/2020 21:40
4-Chlorotoluene	ND	0.0050	1	03/01/2020 21:40
Dibromochloromethane	ND	0.0050	1	03/01/2020 21:40
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 21:40
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 21:40
Dibromomethane	ND	0.0050	1	03/01/2020 21:40
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:40
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:40
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:40
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 21:40
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 21:40
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 21:40
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 21:40
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 21:40
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 21:40
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 21:40
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 21:40
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 21:40

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	GC10 03012017.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 21:40
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 21:40
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 21:40
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 21:40
Ethylbenzene	ND	0.0050	1	03/01/2020 21:40
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 21:40
Freon 113	ND	0.0050	1	03/01/2020 21:40
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 21:40
Hexachloroethane	ND	0.0050	1	03/01/2020 21:40
2-Hexanone	ND	0.0050	1	03/01/2020 21:40
Isopropylbenzene	ND	0.0050	1	03/01/2020 21:40
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 21:40
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 21:40
Methylene chloride	ND	0.020	1	03/01/2020 21:40
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 21:40
Naphthalene	ND	0.0050	1	03/01/2020 21:40
n-Propyl benzene	ND	0.0050	1	03/01/2020 21:40
Styrene	ND	0.0050	1	03/01/2020 21:40
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 21:40
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 21:40
Tetrachloroethene	ND	0.0050	1	03/01/2020 21:40
Toluene	ND	0.0050	1	03/01/2020 21:40
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 21:40
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 21:40
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 21:40
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 21:40
Trichloroethene	ND	0.0050	1	03/01/2020 21:40
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 21:40
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 21:40
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 21:40
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 21:40
Vinyl Chloride	ND	0.0050	1	03/01/2020 21:40
m,p-Xylene	ND	0.0050	1	03/01/2020 21:40
o-Xylene	ND	0.0050	1	03/01/2020 21:40
Xylenes, Total	ND	0.0050	1	03/01/2020 21:40

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	GC10 03012017.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	90	66-116		03/01/2020 21:40
Toluene-d8	104	86-110		03/01/2020 21:40
4-BFB	101	71-114		03/01/2020 21:40
Benzene-d6	67	62-122		03/01/2020 21:40
Ethylbenzene-d10	76	69-130		03/01/2020 21:40
1,2-DCB-d4	66	55-108		03/01/2020 21:40

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	GC10 03012016.D	194541

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 21:00
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 21:00
Benzene	ND	0.0050	1	03/01/2020 21:00
Bromobenzene	ND	0.0050	1	03/01/2020 21:00
Bromochloromethane	ND	0.0050	1	03/01/2020 21:00
Bromodichloromethane	ND	0.0050	1	03/01/2020 21:00
Bromoform	ND	0.0050	1	03/01/2020 21:00
Bromomethane	ND	0.0050	1	03/01/2020 21:00
2-Butanone (MEK)	ND	0.050	1	03/01/2020 21:00
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 21:00
n-Butyl benzene	ND	0.0050	1	03/01/2020 21:00
sec-Butyl benzene	ND	0.0050	1	03/01/2020 21:00
tert-Butyl benzene	ND	0.0050	1	03/01/2020 21:00
Carbon Disulfide	ND	0.0050	1	03/01/2020 21:00
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 21:00
Chlorobenzene	ND	0.0050	1	03/01/2020 21:00
Chloroethane	ND	0.0050	1	03/01/2020 21:00
Chloroform	ND	0.0050	1	03/01/2020 21:00
Chloromethane	ND	0.0050	1	03/01/2020 21:00
2-Chlorotoluene	ND	0.0050	1	03/01/2020 21:00
4-Chlorotoluene	ND	0.0050	1	03/01/2020 21:00
Dibromochloromethane	ND	0.0050	1	03/01/2020 21:00
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 21:00
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 21:00
Dibromomethane	ND	0.0050	1	03/01/2020 21:00
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:00
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:00
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:00
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 21:00
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 21:00
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 21:00
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 21:00
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 21:00
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 21:00
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 21:00
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 21:00
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 21:00

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	GC10 03012016.D	194541

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 21:00
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 21:00
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 21:00
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 21:00
Ethylbenzene	ND	0.0050	1	03/01/2020 21:00
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 21:00
Freon 113	ND	0.0050	1	03/01/2020 21:00
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 21:00
Hexachloroethane	ND	0.0050	1	03/01/2020 21:00
2-Hexanone	ND	0.0050	1	03/01/2020 21:00
Isopropylbenzene	ND	0.0050	1	03/01/2020 21:00
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 21:00
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 21:00
Methylene chloride	ND	0.020	1	03/01/2020 21:00
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 21:00
Naphthalene	ND	0.0050	1	03/01/2020 21:00
n-Propyl benzene	ND	0.0050	1	03/01/2020 21:00
Styrene	ND	0.0050	1	03/01/2020 21:00
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 21:00
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 21:00
Tetrachloroethene	ND	0.0050	1	03/01/2020 21:00
Toluene	ND	0.0050	1	03/01/2020 21:00
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 21:00
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 21:00
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 21:00
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 21:00
Trichloroethene	ND	0.0050	1	03/01/2020 21:00
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 21:00
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 21:00
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 21:00
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 21:00
Vinyl Chloride	ND	0.0050	1	03/01/2020 21:00
m,p-Xylene	ND	0.0050	1	03/01/2020 21:00
o-Xylene	ND	0.0050	1	03/01/2020 21:00
Xylenes, Total	ND	0.0050	1	03/01/2020 21:00

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	GC10 03012016.D	194541

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	90	66-116		03/01/2020 21:00
Toluene-d8	104	86-110		03/01/2020 21:00
4-BFB	101	71-114		03/01/2020 21:00
Benzene-d6	72	62-122		03/01/2020 21:00
Ethylbenzene-d10	82	69-130		03/01/2020 21:00
1,2-DCB-d4	70	55-108		03/01/2020 21:00

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	GC10 02292012.D	194542

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	02/29/2020 18:40
tert-Amyl methyl ether (TAME)	ND	0.0050	1	02/29/2020 18:40
Benzene	ND	0.0050	1	02/29/2020 18:40
Bromobenzene	ND	0.0050	1	02/29/2020 18:40
Bromochloromethane	ND	0.0050	1	02/29/2020 18:40
Bromodichloromethane	ND	0.0050	1	02/29/2020 18:40
Bromoform	ND	0.0050	1	02/29/2020 18:40
Bromomethane	ND	0.0050	1	02/29/2020 18:40
2-Butanone (MEK)	ND	0.050	1	02/29/2020 18:40
t-Butyl alcohol (TBA)	ND	0.050	1	02/29/2020 18:40
n-Butyl benzene	ND	0.0050	1	02/29/2020 18:40
sec-Butyl benzene	ND	0.0050	1	02/29/2020 18:40
tert-Butyl benzene	ND	0.0050	1	02/29/2020 18:40
Carbon Disulfide	ND	0.0050	1	02/29/2020 18:40
Carbon Tetrachloride	ND	0.0050	1	02/29/2020 18:40
Chlorobenzene	ND	0.0050	1	02/29/2020 18:40
Chloroethane	ND	0.0050	1	02/29/2020 18:40
Chloroform	ND	0.0050	1	02/29/2020 18:40
Chloromethane	ND	0.0050	1	02/29/2020 18:40
2-Chlorotoluene	ND	0.0050	1	02/29/2020 18:40
4-Chlorotoluene	ND	0.0050	1	02/29/2020 18:40
Dibromochloromethane	ND	0.0050	1	02/29/2020 18:40
1,2-Dibromo-3-chloropropane	ND	0.0050	1	02/29/2020 18:40
1,2-Dibromoethane (EDB)	ND	0.0040	1	02/29/2020 18:40
Dibromomethane	ND	0.0050	1	02/29/2020 18:40
1,2-Dichlorobenzene	ND	0.0050	1	02/29/2020 18:40
1,3-Dichlorobenzene	ND	0.0050	1	02/29/2020 18:40
1,4-Dichlorobenzene	ND	0.0050	1	02/29/2020 18:40
Dichlorodifluoromethane	ND	0.0050	1	02/29/2020 18:40
1,1-Dichloroethane	ND	0.0050	1	02/29/2020 18:40
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	02/29/2020 18:40
1,1-Dichloroethene	ND	0.0050	1	02/29/2020 18:40
cis-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 18:40
trans-1,2-Dichloroethene	ND	0.0050	1	02/29/2020 18:40
1,2-Dichloropropane	ND	0.0050	1	02/29/2020 18:40
1,3-Dichloropropane	ND	0.0050	1	02/29/2020 18:40
2,2-Dichloropropane	ND	0.0050	1	02/29/2020 18:40

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	GC10 02292012.D	194542

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	02/29/2020 18:40
cis-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 18:40
trans-1,3-Dichloropropene	ND	0.0050	1	02/29/2020 18:40
Diisopropyl ether (DIPE)	ND	0.0050	1	02/29/2020 18:40
Ethylbenzene	ND	0.0050	1	02/29/2020 18:40
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	02/29/2020 18:40
Freon 113	ND	0.0050	1	02/29/2020 18:40
Hexachlorobutadiene	ND	0.0050	1	02/29/2020 18:40
Hexachloroethane	ND	0.0050	1	02/29/2020 18:40
2-Hexanone	ND	0.0050	1	02/29/2020 18:40
Isopropylbenzene	ND	0.0050	1	02/29/2020 18:40
4-Isopropyl toluene	ND	0.0050	1	02/29/2020 18:40
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	02/29/2020 18:40
Methylene chloride	ND	0.020	1	02/29/2020 18:40
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	02/29/2020 18:40
Naphthalene	ND	0.0050	1	02/29/2020 18:40
n-Propyl benzene	ND	0.0050	1	02/29/2020 18:40
Styrene	ND	0.0050	1	02/29/2020 18:40
1,1,1,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 18:40
1,1,2,2-Tetrachloroethane	ND	0.0050	1	02/29/2020 18:40
Tetrachloroethene	ND	0.0050	1	02/29/2020 18:40
Toluene	ND	0.0050	1	02/29/2020 18:40
1,2,3-Trichlorobenzene	ND	0.0050	1	02/29/2020 18:40
1,2,4-Trichlorobenzene	ND	0.0050	1	02/29/2020 18:40
1,1,1-Trichloroethane	ND	0.0050	1	02/29/2020 18:40
1,1,2-Trichloroethane	ND	0.0050	1	02/29/2020 18:40
Trichloroethene	ND	0.0050	1	02/29/2020 18:40
Trichlorofluoromethane	ND	0.0050	1	02/29/2020 18:40
1,2,3-Trichloropropane	ND	0.0050	1	02/29/2020 18:40
1,2,4-Trimethylbenzene	ND	0.0050	1	02/29/2020 18:40
1,3,5-Trimethylbenzene	ND	0.0050	1	02/29/2020 18:40
Vinyl Chloride	ND	0.0050	1	02/29/2020 18:40
m,p-Xylene	ND	0.0050	1	02/29/2020 18:40
o-Xylene	ND	0.0050	1	02/29/2020 18:40
Xylenes, Total	ND	0.0050	1	02/29/2020 18:40

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	GC10 02292012.D	194542

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	88	66-116		02/29/2020 18:40
Toluene-d8	105	86-110		02/29/2020 18:40
4-BFB	100	71-114		02/29/2020 18:40
Benzene-d6	76	62-122		02/29/2020 18:40
Ethylbenzene-d10	89	69-130		02/29/2020 18:40
1,2-DCB-d4	73	55-108		02/29/2020 18:40

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	GC10 03012018.D	194542

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 22:20
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 22:20
Benzene	ND	0.0050	1	03/01/2020 22:20
Bromobenzene	ND	0.0050	1	03/01/2020 22:20
Bromochloromethane	ND	0.0050	1	03/01/2020 22:20
Bromodichloromethane	ND	0.0050	1	03/01/2020 22:20
Bromoform	ND	0.0050	1	03/01/2020 22:20
Bromomethane	ND	0.0050	1	03/01/2020 22:20
2-Butanone (MEK)	ND	0.050	1	03/01/2020 22:20
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 22:20
n-Butyl benzene	ND	0.0050	1	03/01/2020 22:20
sec-Butyl benzene	ND	0.0050	1	03/01/2020 22:20
tert-Butyl benzene	ND	0.0050	1	03/01/2020 22:20
Carbon Disulfide	ND	0.0050	1	03/01/2020 22:20
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 22:20
Chlorobenzene	ND	0.0050	1	03/01/2020 22:20
Chloroethane	ND	0.0050	1	03/01/2020 22:20
Chloroform	ND	0.0050	1	03/01/2020 22:20
Chloromethane	ND	0.0050	1	03/01/2020 22:20
2-Chlorotoluene	ND	0.0050	1	03/01/2020 22:20
4-Chlorotoluene	ND	0.0050	1	03/01/2020 22:20
Dibromochloromethane	ND	0.0050	1	03/01/2020 22:20
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 22:20
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 22:20
Dibromomethane	ND	0.0050	1	03/01/2020 22:20
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 22:20
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 22:20
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 22:20
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 22:20
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 22:20
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 22:20
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 22:20
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 22:20
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 22:20
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 22:20
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 22:20
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 22:20

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	GC10 03012018.D	194542

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 22:20
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 22:20
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 22:20
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 22:20
Ethylbenzene	ND	0.0050	1	03/01/2020 22:20
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 22:20
Freon 113	ND	0.0050	1	03/01/2020 22:20
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 22:20
Hexachloroethane	ND	0.0050	1	03/01/2020 22:20
2-Hexanone	ND	0.0050	1	03/01/2020 22:20
Isopropylbenzene	ND	0.0050	1	03/01/2020 22:20
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 22:20
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 22:20
Methylene chloride	ND	0.020	1	03/01/2020 22:20
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 22:20
Naphthalene	ND	0.0050	1	03/01/2020 22:20
n-Propyl benzene	ND	0.0050	1	03/01/2020 22:20
Styrene	ND	0.0050	1	03/01/2020 22:20
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 22:20
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 22:20
Tetrachloroethene	ND	0.0050	1	03/01/2020 22:20
Toluene	ND	0.0050	1	03/01/2020 22:20
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 22:20
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 22:20
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 22:20
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 22:20
Trichloroethene	ND	0.0050	1	03/01/2020 22:20
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 22:20
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 22:20
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 22:20
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 22:20
Vinyl Chloride	ND	0.0050	1	03/01/2020 22:20
m,p-Xylene	ND	0.0050	1	03/01/2020 22:20
o-Xylene	ND	0.0050	1	03/01/2020 22:20
Xylenes, Total	ND	0.0050	1	03/01/2020 22:20

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	GC10 03012018.D	194542

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	90	66-116		03/01/2020 22:20
Toluene-d8	104	86-110		03/01/2020 22:20
4-BFB	101	71-114		03/01/2020 22:20
Benzene-d6	73	62-122		03/01/2020 22:20
Ethylbenzene-d10	84	69-130		03/01/2020 22:20
1,2-DCB-d4	70	55-108		03/01/2020 22:20

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_16-17	2002901-028A	Soil	02/20/2020 11:20	GC18 03012016.D	194542

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 21:02
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 21:02
Benzene	ND	0.0050	1	03/01/2020 21:02
Bromobenzene	ND	0.0050	1	03/01/2020 21:02
Bromochloromethane	ND	0.0050	1	03/01/2020 21:02
Bromodichloromethane	ND	0.0050	1	03/01/2020 21:02
Bromoform	ND	0.0050	1	03/01/2020 21:02
Bromomethane	ND	0.0050	1	03/01/2020 21:02
2-Butanone (MEK)	ND	0.050	1	03/01/2020 21:02
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 21:02
n-Butyl benzene	ND	0.0050	1	03/01/2020 21:02
sec-Butyl benzene	ND	0.0050	1	03/01/2020 21:02
tert-Butyl benzene	ND	0.0050	1	03/01/2020 21:02
Carbon Disulfide	ND	0.0050	1	03/01/2020 21:02
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 21:02
Chlorobenzene	ND	0.0050	1	03/01/2020 21:02
Chloroethane	ND	0.0050	1	03/01/2020 21:02
Chloroform	ND	0.0050	1	03/01/2020 21:02
Chloromethane	ND	0.0050	1	03/01/2020 21:02
2-Chlorotoluene	ND	0.0050	1	03/01/2020 21:02
4-Chlorotoluene	ND	0.0050	1	03/01/2020 21:02
Dibromochloromethane	ND	0.0050	1	03/01/2020 21:02
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 21:02
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 21:02
Dibromomethane	ND	0.0050	1	03/01/2020 21:02
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:02
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:02
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:02
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 21:02
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 21:02
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 21:02
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 21:02
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 21:02
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 21:02
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 21:02
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 21:02
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 21:02

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_16-17	2002901-028A	Soil	02/20/2020 11:20	GC18 03012016.D	194542

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 21:02
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 21:02
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 21:02
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 21:02
Ethylbenzene	ND	0.0050	1	03/01/2020 21:02
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 21:02
Freon 113	ND	0.0050	1	03/01/2020 21:02
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 21:02
Hexachloroethane	ND	0.0050	1	03/01/2020 21:02
2-Hexanone	ND	0.0050	1	03/01/2020 21:02
Isopropylbenzene	ND	0.0050	1	03/01/2020 21:02
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 21:02
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 21:02
Methylene chloride	ND	0.020	1	03/01/2020 21:02
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 21:02
Naphthalene	ND	0.0050	1	03/01/2020 21:02
n-Propyl benzene	ND	0.0050	1	03/01/2020 21:02
Styrene	ND	0.0050	1	03/01/2020 21:02
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 21:02
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 21:02
Tetrachloroethene	ND	0.0050	1	03/01/2020 21:02
Toluene	ND	0.0050	1	03/01/2020 21:02
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 21:02
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 21:02
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 21:02
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 21:02
Trichloroethene	ND	0.0050	1	03/01/2020 21:02
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 21:02
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 21:02
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 21:02
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 21:02
Vinyl Chloride	ND	0.0050	1	03/01/2020 21:02
m,p-Xylene	ND	0.0050	1	03/01/2020 21:02
o-Xylene	ND	0.0050	1	03/01/2020 21:02
Xylenes, Total	ND	0.0050	1	03/01/2020 21:02

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_16-17	**2002901-028A**	**Soil**	**02/20/2020 11:20**	**GC18 03012016.D**	**194542**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	86	66-116		03/01/2020 21:02
Toluene-d8	102	86-110		03/01/2020 21:02
4-BFB	81	71-114		03/01/2020 21:02
Benzene-d6	79	62-122		03/01/2020 21:02
Ethylbenzene-d10	93	69-130		03/01/2020 21:02
1,2-DCB-d4	75	55-108		03/01/2020 21:02

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	GC18 03012017.D	194542

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 21:42
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 21:42
Benzene	ND	0.0050	1	03/01/2020 21:42
Bromobenzene	ND	0.0050	1	03/01/2020 21:42
Bromochloromethane	ND	0.0050	1	03/01/2020 21:42
Bromodichloromethane	ND	0.0050	1	03/01/2020 21:42
Bromoform	ND	0.0050	1	03/01/2020 21:42
Bromomethane	ND	0.0050	1	03/01/2020 21:42
2-Butanone (MEK)	ND	0.050	1	03/01/2020 21:42
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 21:42
n-Butyl benzene	ND	0.0050	1	03/01/2020 21:42
sec-Butyl benzene	ND	0.0050	1	03/01/2020 21:42
tert-Butyl benzene	ND	0.0050	1	03/01/2020 21:42
Carbon Disulfide	ND	0.0050	1	03/01/2020 21:42
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 21:42
Chlorobenzene	ND	0.0050	1	03/01/2020 21:42
Chloroethane	ND	0.0050	1	03/01/2020 21:42
Chloroform	ND	0.0050	1	03/01/2020 21:42
Chloromethane	ND	0.0050	1	03/01/2020 21:42
2-Chlorotoluene	ND	0.0050	1	03/01/2020 21:42
4-Chlorotoluene	ND	0.0050	1	03/01/2020 21:42
Dibromochloromethane	ND	0.0050	1	03/01/2020 21:42
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 21:42
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 21:42
Dibromomethane	ND	0.0050	1	03/01/2020 21:42
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:42
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:42
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 21:42
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 21:42
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 21:42
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 21:42
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 21:42
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 21:42
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 21:42
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 21:42
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 21:42
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 21:42

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	GC18 03012017.D	194542

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 21:42
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 21:42
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 21:42
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 21:42
Ethylbenzene	ND	0.0050	1	03/01/2020 21:42
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 21:42
Freon 113	ND	0.0050	1	03/01/2020 21:42
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 21:42
Hexachloroethane	ND	0.0050	1	03/01/2020 21:42
2-Hexanone	ND	0.0050	1	03/01/2020 21:42
Isopropylbenzene	ND	0.0050	1	03/01/2020 21:42
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 21:42
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 21:42
Methylene chloride	ND	0.020	1	03/01/2020 21:42
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 21:42
Naphthalene	ND	0.0050	1	03/01/2020 21:42
n-Propyl benzene	ND	0.0050	1	03/01/2020 21:42
Styrene	ND	0.0050	1	03/01/2020 21:42
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 21:42
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 21:42
Tetrachloroethene	ND	0.0050	1	03/01/2020 21:42
Toluene	ND	0.0050	1	03/01/2020 21:42
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 21:42
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 21:42
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 21:42
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 21:42
Trichloroethene	ND	0.0050	1	03/01/2020 21:42
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 21:42
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 21:42
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 21:42
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 21:42
Vinyl Chloride	ND	0.0050	1	03/01/2020 21:42
m,p-Xylene	ND	0.0050	1	03/01/2020 21:42
o-Xylene	ND	0.0050	1	03/01/2020 21:42
Xylenes, Total	ND	0.0050	1	03/01/2020 21:42

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	GC18 03012017.D	194542

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	87	66-116		03/01/2020 21:42
Toluene-d8	101	86-110		03/01/2020 21:42
4-BFB	81	71-114		03/01/2020 21:42
Benzene-d6	77	62-122		03/01/2020 21:42
Ethylbenzene-d10	90	69-130		03/01/2020 21:42
1,2-DCB-d4	74	55-108		03/01/2020 21:42

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	GC10 03022016.D	194542

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/02/2020 16:52
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/02/2020 16:52
Benzene	ND	0.0050	1	03/02/2020 16:52
Bromobenzene	ND	0.0050	1	03/02/2020 16:52
Bromochloromethane	ND	0.0050	1	03/02/2020 16:52
Bromodichloromethane	ND	0.0050	1	03/02/2020 16:52
Bromoform	ND	0.0050	1	03/02/2020 16:52
Bromomethane	ND	0.0050	1	03/02/2020 16:52
2-Butanone (MEK)	ND	0.050	1	03/02/2020 16:52
t-Butyl alcohol (TBA)	ND	0.050	1	03/02/2020 16:52
n-Butyl benzene	ND	0.0050	1	03/02/2020 16:52
sec-Butyl benzene	ND	0.0050	1	03/02/2020 16:52
tert-Butyl benzene	ND	0.0050	1	03/02/2020 16:52
Carbon Disulfide	ND	0.0050	1	03/02/2020 16:52
Carbon Tetrachloride	ND	0.0050	1	03/02/2020 16:52
Chlorobenzene	ND	0.0050	1	03/02/2020 16:52
Chloroethane	ND	0.0050	1	03/02/2020 16:52
Chloroform	ND	0.0050	1	03/02/2020 16:52
Chloromethane	ND	0.0050	1	03/02/2020 16:52
2-Chlorotoluene	ND	0.0050	1	03/02/2020 16:52
4-Chlorotoluene	ND	0.0050	1	03/02/2020 16:52
Dibromochloromethane	ND	0.0050	1	03/02/2020 16:52
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/02/2020 16:52
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/02/2020 16:52
Dibromomethane	ND	0.0050	1	03/02/2020 16:52
1,2-Dichlorobenzene	ND	0.0050	1	03/02/2020 16:52
1,3-Dichlorobenzene	ND	0.0050	1	03/02/2020 16:52
1,4-Dichlorobenzene	ND	0.0050	1	03/02/2020 16:52
Dichlorodifluoromethane	ND	0.0050	1	03/02/2020 16:52
1,1-Dichloroethane	ND	0.0050	1	03/02/2020 16:52
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/02/2020 16:52
1,1-Dichloroethene	ND	0.0050	1	03/02/2020 16:52
cis-1,2-Dichloroethene	ND	0.0050	1	03/02/2020 16:52
trans-1,2-Dichloroethene	ND	0.0050	1	03/02/2020 16:52
1,2-Dichloropropane	ND	0.0050	1	03/02/2020 16:52
1,3-Dichloropropane	ND	0.0050	1	03/02/2020 16:52
2,2-Dichloropropane	ND	0.0050	1	03/02/2020 16:52

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	GC10 03022016.D	194542

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/02/2020 16:52
cis-1,3-Dichloropropene	ND	0.0050	1	03/02/2020 16:52
trans-1,3-Dichloropropene	ND	0.0050	1	03/02/2020 16:52
Diisopropyl ether (DIPE)	ND	0.0050	1	03/02/2020 16:52
Ethylbenzene	ND	0.0050	1	03/02/2020 16:52
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/02/2020 16:52
Freon 113	ND	0.0050	1	03/02/2020 16:52
Hexachlorobutadiene	ND	0.0050	1	03/02/2020 16:52
Hexachloroethane	ND	0.0050	1	03/02/2020 16:52
2-Hexanone	ND	0.0050	1	03/02/2020 16:52
Isopropylbenzene	ND	0.0050	1	03/02/2020 16:52
4-Isopropyl toluene	ND	0.0050	1	03/02/2020 16:52
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/02/2020 16:52
Methylene chloride	ND	0.020	1	03/02/2020 16:52
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/02/2020 16:52
Naphthalene	ND	0.0050	1	03/02/2020 16:52
n-Propyl benzene	ND	0.0050	1	03/02/2020 16:52
Styrene	ND	0.0050	1	03/02/2020 16:52
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/02/2020 16:52
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/02/2020 16:52
Tetrachloroethene	ND	0.0050	1	03/02/2020 16:52
Toluene	ND	0.0050	1	03/02/2020 16:52
1,2,3-Trichlorobenzene	ND	0.0050	1	03/02/2020 16:52
1,2,4-Trichlorobenzene	ND	0.0050	1	03/02/2020 16:52
1,1,1-Trichloroethane	ND	0.0050	1	03/02/2020 16:52
1,1,2-Trichloroethane	ND	0.0050	1	03/02/2020 16:52
Trichloroethene	ND	0.0050	1	03/02/2020 16:52
Trichlorofluoromethane	ND	0.0050	1	03/02/2020 16:52
1,2,3-Trichloropropane	ND	0.0050	1	03/02/2020 16:52
1,2,4-Trimethylbenzene	ND	0.0050	1	03/02/2020 16:52
1,3,5-Trimethylbenzene	ND	0.0050	1	03/02/2020 16:52
Vinyl Chloride	ND	0.0050	1	03/02/2020 16:52
m,p-Xylene	ND	0.0050	1	03/02/2020 16:52
o-Xylene	ND	0.0050	1	03/02/2020 16:52
Xylenes, Total	ND	0.0050	1	03/02/2020 16:52

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	GC10 03022016.D	194542

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	107	66-116		03/02/2020 16:52
Toluene-d8	94	86-110		03/02/2020 16:52
4-BFB	109	71-114		03/02/2020 16:52
Benzene-d6	89	62-122		03/02/2020 16:52
Ethylbenzene-d10	82	69-130		03/02/2020 16:52
1,2-DCB-d4	68	55-108		03/02/2020 16:52

Analyst(s): TK

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	2002901-031A	Soil	02/20/2020 11:50	GC18 03012014.D	194542

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 19:42
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 19:42
Benzene	ND	0.0050	1	03/01/2020 19:42
Bromobenzene	ND	0.0050	1	03/01/2020 19:42
Bromochloromethane	ND	0.0050	1	03/01/2020 19:42
Bromodichloromethane	ND	0.0050	1	03/01/2020 19:42
Bromoform	ND	0.0050	1	03/01/2020 19:42
Bromomethane	ND	0.0050	1	03/01/2020 19:42
2-Butanone (MEK)	ND	0.050	1	03/01/2020 19:42
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 19:42
n-Butyl benzene	ND	0.0050	1	03/01/2020 19:42
sec-Butyl benzene	ND	0.0050	1	03/01/2020 19:42
tert-Butyl benzene	ND	0.0050	1	03/01/2020 19:42
Carbon Disulfide	ND	0.0050	1	03/01/2020 19:42
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 19:42
Chlorobenzene	ND	0.0050	1	03/01/2020 19:42
Chloroethane	ND	0.0050	1	03/01/2020 19:42
Chloroform	ND	0.0050	1	03/01/2020 19:42
Chloromethane	ND	0.0050	1	03/01/2020 19:42
2-Chlorotoluene	ND	0.0050	1	03/01/2020 19:42
4-Chlorotoluene	ND	0.0050	1	03/01/2020 19:42
Dibromochloromethane	ND	0.0050	1	03/01/2020 19:42
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 19:42
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 19:42
Dibromomethane	ND	0.0050	1	03/01/2020 19:42
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 19:42
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 19:42
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 19:42
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 19:42
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 19:42
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 19:42
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 19:42
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 19:42
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 19:42
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 19:42
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 19:42
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 19:42

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	2002901-031A	Soil	02/20/2020 11:50	GC18 03012014.D	194542

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 19:42
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 19:42
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 19:42
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 19:42
Ethylbenzene	ND	0.0050	1	03/01/2020 19:42
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 19:42
Freon 113	ND	0.0050	1	03/01/2020 19:42
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 19:42
Hexachloroethane	ND	0.0050	1	03/01/2020 19:42
2-Hexanone	ND	0.0050	1	03/01/2020 19:42
Isopropylbenzene	ND	0.0050	1	03/01/2020 19:42
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 19:42
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 19:42
Methylene chloride	ND	0.020	1	03/01/2020 19:42
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 19:42
Naphthalene	ND	0.0050	1	03/01/2020 19:42
n-Propyl benzene	ND	0.0050	1	03/01/2020 19:42
Styrene	ND	0.0050	1	03/01/2020 19:42
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 19:42
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 19:42
Tetrachloroethene	ND	0.0050	1	03/01/2020 19:42
Toluene	ND	0.0050	1	03/01/2020 19:42
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 19:42
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 19:42
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 19:42
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 19:42
Trichloroethene	ND	0.0050	1	03/01/2020 19:42
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 19:42
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 19:42
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 19:42
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 19:42
Vinyl Chloride	ND	0.0050	1	03/01/2020 19:42
m,p-Xylene	ND	0.0050	1	03/01/2020 19:42
o-Xylene	ND	0.0050	1	03/01/2020 19:42
Xylenes, Total	ND	0.0050	1	03/01/2020 19:42

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	**2002901-031A**	**Soil**	**02/20/2020 11:50**	**GC18 03012014.D**	**194542**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	86	66-116		03/01/2020 19:42
Toluene-d8	103	86-110		03/01/2020 19:42
4-BFB	83	71-114		03/01/2020 19:42
Benzene-d6	80	62-122		03/01/2020 19:42
Ethylbenzene-d10	92	69-130		03/01/2020 19:42
1,2-DCB-d4	74	55-108		03/01/2020 19:42

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	2002901-032A	Soil	02/20/2020 11:55	GC18 03012015.D	194542

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/01/2020 20:22
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2020 20:22
Benzene	ND	0.0050	1	03/01/2020 20:22
Bromobenzene	ND	0.0050	1	03/01/2020 20:22
Bromochloromethane	ND	0.0050	1	03/01/2020 20:22
Bromodichloromethane	ND	0.0050	1	03/01/2020 20:22
Bromoform	ND	0.0050	1	03/01/2020 20:22
Bromomethane	ND	0.0050	1	03/01/2020 20:22
2-Butanone (MEK)	ND	0.050	1	03/01/2020 20:22
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2020 20:22
n-Butyl benzene	ND	0.0050	1	03/01/2020 20:22
sec-Butyl benzene	ND	0.0050	1	03/01/2020 20:22
tert-Butyl benzene	ND	0.0050	1	03/01/2020 20:22
Carbon Disulfide	ND	0.0050	1	03/01/2020 20:22
Carbon Tetrachloride	ND	0.0050	1	03/01/2020 20:22
Chlorobenzene	ND	0.0050	1	03/01/2020 20:22
Chloroethane	ND	0.0050	1	03/01/2020 20:22
Chloroform	ND	0.0050	1	03/01/2020 20:22
Chloromethane	ND	0.0050	1	03/01/2020 20:22
2-Chlorotoluene	ND	0.0050	1	03/01/2020 20:22
4-Chlorotoluene	ND	0.0050	1	03/01/2020 20:22
Dibromochloromethane	ND	0.0050	1	03/01/2020 20:22
1,2-Dibromo-3-chloropropane	ND	0.0050	1	03/01/2020 20:22
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2020 20:22
Dibromomethane	ND	0.0050	1	03/01/2020 20:22
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2020 20:22
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2020 20:22
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2020 20:22
Dichlorodifluoromethane	ND	0.0050	1	03/01/2020 20:22
1,1-Dichloroethane	ND	0.0050	1	03/01/2020 20:22
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2020 20:22
1,1-Dichloroethene	ND	0.0050	1	03/01/2020 20:22
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 20:22
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2020 20:22
1,2-Dichloropropane	ND	0.0050	1	03/01/2020 20:22
1,3-Dichloropropane	ND	0.0050	1	03/01/2020 20:22
2,2-Dichloropropane	ND	0.0050	1	03/01/2020 20:22

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	2002901-032A	Soil	02/20/2020 11:55	GC18 03012015.D	194542

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/01/2020 20:22
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 20:22
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2020 20:22
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2020 20:22
Ethylbenzene	ND	0.0050	1	03/01/2020 20:22
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2020 20:22
Freon 113	ND	0.0050	1	03/01/2020 20:22
Hexachlorobutadiene	ND	0.0050	1	03/01/2020 20:22
Hexachloroethane	ND	0.0050	1	03/01/2020 20:22
2-Hexanone	ND	0.0050	1	03/01/2020 20:22
Isopropylbenzene	ND	0.0050	1	03/01/2020 20:22
4-Isopropyl toluene	ND	0.0050	1	03/01/2020 20:22
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2020 20:22
Methylene chloride	ND	0.020	1	03/01/2020 20:22
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2020 20:22
Naphthalene	ND	0.0050	1	03/01/2020 20:22
n-Propyl benzene	ND	0.0050	1	03/01/2020 20:22
Styrene	ND	0.0050	1	03/01/2020 20:22
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 20:22
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2020 20:22
Tetrachloroethene	ND	0.0050	1	03/01/2020 20:22
Toluene	ND	0.0050	1	03/01/2020 20:22
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2020 20:22
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2020 20:22
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2020 20:22
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2020 20:22
Trichloroethene	ND	0.0050	1	03/01/2020 20:22
Trichlorofluoromethane	ND	0.0050	1	03/01/2020 20:22
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2020 20:22
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2020 20:22
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2020 20:22
Vinyl Chloride	ND	0.0050	1	03/01/2020 20:22
m,p-Xylene	ND	0.0050	1	03/01/2020 20:22
o-Xylene	ND	0.0050	1	03/01/2020 20:22
Xylenes, Total	ND	0.0050	1	03/01/2020 20:22

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5030B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8260B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	**2002901-032A**	**Soil**	**02/20/2020 11:55**	**GC18 03012015.D**	**194542**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	84	66-116		03/01/2020 20:22
Toluene-d8	101	86-110		03/01/2020 20:22
4-BFB	81	71-114		03/01/2020 20:22
Benzene-d6	79	62-122		03/01/2020 20:22
Ethylbenzene-d10	92	69-130		03/01/2020 20:22
1,2-DCB-d4	74	55-108		03/01/2020 20:22

Analyst(s): KF

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_2-3	2002901-001A	Soil	02/21/2020 13:35	GC21 02252024.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acenaphthene	**0.0017**		0.0013	1	02/25/2020 19:14
Acenaphthylene	ND		0.0013	1	02/25/2020 19:14
Acetochlor	ND		0.25	1	02/25/2020 19:14
Anthracene	**0.0041**		0.0013	1	02/25/2020 19:14
Benzidine	ND		1.2	1	02/25/2020 19:14
Benzo (a) anthracene	**0.010**		0.0050	1	02/25/2020 19:14
Benzo (a) pyrene	**0.0045**		0.0025	1	02/25/2020 19:14
Benzo (b) fluoranthene	ND		0.0063	1	02/25/2020 19:14
Benzo (g,h,i) perylene	**0.0032**		0.0025	1	02/25/2020 19:14
Benzo (k) fluoranthene	**0.0031**		0.0013	1	02/25/2020 19:14
Benzyl Alcohol	ND		1.2	1	02/25/2020 19:14
1,1-Biphenyl	ND		0.013	1	02/25/2020 19:14
Bis (2-chloroethoxy) Methane	ND		0.25	1	02/25/2020 19:14
Bis (2-chloroethyl) Ether	ND		0.0025	1	02/25/2020 19:14
Bis (2-chloroisopropyl) Ether	ND		0.0025	1	02/25/2020 19:14
Bis (2-ethylhexyl) Adipate	ND		0.50	1	02/25/2020 19:14
Bis (2-ethylhexyl) Phthalate	**0.0093**		0.0050	1	02/25/2020 19:14
4-Bromophenyl Phenyl Ether	ND		0.25	1	02/25/2020 19:14
Butylbenzyl Phthalate	ND		0.025	1	02/25/2020 19:14
4-Chloroaniline	ND		0.0025	1	02/25/2020 19:14
4-Chloro-3-methylphenol	ND		0.25	1	02/25/2020 19:14
2-Chloronaphthalene	ND		0.25	1	02/25/2020 19:14
2-Chlorophenol	ND		0.0050	1	02/25/2020 19:14
4-Chlorophenyl Phenyl Ether	ND		0.25	1	02/25/2020 19:14
Chrysene	**0.0068**		0.0025	1	02/25/2020 19:14
Dibenzo (a,h) anthracene	ND		0.0025	1	02/25/2020 19:14
Dibenzofuran	ND		0.25	1	02/25/2020 19:14
Di-n-butyl Phthalate	**0.0069**	B	0.0050	1	02/25/2020 19:14
1,2-Dichlorobenzene	ND		0.25	1	02/25/2020 19:14
1,3-Dichlorobenzene	ND		0.25	1	02/25/2020 19:14
1,4-Dichlorobenzene	ND		0.25	1	02/25/2020 19:14
3,3-Dichlorobenzidine	ND		0.0025	1	02/25/2020 19:14
2,4-Dichlorophenol	ND		0.013	1	02/25/2020 19:14
Diethyl Phthalate	ND		0.0050	1	02/25/2020 19:14
2,4-Dimethylphenol	ND		0.25	1	02/25/2020 19:14
Dimethyl Phthalate	ND		0.0025	1	02/25/2020 19:14
4,6-Dinitro-2-methylphenol	ND		1.2	1	02/25/2020 19:14

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_2-3	2002901-001A	Soil	02/21/2020 13:35	GC21 02252024.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		0.13	1	02/25/2020 19:14
2,4-Dinitrotoluene	ND		0.0063	1	02/25/2020 19:14
2,6-Dinitrotoluene	ND		0.0025	1	02/25/2020 19:14
Di-n-octyl Phthalate	ND		0.0050	1	02/25/2020 19:14
1,2-Diphenylhydrazine	ND		0.25	1	02/25/2020 19:14
Fluoranthene	**0.016**		0.0013	1	02/25/2020 19:14
Fluorene	ND		0.0025	1	02/25/2020 19:14
Hexachlorobenzene	ND		0.0013	1	02/25/2020 19:14
Hexachlorobutadiene	ND		0.0025	1	02/25/2020 19:14
Hexachlorocyclopentadiene	ND		2.0	1	02/25/2020 19:14
Hexachloroethane	ND		0.0025	1	02/25/2020 19:14
Indeno (1,2,3-cd) pyrene	**0.0035**	B	0.0025	1	02/25/2020 19:14
Isophorone	ND		0.25	1	02/25/2020 19:14
1-Methylnaphthalene	ND		0.0013	1	02/25/2020 19:14
2-Methylnaphthalene	ND		0.0025	1	02/25/2020 19:14
2-Methylphenol (o-Cresol)	ND		0.50	1	02/25/2020 19:14
3 & 4-Methylphenol (m,p-Cresol)	ND		0.25	1	02/25/2020 19:14
Naphthalene	ND		0.0013	1	02/25/2020 19:14
2-Nitroaniline	ND		1.2	1	02/25/2020 19:14
3-Nitroaniline	ND		1.2	1	02/25/2020 19:14
4-Nitroaniline	ND		1.2	1	02/25/2020 19:14
Nitrobenzene	ND		0.25	1	02/25/2020 19:14
2-Nitrophenol	ND		1.2	1	02/25/2020 19:14
4-Nitrophenol	ND		1.2	1	02/25/2020 19:14
N-Nitrosodiphenylamine	ND		0.25	1	02/25/2020 19:14
N-Nitrosodi-n-propylamine	ND		0.25	1	02/25/2020 19:14
Pentachlorophenol	ND		0.031	1	02/25/2020 19:14
Phenanthrene	**0.017**		0.0050	1	02/25/2020 19:14
Phenol	ND		0.0050	1	02/25/2020 19:14
Pyrene	**0.012**		0.0025	1	02/25/2020 19:14
Pyridine	ND		0.25	1	02/25/2020 19:14
1,2,4-Trichlorobenzene	ND		0.25	1	02/25/2020 19:14
2,4,5-Trichlorophenol	ND		0.0025	1	02/25/2020 19:14
2,4,6-Trichlorophenol	ND		0.013	1	02/25/2020 19:14

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_2-3	2002901-001A	Soil	02/21/2020 13:35	GC21 02252024.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Surrogates	**REC (%)**		**Limits**		
2-Fluorophenol	107		56-152		02/25/2020 19:14
Phenol-d5	101		54-146		02/25/2020 19:14
Nitrobenzene-d5	92		47-147		02/25/2020 19:14
2-Fluorobiphenyl	86		46-141		02/25/2020 19:14
2,4,6-Tribromophenol	80		25-166		02/25/2020 19:14
4-Terphenyl-d14	71		39-153		02/25/2020 19:14

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	GC21 02252025.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acenaphthene	**0.0029**		0.0013	1	02/25/2020 19:42
Acenaphthylene	ND		0.0013	1	02/25/2020 19:42
Acetochlor	ND		0.25	1	02/25/2020 19:42
Anthracene	**0.0091**		0.0013	1	02/25/2020 19:42
Benzidine	ND		1.2	1	02/25/2020 19:42
Benzo (a) anthracene	**0.014**		0.0050	1	02/25/2020 19:42
Benzo (a) pyrene	**0.0074**		0.0025	1	02/25/2020 19:42
Benzo (b) fluoranthene	**0.0091**		0.0063	1	02/25/2020 19:42
Benzo (g,h,i) perylene	**0.0046**		0.0025	1	02/25/2020 19:42
Benzo (k) fluoranthene	**0.0045**		0.0013	1	02/25/2020 19:42
Benzyl Alcohol	ND		1.2	1	02/25/2020 19:42
1,1-Biphenyl	ND		0.013	1	02/25/2020 19:42
Bis (2-chloroethoxy) Methane	ND		0.25	1	02/25/2020 19:42
Bis (2-chloroethyl) Ether	ND		0.0025	1	02/25/2020 19:42
Bis (2-chloroisopropyl) Ether	ND		0.0025	1	02/25/2020 19:42
Bis (2-ethylhexyl) Adipate	ND		0.50	1	02/25/2020 19:42
Bis (2-ethylhexyl) Phthalate	ND		0.0050	1	02/25/2020 19:42
4-Bromophenyl Phenyl Ether	ND		0.25	1	02/25/2020 19:42
Butylbenzyl Phthalate	ND		0.025	1	02/25/2020 19:42
4-Chloroaniline	ND		0.0025	1	02/25/2020 19:42
4-Chloro-3-methylphenol	ND		0.25	1	02/25/2020 19:42
2-Chloronaphthalene	ND		0.25	1	02/25/2020 19:42
2-Chlorophenol	ND		0.0050	1	02/25/2020 19:42
4-Chlorophenyl Phenyl Ether	ND		0.25	1	02/25/2020 19:42
Chrysene	**0.013**		0.0025	1	02/25/2020 19:42
Dibenzo (a,h) anthracene	ND		0.0025	1	02/25/2020 19:42
Dibenzofuran	ND		0.25	1	02/25/2020 19:42
Di-n-butyl Phthalate	**0.0058**	B	0.0050	1	02/25/2020 19:42
1,2-Dichlorobenzene	ND		0.25	1	02/25/2020 19:42
1,3-Dichlorobenzene	ND		0.25	1	02/25/2020 19:42
1,4-Dichlorobenzene	ND		0.25	1	02/25/2020 19:42
3,3-Dichlorobenzidine	ND		0.0025	1	02/25/2020 19:42
2,4-Dichlorophenol	ND		0.013	1	02/25/2020 19:42
Diethyl Phthalate	ND		0.0050	1	02/25/2020 19:42
2,4-Dimethylphenol	ND		0.25	1	02/25/2020 19:42
Dimethyl Phthalate	ND		0.0025	1	02/25/2020 19:42
4,6-Dinitro-2-methylphenol	ND		1.2	1	02/25/2020 19:42

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	GC21 02252025.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		0.13	1	02/25/2020 19:42
2,4-Dinitrotoluene	ND		0.0063	1	02/25/2020 19:42
2,6-Dinitrotoluene	ND		0.0025	1	02/25/2020 19:42
Di-n-octyl Phthalate	ND		0.0050	1	02/25/2020 19:42
1,2-Diphenylhydrazine	ND		0.25	1	02/25/2020 19:42
Fluoranthene	**0.029**		0.0013	1	02/25/2020 19:42
Fluorene	**0.0049**		0.0025	1	02/25/2020 19:42
Hexachlorobenzene	ND		0.0013	1	02/25/2020 19:42
Hexachlorobutadiene	ND		0.0025	1	02/25/2020 19:42
Hexachlorocyclopentadiene	ND		2.0	1	02/25/2020 19:42
Hexachloroethane	ND		0.0025	1	02/25/2020 19:42
Indeno (1,2,3-cd) pyrene	**0.0045**	B	0.0025	1	02/25/2020 19:42
Isophorone	ND		0.25	1	02/25/2020 19:42
1-Methylnaphthalene	ND		0.0013	1	02/25/2020 19:42
2-Methylnaphthalene	ND		0.0025	1	02/25/2020 19:42
2-Methylphenol (o-Cresol)	ND		0.50	1	02/25/2020 19:42
3 & 4-Methylphenol (m,p-Cresol)	ND		0.25	1	02/25/2020 19:42
Naphthalene	ND		0.0013	1	02/25/2020 19:42
2-Nitroaniline	ND		1.2	1	02/25/2020 19:42
3-Nitroaniline	ND		1.2	1	02/25/2020 19:42
4-Nitroaniline	ND		1.2	1	02/25/2020 19:42
Nitrobenzene	ND		0.25	1	02/25/2020 19:42
2-Nitrophenol	ND		1.2	1	02/25/2020 19:42
4-Nitrophenol	ND		1.2	1	02/25/2020 19:42
N-Nitrosodiphenylamine	ND		0.25	1	02/25/2020 19:42
N-Nitrosodi-n-propylamine	ND		0.25	1	02/25/2020 19:42
Pentachlorophenol	ND		0.031	1	02/25/2020 19:42
Phenanthrene	**0.038**		0.0050	1	02/25/2020 19:42
Phenol	ND		0.0050	1	02/25/2020 19:42
Pyrene	**0.025**		0.0025	1	02/25/2020 19:42
Pyridine	ND		0.25	1	02/25/2020 19:42
1,2,4-Trichlorobenzene	ND		0.25	1	02/25/2020 19:42
2,4,5-Trichlorophenol	ND		0.0025	1	02/25/2020 19:42
2,4,6-Trichlorophenol	ND		0.013	1	02/25/2020 19:42

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	GC21 02252025.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Surrogates	**REC (%)**		**Limits**		
2-Fluorophenol	92		56-152		02/25/2020 19:42
Phenol-d5	89		54-146		02/25/2020 19:42
Nitrobenzene-d5	78		47-147		02/25/2020 19:42
2-Fluorobiphenyl	74		46-141		02/25/2020 19:42
2,4,6-Tribromophenol	68		25-166		02/25/2020 19:42
4-Terphenyl-d14	66		39-153		02/25/2020 19:42

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	2002901-003A	Soil	02/20/2020 14:00	GC21 02252026.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acenaphthene	**0.0016**		0.0013	1	02/25/2020 20:09
Acenaphthylene	ND		0.0013	1	02/25/2020 20:09
Acetochlor	ND		0.25	1	02/25/2020 20:09
Anthracene	**0.0046**		0.0013	1	02/25/2020 20:09
Benzidine	ND		1.2	1	02/25/2020 20:09
Benzo (a) anthracene	**0.0094**		0.0050	1	02/25/2020 20:09
Benzo (a) pyrene	**0.0040**		0.0025	1	02/25/2020 20:09
Benzo (b) fluoranthene	ND		0.0063	1	02/25/2020 20:09
Benzo (g,h,i) perylene	**0.0025**		0.0025	1	02/25/2020 20:09
Benzo (k) fluoranthene	**0.0025**		0.0013	1	02/25/2020 20:09
Benzyl Alcohol	ND		1.2	1	02/25/2020 20:09
1,1-Biphenyl	ND		0.013	1	02/25/2020 20:09
Bis (2-chloroethoxy) Methane	ND		0.25	1	02/25/2020 20:09
Bis (2-chloroethyl) Ether	ND		0.0025	1	02/25/2020 20:09
Bis (2-chloroisopropyl) Ether	ND		0.0025	1	02/25/2020 20:09
Bis (2-ethylhexyl) Adipate	ND		0.50	1	02/25/2020 20:09
Bis (2-ethylhexyl) Phthalate	**0.0063**		0.0050	1	02/25/2020 20:09
4-Bromophenyl Phenyl Ether	ND		0.25	1	02/25/2020 20:09
Butylbenzyl Phthalate	ND		0.025	1	02/25/2020 20:09
4-Chloroaniline	ND		0.0025	1	02/25/2020 20:09
4-Chloro-3-methylphenol	ND		0.25	1	02/25/2020 20:09
2-Chloronaphthalene	ND		0.25	1	02/25/2020 20:09
2-Chlorophenol	ND		0.0050	1	02/25/2020 20:09
4-Chlorophenyl Phenyl Ether	ND		0.25	1	02/25/2020 20:09
Chrysene	**0.0061**		0.0025	1	02/25/2020 20:09
Dibenzo (a,h) anthracene	ND		0.0025	1	02/25/2020 20:09
Dibenzofuran	ND		0.25	1	02/25/2020 20:09
Di-n-butyl Phthalate	ND		0.0050	1	02/25/2020 20:09
1,2-Dichlorobenzene	ND		0.25	1	02/25/2020 20:09
1,3-Dichlorobenzene	ND		0.25	1	02/25/2020 20:09
1,4-Dichlorobenzene	ND		0.25	1	02/25/2020 20:09
3,3-Dichlorobenzidine	ND		0.0025	1	02/25/2020 20:09
2,4-Dichlorophenol	ND		0.013	1	02/25/2020 20:09
Diethyl Phthalate	ND		0.0050	1	02/25/2020 20:09
2,4-Dimethylphenol	ND		0.25	1	02/25/2020 20:09
Dimethyl Phthalate	ND		0.0025	1	02/25/2020 20:09
4,6-Dinitro-2-methylphenol	ND		1.2	1	02/25/2020 20:09

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	2002901-003A	Soil	02/20/2020 14:00	GC21 02252026.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		0.13	1	02/25/2020 20:09
2,4-Dinitrotoluene	ND		0.0063	1	02/25/2020 20:09
2,6-Dinitrotoluene	ND		0.0025	1	02/25/2020 20:09
Di-n-octyl Phthalate	ND		0.0050	1	02/25/2020 20:09
1,2-Diphenylhydrazine	ND		0.25	1	02/25/2020 20:09
Fluoranthene	**0.015**		0.0013	1	02/25/2020 20:09
Fluorene	ND		0.0025	1	02/25/2020 20:09
Hexachlorobenzene	ND		0.0013	1	02/25/2020 20:09
Hexachlorobutadiene	ND		0.0025	1	02/25/2020 20:09
Hexachlorocyclopentadiene	ND		2.0	1	02/25/2020 20:09
Hexachloroethane	ND		0.0025	1	02/25/2020 20:09
Indeno (1,2,3-cd) pyrene	**0.0030**	B	0.0025	1	02/25/2020 20:09
Isophorone	ND		0.25	1	02/25/2020 20:09
1-Methylnaphthalene	ND		0.0013	1	02/25/2020 20:09
2-Methylnaphthalene	ND		0.0025	1	02/25/2020 20:09
2-Methylphenol (o-Cresol)	ND		0.50	1	02/25/2020 20:09
3 & 4-Methylphenol (m,p-Cresol)	ND		0.25	1	02/25/2020 20:09
Naphthalene	ND		0.0013	1	02/25/2020 20:09
2-Nitroaniline	ND		1.2	1	02/25/2020 20:09
3-Nitroaniline	ND		1.2	1	02/25/2020 20:09
4-Nitroaniline	ND		1.2	1	02/25/2020 20:09
Nitrobenzene	ND		0.25	1	02/25/2020 20:09
2-Nitrophenol	ND		1.2	1	02/25/2020 20:09
4-Nitrophenol	ND		1.2	1	02/25/2020 20:09
N-Nitrosodiphenylamine	ND		0.25	1	02/25/2020 20:09
N-Nitrosodi-n-propylamine	ND		0.25	1	02/25/2020 20:09
Pentachlorophenol	ND		0.031	1	02/25/2020 20:09
Phenanthrene	**0.019**		0.0050	1	02/25/2020 20:09
Phenol	ND		0.0050	1	02/25/2020 20:09
Pyrene	**0.012**		0.0025	1	02/25/2020 20:09
Pyridine	ND		0.25	1	02/25/2020 20:09
1,2,4-Trichlorobenzene	ND		0.25	1	02/25/2020 20:09
2,4,5-Trichlorophenol	ND		0.0025	1	02/25/2020 20:09
2,4,6-Trichlorophenol	ND		0.013	1	02/25/2020 20:09

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	2002901-003A	Soil	02/20/2020 14:00	GC21 02252026.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Surrogates	**REC (%)**		**Limits**		
2-Fluorophenol	100		56-152		02/25/2020 20:09
Phenol-d5	93		54-146		02/25/2020 20:09
Nitrobenzene-d5	85		47-147		02/25/2020 20:09
2-Fluorobiphenyl	86		46-141		02/25/2020 20:09
2,4,6-Tribromophenol	67		25-166		02/25/2020 20:09
4-Terphenyl-d14	68		39-153		02/25/2020 20:09

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	2002901-004A	Soil	02/20/2020 14:05	GC21 02252027.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acenaphthene	**0.055**		0.0013	1	02/25/2020 20:36
Acenaphthylene	ND		0.0013	1	02/25/2020 20:36
Acetochlor	ND		0.25	1	02/25/2020 20:36
Anthracene	**0.14**		0.0013	1	02/25/2020 20:36
Benzidine	ND		1.2	1	02/25/2020 20:36
Benzo (a) anthracene	**0.19**		0.0050	1	02/25/2020 20:36
Benzo (a) pyrene	**0.11**		0.0025	1	02/25/2020 20:36
Benzo (b) fluoranthene	**0.15**		0.0063	1	02/25/2020 20:36
Benzo (g,h,i) perylene	**0.052**		0.0025	1	02/25/2020 20:36
Benzo (k) fluoranthene	**0.066**		0.0013	1	02/25/2020 20:36
Benzyl Alcohol	ND		1.2	1	02/25/2020 20:36
1,1-Biphenyl	ND		0.013	1	02/25/2020 20:36
Bis (2-chloroethoxy) Methane	ND		0.25	1	02/25/2020 20:36
Bis (2-chloroethyl) Ether	ND		0.0025	1	02/25/2020 20:36
Bis (2-chloroisopropyl) Ether	ND		0.0025	1	02/25/2020 20:36
Bis (2-ethylhexyl) Adipate	ND		0.50	1	02/25/2020 20:36
Bis (2-ethylhexyl) Phthalate	**0.0093**		0.0050	1	02/25/2020 20:36
4-Bromophenyl Phenyl Ether	ND		0.25	1	02/25/2020 20:36
Butylbenzyl Phthalate	ND		0.025	1	02/25/2020 20:36
4-Chloroaniline	ND		0.0025	1	02/25/2020 20:36
4-Chloro-3-methylphenol	ND		0.25	1	02/25/2020 20:36
2-Chloronaphthalene	ND		0.25	1	02/25/2020 20:36
2-Chlorophenol	ND		0.0050	1	02/25/2020 20:36
4-Chlorophenyl Phenyl Ether	ND		0.25	1	02/25/2020 20:36
Chrysene	**0.21**		0.0025	1	02/25/2020 20:36
Dibenzo (a,h) anthracene	**0.014**		0.0025	1	02/25/2020 20:36
Dibenzofuran	ND		0.25	1	02/25/2020 20:36
Di-n-butyl Phthalate	**0.0053**	B	0.0050	1	02/25/2020 20:36
1,2-Dichlorobenzene	ND		0.25	1	02/25/2020 20:36
1,3-Dichlorobenzene	ND		0.25	1	02/25/2020 20:36
1,4-Dichlorobenzene	ND		0.25	1	02/25/2020 20:36
3,3-Dichlorobenzidine	ND		0.0025	1	02/25/2020 20:36
2,4-Dichlorophenol	ND		0.013	1	02/25/2020 20:36
Diethyl Phthalate	ND		0.0050	1	02/25/2020 20:36
2,4-Dimethylphenol	ND		0.25	1	02/25/2020 20:36
Dimethyl Phthalate	ND		0.0025	1	02/25/2020 20:36
4,6-Dinitro-2-methylphenol	ND		1.2	1	02/25/2020 20:36

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	2002901-004A	Soil	02/20/2020 14:05	GC21 02252027.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		0.13	1	02/25/2020 20:36
2,4-Dinitrotoluene	ND		0.0063	1	02/25/2020 20:36
2,6-Dinitrotoluene	ND		0.0025	1	02/25/2020 20:36
Di-n-octyl Phthalate	ND		0.0050	1	02/25/2020 20:36
1,2-Diphenylhydrazine	ND		0.25	1	02/25/2020 20:36
Fluoranthene	**0.48**		0.0013	1	02/25/2020 20:36
Fluorene	**0.069**		0.0025	1	02/25/2020 20:36
Hexachlorobenzene	ND		0.0013	1	02/25/2020 20:36
Hexachlorobutadiene	ND		0.0025	1	02/25/2020 20:36
Hexachlorocyclopentadiene	ND		2.0	1	02/25/2020 20:36
Hexachloroethane	ND		0.0025	1	02/25/2020 20:36
Indeno (1,2,3-cd) pyrene	**0.039**	B	0.0025	1	02/25/2020 20:36
Isophorone	ND		0.25	1	02/25/2020 20:36
1-Methylnaphthalene	**0.0068**		0.0013	1	02/25/2020 20:36
2-Methylnaphthalene	**0.0096**		0.0025	1	02/25/2020 20:36
2-Methylphenol (o-Cresol)	ND		0.50	1	02/25/2020 20:36
3 & 4-Methylphenol (m,p-Cresol)	ND		0.25	1	02/25/2020 20:36
Naphthalene	**0.018**		0.0013	1	02/25/2020 20:36
2-Nitroaniline	ND		1.2	1	02/25/2020 20:36
3-Nitroaniline	ND		1.2	1	02/25/2020 20:36
4-Nitroaniline	ND		1.2	1	02/25/2020 20:36
Nitrobenzene	ND		0.25	1	02/25/2020 20:36
2-Nitrophenol	ND		1.2	1	02/25/2020 20:36
4-Nitrophenol	ND		1.2	1	02/25/2020 20:36
N-Nitrosodiphenylamine	ND		0.25	1	02/25/2020 20:36
N-Nitrosodi-n-propylamine	ND		0.25	1	02/25/2020 20:36
Pentachlorophenol	ND		0.031	1	02/25/2020 20:36
Phenanthrene	**0.46**		0.0050	1	02/25/2020 20:36
Phenol	ND		0.0050	1	02/25/2020 20:36
Pyrene	**0.36**		0.0025	1	02/25/2020 20:36
Pyridine	ND		0.25	1	02/25/2020 20:36
1,2,4-Trichlorobenzene	ND		0.25	1	02/25/2020 20:36
2,4,5-Trichlorophenol	ND		0.0025	1	02/25/2020 20:36
2,4,6-Trichlorophenol	ND		0.013	1	02/25/2020 20:36

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	2002901-004A	Soil	02/20/2020 14:05	GC21 02252027.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Surrogates	**REC (%)**		**Limits**		
2-Fluorophenol	101		56-152		02/25/2020 20:36
Phenol-d5	97		54-146		02/25/2020 20:36
Nitrobenzene-d5	86		47-147		02/25/2020 20:36
2-Fluorobiphenyl	86		46-141		02/25/2020 20:36
2,4,6-Tribromophenol	43		25-166		02/25/2020 20:36
4-Terphenyl-d14	71		39-153		02/25/2020 20:36

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	GC21 02252028.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acenaphthene	ND		0.0013	1	02/25/2020 21:03
Acenaphthylene	ND		0.0013	1	02/25/2020 21:03
Acetochlor	ND		0.25	1	02/25/2020 21:03
Anthracene	**0.0013**		0.0013	1	02/25/2020 21:03
Benzidine	ND		1.2	1	02/25/2020 21:03
Benzo (a) anthracene	ND		0.0050	1	02/25/2020 21:03
Benzo (a) pyrene	ND		0.0025	1	02/25/2020 21:03
Benzo (b) fluoranthene	ND		0.0063	1	02/25/2020 21:03
Benzo (g,h,i) perylene	ND		0.0025	1	02/25/2020 21:03
Benzo (k) fluoranthene	ND		0.0013	1	02/25/2020 21:03
Benzyl Alcohol	ND		1.2	1	02/25/2020 21:03
1,1-Biphenyl	ND		0.013	1	02/25/2020 21:03
Bis (2-chloroethoxy) Methane	ND		0.25	1	02/25/2020 21:03
Bis (2-chloroethyl) Ether	ND		0.0025	1	02/25/2020 21:03
Bis (2-chloroisopropyl) Ether	ND		0.0025	1	02/25/2020 21:03
Bis (2-ethylhexyl) Adipate	ND		0.50	1	02/25/2020 21:03
Bis (2-ethylhexyl) Phthalate	**0.0076**		0.0050	1	02/25/2020 21:03
4-Bromophenyl Phenyl Ether	ND		0.25	1	02/25/2020 21:03
Butylbenzyl Phthalate	ND		0.025	1	02/25/2020 21:03
4-Chloroaniline	ND		0.0025	1	02/25/2020 21:03
4-Chloro-3-methylphenol	ND		0.25	1	02/25/2020 21:03
2-Chloronaphthalene	ND		0.25	1	02/25/2020 21:03
2-Chlorophenol	ND		0.0050	1	02/25/2020 21:03
4-Chlorophenyl Phenyl Ether	ND		0.25	1	02/25/2020 21:03
Chrysene	ND		0.0025	1	02/25/2020 21:03
Dibenzo (a,h) anthracene	ND		0.0025	1	02/25/2020 21:03
Dibenzofuran	ND		0.25	1	02/25/2020 21:03
Di-n-butyl Phthalate	**0.0056**	B	0.0050	1	02/25/2020 21:03
1,2-Dichlorobenzene	ND		0.25	1	02/25/2020 21:03
1,3-Dichlorobenzene	ND		0.25	1	02/25/2020 21:03
1,4-Dichlorobenzene	ND		0.25	1	02/25/2020 21:03
3,3-Dichlorobenzidine	ND		0.0025	1	02/25/2020 21:03
2,4-Dichlorophenol	ND		0.013	1	02/25/2020 21:03
Diethyl Phthalate	ND		0.0050	1	02/25/2020 21:03
2,4-Dimethylphenol	ND		0.25	1	02/25/2020 21:03
Dimethyl Phthalate	ND		0.0025	1	02/25/2020 21:03
4,6-Dinitro-2-methylphenol	ND		1.2	1	02/25/2020 21:03

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	GC21 02252028.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		0.13	1	02/25/2020 21:03
2,4-Dinitrotoluene	ND		0.0063	1	02/25/2020 21:03
2,6-Dinitrotoluene	ND		0.0025	1	02/25/2020 21:03
Di-n-octyl Phthalate	ND		0.0050	1	02/25/2020 21:03
1,2-Diphenylhydrazine	ND		0.25	1	02/25/2020 21:03
Fluoranthene	**0.0058**		0.0013	1	02/25/2020 21:03
Fluorene	ND		0.0025	1	02/25/2020 21:03
Hexachlorobenzene	ND		0.0013	1	02/25/2020 21:03
Hexachlorobutadiene	ND		0.0025	1	02/25/2020 21:03
Hexachlorocyclopentadiene	ND		2.0	1	02/25/2020 21:03
Hexachloroethane	ND		0.0025	1	02/25/2020 21:03
Indeno (1,2,3-cd) pyrene	ND		0.0025	1	02/25/2020 21:03
Isophorone	ND		0.25	1	02/25/2020 21:03
1-Methylnaphthalene	ND		0.0013	1	02/25/2020 21:03
2-Methylnaphthalene	ND		0.0025	1	02/25/2020 21:03
2-Methylphenol (o-Cresol)	ND		0.50	1	02/25/2020 21:03
3 & 4-Methylphenol (m,p-Cresol)	ND		0.25	1	02/25/2020 21:03
Naphthalene	ND		0.0013	1	02/25/2020 21:03
2-Nitroaniline	ND		1.2	1	02/25/2020 21:03
3-Nitroaniline	ND		1.2	1	02/25/2020 21:03
4-Nitroaniline	ND		1.2	1	02/25/2020 21:03
Nitrobenzene	ND		0.25	1	02/25/2020 21:03
2-Nitrophenol	ND		1.2	1	02/25/2020 21:03
4-Nitrophenol	ND		1.2	1	02/25/2020 21:03
N-Nitrosodiphenylamine	ND		0.25	1	02/25/2020 21:03
N-Nitrosodi-n-propylamine	ND		0.25	1	02/25/2020 21:03
Pentachlorophenol	ND		0.031	1	02/25/2020 21:03
Phenanthrene	**0.0058**		0.0050	1	02/25/2020 21:03
Phenol	ND		0.0050	1	02/25/2020 21:03
Pyrene	**0.0043**		0.0025	1	02/25/2020 21:03
Pyridine	ND		0.25	1	02/25/2020 21:03
1,2,4-Trichlorobenzene	ND		0.25	1	02/25/2020 21:03
2,4,5-Trichlorophenol	ND		0.0025	1	02/25/2020 21:03
2,4,6-Trichlorophenol	ND		0.013	1	02/25/2020 21:03

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	GC21 02252028.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Surrogates	**REC (%)**		**Limits**		
2-Fluorophenol	92		56-152		02/25/2020 21:03
Phenol-d5	87		54-146		02/25/2020 21:03
Nitrobenzene-d5	79		47-147		02/25/2020 21:03
2-Fluorobiphenyl	77		46-141		02/25/2020 21:03
2,4,6-Tribromophenol	43		25-166		02/25/2020 21:03
4-Terphenyl-d14	62		39-153		02/25/2020 21:03

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_5-6	2002901-006A	Soil	02/20/2020 14:25	GC21 02252029.D	194582

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/25/2020 21:30
Acenaphthylene	ND	0.0013	1	02/25/2020 21:30
Acetochlor	ND	0.25	1	02/25/2020 21:30
Anthracene	ND	0.0013	1	02/25/2020 21:30
Benzidine	ND	1.2	1	02/25/2020 21:30
Benzo (a) anthracene	ND	0.0050	1	02/25/2020 21:30
Benzo (a) pyrene	ND	0.0025	1	02/25/2020 21:30
Benzo (b) fluoranthene	ND	0.0063	1	02/25/2020 21:30
Benzo (g,h,i) perylene	ND	0.0025	1	02/25/2020 21:30
Benzo (k) fluoranthene	ND	0.0013	1	02/25/2020 21:30
Benzyl Alcohol	ND	1.2	1	02/25/2020 21:30
1,1-Biphenyl	ND	0.013	1	02/25/2020 21:30
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/25/2020 21:30
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/25/2020 21:30
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/25/2020 21:30
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/25/2020 21:30
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/25/2020 21:30
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/25/2020 21:30
Butylbenzyl Phthalate	ND	0.025	1	02/25/2020 21:30
4-Chloroaniline	ND	0.0025	1	02/25/2020 21:30
4-Chloro-3-methylphenol	ND	0.25	1	02/25/2020 21:30
2-Chloronaphthalene	ND	0.25	1	02/25/2020 21:30
2-Chlorophenol	ND	0.0050	1	02/25/2020 21:30
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/25/2020 21:30
Chrysene	ND	0.0025	1	02/25/2020 21:30
Dibenzo (a,h) anthracene	ND	0.0025	1	02/25/2020 21:30
Dibenzofuran	ND	0.25	1	02/25/2020 21:30
Di-n-butyl Phthalate	ND	0.0050	1	02/25/2020 21:30
1,2-Dichlorobenzene	ND	0.25	1	02/25/2020 21:30
1,3-Dichlorobenzene	ND	0.25	1	02/25/2020 21:30
1,4-Dichlorobenzene	ND	0.25	1	02/25/2020 21:30
3,3-Dichlorobenzidine	ND	0.0025	1	02/25/2020 21:30
2,4-Dichlorophenol	ND	0.013	1	02/25/2020 21:30
Diethyl Phthalate	ND	0.0050	1	02/25/2020 21:30
2,4-Dimethylphenol	ND	0.25	1	02/25/2020 21:30
Dimethyl Phthalate	ND	0.0025	1	02/25/2020 21:30
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/25/2020 21:30

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_5-6	2002901-006A	Soil	02/20/2020 14:25	GC21 02252029.D	194582

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/25/2020 21:30
2,4-Dinitrotoluene	ND	0.0063	1	02/25/2020 21:30
2,6-Dinitrotoluene	ND	0.0025	1	02/25/2020 21:30
Di-n-octyl Phthalate	ND	0.0050	1	02/25/2020 21:30
1,2-Diphenylhydrazine	ND	0.25	1	02/25/2020 21:30
Fluoranthene	ND	0.0013	1	02/25/2020 21:30
Fluorene	ND	0.0025	1	02/25/2020 21:30
Hexachlorobenzene	ND	0.0013	1	02/25/2020 21:30
Hexachlorobutadiene	ND	0.0025	1	02/25/2020 21:30
Hexachlorocyclopentadiene	ND	2.0	1	02/25/2020 21:30
Hexachloroethane	ND	0.0025	1	02/25/2020 21:30
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/25/2020 21:30
Isophorone	ND	0.25	1	02/25/2020 21:30
1-Methylnaphthalene	ND	0.0013	1	02/25/2020 21:30
2-Methylnaphthalene	ND	0.0025	1	02/25/2020 21:30
2-Methylphenol (o-Cresol)	ND	0.50	1	02/25/2020 21:30
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/25/2020 21:30
Naphthalene	ND	0.0013	1	02/25/2020 21:30
2-Nitroaniline	ND	1.2	1	02/25/2020 21:30
3-Nitroaniline	ND	1.2	1	02/25/2020 21:30
4-Nitroaniline	ND	1.2	1	02/25/2020 21:30
Nitrobenzene	ND	0.25	1	02/25/2020 21:30
2-Nitrophenol	ND	1.2	1	02/25/2020 21:30
4-Nitrophenol	ND	1.2	1	02/25/2020 21:30
N-Nitrosodiphenylamine	ND	0.25	1	02/25/2020 21:30
N-Nitrosodi-n-propylamine	ND	0.25	1	02/25/2020 21:30
Pentachlorophenol	ND	0.031	1	02/25/2020 21:30
Phenanthrene	ND	0.0050	1	02/25/2020 21:30
Phenol	ND	0.0050	1	02/25/2020 21:30
Pyrene	ND	0.0025	1	02/25/2020 21:30
Pyridine	ND	0.25	1	02/25/2020 21:30
1,2,4-Trichlorobenzene	ND	0.25	1	02/25/2020 21:30
2,4,5-Trichlorophenol	ND	0.0025	1	02/25/2020 21:30
2,4,6-Trichlorophenol	ND	0.013	1	02/25/2020 21:30

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_5-6	2002901-006A	Soil	02/20/2020 14:25	GC21 02252029.D	194582

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	93	56-152		02/25/2020 21:30
Phenol-d5	87	54-146		02/25/2020 21:30
Nitrobenzene-d5	77	47-147		02/25/2020 21:30
2-Fluorobiphenyl	78	46-141		02/25/2020 21:30
2,4,6-Tribromophenol	53	25-166		02/25/2020 21:30
4-Terphenyl-d14	64	39-153		02/25/2020 21:30

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	2002901-007A	Soil	02/20/2020 14:35	GC21 02252030.D	194582

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/25/2020 21:58
Acenaphthylene	ND	0.0013	1	02/25/2020 21:58
Acetochlor	ND	0.25	1	02/25/2020 21:58
Anthracene	ND	0.0013	1	02/25/2020 21:58
Benzidine	ND	1.2	1	02/25/2020 21:58
Benzo (a) anthracene	ND	0.0050	1	02/25/2020 21:58
Benzo (a) pyrene	ND	0.0025	1	02/25/2020 21:58
Benzo (b) fluoranthene	ND	0.0063	1	02/25/2020 21:58
Benzo (g,h,i) perylene	ND	0.0025	1	02/25/2020 21:58
Benzo (k) fluoranthene	ND	0.0013	1	02/25/2020 21:58
Benzyl Alcohol	ND	1.2	1	02/25/2020 21:58
1,1-Biphenyl	ND	0.013	1	02/25/2020 21:58
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/25/2020 21:58
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/25/2020 21:58
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/25/2020 21:58
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/25/2020 21:58
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/25/2020 21:58
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/25/2020 21:58
Butylbenzyl Phthalate	ND	0.025	1	02/25/2020 21:58
4-Chloroaniline	ND	0.0025	1	02/25/2020 21:58
4-Chloro-3-methylphenol	ND	0.25	1	02/25/2020 21:58
2-Chloronaphthalene	ND	0.25	1	02/25/2020 21:58
2-Chlorophenol	ND	0.0050	1	02/25/2020 21:58
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/25/2020 21:58
Chrysene	ND	0.0025	1	02/25/2020 21:58
Dibenzo (a,h) anthracene	ND	0.0025	1	02/25/2020 21:58
Dibenzofuran	ND	0.25	1	02/25/2020 21:58
Di-n-butyl Phthalate	ND	0.0050	1	02/25/2020 21:58
1,2-Dichlorobenzene	ND	0.25	1	02/25/2020 21:58
1,3-Dichlorobenzene	ND	0.25	1	02/25/2020 21:58
1,4-Dichlorobenzene	ND	0.25	1	02/25/2020 21:58
3,3-Dichlorobenzidine	ND	0.0025	1	02/25/2020 21:58
2,4-Dichlorophenol	ND	0.013	1	02/25/2020 21:58
Diethyl Phthalate	ND	0.0050	1	02/25/2020 21:58
2,4-Dimethylphenol	ND	0.25	1	02/25/2020 21:58
Dimethyl Phthalate	ND	0.0025	1	02/25/2020 21:58
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/25/2020 21:58

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	2002901-007A	Soil	02/20/2020 14:35	GC21 02252030.D	194582

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/25/2020 21:58
2,4-Dinitrotoluene	ND	0.0063	1	02/25/2020 21:58
2,6-Dinitrotoluene	ND	0.0025	1	02/25/2020 21:58
Di-n-octyl Phthalate	ND	0.0050	1	02/25/2020 21:58
1,2-Diphenylhydrazine	ND	0.25	1	02/25/2020 21:58
Fluoranthene	ND	0.0013	1	02/25/2020 21:58
Fluorene	ND	0.0025	1	02/25/2020 21:58
Hexachlorobenzene	ND	0.0013	1	02/25/2020 21:58
Hexachlorobutadiene	ND	0.0025	1	02/25/2020 21:58
Hexachlorocyclopentadiene	ND	2.0	1	02/25/2020 21:58
Hexachloroethane	ND	0.0025	1	02/25/2020 21:58
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/25/2020 21:58
Isophorone	ND	0.25	1	02/25/2020 21:58
1-Methylnaphthalene	ND	0.0013	1	02/25/2020 21:58
2-Methylnaphthalene	ND	0.0025	1	02/25/2020 21:58
2-Methylphenol (o-Cresol)	ND	0.50	1	02/25/2020 21:58
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/25/2020 21:58
Naphthalene	ND	0.0013	1	02/25/2020 21:58
2-Nitroaniline	ND	1.2	1	02/25/2020 21:58
3-Nitroaniline	ND	1.2	1	02/25/2020 21:58
4-Nitroaniline	ND	1.2	1	02/25/2020 21:58
Nitrobenzene	ND	0.25	1	02/25/2020 21:58
2-Nitrophenol	ND	1.2	1	02/25/2020 21:58
4-Nitrophenol	ND	1.2	1	02/25/2020 21:58
N-Nitrosodiphenylamine	ND	0.25	1	02/25/2020 21:58
N-Nitrosodi-n-propylamine	ND	0.25	1	02/25/2020 21:58
Pentachlorophenol	ND	0.031	1	02/25/2020 21:58
Phenanthrene	ND	0.0050	1	02/25/2020 21:58
Phenol	ND	0.0050	1	02/25/2020 21:58
Pyrene	ND	0.0025	1	02/25/2020 21:58
Pyridine	ND	0.25	1	02/25/2020 21:58
1,2,4-Trichlorobenzene	ND	0.25	1	02/25/2020 21:58
2,4,5-Trichlorophenol	ND	0.0025	1	02/25/2020 21:58
2,4,6-Trichlorophenol	ND	0.013	1	02/25/2020 21:58

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	2002901-007A	Soil	02/20/2020 14:35	GC21 02252030.D	194582

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	101	56-152		02/25/2020 21:58
Phenol-d5	99	54-146		02/25/2020 21:58
Nitrobenzene-d5	85	47-147		02/25/2020 21:58
2-Fluorobiphenyl	82	46-141		02/25/2020 21:58
2,4,6-Tribromophenol	56	25-166		02/25/2020 21:58
4-Terphenyl-d14	65	39-153		02/25/2020 21:58

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	2002901-008A	Soil	02/20/2020 14:40	GC21 02252031.D	194582

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/25/2020 22:25
Acenaphthylene	ND	0.0013	1	02/25/2020 22:25
Acetochlor	ND	0.25	1	02/25/2020 22:25
Anthracene	ND	0.0013	1	02/25/2020 22:25
Benzidine	ND	1.2	1	02/25/2020 22:25
Benzo (a) anthracene	ND	0.0050	1	02/25/2020 22:25
Benzo (a) pyrene	ND	0.0025	1	02/25/2020 22:25
Benzo (b) fluoranthene	ND	0.0063	1	02/25/2020 22:25
Benzo (g,h,i) perylene	ND	0.0025	1	02/25/2020 22:25
Benzo (k) fluoranthene	ND	0.0013	1	02/25/2020 22:25
Benzyl Alcohol	ND	1.2	1	02/25/2020 22:25
1,1-Biphenyl	ND	0.013	1	02/25/2020 22:25
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/25/2020 22:25
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/25/2020 22:25
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/25/2020 22:25
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/25/2020 22:25
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/25/2020 22:25
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/25/2020 22:25
Butylbenzyl Phthalate	ND	0.025	1	02/25/2020 22:25
4-Chloroaniline	ND	0.0025	1	02/25/2020 22:25
4-Chloro-3-methylphenol	ND	0.25	1	02/25/2020 22:25
2-Chloronaphthalene	ND	0.25	1	02/25/2020 22:25
2-Chlorophenol	ND	0.0050	1	02/25/2020 22:25
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/25/2020 22:25
Chrysene	ND	0.0025	1	02/25/2020 22:25
Dibenzo (a,h) anthracene	ND	0.0025	1	02/25/2020 22:25
Dibenzofuran	ND	0.25	1	02/25/2020 22:25
Di-n-butyl Phthalate	ND	0.0050	1	02/25/2020 22:25
1,2-Dichlorobenzene	ND	0.25	1	02/25/2020 22:25
1,3-Dichlorobenzene	ND	0.25	1	02/25/2020 22:25
1,4-Dichlorobenzene	ND	0.25	1	02/25/2020 22:25
3,3-Dichlorobenzidine	ND	0.0025	1	02/25/2020 22:25
2,4-Dichlorophenol	ND	0.013	1	02/25/2020 22:25
Diethyl Phthalate	ND	0.0050	1	02/25/2020 22:25
2,4-Dimethylphenol	ND	0.25	1	02/25/2020 22:25
Dimethyl Phthalate	ND	0.0025	1	02/25/2020 22:25
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/25/2020 22:25

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	2002901-008A	Soil	02/20/2020 14:40	GC21 02252031.D	194582

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/25/2020 22:25
2,4-Dinitrotoluene	ND	0.0063	1	02/25/2020 22:25
2,6-Dinitrotoluene	ND	0.0025	1	02/25/2020 22:25
Di-n-octyl Phthalate	ND	0.0050	1	02/25/2020 22:25
1,2-Diphenylhydrazine	ND	0.25	1	02/25/2020 22:25
Fluoranthene	ND	0.0013	1	02/25/2020 22:25
Fluorene	ND	0.0025	1	02/25/2020 22:25
Hexachlorobenzene	ND	0.0013	1	02/25/2020 22:25
Hexachlorobutadiene	ND	0.0025	1	02/25/2020 22:25
Hexachlorocyclopentadiene	ND	2.0	1	02/25/2020 22:25
Hexachloroethane	ND	0.0025	1	02/25/2020 22:25
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/25/2020 22:25
Isophorone	ND	0.25	1	02/25/2020 22:25
1-Methylnaphthalene	ND	0.0013	1	02/25/2020 22:25
2-Methylnaphthalene	ND	0.0025	1	02/25/2020 22:25
2-Methylphenol (o-Cresol)	ND	0.50	1	02/25/2020 22:25
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/25/2020 22:25
Naphthalene	ND	0.0013	1	02/25/2020 22:25
2-Nitroaniline	ND	1.2	1	02/25/2020 22:25
3-Nitroaniline	ND	1.2	1	02/25/2020 22:25
4-Nitroaniline	ND	1.2	1	02/25/2020 22:25
Nitrobenzene	ND	0.25	1	02/25/2020 22:25
2-Nitrophenol	ND	1.2	1	02/25/2020 22:25
4-Nitrophenol	ND	1.2	1	02/25/2020 22:25
N-Nitrosodiphenylamine	ND	0.25	1	02/25/2020 22:25
N-Nitrosodi-n-propylamine	ND	0.25	1	02/25/2020 22:25
Pentachlorophenol	ND	0.031	1	02/25/2020 22:25
Phenanthrene	ND	0.0050	1	02/25/2020 22:25
Phenol	ND	0.0050	1	02/25/2020 22:25
Pyrene	ND	0.0025	1	02/25/2020 22:25
Pyridine	ND	0.25	1	02/25/2020 22:25
1,2,4-Trichlorobenzene	ND	0.25	1	02/25/2020 22:25
2,4,5-Trichlorophenol	ND	0.0025	1	02/25/2020 22:25
2,4,6-Trichlorophenol	ND	0.013	1	02/25/2020 22:25

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	2002901-008A	Soil	02/20/2020 14:40	GC21 02252031.D	194582

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	105	56-152		02/25/2020 22:25
Phenol-d5	101	54-146		02/25/2020 22:25
Nitrobenzene-d5	87	47-147		02/25/2020 22:25
2-Fluorobiphenyl	84	46-141		02/25/2020 22:25
2,4,6-Tribromophenol	65	25-166		02/25/2020 22:25
4-Terphenyl-d14	68	39-153		02/25/2020 22:25

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_2-3	2002901-009A	Soil	02/20/2020 15:25	GC21 02252032.D	194582

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/25/2020 22:52
Acenaphthylene	ND	0.0013	1	02/25/2020 22:52
Acetochlor	ND	0.25	1	02/25/2020 22:52
Anthracene	ND	0.0013	1	02/25/2020 22:52
Benzidine	ND	1.2	1	02/25/2020 22:52
Benzo (a) anthracene	ND	0.0050	1	02/25/2020 22:52
Benzo (a) pyrene	ND	0.0025	1	02/25/2020 22:52
Benzo (b) fluoranthene	ND	0.0063	1	02/25/2020 22:52
Benzo (g,h,i) perylene	ND	0.0025	1	02/25/2020 22:52
Benzo (k) fluoranthene	ND	0.0013	1	02/25/2020 22:52
Benzyl Alcohol	ND	1.2	1	02/25/2020 22:52
1,1-Biphenyl	ND	0.013	1	02/25/2020 22:52
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/25/2020 22:52
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/25/2020 22:52
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/25/2020 22:52
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/25/2020 22:52
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/25/2020 22:52
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/25/2020 22:52
Butylbenzyl Phthalate	ND	0.025	1	02/25/2020 22:52
4-Chloroaniline	ND	0.0025	1	02/25/2020 22:52
4-Chloro-3-methylphenol	ND	0.25	1	02/25/2020 22:52
2-Chloronaphthalene	ND	0.25	1	02/25/2020 22:52
2-Chlorophenol	ND	0.0050	1	02/25/2020 22:52
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/25/2020 22:52
Chrysene	ND	0.0025	1	02/25/2020 22:52
Dibenzo (a,h) anthracene	ND	0.0025	1	02/25/2020 22:52
Dibenzofuran	ND	0.25	1	02/25/2020 22:52
Di-n-butyl Phthalate	ND	0.0050	1	02/25/2020 22:52
1,2-Dichlorobenzene	ND	0.25	1	02/25/2020 22:52
1,3-Dichlorobenzene	ND	0.25	1	02/25/2020 22:52
1,4-Dichlorobenzene	ND	0.25	1	02/25/2020 22:52
3,3-Dichlorobenzidine	ND	0.0025	1	02/25/2020 22:52
2,4-Dichlorophenol	ND	0.013	1	02/25/2020 22:52
Diethyl Phthalate	ND	0.0050	1	02/25/2020 22:52
2,4-Dimethylphenol	ND	0.25	1	02/25/2020 22:52
Dimethyl Phthalate	ND	0.0025	1	02/25/2020 22:52
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/25/2020 22:52

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_2-3	2002901-009A	Soil	02/20/2020 15:25	GC21 02252032.D	194582

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/25/2020 22:52
2,4-Dinitrotoluene	ND	0.0063	1	02/25/2020 22:52
2,6-Dinitrotoluene	ND	0.0025	1	02/25/2020 22:52
Di-n-octyl Phthalate	ND	0.0050	1	02/25/2020 22:52
1,2-Diphenylhydrazine	ND	0.25	1	02/25/2020 22:52
Fluoranthene	ND	0.0013	1	02/25/2020 22:52
Fluorene	ND	0.0025	1	02/25/2020 22:52
Hexachlorobenzene	ND	0.0013	1	02/25/2020 22:52
Hexachlorobutadiene	ND	0.0025	1	02/25/2020 22:52
Hexachlorocyclopentadiene	ND	2.0	1	02/25/2020 22:52
Hexachloroethane	ND	0.0025	1	02/25/2020 22:52
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/25/2020 22:52
Isophorone	ND	0.25	1	02/25/2020 22:52
1-Methylnaphthalene	ND	0.0013	1	02/25/2020 22:52
2-Methylnaphthalene	ND	0.0025	1	02/25/2020 22:52
2-Methylphenol (o-Cresol)	ND	0.50	1	02/25/2020 22:52
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/25/2020 22:52
Naphthalene	ND	0.0013	1	02/25/2020 22:52
2-Nitroaniline	ND	1.2	1	02/25/2020 22:52
3-Nitroaniline	ND	1.2	1	02/25/2020 22:52
4-Nitroaniline	ND	1.2	1	02/25/2020 22:52
Nitrobenzene	ND	0.25	1	02/25/2020 22:52
2-Nitrophenol	ND	1.2	1	02/25/2020 22:52
4-Nitrophenol	ND	1.2	1	02/25/2020 22:52
N-Nitrosodiphenylamine	ND	0.25	1	02/25/2020 22:52
N-Nitrosodi-n-propylamine	ND	0.25	1	02/25/2020 22:52
Pentachlorophenol	ND	0.031	1	02/25/2020 22:52
Phenanthrene	ND	0.0050	1	02/25/2020 22:52
Phenol	ND	0.0050	1	02/25/2020 22:52
Pyrene	ND	0.0025	1	02/25/2020 22:52
Pyridine	ND	0.25	1	02/25/2020 22:52
1,2,4-Trichlorobenzene	ND	0.25	1	02/25/2020 22:52
2,4,5-Trichlorophenol	ND	0.0025	1	02/25/2020 22:52
2,4,6-Trichlorophenol	ND	0.013	1	02/25/2020 22:52

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_2-3	2002901-009A	Soil	02/20/2020 15:25	GC21 02252032.D	194582

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	110	56-152		02/25/2020 22:52
Phenol-d5	107	54-146		02/25/2020 22:52
Nitrobenzene-d5	92	47-147		02/25/2020 22:52
2-Fluorobiphenyl	88	46-141		02/25/2020 22:52
2,4,6-Tribromophenol	58	25-166		02/25/2020 22:52
4-Terphenyl-d14	70	39-153		02/25/2020 22:52

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	GC21 02252033.D	194582

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/25/2020 23:18
Acenaphthylene	ND	0.0013	1	02/25/2020 23:18
Acetochlor	ND	0.25	1	02/25/2020 23:18
Anthracene	ND	0.0013	1	02/25/2020 23:18
Benzidine	ND	1.2	1	02/25/2020 23:18
Benzo (a) anthracene	ND	0.0050	1	02/25/2020 23:18
Benzo (a) pyrene	ND	0.0025	1	02/25/2020 23:18
Benzo (b) fluoranthene	ND	0.0063	1	02/25/2020 23:18
Benzo (g,h,i) perylene	ND	0.0025	1	02/25/2020 23:18
Benzo (k) fluoranthene	ND	0.0013	1	02/25/2020 23:18
Benzyl Alcohol	ND	1.2	1	02/25/2020 23:18
1,1-Biphenyl	ND	0.013	1	02/25/2020 23:18
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/25/2020 23:18
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/25/2020 23:18
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/25/2020 23:18
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/25/2020 23:18
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/25/2020 23:18
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/25/2020 23:18
Butylbenzyl Phthalate	ND	0.025	1	02/25/2020 23:18
4-Chloroaniline	ND	0.0025	1	02/25/2020 23:18
4-Chloro-3-methylphenol	ND	0.25	1	02/25/2020 23:18
2-Chloronaphthalene	ND	0.25	1	02/25/2020 23:18
2-Chlorophenol	ND	0.0050	1	02/25/2020 23:18
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/25/2020 23:18
Chrysene	ND	0.0025	1	02/25/2020 23:18
Dibenzo (a,h) anthracene	ND	0.0025	1	02/25/2020 23:18
Dibenzofuran	ND	0.25	1	02/25/2020 23:18
Di-n-butyl Phthalate	ND	0.0050	1	02/25/2020 23:18
1,2-Dichlorobenzene	ND	0.25	1	02/25/2020 23:18
1,3-Dichlorobenzene	ND	0.25	1	02/25/2020 23:18
1,4-Dichlorobenzene	ND	0.25	1	02/25/2020 23:18
3,3-Dichlorobenzidine	ND	0.0025	1	02/25/2020 23:18
2,4-Dichlorophenol	ND	0.013	1	02/25/2020 23:18
Diethyl Phthalate	ND	0.0050	1	02/25/2020 23:18
2,4-Dimethylphenol	ND	0.25	1	02/25/2020 23:18
Dimethyl Phthalate	ND	0.0025	1	02/25/2020 23:18
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/25/2020 23:18

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	GC21 02252033.D	194582

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/25/2020 23:18
2,4-Dinitrotoluene	ND	0.0063	1	02/25/2020 23:18
2,6-Dinitrotoluene	ND	0.0025	1	02/25/2020 23:18
Di-n-octyl Phthalate	ND	0.0050	1	02/25/2020 23:18
1,2-Diphenylhydrazine	ND	0.25	1	02/25/2020 23:18
Fluoranthene	ND	0.0013	1	02/25/2020 23:18
Fluorene	ND	0.0025	1	02/25/2020 23:18
Hexachlorobenzene	ND	0.0013	1	02/25/2020 23:18
Hexachlorobutadiene	ND	0.0025	1	02/25/2020 23:18
Hexachlorocyclopentadiene	ND	2.0	1	02/25/2020 23:18
Hexachloroethane	ND	0.0025	1	02/25/2020 23:18
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/25/2020 23:18
Isophorone	ND	0.25	1	02/25/2020 23:18
1-Methylnaphthalene	ND	0.0013	1	02/25/2020 23:18
2-Methylnaphthalene	ND	0.0025	1	02/25/2020 23:18
2-Methylphenol (o-Cresol)	ND	0.50	1	02/25/2020 23:18
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/25/2020 23:18
Naphthalene	ND	0.0013	1	02/25/2020 23:18
2-Nitroaniline	ND	1.2	1	02/25/2020 23:18
3-Nitroaniline	ND	1.2	1	02/25/2020 23:18
4-Nitroaniline	ND	1.2	1	02/25/2020 23:18
Nitrobenzene	ND	0.25	1	02/25/2020 23:18
2-Nitrophenol	ND	1.2	1	02/25/2020 23:18
4-Nitrophenol	ND	1.2	1	02/25/2020 23:18
N-Nitrosodiphenylamine	ND	0.25	1	02/25/2020 23:18
N-Nitrosodi-n-propylamine	ND	0.25	1	02/25/2020 23:18
Pentachlorophenol	ND	0.031	1	02/25/2020 23:18
Phenanthrene	ND	0.0050	1	02/25/2020 23:18
Phenol	ND	0.0050	1	02/25/2020 23:18
Pyrene	ND	0.0025	1	02/25/2020 23:18
Pyridine	ND	0.25	1	02/25/2020 23:18
1,2,4-Trichlorobenzene	ND	0.25	1	02/25/2020 23:18
2,4,5-Trichlorophenol	ND	0.0025	1	02/25/2020 23:18
2,4,6-Trichlorophenol	ND	0.013	1	02/25/2020 23:18

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	GC21 02252033.D	194582

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	109	56-152		02/25/2020 23:18
Phenol-d5	100	54-146		02/25/2020 23:18
Nitrobenzene-d5	89	47-147		02/25/2020 23:18
2-Fluorobiphenyl	94	46-141		02/25/2020 23:18
2,4,6-Tribromophenol	65	25-166		02/25/2020 23:18
4-Terphenyl-d14	70	39-153		02/25/2020 23:18

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	2002901-011A	Soil	02/20/2020 15:35	GC21 02252034.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acenaphthene	ND		0.0013	1	02/25/2020 23:45
Acenaphthylene	ND		0.0013	1	02/25/2020 23:45
Acetochlor	ND		0.25	1	02/25/2020 23:45
Anthracene	ND		0.0013	1	02/25/2020 23:45
Benzidine	ND		1.2	1	02/25/2020 23:45
Benzo (a) anthracene	ND		0.0050	1	02/25/2020 23:45
Benzo (a) pyrene	ND		0.0025	1	02/25/2020 23:45
Benzo (b) fluoranthene	ND		0.0063	1	02/25/2020 23:45
Benzo (g,h,i) perylene	ND		0.0025	1	02/25/2020 23:45
Benzo (k) fluoranthene	ND		0.0013	1	02/25/2020 23:45
Benzyl Alcohol	ND		1.2	1	02/25/2020 23:45
1,1-Biphenyl	ND		0.013	1	02/25/2020 23:45
Bis (2-chloroethoxy) Methane	ND		0.25	1	02/25/2020 23:45
Bis (2-chloroethyl) Ether	ND		0.0025	1	02/25/2020 23:45
Bis (2-chloroisopropyl) Ether	ND		0.0025	1	02/25/2020 23:45
Bis (2-ethylhexyl) Adipate	ND		0.50	1	02/25/2020 23:45
Bis (2-ethylhexyl) Phthalate	ND		0.0050	1	02/25/2020 23:45
4-Bromophenyl Phenyl Ether	ND		0.25	1	02/25/2020 23:45
Butylbenzyl Phthalate	ND		0.025	1	02/25/2020 23:45
4-Chloroaniline	ND		0.0025	1	02/25/2020 23:45
4-Chloro-3-methylphenol	ND		0.25	1	02/25/2020 23:45
2-Chloronaphthalene	ND		0.25	1	02/25/2020 23:45
2-Chlorophenol	ND		0.0050	1	02/25/2020 23:45
4-Chlorophenyl Phenyl Ether	ND		0.25	1	02/25/2020 23:45
Chrysene	ND		0.0025	1	02/25/2020 23:45
Dibenzo (a,h) anthracene	ND		0.0025	1	02/25/2020 23:45
Dibenzofuran	ND		0.25	1	02/25/2020 23:45
Di-n-butyl Phthalate	**0.0052**	B	0.0050	1	02/25/2020 23:45
1,2-Dichlorobenzene	ND		0.25	1	02/25/2020 23:45
1,3-Dichlorobenzene	ND		0.25	1	02/25/2020 23:45
1,4-Dichlorobenzene	ND		0.25	1	02/25/2020 23:45
3,3-Dichlorobenzidine	ND		0.0025	1	02/25/2020 23:45
2,4-Dichlorophenol	ND		0.013	1	02/25/2020 23:45
Diethyl Phthalate	ND		0.0050	1	02/25/2020 23:45
2,4-Dimethylphenol	ND		0.25	1	02/25/2020 23:45
Dimethyl Phthalate	ND		0.0025	1	02/25/2020 23:45
4,6-Dinitro-2-methylphenol	ND		1.2	1	02/25/2020 23:45

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	2002901-011A	Soil	02/20/2020 15:35	GC21 02252034.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		0.13	1	02/25/2020 23:45
2,4-Dinitrotoluene	ND		0.0063	1	02/25/2020 23:45
2,6-Dinitrotoluene	ND		0.0025	1	02/25/2020 23:45
Di-n-octyl Phthalate	ND		0.0050	1	02/25/2020 23:45
1,2-Diphenylhydrazine	ND		0.25	1	02/25/2020 23:45
Fluoranthene	ND		0.0013	1	02/25/2020 23:45
Fluorene	ND		0.0025	1	02/25/2020 23:45
Hexachlorobenzene	ND		0.0013	1	02/25/2020 23:45
Hexachlorobutadiene	ND		0.0025	1	02/25/2020 23:45
Hexachlorocyclopentadiene	ND		2.0	1	02/25/2020 23:45
Hexachloroethane	ND		0.0025	1	02/25/2020 23:45
Indeno (1,2,3-cd) pyrene	ND		0.0025	1	02/25/2020 23:45
Isophorone	ND		0.25	1	02/25/2020 23:45
1-Methylnaphthalene	ND		0.0013	1	02/25/2020 23:45
2-Methylnaphthalene	ND		0.0025	1	02/25/2020 23:45
2-Methylphenol (o-Cresol)	ND		0.50	1	02/25/2020 23:45
3 & 4-Methylphenol (m,p-Cresol)	ND		0.25	1	02/25/2020 23:45
Naphthalene	ND		0.0013	1	02/25/2020 23:45
2-Nitroaniline	ND		1.2	1	02/25/2020 23:45
3-Nitroaniline	ND		1.2	1	02/25/2020 23:45
4-Nitroaniline	ND		1.2	1	02/25/2020 23:45
Nitrobenzene	ND		0.25	1	02/25/2020 23:45
2-Nitrophenol	ND		1.2	1	02/25/2020 23:45
4-Nitrophenol	ND		1.2	1	02/25/2020 23:45
N-Nitrosodiphenylamine	ND		0.25	1	02/25/2020 23:45
N-Nitrosodi-n-propylamine	ND		0.25	1	02/25/2020 23:45
Pentachlorophenol	ND		0.031	1	02/25/2020 23:45
Phenanthrene	ND		0.0050	1	02/25/2020 23:45
Phenol	ND		0.0050	1	02/25/2020 23:45
Pyrene	ND		0.0025	1	02/25/2020 23:45
Pyridine	ND		0.25	1	02/25/2020 23:45
1,2,4-Trichlorobenzene	ND		0.25	1	02/25/2020 23:45
2,4,5-Trichlorophenol	ND		0.0025	1	02/25/2020 23:45
2,4,6-Trichlorophenol	ND		0.013	1	02/25/2020 23:45

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	2002901-011A	Soil	02/20/2020 15:35	GC21 02252034.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Surrogates	**REC (%)**		**Limits**		
2-Fluorophenol	102		56-152		02/25/2020 23:45
Phenol-d5	98		54-146		02/25/2020 23:45
Nitrobenzene-d5	85		47-147		02/25/2020 23:45
2-Fluorobiphenyl	88		46-141		02/25/2020 23:45
2,4,6-Tribromophenol	63		25-166		02/25/2020 23:45
4-Terphenyl-d14	70		39-153		02/25/2020 23:45

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	GC21 02252035.D	194582

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/26/2020 00:12
Acenaphthylene	ND	0.0013	1	02/26/2020 00:12
Acetochlor	ND	0.25	1	02/26/2020 00:12
Anthracene	ND	0.0013	1	02/26/2020 00:12
Benzidine	ND	1.2	1	02/26/2020 00:12
Benzo (a) anthracene	ND	0.0050	1	02/26/2020 00:12
Benzo (a) pyrene	ND	0.0025	1	02/26/2020 00:12
Benzo (b) fluoranthene	ND	0.0063	1	02/26/2020 00:12
Benzo (g,h,i) perylene	ND	0.0025	1	02/26/2020 00:12
Benzo (k) fluoranthene	ND	0.0013	1	02/26/2020 00:12
Benzyl Alcohol	ND	1.2	1	02/26/2020 00:12
1,1-Biphenyl	ND	0.013	1	02/26/2020 00:12
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/26/2020 00:12
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/26/2020 00:12
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/26/2020 00:12
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/26/2020 00:12
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/26/2020 00:12
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/26/2020 00:12
Butylbenzyl Phthalate	ND	0.025	1	02/26/2020 00:12
4-Chloroaniline	ND	0.0025	1	02/26/2020 00:12
4-Chloro-3-methylphenol	ND	0.25	1	02/26/2020 00:12
2-Chloronaphthalene	ND	0.25	1	02/26/2020 00:12
2-Chlorophenol	ND	0.0050	1	02/26/2020 00:12
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/26/2020 00:12
Chrysene	ND	0.0025	1	02/26/2020 00:12
Dibenzo (a,h) anthracene	ND	0.0025	1	02/26/2020 00:12
Dibenzofuran	ND	0.25	1	02/26/2020 00:12
Di-n-butyl Phthalate	ND	0.0050	1	02/26/2020 00:12
1,2-Dichlorobenzene	ND	0.25	1	02/26/2020 00:12
1,3-Dichlorobenzene	ND	0.25	1	02/26/2020 00:12
1,4-Dichlorobenzene	ND	0.25	1	02/26/2020 00:12
3,3-Dichlorobenzidine	ND	0.0025	1	02/26/2020 00:12
2,4-Dichlorophenol	ND	0.013	1	02/26/2020 00:12
Diethyl Phthalate	ND	0.0050	1	02/26/2020 00:12
2,4-Dimethylphenol	ND	0.25	1	02/26/2020 00:12
Dimethyl Phthalate	ND	0.0025	1	02/26/2020 00:12
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/26/2020 00:12

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	GC21 02252035.D	194582

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/26/2020 00:12
2,4-Dinitrotoluene	ND	0.0063	1	02/26/2020 00:12
2,6-Dinitrotoluene	ND	0.0025	1	02/26/2020 00:12
Di-n-octyl Phthalate	ND	0.0050	1	02/26/2020 00:12
1,2-Diphenylhydrazine	ND	0.25	1	02/26/2020 00:12
Fluoranthene	ND	0.0013	1	02/26/2020 00:12
Fluorene	ND	0.0025	1	02/26/2020 00:12
Hexachlorobenzene	ND	0.0013	1	02/26/2020 00:12
Hexachlorobutadiene	ND	0.0025	1	02/26/2020 00:12
Hexachlorocyclopentadiene	ND	2.0	1	02/26/2020 00:12
Hexachloroethane	ND	0.0025	1	02/26/2020 00:12
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/26/2020 00:12
Isophorone	ND	0.25	1	02/26/2020 00:12
1-Methylnaphthalene	ND	0.0013	1	02/26/2020 00:12
2-Methylnaphthalene	ND	0.0025	1	02/26/2020 00:12
2-Methylphenol (o-Cresol)	ND	0.50	1	02/26/2020 00:12
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/26/2020 00:12
Naphthalene	ND	0.0013	1	02/26/2020 00:12
2-Nitroaniline	ND	1.2	1	02/26/2020 00:12
3-Nitroaniline	ND	1.2	1	02/26/2020 00:12
4-Nitroaniline	ND	1.2	1	02/26/2020 00:12
Nitrobenzene	ND	0.25	1	02/26/2020 00:12
2-Nitrophenol	ND	1.2	1	02/26/2020 00:12
4-Nitrophenol	ND	1.2	1	02/26/2020 00:12
N-Nitrosodiphenylamine	ND	0.25	1	02/26/2020 00:12
N-Nitrosodi-n-propylamine	ND	0.25	1	02/26/2020 00:12
Pentachlorophenol	ND	0.031	1	02/26/2020 00:12
Phenanthrene	ND	0.0050	1	02/26/2020 00:12
Phenol	ND	0.0050	1	02/26/2020 00:12
Pyrene	ND	0.0025	1	02/26/2020 00:12
Pyridine	ND	0.25	1	02/26/2020 00:12
1,2,4-Trichlorobenzene	ND	0.25	1	02/26/2020 00:12
2,4,5-Trichlorophenol	ND	0.0025	1	02/26/2020 00:12
2,4,6-Trichlorophenol	ND	0.013	1	02/26/2020 00:12

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	GC21 02252035.D	194582

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	93	56-152		02/26/2020 00:12
Phenol-d5	90	54-146		02/26/2020 00:12
Nitrobenzene-d5	74	47-147		02/26/2020 00:12
2-Fluorobiphenyl	79	46-141		02/26/2020 00:12
2,4,6-Tribromophenol	49	25-166		02/26/2020 00:12
4-Terphenyl-d14	65	39-153		02/26/2020 00:12

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_1-2	2002901-013A	Soil	02/20/2020 16:00	GC21 02252036.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acenaphthene	ND		0.0013	1	02/26/2020 00:39
Acenaphthylene	ND		0.0013	1	02/26/2020 00:39
Acetochlor	ND		0.25	1	02/26/2020 00:39
Anthracene	ND		0.0013	1	02/26/2020 00:39
Benzidine	ND		1.2	1	02/26/2020 00:39
Benzo (a) anthracene	ND		0.0050	1	02/26/2020 00:39
Benzo (a) pyrene	ND		0.0025	1	02/26/2020 00:39
Benzo (b) fluoranthene	ND		0.0063	1	02/26/2020 00:39
Benzo (g,h,i) perylene	ND		0.0025	1	02/26/2020 00:39
Benzo (k) fluoranthene	ND		0.0013	1	02/26/2020 00:39
Benzyl Alcohol	ND		1.2	1	02/26/2020 00:39
1,1-Biphenyl	ND		0.013	1	02/26/2020 00:39
Bis (2-chloroethoxy) Methane	ND		0.25	1	02/26/2020 00:39
Bis (2-chloroethyl) Ether	ND		0.0025	1	02/26/2020 00:39
Bis (2-chloroisopropyl) Ether	ND		0.0025	1	02/26/2020 00:39
Bis (2-ethylhexyl) Adipate	ND		0.50	1	02/26/2020 00:39
Bis (2-ethylhexyl) Phthalate	ND		0.0050	1	02/26/2020 00:39
4-Bromophenyl Phenyl Ether	ND		0.25	1	02/26/2020 00:39
Butylbenzyl Phthalate	ND		0.025	1	02/26/2020 00:39
4-Chloroaniline	ND		0.0025	1	02/26/2020 00:39
4-Chloro-3-methylphenol	ND		0.25	1	02/26/2020 00:39
2-Chloronaphthalene	ND		0.25	1	02/26/2020 00:39
2-Chlorophenol	ND		0.0050	1	02/26/2020 00:39
4-Chlorophenyl Phenyl Ether	ND		0.25	1	02/26/2020 00:39
Chrysene	ND		0.0025	1	02/26/2020 00:39
Dibenzo (a,h) anthracene	ND		0.0025	1	02/26/2020 00:39
Dibenzofuran	ND		0.25	1	02/26/2020 00:39
Di-n-butyl Phthalate	**0.0050**	B	0.0050	1	02/26/2020 00:39
1,2-Dichlorobenzene	ND		0.25	1	02/26/2020 00:39
1,3-Dichlorobenzene	ND		0.25	1	02/26/2020 00:39
1,4-Dichlorobenzene	ND		0.25	1	02/26/2020 00:39
3,3-Dichlorobenzidine	ND		0.0025	1	02/26/2020 00:39
2,4-Dichlorophenol	ND		0.013	1	02/26/2020 00:39
Diethyl Phthalate	ND		0.0050	1	02/26/2020 00:39
2,4-Dimethylphenol	ND		0.25	1	02/26/2020 00:39
Dimethyl Phthalate	ND		0.0025	1	02/26/2020 00:39
4,6-Dinitro-2-methylphenol	ND		1.2	1	02/26/2020 00:39

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_1-2	2002901-013A	Soil	02/20/2020 16:00	GC21 02252036.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		0.13	1	02/26/2020 00:39
2,4-Dinitrotoluene	ND		0.0063	1	02/26/2020 00:39
2,6-Dinitrotoluene	ND		0.0025	1	02/26/2020 00:39
Di-n-octyl Phthalate	ND		0.0050	1	02/26/2020 00:39
1,2-Diphenylhydrazine	ND		0.25	1	02/26/2020 00:39
Fluoranthene	ND		0.0013	1	02/26/2020 00:39
Fluorene	ND		0.0025	1	02/26/2020 00:39
Hexachlorobenzene	ND		0.0013	1	02/26/2020 00:39
Hexachlorobutadiene	ND		0.0025	1	02/26/2020 00:39
Hexachlorocyclopentadiene	ND		2.0	1	02/26/2020 00:39
Hexachloroethane	ND		0.0025	1	02/26/2020 00:39
Indeno (1,2,3-cd) pyrene	ND		0.0025	1	02/26/2020 00:39
Isophorone	ND		0.25	1	02/26/2020 00:39
1-Methylnaphthalene	ND		0.0013	1	02/26/2020 00:39
2-Methylnaphthalene	ND		0.0025	1	02/26/2020 00:39
2-Methylphenol (o-Cresol)	ND		0.50	1	02/26/2020 00:39
3 & 4-Methylphenol (m,p-Cresol)	ND		0.25	1	02/26/2020 00:39
Naphthalene	ND		0.0013	1	02/26/2020 00:39
2-Nitroaniline	ND		1.2	1	02/26/2020 00:39
3-Nitroaniline	ND		1.2	1	02/26/2020 00:39
4-Nitroaniline	ND		1.2	1	02/26/2020 00:39
Nitrobenzene	ND		0.25	1	02/26/2020 00:39
2-Nitrophenol	ND		1.2	1	02/26/2020 00:39
4-Nitrophenol	ND		1.2	1	02/26/2020 00:39
N-Nitrosodiphenylamine	ND		0.25	1	02/26/2020 00:39
N-Nitrosodi-n-propylamine	ND		0.25	1	02/26/2020 00:39
Pentachlorophenol	ND		0.031	1	02/26/2020 00:39
Phenanthrene	ND		0.0050	1	02/26/2020 00:39
Phenol	ND		0.0050	1	02/26/2020 00:39
Pyrene	ND		0.0025	1	02/26/2020 00:39
Pyridine	ND		0.25	1	02/26/2020 00:39
1,2,4-Trichlorobenzene	ND		0.25	1	02/26/2020 00:39
2,4,5-Trichlorophenol	ND		0.0025	1	02/26/2020 00:39
2,4,6-Trichlorophenol	ND		0.013	1	02/26/2020 00:39

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_1-2	2002901-013A	Soil	02/20/2020 16:00	GC21 02252036.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Surrogates	**REC (%)**		**Limits**		
2-Fluorophenol	93		56-152		02/26/2020 00:39
Phenol-d5	90		54-146		02/26/2020 00:39
Nitrobenzene-d5	77		47-147		02/26/2020 00:39
2-Fluorobiphenyl	81		46-141		02/26/2020 00:39
2,4,6-Tribromophenol	36		25-166		02/26/2020 00:39
4-Terphenyl-d14	67		39-153		02/26/2020 00:39

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	GC21 02252037.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acenaphthene	ND		0.0013	1	02/26/2020 01:05
Acenaphthylene	ND		0.0013	1	02/26/2020 01:05
Acetochlor	ND		0.25	1	02/26/2020 01:05
Anthracene	ND		0.0013	1	02/26/2020 01:05
Benzidine	ND		1.2	1	02/26/2020 01:05
Benzo (a) anthracene	ND		0.0050	1	02/26/2020 01:05
Benzo (a) pyrene	ND		0.0025	1	02/26/2020 01:05
Benzo (b) fluoranthene	ND		0.0063	1	02/26/2020 01:05
Benzo (g,h,i) perylene	ND		0.0025	1	02/26/2020 01:05
Benzo (k) fluoranthene	ND		0.0013	1	02/26/2020 01:05
Benzyl Alcohol	ND		1.2	1	02/26/2020 01:05
1,1-Biphenyl	ND		0.013	1	02/26/2020 01:05
Bis (2-chloroethoxy) Methane	ND		0.25	1	02/26/2020 01:05
Bis (2-chloroethyl) Ether	ND		0.0025	1	02/26/2020 01:05
Bis (2-chloroisopropyl) Ether	ND		0.0025	1	02/26/2020 01:05
Bis (2-ethylhexyl) Adipate	ND		0.50	1	02/26/2020 01:05
Bis (2-ethylhexyl) Phthalate	ND		0.0050	1	02/26/2020 01:05
4-Bromophenyl Phenyl Ether	ND		0.25	1	02/26/2020 01:05
Butylbenzyl Phthalate	ND		0.025	1	02/26/2020 01:05
4-Chloroaniline	ND		0.0025	1	02/26/2020 01:05
4-Chloro-3-methylphenol	ND		0.25	1	02/26/2020 01:05
2-Chloronaphthalene	ND		0.25	1	02/26/2020 01:05
2-Chlorophenol	ND		0.0050	1	02/26/2020 01:05
4-Chlorophenyl Phenyl Ether	ND		0.25	1	02/26/2020 01:05
Chrysene	ND		0.0025	1	02/26/2020 01:05
Dibenzo (a,h) anthracene	ND		0.0025	1	02/26/2020 01:05
Dibenzofuran	ND		0.25	1	02/26/2020 01:05
Di-n-butyl Phthalate	**0.0051**	B	0.0050	1	02/26/2020 01:05
1,2-Dichlorobenzene	ND		0.25	1	02/26/2020 01:05
1,3-Dichlorobenzene	ND		0.25	1	02/26/2020 01:05
1,4-Dichlorobenzene	ND		0.25	1	02/26/2020 01:05
3,3-Dichlorobenzidine	ND		0.0025	1	02/26/2020 01:05
2,4-Dichlorophenol	ND		0.013	1	02/26/2020 01:05
Diethyl Phthalate	ND		0.0050	1	02/26/2020 01:05
2,4-Dimethylphenol	ND		0.25	1	02/26/2020 01:05
Dimethyl Phthalate	ND		0.0025	1	02/26/2020 01:05
4,6-Dinitro-2-methylphenol	ND		1.2	1	02/26/2020 01:05

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	GC21 02252037.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		0.13	1	02/26/2020 01:05
2,4-Dinitrotoluene	ND		0.0063	1	02/26/2020 01:05
2,6-Dinitrotoluene	ND		0.0025	1	02/26/2020 01:05
Di-n-octyl Phthalate	ND		0.0050	1	02/26/2020 01:05
1,2-Diphenylhydrazine	ND		0.25	1	02/26/2020 01:05
Fluoranthene	ND		0.0013	1	02/26/2020 01:05
Fluorene	ND		0.0025	1	02/26/2020 01:05
Hexachlorobenzene	ND		0.0013	1	02/26/2020 01:05
Hexachlorobutadiene	ND		0.0025	1	02/26/2020 01:05
Hexachlorocyclopentadiene	ND		2.0	1	02/26/2020 01:05
Hexachloroethane	ND		0.0025	1	02/26/2020 01:05
Indeno (1,2,3-cd) pyrene	ND		0.0025	1	02/26/2020 01:05
Isophorone	ND		0.25	1	02/26/2020 01:05
1-Methylnaphthalene	ND		0.0013	1	02/26/2020 01:05
2-Methylnaphthalene	ND		0.0025	1	02/26/2020 01:05
2-Methylphenol (o-Cresol)	ND		0.50	1	02/26/2020 01:05
3 & 4-Methylphenol (m,p-Cresol)	ND		0.25	1	02/26/2020 01:05
Naphthalene	ND		0.0013	1	02/26/2020 01:05
2-Nitroaniline	ND		1.2	1	02/26/2020 01:05
3-Nitroaniline	ND		1.2	1	02/26/2020 01:05
4-Nitroaniline	ND		1.2	1	02/26/2020 01:05
Nitrobenzene	ND		0.25	1	02/26/2020 01:05
2-Nitrophenol	ND		1.2	1	02/26/2020 01:05
4-Nitrophenol	ND		1.2	1	02/26/2020 01:05
N-Nitrosodiphenylamine	ND		0.25	1	02/26/2020 01:05
N-Nitrosodi-n-propylamine	ND		0.25	1	02/26/2020 01:05
Pentachlorophenol	ND		0.031	1	02/26/2020 01:05
Phenanthrene	ND		0.0050	1	02/26/2020 01:05
Phenol	ND		0.0050	1	02/26/2020 01:05
Pyrene	ND		0.0025	1	02/26/2020 01:05
Pyridine	ND		0.25	1	02/26/2020 01:05
1,2,4-Trichlorobenzene	ND		0.25	1	02/26/2020 01:05
2,4,5-Trichlorophenol	ND		0.0025	1	02/26/2020 01:05
2,4,6-Trichlorophenol	ND		0.013	1	02/26/2020 01:05

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	GC21 02252037.D	194582

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Surrogates	**REC (%)**		**Limits**		
2-Fluorophenol	97		56-152		02/26/2020 01:05
Phenol-d5	94		54-146		02/26/2020 01:05
Nitrobenzene-d5	79		47-147		02/26/2020 01:05
2-Fluorobiphenyl	84		46-141		02/26/2020 01:05
2,4,6-Tribromophenol	53		25-166		02/26/2020 01:05
4-Terphenyl-d14	65		39-153		02/26/2020 01:05

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	2002901-015A	Soil	02/20/2020 16:15	GC21 02252038.D	194582

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/26/2020 01:32
Acenaphthylene	ND	0.0013	1	02/26/2020 01:32
Acetochlor	ND	0.25	1	02/26/2020 01:32
Anthracene	ND	0.0013	1	02/26/2020 01:32
Benzidine	ND	1.2	1	02/26/2020 01:32
Benzo (a) anthracene	ND	0.0050	1	02/26/2020 01:32
Benzo (a) pyrene	ND	0.0025	1	02/26/2020 01:32
Benzo (b) fluoranthene	ND	0.0063	1	02/26/2020 01:32
Benzo (g,h,i) perylene	ND	0.0025	1	02/26/2020 01:32
Benzo (k) fluoranthene	ND	0.0013	1	02/26/2020 01:32
Benzyl Alcohol	ND	1.2	1	02/26/2020 01:32
1,1-Biphenyl	ND	0.013	1	02/26/2020 01:32
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/26/2020 01:32
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/26/2020 01:32
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/26/2020 01:32
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/26/2020 01:32
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/26/2020 01:32
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/26/2020 01:32
Butylbenzyl Phthalate	ND	0.025	1	02/26/2020 01:32
4-Chloroaniline	ND	0.0025	1	02/26/2020 01:32
4-Chloro-3-methylphenol	ND	0.25	1	02/26/2020 01:32
2-Chloronaphthalene	ND	0.25	1	02/26/2020 01:32
2-Chlorophenol	ND	0.0050	1	02/26/2020 01:32
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/26/2020 01:32
Chrysene	ND	0.0025	1	02/26/2020 01:32
Dibenzo (a,h) anthracene	ND	0.0025	1	02/26/2020 01:32
Dibenzofuran	ND	0.25	1	02/26/2020 01:32
Di-n-butyl Phthalate	ND	0.0050	1	02/26/2020 01:32
1,2-Dichlorobenzene	ND	0.25	1	02/26/2020 01:32
1,3-Dichlorobenzene	ND	0.25	1	02/26/2020 01:32
1,4-Dichlorobenzene	ND	0.25	1	02/26/2020 01:32
3,3-Dichlorobenzidine	ND	0.0025	1	02/26/2020 01:32
2,4-Dichlorophenol	ND	0.013	1	02/26/2020 01:32
Diethyl Phthalate	ND	0.0050	1	02/26/2020 01:32
2,4-Dimethylphenol	ND	0.25	1	02/26/2020 01:32
Dimethyl Phthalate	ND	0.0025	1	02/26/2020 01:32
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/26/2020 01:32

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	2002901-015A	Soil	02/20/2020 16:15	GC21 02252038.D	194582

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/26/2020 01:32
2,4-Dinitrotoluene	ND	0.0063	1	02/26/2020 01:32
2,6-Dinitrotoluene	ND	0.0025	1	02/26/2020 01:32
Di-n-octyl Phthalate	ND	0.0050	1	02/26/2020 01:32
1,2-Diphenylhydrazine	ND	0.25	1	02/26/2020 01:32
Fluoranthene	ND	0.0013	1	02/26/2020 01:32
Fluorene	ND	0.0025	1	02/26/2020 01:32
Hexachlorobenzene	ND	0.0013	1	02/26/2020 01:32
Hexachlorobutadiene	ND	0.0025	1	02/26/2020 01:32
Hexachlorocyclopentadiene	ND	2.0	1	02/26/2020 01:32
Hexachloroethane	ND	0.0025	1	02/26/2020 01:32
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/26/2020 01:32
Isophorone	ND	0.25	1	02/26/2020 01:32
1-Methylnaphthalene	ND	0.0013	1	02/26/2020 01:32
2-Methylnaphthalene	ND	0.0025	1	02/26/2020 01:32
2-Methylphenol (o-Cresol)	ND	0.50	1	02/26/2020 01:32
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/26/2020 01:32
Naphthalene	ND	0.0013	1	02/26/2020 01:32
2-Nitroaniline	ND	1.2	1	02/26/2020 01:32
3-Nitroaniline	ND	1.2	1	02/26/2020 01:32
4-Nitroaniline	ND	1.2	1	02/26/2020 01:32
Nitrobenzene	ND	0.25	1	02/26/2020 01:32
2-Nitrophenol	ND	1.2	1	02/26/2020 01:32
4-Nitrophenol	ND	1.2	1	02/26/2020 01:32
N-Nitrosodiphenylamine	ND	0.25	1	02/26/2020 01:32
N-Nitrosodi-n-propylamine	ND	0.25	1	02/26/2020 01:32
Pentachlorophenol	ND	0.031	1	02/26/2020 01:32
Phenanthrene	ND	0.0050	1	02/26/2020 01:32
Phenol	ND	0.0050	1	02/26/2020 01:32
Pyrene	ND	0.0025	1	02/26/2020 01:32
Pyridine	ND	0.25	1	02/26/2020 01:32
1,2,4-Trichlorobenzene	ND	0.25	1	02/26/2020 01:32
2,4,5-Trichlorophenol	ND	0.0025	1	02/26/2020 01:32
2,4,6-Trichlorophenol	ND	0.013	1	02/26/2020 01:32

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	2002901-015A	Soil	02/20/2020 16:15	GC21 02252038.D	194582

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	103	56-152		02/26/2020 01:32
Phenol-d5	98	54-146		02/26/2020 01:32
Nitrobenzene-d5	82	47-147		02/26/2020 01:32
2-Fluorobiphenyl	85	46-141		02/26/2020 01:32
2,4,6-Tribromophenol	59	25-166		02/26/2020 01:32
4-Terphenyl-d14	68	39-153		02/26/2020 01:32

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	2002901-016A	Soil	02/20/2020 16:20	GC21 02252039.D	194582

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/26/2020 01:58
Acenaphthylene	ND	0.0013	1	02/26/2020 01:58
Acetochlor	ND	0.25	1	02/26/2020 01:58
Anthracene	ND	0.0013	1	02/26/2020 01:58
Benzidine	ND	1.2	1	02/26/2020 01:58
Benzo (a) anthracene	ND	0.0050	1	02/26/2020 01:58
Benzo (a) pyrene	ND	0.0025	1	02/26/2020 01:58
Benzo (b) fluoranthene	ND	0.0063	1	02/26/2020 01:58
Benzo (g,h,i) perylene	ND	0.0025	1	02/26/2020 01:58
Benzo (k) fluoranthene	ND	0.0013	1	02/26/2020 01:58
Benzyl Alcohol	ND	1.2	1	02/26/2020 01:58
1,1-Biphenyl	ND	0.013	1	02/26/2020 01:58
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/26/2020 01:58
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/26/2020 01:58
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/26/2020 01:58
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/26/2020 01:58
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/26/2020 01:58
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/26/2020 01:58
Butylbenzyl Phthalate	ND	0.025	1	02/26/2020 01:58
4-Chloroaniline	ND	0.0025	1	02/26/2020 01:58
4-Chloro-3-methylphenol	ND	0.25	1	02/26/2020 01:58
2-Chloronaphthalene	ND	0.25	1	02/26/2020 01:58
2-Chlorophenol	ND	0.0050	1	02/26/2020 01:58
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/26/2020 01:58
Chrysene	ND	0.0025	1	02/26/2020 01:58
Dibenzo (a,h) anthracene	ND	0.0025	1	02/26/2020 01:58
Dibenzofuran	ND	0.25	1	02/26/2020 01:58
Di-n-butyl Phthalate	ND	0.0050	1	02/26/2020 01:58
1,2-Dichlorobenzene	ND	0.25	1	02/26/2020 01:58
1,3-Dichlorobenzene	ND	0.25	1	02/26/2020 01:58
1,4-Dichlorobenzene	ND	0.25	1	02/26/2020 01:58
3,3-Dichlorobenzidine	ND	0.0025	1	02/26/2020 01:58
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Diethyl Phthalate	ND	0.0050	1	02/26/2020 01:58
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4,6-Dinitro-2-methylphenol	ND	1.2	1	02/26/2020 01:58

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	2002901-016A	Soil	02/20/2020 16:20	GC21 02252039.D	194582

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/26/2020 01:58
2,4-Dinitrotoluene	ND	0.0063	1	02/26/2020 01:58
2,6-Dinitrotoluene	ND	0.0025	1	02/26/2020 01:58
Di-n-octyl Phthalate	ND	0.0050	1	02/26/2020 01:58
1,2-Diphenylhydrazine	ND	0.25	1	02/26/2020 01:58
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Hexachlorobenzene	ND	0.0013	1	02/26/2020 01:58
Hexachlorobutadiene	ND	0.0025	1	02/26/2020 01:58
Hexachlorocyclopentadiene	ND	2.0	1	02/26/2020 01:58
Hexachloroethane	ND	0.0025	1	02/26/2020 01:58
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/26/2020 01:58
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1-Methylnaphthalene	ND	0.0013	1	02/26/2020 01:58
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Naphthalene	ND	0.0013	1	02/26/2020 01:58
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3-Nitroaniline	ND	1.2	1	02/26/2020 01:58
4-Nitroaniline	ND	1.2	1	02/26/2020 01:58
Nitrobenzene	ND	0.25	1	02/26/2020 01:58
2-Nitrophenol	ND	1.2	1	02/26/2020 01:58
4-Nitrophenol	ND	1.2	1	02/26/2020 01:58
N-Nitrosodiphenylamine	ND	0.25	1	02/26/2020 01:58
N-Nitrosodi-n-propylamine	ND	0.25	1	02/26/2020 01:58
Pentachlorophenol	ND	0.031	1	02/26/2020 01:58
Phenanthrene	ND	0.0050	1	02/26/2020 01:58
Phenol	ND	0.0050	1	02/26/2020 01:58
Pyrene	ND	0.0025	1	02/26/2020 01:58
Pyridine	ND	0.25	1	02/26/2020 01:58
1,2,4-Trichlorobenzene	ND	0.25	1	02/26/2020 01:58
2,4,5-Trichlorophenol	ND	0.0025	1	02/26/2020 01:58
2,4,6-Trichlorophenol	ND	0.013	1	02/26/2020 01:58

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	2002901-016A	Soil	02/20/2020 16:20	GC21 02252039.D	194582

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	100	56-152		02/26/2020 01:58
Phenol-d5	99	54-146		02/26/2020 01:58
Nitrobenzene-d5	84	47-147		02/26/2020 01:58
2-Fluorobiphenyl	87	46-141		02/26/2020 01:58
2,4,6-Tribromophenol	59	25-166		02/26/2020 01:58
4-Terphenyl-d14	70	39-153		02/26/2020 01:58

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	GC21 02252040.D	194582

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/26/2020 02:25
Acenaphthylene	ND	0.0013	1	02/26/2020 02:25
Acetochlor	ND	0.25	1	02/26/2020 02:25
Anthracene	ND	0.0013	1	02/26/2020 02:25
Benzidine	ND	1.2	1	02/26/2020 02:25
Benzo (a) anthracene	ND	0.0050	1	02/26/2020 02:25
Benzo (a) pyrene	ND	0.0025	1	02/26/2020 02:25
Benzo (b) fluoranthene	ND	0.0063	1	02/26/2020 02:25
Benzo (g,h,i) perylene	ND	0.0025	1	02/26/2020 02:25
Benzo (k) fluoranthene	ND	0.0013	1	02/26/2020 02:25
Benzyl Alcohol	ND	1.2	1	02/26/2020 02:25
1,1-Biphenyl	ND	0.013	1	02/26/2020 02:25
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/26/2020 02:25
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/26/2020 02:25
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/26/2020 02:25
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/26/2020 02:25
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/26/2020 02:25
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/26/2020 02:25
Butylbenzyl Phthalate	ND	0.025	1	02/26/2020 02:25
4-Chloroaniline	ND	0.0025	1	02/26/2020 02:25
4-Chloro-3-methylphenol	ND	0.25	1	02/26/2020 02:25
2-Chloronaphthalene	ND	0.25	1	02/26/2020 02:25
2-Chlorophenol	ND	0.0050	1	02/26/2020 02:25
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/26/2020 02:25
Chrysene	ND	0.0025	1	02/26/2020 02:25
Dibenzo (a,h) anthracene	ND	0.0025	1	02/26/2020 02:25
Dibenzofuran	ND	0.25	1	02/26/2020 02:25
Di-n-butyl Phthalate	ND	0.0050	1	02/26/2020 02:25
1,2-Dichlorobenzene	ND	0.25	1	02/26/2020 02:25
1,3-Dichlorobenzene	ND	0.25	1	02/26/2020 02:25
1,4-Dichlorobenzene	ND	0.25	1	02/26/2020 02:25
3,3-Dichlorobenzidine	ND	0.0025	1	02/26/2020 02:25
2,4-Dichlorophenol	ND	0.013	1	02/26/2020 02:25
Diethyl Phthalate	ND	0.0050	1	02/26/2020 02:25
2,4-Dimethylphenol	ND	0.25	1	02/26/2020 02:25
Dimethyl Phthalate	ND	0.0025	1	02/26/2020 02:25
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/26/2020 02:25

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	GC21 02252040.D	194582

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/26/2020 02:25
2,4-Dinitrotoluene	ND	0.0063	1	02/26/2020 02:25
2,6-Dinitrotoluene	ND	0.0025	1	02/26/2020 02:25
Di-n-octyl Phthalate	ND	0.0050	1	02/26/2020 02:25
1,2-Diphenylhydrazine	ND	0.25	1	02/26/2020 02:25
Fluoranthene	ND	0.0013	1	02/26/2020 02:25
Fluorene	ND	0.0025	1	02/26/2020 02:25
Hexachlorobenzene	ND	0.0013	1	02/26/2020 02:25
Hexachlorobutadiene	ND	0.0025	1	02/26/2020 02:25
Hexachlorocyclopentadiene	ND	2.0	1	02/26/2020 02:25
Hexachloroethane	ND	0.0025	1	02/26/2020 02:25
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/26/2020 02:25
Isophorone	ND	0.25	1	02/26/2020 02:25
1-Methylnaphthalene	ND	0.0013	1	02/26/2020 02:25
2-Methylnaphthalene	ND	0.0025	1	02/26/2020 02:25
2-Methylphenol (o-Cresol)	ND	0.50	1	02/26/2020 02:25
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/26/2020 02:25
Naphthalene	ND	0.0013	1	02/26/2020 02:25
2-Nitroaniline	ND	1.2	1	02/26/2020 02:25
3-Nitroaniline	ND	1.2	1	02/26/2020 02:25
4-Nitroaniline	ND	1.2	1	02/26/2020 02:25
Nitrobenzene	ND	0.25	1	02/26/2020 02:25
2-Nitrophenol	ND	1.2	1	02/26/2020 02:25
4-Nitrophenol	ND	1.2	1	02/26/2020 02:25
N-Nitrosodiphenylamine	ND	0.25	1	02/26/2020 02:25
N-Nitrosodi-n-propylamine	ND	0.25	1	02/26/2020 02:25
Pentachlorophenol	ND	0.031	1	02/26/2020 02:25
Phenanthrene	ND	0.0050	1	02/26/2020 02:25
Phenol	ND	0.0050	1	02/26/2020 02:25
Pyrene	ND	0.0025	1	02/26/2020 02:25
Pyridine	ND	0.25	1	02/26/2020 02:25
1,2,4-Trichlorobenzene	ND	0.25	1	02/26/2020 02:25
2,4,5-Trichlorophenol	ND	0.0025	1	02/26/2020 02:25
2,4,6-Trichlorophenol	ND	0.013	1	02/26/2020 02:25

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Analytical Report

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Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	GC21 02252040.D	194582

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	97	56-152		02/26/2020 02:25
Phenol-d5	94	54-146		02/26/2020 02:25
Nitrobenzene-d5	78	47-147		02/26/2020 02:25
2-Fluorobiphenyl	81	46-141		02/26/2020 02:25
2,4,6-Tribromophenol	56	25-166		02/26/2020 02:25
4-Terphenyl-d14	68	39-153		02/26/2020 02:25

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	GC21 02252041.D	194582

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/26/2020 02:51
Acenaphthylene	ND	0.0013	1	02/26/2020 02:51
Acetochlor	ND	0.25	1	02/26/2020 02:51
Anthracene	ND	0.0013	1	02/26/2020 02:51
Benzidine	ND	1.2	1	02/26/2020 02:51
Benzo (a) anthracene	ND	0.0050	1	02/26/2020 02:51
Benzo (a) pyrene	ND	0.0025	1	02/26/2020 02:51
Benzo (b) fluoranthene	ND	0.0063	1	02/26/2020 02:51
Benzo (g,h,i) perylene	ND	0.0025	1	02/26/2020 02:51
Benzo (k) fluoranthene	ND	0.0013	1	02/26/2020 02:51
Benzyl Alcohol	ND	1.2	1	02/26/2020 02:51
1,1-Biphenyl	ND	0.013	1	02/26/2020 02:51
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/26/2020 02:51
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/26/2020 02:51
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/26/2020 02:51
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/26/2020 02:51
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/26/2020 02:51
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/26/2020 02:51
Butylbenzyl Phthalate	ND	0.025	1	02/26/2020 02:51
4-Chloroaniline	ND	0.0025	1	02/26/2020 02:51
4-Chloro-3-methylphenol	ND	0.25	1	02/26/2020 02:51
2-Chloronaphthalene	ND	0.25	1	02/26/2020 02:51
2-Chlorophenol	ND	0.0050	1	02/26/2020 02:51
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/26/2020 02:51
Chrysene	ND	0.0025	1	02/26/2020 02:51
Dibenzo (a,h) anthracene	ND	0.0025	1	02/26/2020 02:51
Dibenzofuran	ND	0.25	1	02/26/2020 02:51
Di-n-butyl Phthalate	ND	0.0050	1	02/26/2020 02:51
1,2-Dichlorobenzene	ND	0.25	1	02/26/2020 02:51
1,3-Dichlorobenzene	ND	0.25	1	02/26/2020 02:51
1,4-Dichlorobenzene	ND	0.25	1	02/26/2020 02:51
3,3-Dichlorobenzidine	ND	0.0025	1	02/26/2020 02:51
2,4-Dichlorophenol	ND	0.013	1	02/26/2020 02:51
Diethyl Phthalate	ND	0.0050	1	02/26/2020 02:51
2,4-Dimethylphenol	ND	0.25	1	02/26/2020 02:51
Dimethyl Phthalate	ND	0.0025	1	02/26/2020 02:51
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/26/2020 02:51

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	GC21 02252041.D	194582

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/26/2020 02:51
2,4-Dinitrotoluene	ND	0.0063	1	02/26/2020 02:51
2,6-Dinitrotoluene	ND	0.0025	1	02/26/2020 02:51
Di-n-octyl Phthalate	ND	0.0050	1	02/26/2020 02:51
1,2-Diphenylhydrazine	ND	0.25	1	02/26/2020 02:51
Fluoranthene	ND	0.0013	1	02/26/2020 02:51
Fluorene	ND	0.0025	1	02/26/2020 02:51
Hexachlorobenzene	ND	0.0013	1	02/26/2020 02:51
Hexachlorobutadiene	ND	0.0025	1	02/26/2020 02:51
Hexachlorocyclopentadiene	ND	2.0	1	02/26/2020 02:51
Hexachloroethane	ND	0.0025	1	02/26/2020 02:51
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/26/2020 02:51
Isophorone	ND	0.25	1	02/26/2020 02:51
1-Methylnaphthalene	ND	0.0013	1	02/26/2020 02:51
2-Methylnaphthalene	ND	0.0025	1	02/26/2020 02:51
2-Methylphenol (o-Cresol)	ND	0.50	1	02/26/2020 02:51
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/26/2020 02:51
Naphthalene	ND	0.0013	1	02/26/2020 02:51
2-Nitroaniline	ND	1.2	1	02/26/2020 02:51
3-Nitroaniline	ND	1.2	1	02/26/2020 02:51
4-Nitroaniline	ND	1.2	1	02/26/2020 02:51
Nitrobenzene	ND	0.25	1	02/26/2020 02:51
2-Nitrophenol	ND	1.2	1	02/26/2020 02:51
4-Nitrophenol	ND	1.2	1	02/26/2020 02:51
N-Nitrosodiphenylamine	ND	0.25	1	02/26/2020 02:51
N-Nitrosodi-n-propylamine	ND	0.25	1	02/26/2020 02:51
Pentachlorophenol	ND	0.031	1	02/26/2020 02:51
Phenanthrene	ND	0.0050	1	02/26/2020 02:51
Phenol	ND	0.0050	1	02/26/2020 02:51
Pyrene	ND	0.0025	1	02/26/2020 02:51
Pyridine	ND	0.25	1	02/26/2020 02:51
1,2,4-Trichlorobenzene	ND	0.25	1	02/26/2020 02:51
2,4,5-Trichlorophenol	ND	0.0025	1	02/26/2020 02:51
2,4,6-Trichlorophenol	ND	0.013	1	02/26/2020 02:51

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	GC21 02252041.D	194582

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	95	56-152		02/26/2020 02:51
Phenol-d5	96	54-146		02/26/2020 02:51
Nitrobenzene-d5	80	47-147		02/26/2020 02:51
2-Fluorobiphenyl	83	46-141		02/26/2020 02:51
2,4,6-Tribromophenol	56	25-166		02/26/2020 02:51
4-Terphenyl-d14	65	39-153		02/26/2020 02:51

Analyst(s): REB

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	2002901-019A	Soil	02/21/2020 09:55	GC17 02262014.D	194582

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/26/2020 14:52
Acenaphthylene	ND	0.0013	1	02/26/2020 14:52
Acetochlor	ND	0.25	1	02/26/2020 14:52
Anthracene	ND	0.0013	1	02/26/2020 14:52
Benzidine	ND	1.2	1	02/26/2020 14:52
Benzo (a) anthracene	ND	0.0050	1	02/26/2020 14:52
Benzo (a) pyrene	ND	0.0025	1	02/26/2020 14:52
Benzo (b) fluoranthene	ND	0.0063	1	02/26/2020 14:52
Benzo (g,h,i) perylene	ND	0.0025	1	02/26/2020 14:52
Benzo (k) fluoranthene	ND	0.0013	1	02/26/2020 14:52
Benzyl Alcohol	ND	1.2	1	02/26/2020 14:52
1,1-Biphenyl	ND	0.013	1	02/26/2020 14:52
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/26/2020 14:52
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/26/2020 14:52
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/26/2020 14:52
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/26/2020 14:52
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/26/2020 14:52
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/26/2020 14:52
Butylbenzyl Phthalate	ND	0.025	1	02/26/2020 14:52
4-Chloroaniline	ND	0.0025	1	02/26/2020 14:52
4-Chloro-3-methylphenol	ND	0.25	1	02/26/2020 14:52
2-Chloronaphthalene	ND	0.25	1	02/26/2020 14:52
2-Chlorophenol	ND	0.0050	1	02/26/2020 14:52
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/26/2020 14:52
Chrysene	ND	0.0025	1	02/26/2020 14:52
Dibenzo (a,h) anthracene	ND	0.0025	1	02/26/2020 14:52
Dibenzofuran	ND	0.25	1	02/26/2020 14:52
Di-n-butyl Phthalate	ND	0.0050	1	02/26/2020 14:52
1,2-Dichlorobenzene	ND	0.25	1	02/26/2020 14:52
1,3-Dichlorobenzene	ND	0.25	1	02/26/2020 14:52
1,4-Dichlorobenzene	ND	0.25	1	02/26/2020 14:52
3,3-Dichlorobenzidine	ND	0.0025	1	02/26/2020 14:52
2,4-Dichlorophenol	ND	0.013	1	02/26/2020 14:52
Diethyl Phthalate	ND	0.0050	1	02/26/2020 14:52
2,4-Dimethylphenol	ND	0.25	1	02/26/2020 14:52
Dimethyl Phthalate	ND	0.0025	1	02/26/2020 14:52
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/26/2020 14:52

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	2002901-019A	Soil	02/21/2020 09:55	GC17 02262014.D	194582

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/26/2020 14:52
2,4-Dinitrotoluene	ND	0.0063	1	02/26/2020 14:52
2,6-Dinitrotoluene	ND	0.0025	1	02/26/2020 14:52
Di-n-octyl Phthalate	ND	0.0050	1	02/26/2020 14:52
1,2-Diphenylhydrazine	ND	0.25	1	02/26/2020 14:52
Fluoranthene	ND	0.0013	1	02/26/2020 14:52
Fluorene	ND	0.0025	1	02/26/2020 14:52
Hexachlorobenzene	ND	0.0013	1	02/26/2020 14:52
Hexachlorobutadiene	ND	0.0025	1	02/26/2020 14:52
Hexachlorocyclopentadiene	ND	2.0	1	02/26/2020 14:52
Hexachloroethane	ND	0.0025	1	02/26/2020 14:52
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/26/2020 14:52
Isophorone	ND	0.25	1	02/26/2020 14:52
1-Methylnaphthalene	ND	0.0013	1	02/26/2020 14:52
2-Methylnaphthalene	ND	0.0025	1	02/26/2020 14:52
2-Methylphenol (o-Cresol)	ND	0.50	1	02/26/2020 14:52
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/26/2020 14:52
Naphthalene	ND	0.0013	1	02/26/2020 14:52
2-Nitroaniline	ND	1.2	1	02/26/2020 14:52
3-Nitroaniline	ND	1.2	1	02/26/2020 14:52
4-Nitroaniline	ND	1.2	1	02/26/2020 14:52
Nitrobenzene	ND	0.25	1	02/26/2020 14:52
2-Nitrophenol	ND	1.2	1	02/26/2020 14:52
4-Nitrophenol	ND	1.2	1	02/26/2020 14:52
N-Nitrosodiphenylamine	ND	0.25	1	02/26/2020 14:52
N-Nitrosodi-n-propylamine	ND	0.25	1	02/26/2020 14:52
Pentachlorophenol	ND	0.031	1	02/26/2020 14:52
Phenanthrene	ND	0.0050	1	02/26/2020 14:52
Phenol	ND	0.0050	1	02/26/2020 14:52
Pyrene	ND	0.0025	1	02/26/2020 14:52
Pyridine	ND	0.25	1	02/26/2020 14:52
1,2,4-Trichlorobenzene	ND	0.25	1	02/26/2020 14:52
2,4,5-Trichlorophenol	ND	0.0025	1	02/26/2020 14:52
2,4,6-Trichlorophenol	ND	0.013	1	02/26/2020 14:52

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	2002901-019A	Soil	02/21/2020 09:55	GC17 02262014.D	194582

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	104	56-152		02/26/2020 14:52
Phenol-d5	99	54-146		02/26/2020 14:52
Nitrobenzene-d5	82	47-147		02/26/2020 14:52
2-Fluorobiphenyl	78	46-141		02/26/2020 14:52
2,4,6-Tribromophenol	54	25-166		02/26/2020 14:52
4-Terphenyl-d14	72	39-153		02/26/2020 14:52

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	2002901-020A	Soil	02/21/2020 10:00	GC17 02262015.D	194582

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/26/2020 15:19
Acenaphthylene	ND	0.0013	1	02/26/2020 15:19
Acetochlor	ND	0.25	1	02/26/2020 15:19
Anthracene	ND	0.0013	1	02/26/2020 15:19
Benzidine	ND	1.2	1	02/26/2020 15:19
Benzo (a) anthracene	ND	0.0050	1	02/26/2020 15:19
Benzo (a) pyrene	ND	0.0025	1	02/26/2020 15:19
Benzo (b) fluoranthene	ND	0.0063	1	02/26/2020 15:19
Benzo (g,h,i) perylene	ND	0.0025	1	02/26/2020 15:19
Benzo (k) fluoranthene	ND	0.0013	1	02/26/2020 15:19
Benzyl Alcohol	ND	1.2	1	02/26/2020 15:19
1,1-Biphenyl	ND	0.013	1	02/26/2020 15:19
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/26/2020 15:19
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/26/2020 15:19
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/26/2020 15:19
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/26/2020 15:19
Bis (2-ethylhexyl) Phthalate	**0.0053**	0.0050	1	02/26/2020 15:19
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/26/2020 15:19
Butylbenzyl Phthalate	ND	0.025	1	02/26/2020 15:19
4-Chloroaniline	ND	0.0025	1	02/26/2020 15:19
4-Chloro-3-methylphenol	ND	0.25	1	02/26/2020 15:19
2-Chloronaphthalene	ND	0.25	1	02/26/2020 15:19
2-Chlorophenol	ND	0.0050	1	02/26/2020 15:19
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/26/2020 15:19
Chrysene	ND	0.0025	1	02/26/2020 15:19
Dibenzo (a,h) anthracene	ND	0.0025	1	02/26/2020 15:19
Dibenzofuran	ND	0.25	1	02/26/2020 15:19
Di-n-butyl Phthalate	ND	0.0050	1	02/26/2020 15:19
1,2-Dichlorobenzene	ND	0.25	1	02/26/2020 15:19
1,3-Dichlorobenzene	ND	0.25	1	02/26/2020 15:19
1,4-Dichlorobenzene	ND	0.25	1	02/26/2020 15:19
3,3-Dichlorobenzidine	ND	0.0025	1	02/26/2020 15:19
2,4-Dichlorophenol	ND	0.013	1	02/26/2020 15:19
Diethyl Phthalate	ND	0.0050	1	02/26/2020 15:19
2,4-Dimethylphenol	ND	0.25	1	02/26/2020 15:19
Dimethyl Phthalate	ND	0.0025	1	02/26/2020 15:19
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/26/2020 15:19

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	2002901-020A	Soil	02/21/2020 10:00	GC17 02262015.D	194582

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/26/2020 15:19
2,4-Dinitrotoluene	ND	0.0063	1	02/26/2020 15:19
2,6-Dinitrotoluene	ND	0.0025	1	02/26/2020 15:19
Di-n-octyl Phthalate	ND	0.0050	1	02/26/2020 15:19
1,2-Diphenylhydrazine	ND	0.25	1	02/26/2020 15:19
Fluoranthene	ND	0.0013	1	02/26/2020 15:19
Fluorene	ND	0.0025	1	02/26/2020 15:19
Hexachlorobenzene	ND	0.0013	1	02/26/2020 15:19
Hexachlorobutadiene	ND	0.0025	1	02/26/2020 15:19
Hexachlorocyclopentadiene	ND	2.0	1	02/26/2020 15:19
Hexachloroethane	ND	0.0025	1	02/26/2020 15:19
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/26/2020 15:19
Isophorone	ND	0.25	1	02/26/2020 15:19
1-Methylnaphthalene	ND	0.0013	1	02/26/2020 15:19
2-Methylnaphthalene	ND	0.0025	1	02/26/2020 15:19
2-Methylphenol (o-Cresol)	ND	0.50	1	02/26/2020 15:19
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/26/2020 15:19
Naphthalene	ND	0.0013	1	02/26/2020 15:19
2-Nitroaniline	ND	1.2	1	02/26/2020 15:19
3-Nitroaniline	ND	1.2	1	02/26/2020 15:19
4-Nitroaniline	ND	1.2	1	02/26/2020 15:19
Nitrobenzene	ND	0.25	1	02/26/2020 15:19
2-Nitrophenol	ND	1.2	1	02/26/2020 15:19
4-Nitrophenol	ND	1.2	1	02/26/2020 15:19
N-Nitrosodiphenylamine	ND	0.25	1	02/26/2020 15:19
N-Nitrosodi-n-propylamine	ND	0.25	1	02/26/2020 15:19
Pentachlorophenol	ND	0.031	1	02/26/2020 15:19
Phenanthrene	ND	0.0050	1	02/26/2020 15:19
Phenol	ND	0.0050	1	02/26/2020 15:19
Pyrene	ND	0.0025	1	02/26/2020 15:19
Pyridine	ND	0.25	1	02/26/2020 15:19
1,2,4-Trichlorobenzene	ND	0.25	1	02/26/2020 15:19
2,4,5-Trichlorophenol	ND	0.0025	1	02/26/2020 15:19
2,4,6-Trichlorophenol	ND	0.013	1	02/26/2020 15:19

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	2002901-020A	Soil	02/21/2020 10:00	GC17 02262015.D	194582

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	111	56-152		02/26/2020 15:19
Phenol-d5	108	54-146		02/26/2020 15:19
Nitrobenzene-d5	89	47-147		02/26/2020 15:19
2-Fluorobiphenyl	83	46-141		02/26/2020 15:19
2,4,6-Tribromophenol	58	25-166		02/26/2020 15:19
4-Terphenyl-d14	73	39-153		02/26/2020 15:19

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	GC17 02252021.D	194583

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/25/2020 18:47
Acenaphthylene	ND	0.0013	1	02/25/2020 18:47
Acetochlor	ND	0.25	1	02/25/2020 18:47
Anthracene	ND	0.0013	1	02/25/2020 18:47
Benzidine	ND	1.2	1	02/25/2020 18:47
Benzo (a) anthracene	ND	0.0050	1	02/25/2020 18:47
Benzo (a) pyrene	ND	0.0025	1	02/25/2020 18:47
Benzo (b) fluoranthene	ND	0.0063	1	02/25/2020 18:47
Benzo (g,h,i) perylene	ND	0.0025	1	02/25/2020 18:47
Benzo (k) fluoranthene	ND	0.0013	1	02/25/2020 18:47
Benzyl Alcohol	ND	1.2	1	02/25/2020 18:47
1,1-Biphenyl	ND	0.013	1	02/25/2020 18:47
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/25/2020 18:47
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/25/2020 18:47
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/25/2020 18:47
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/25/2020 18:47
Bis (2-ethylhexyl) Phthalate	**0.0056**	0.0050	1	02/25/2020 18:47
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/25/2020 18:47
Butylbenzyl Phthalate	ND	0.025	1	02/25/2020 18:47
4-Chloroaniline	ND	0.0025	1	02/25/2020 18:47
4-Chloro-3-methylphenol	ND	0.25	1	02/25/2020 18:47
2-Chloronaphthalene	ND	0.25	1	02/25/2020 18:47
2-Chlorophenol	ND	0.0050	1	02/25/2020 18:47
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/25/2020 18:47
Chrysene	ND	0.0025	1	02/25/2020 18:47
Dibenzo (a,h) anthracene	ND	0.0025	1	02/25/2020 18:47
Dibenzofuran	ND	0.25	1	02/25/2020 18:47
Di-n-butyl Phthalate	ND	0.0050	1	02/25/2020 18:47
1,2-Dichlorobenzene	ND	0.25	1	02/25/2020 18:47
1,3-Dichlorobenzene	ND	0.25	1	02/25/2020 18:47
1,4-Dichlorobenzene	ND	0.25	1	02/25/2020 18:47
3,3-Dichlorobenzidine	ND	0.0025	1	02/25/2020 18:47
2,4-Dichlorophenol	ND	0.013	1	02/25/2020 18:47
Diethyl Phthalate	ND	0.0050	1	02/25/2020 18:47
2,4-Dimethylphenol	ND	0.25	1	02/25/2020 18:47
Dimethyl Phthalate	ND	0.0025	1	02/25/2020 18:47
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/25/2020 18:47

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	GC17 02252021.D	194583

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/25/2020 18:47
2,4-Dinitrotoluene	ND	0.0063	1	02/25/2020 18:47
2,6-Dinitrotoluene	ND	0.0025	1	02/25/2020 18:47
Di-n-octyl Phthalate	ND	0.0050	1	02/25/2020 18:47
1,2-Diphenylhydrazine	ND	0.25	1	02/25/2020 18:47
Fluoranthene	**0.0049**	0.0013	1	02/25/2020 18:47
Fluorene	ND	0.0025	1	02/25/2020 18:47
Hexachlorobenzene	ND	0.0013	1	02/25/2020 18:47
Hexachlorobutadiene	ND	0.0025	1	02/25/2020 18:47
Hexachlorocyclopentadiene	ND	2.0	1	02/25/2020 18:47
Hexachloroethane	ND	0.0025	1	02/25/2020 18:47
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/25/2020 18:47
Isophorone	ND	0.25	1	02/25/2020 18:47
1-Methylnaphthalene	ND	0.0013	1	02/25/2020 18:47
2-Methylnaphthalene	ND	0.0025	1	02/25/2020 18:47
2-Methylphenol (o-Cresol)	ND	0.50	1	02/25/2020 18:47
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/25/2020 18:47
Naphthalene	ND	0.0013	1	02/25/2020 18:47
2-Nitroaniline	ND	1.2	1	02/25/2020 18:47
3-Nitroaniline	ND	1.2	1	02/25/2020 18:47
4-Nitroaniline	ND	1.2	1	02/25/2020 18:47
Nitrobenzene	ND	0.25	1	02/25/2020 18:47
2-Nitrophenol	ND	1.2	1	02/25/2020 18:47
4-Nitrophenol	ND	1.2	1	02/25/2020 18:47
N-Nitrosodiphenylamine	ND	0.25	1	02/25/2020 18:47
N-Nitrosodi-n-propylamine	ND	0.25	1	02/25/2020 18:47
Pentachlorophenol	ND	0.031	1	02/25/2020 18:47
Phenanthrene	**0.0055**	0.0050	1	02/25/2020 18:47
Phenol	ND	0.0050	1	02/25/2020 18:47
Pyrene	**0.0040**	0.0025	1	02/25/2020 18:47
Pyridine	ND	0.25	1	02/25/2020 18:47
1,2,4-Trichlorobenzene	ND	0.25	1	02/25/2020 18:47
2,4,5-Trichlorophenol	ND	0.0025	1	02/25/2020 18:47
2,4,6-Trichlorophenol	ND	0.013	1	02/25/2020 18:47

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	GC17 02252021.D	194583

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	111	56-152		02/25/2020 18:47
Phenol-d5	107	54-146		02/25/2020 18:47
Nitrobenzene-d5	88	47-147		02/25/2020 18:47
2-Fluorobiphenyl	83	46-141		02/25/2020 18:47
2,4,6-Tribromophenol	70	25-166		02/25/2020 18:47
4-Terphenyl-d14	68	39-153		02/25/2020 18:47

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	GC17 02252022.D	194583

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/25/2020 19:14
Acenaphthylene	ND	0.0013	1	02/25/2020 19:14
Acetochlor	ND	0.25	1	02/25/2020 19:14
Anthracene	ND	0.0013	1	02/25/2020 19:14
Benzidine	ND	1.2	1	02/25/2020 19:14
Benzo (a) anthracene	ND	0.0050	1	02/25/2020 19:14
Benzo (a) pyrene	ND	0.0025	1	02/25/2020 19:14
Benzo (b) fluoranthene	ND	0.0063	1	02/25/2020 19:14
Benzo (g,h,i) perylene	ND	0.0025	1	02/25/2020 19:14
Benzo (k) fluoranthene	ND	0.0013	1	02/25/2020 19:14
Benzyl Alcohol	ND	1.2	1	02/25/2020 19:14
1,1-Biphenyl	ND	0.013	1	02/25/2020 19:14
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/25/2020 19:14
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/25/2020 19:14
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/25/2020 19:14
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/25/2020 19:14
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/25/2020 19:14
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/25/2020 19:14
Butylbenzyl Phthalate	ND	0.025	1	02/25/2020 19:14
4-Chloroaniline	ND	0.0025	1	02/25/2020 19:14
4-Chloro-3-methylphenol	ND	0.25	1	02/25/2020 19:14
2-Chloronaphthalene	ND	0.25	1	02/25/2020 19:14
2-Chlorophenol	ND	0.0050	1	02/25/2020 19:14
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/25/2020 19:14
Chrysene	ND	0.0025	1	02/25/2020 19:14
Dibenzo (a,h) anthracene	ND	0.0025	1	02/25/2020 19:14
Dibenzofuran	ND	0.25	1	02/25/2020 19:14
Di-n-butyl Phthalate	ND	0.0050	1	02/25/2020 19:14
1,2-Dichlorobenzene	ND	0.25	1	02/25/2020 19:14
1,3-Dichlorobenzene	ND	0.25	1	02/25/2020 19:14
1,4-Dichlorobenzene	ND	0.25	1	02/25/2020 19:14
3,3-Dichlorobenzidine	ND	0.0025	1	02/25/2020 19:14
2,4-Dichlorophenol	ND	0.013	1	02/25/2020 19:14
Diethyl Phthalate	ND	0.0050	1	02/25/2020 19:14
2,4-Dimethylphenol	ND	0.25	1	02/25/2020 19:14
Dimethyl Phthalate	ND	0.0025	1	02/25/2020 19:14
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/25/2020 19:14

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	GC17 02252022.D	194583

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/25/2020 19:14
2,4-Dinitrotoluene	ND	0.0063	1	02/25/2020 19:14
2,6-Dinitrotoluene	ND	0.0025	1	02/25/2020 19:14
Di-n-octyl Phthalate	ND	0.0050	1	02/25/2020 19:14
1,2-Diphenylhydrazine	ND	0.25	1	02/25/2020 19:14
Fluoranthene	ND	0.0013	1	02/25/2020 19:14
Fluorene	ND	0.0025	1	02/25/2020 19:14
Hexachlorobenzene	ND	0.0013	1	02/25/2020 19:14
Hexachlorobutadiene	ND	0.0025	1	02/25/2020 19:14
Hexachlorocyclopentadiene	ND	2.0	1	02/25/2020 19:14
Hexachloroethane	ND	0.0025	1	02/25/2020 19:14
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/25/2020 19:14
Isophorone	ND	0.25	1	02/25/2020 19:14
1-Methylnaphthalene	ND	0.0013	1	02/25/2020 19:14
2-Methylnaphthalene	ND	0.0025	1	02/25/2020 19:14
2-Methylphenol (o-Cresol)	ND	0.50	1	02/25/2020 19:14
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/25/2020 19:14
Naphthalene	ND	0.0013	1	02/25/2020 19:14
2-Nitroaniline	ND	1.2	1	02/25/2020 19:14
3-Nitroaniline	ND	1.2	1	02/25/2020 19:14
4-Nitroaniline	ND	1.2	1	02/25/2020 19:14
Nitrobenzene	ND	0.25	1	02/25/2020 19:14
2-Nitrophenol	ND	1.2	1	02/25/2020 19:14
4-Nitrophenol	ND	1.2	1	02/25/2020 19:14
N-Nitrosodiphenylamine	ND	0.25	1	02/25/2020 19:14
N-Nitrosodi-n-propylamine	ND	0.25	1	02/25/2020 19:14
Pentachlorophenol	ND	0.031	1	02/25/2020 19:14
Phenanthrene	ND	0.0050	1	02/25/2020 19:14
Phenol	ND	0.0050	1	02/25/2020 19:14
Pyrene	ND	0.0025	1	02/25/2020 19:14
Pyridine	ND	0.25	1	02/25/2020 19:14
1,2,4-Trichlorobenzene	ND	0.25	1	02/25/2020 19:14
2,4,5-Trichlorophenol	ND	0.0025	1	02/25/2020 19:14
2,4,6-Trichlorophenol	ND	0.013	1	02/25/2020 19:14

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	GC17 02252022.D	194583

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	103	56-152		02/25/2020 19:14
Phenol-d5	101	54-146		02/25/2020 19:14
Nitrobenzene-d5	84	47-147		02/25/2020 19:14
2-Fluorobiphenyl	80	46-141		02/25/2020 19:14
2,4,6-Tribromophenol	69	25-166		02/25/2020 19:14
4-Terphenyl-d14	68	39-153		02/25/2020 19:14

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	GC17 02252023.D	194583

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/25/2020 19:42
Acenaphthylene	ND	0.0013	1	02/25/2020 19:42
Acetochlor	ND	0.25	1	02/25/2020 19:42
Anthracene	ND	0.0013	1	02/25/2020 19:42
Benzidine	ND	1.2	1	02/25/2020 19:42
Benzo (a) anthracene	ND	0.0050	1	02/25/2020 19:42
Benzo (a) pyrene	ND	0.0025	1	02/25/2020 19:42
Benzo (b) fluoranthene	ND	0.0063	1	02/25/2020 19:42
Benzo (g,h,i) perylene	ND	0.0025	1	02/25/2020 19:42
Benzo (k) fluoranthene	ND	0.0013	1	02/25/2020 19:42
Benzyl Alcohol	ND	1.2	1	02/25/2020 19:42
1,1-Biphenyl	ND	0.013	1	02/25/2020 19:42
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/25/2020 19:42
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/25/2020 19:42
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/25/2020 19:42
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/25/2020 19:42
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/25/2020 19:42
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/25/2020 19:42
Butylbenzyl Phthalate	ND	0.025	1	02/25/2020 19:42
4-Chloroaniline	ND	0.0025	1	02/25/2020 19:42
4-Chloro-3-methylphenol	ND	0.25	1	02/25/2020 19:42
2-Chloronaphthalene	ND	0.25	1	02/25/2020 19:42
2-Chlorophenol	ND	0.0050	1	02/25/2020 19:42
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/25/2020 19:42
Chrysene	ND	0.0025	1	02/25/2020 19:42
Dibenzo (a,h) anthracene	ND	0.0025	1	02/25/2020 19:42
Dibenzofuran	ND	0.25	1	02/25/2020 19:42
Di-n-butyl Phthalate	ND	0.0050	1	02/25/2020 19:42
1,2-Dichlorobenzene	ND	0.25	1	02/25/2020 19:42
1,3-Dichlorobenzene	ND	0.25	1	02/25/2020 19:42
1,4-Dichlorobenzene	ND	0.25	1	02/25/2020 19:42
3,3-Dichlorobenzidine	ND	0.0025	1	02/25/2020 19:42
2,4-Dichlorophenol	ND	0.013	1	02/25/2020 19:42
Diethyl Phthalate	ND	0.0050	1	02/25/2020 19:42
2,4-Dimethylphenol	ND	0.25	1	02/25/2020 19:42
Dimethyl Phthalate	ND	0.0025	1	02/25/2020 19:42
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/25/2020 19:42

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	GC17 02252023.D	194583

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/25/2020 19:42
2,4-Dinitrotoluene	ND	0.0063	1	02/25/2020 19:42
2,6-Dinitrotoluene	ND	0.0025	1	02/25/2020 19:42
Di-n-octyl Phthalate	ND	0.0050	1	02/25/2020 19:42
1,2-Diphenylhydrazine	ND	0.25	1	02/25/2020 19:42
Fluoranthene	**0.0014**	0.0013	1	02/25/2020 19:42
Fluorene	ND	0.0025	1	02/25/2020 19:42
Hexachlorobenzene	ND	0.0013	1	02/25/2020 19:42
Hexachlorobutadiene	ND	0.0025	1	02/25/2020 19:42
Hexachlorocyclopentadiene	ND	2.0	1	02/25/2020 19:42
Hexachloroethane	ND	0.0025	1	02/25/2020 19:42
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/25/2020 19:42
Isophorone	ND	0.25	1	02/25/2020 19:42
1-Methylnaphthalene	ND	0.0013	1	02/25/2020 19:42
2-Methylnaphthalene	ND	0.0025	1	02/25/2020 19:42
2-Methylphenol (o-Cresol)	ND	0.50	1	02/25/2020 19:42
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/25/2020 19:42
Naphthalene	ND	0.0013	1	02/25/2020 19:42
2-Nitroaniline	ND	1.2	1	02/25/2020 19:42
3-Nitroaniline	ND	1.2	1	02/25/2020 19:42
4-Nitroaniline	ND	1.2	1	02/25/2020 19:42
Nitrobenzene	ND	0.25	1	02/25/2020 19:42
2-Nitrophenol	ND	1.2	1	02/25/2020 19:42
4-Nitrophenol	ND	1.2	1	02/25/2020 19:42
N-Nitrosodiphenylamine	ND	0.25	1	02/25/2020 19:42
N-Nitrosodi-n-propylamine	ND	0.25	1	02/25/2020 19:42
Pentachlorophenol	ND	0.031	1	02/25/2020 19:42
Phenanthrene	ND	0.0050	1	02/25/2020 19:42
Phenol	ND	0.0050	1	02/25/2020 19:42
Pyrene	ND	0.0025	1	02/25/2020 19:42
Pyridine	ND	0.25	1	02/25/2020 19:42
1,2,4-Trichlorobenzene	ND	0.25	1	02/25/2020 19:42
2,4,5-Trichlorophenol	ND	0.0025	1	02/25/2020 19:42
2,4,6-Trichlorophenol	ND	0.013	1	02/25/2020 19:42

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	GC17 02252023.D	194583

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	110	56-152		02/25/2020 19:42
Phenol-d5	106	54-146		02/25/2020 19:42
Nitrobenzene-d5	82	47-147		02/25/2020 19:42
2-Fluorobiphenyl	80	46-141		02/25/2020 19:42
2,4,6-Tribromophenol	66	25-166		02/25/2020 19:42
4-Terphenyl-d14	70	39-153		02/25/2020 19:42

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	GC17 02252024.D	194583

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/25/2020 20:09
Acenaphthylene	ND	0.0013	1	02/25/2020 20:09
Acetochlor	ND	0.25	1	02/25/2020 20:09
Anthracene	ND	0.0013	1	02/25/2020 20:09
Benzidine	ND	1.2	1	02/25/2020 20:09
Benzo (a) anthracene	ND	0.0050	1	02/25/2020 20:09
Benzo (a) pyrene	ND	0.0025	1	02/25/2020 20:09
Benzo (b) fluoranthene	ND	0.0063	1	02/25/2020 20:09
Benzo (g,h,i) perylene	ND	0.0025	1	02/25/2020 20:09
Benzo (k) fluoranthene	ND	0.0013	1	02/25/2020 20:09
Benzyl Alcohol	ND	1.2	1	02/25/2020 20:09
1,1-Biphenyl	ND	0.013	1	02/25/2020 20:09
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/25/2020 20:09
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/25/2020 20:09
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/25/2020 20:09
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/25/2020 20:09
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/25/2020 20:09
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/25/2020 20:09
Butylbenzyl Phthalate	ND	0.025	1	02/25/2020 20:09
4-Chloroaniline	ND	0.0025	1	02/25/2020 20:09
4-Chloro-3-methylphenol	ND	0.25	1	02/25/2020 20:09
2-Chloronaphthalene	ND	0.25	1	02/25/2020 20:09
2-Chlorophenol	ND	0.0050	1	02/25/2020 20:09
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/25/2020 20:09
Chrysene	ND	0.0025	1	02/25/2020 20:09
Dibenzo (a,h) anthracene	ND	0.0025	1	02/25/2020 20:09
Dibenzofuran	ND	0.25	1	02/25/2020 20:09
Di-n-butyl Phthalate	ND	0.0050	1	02/25/2020 20:09
1,2-Dichlorobenzene	ND	0.25	1	02/25/2020 20:09
1,3-Dichlorobenzene	ND	0.25	1	02/25/2020 20:09
1,4-Dichlorobenzene	ND	0.25	1	02/25/2020 20:09
3,3-Dichlorobenzidine	ND	0.0025	1	02/25/2020 20:09
2,4-Dichlorophenol	ND	0.013	1	02/25/2020 20:09
Diethyl Phthalate	ND	0.0050	1	02/25/2020 20:09
2,4-Dimethylphenol	ND	0.25	1	02/25/2020 20:09
Dimethyl Phthalate	ND	0.0025	1	02/25/2020 20:09
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/25/2020 20:09

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	GC17 02252024.D	194583

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/25/2020 20:09
2,4-Dinitrotoluene	ND	0.0063	1	02/25/2020 20:09
2,6-Dinitrotoluene	ND	0.0025	1	02/25/2020 20:09
Di-n-octyl Phthalate	ND	0.0050	1	02/25/2020 20:09
1,2-Diphenylhydrazine	ND	0.25	1	02/25/2020 20:09
Fluoranthene	**0.0016**	0.0013	1	02/25/2020 20:09
Fluorene	ND	0.0025	1	02/25/2020 20:09
Hexachlorobenzene	ND	0.0013	1	02/25/2020 20:09
Hexachlorobutadiene	ND	0.0025	1	02/25/2020 20:09
Hexachlorocyclopentadiene	ND	2.0	1	02/25/2020 20:09
Hexachloroethane	ND	0.0025	1	02/25/2020 20:09
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/25/2020 20:09
Isophorone	ND	0.25	1	02/25/2020 20:09
1-Methylnaphthalene	ND	0.0013	1	02/25/2020 20:09
2-Methylnaphthalene	ND	0.0025	1	02/25/2020 20:09
2-Methylphenol (o-Cresol)	ND	0.50	1	02/25/2020 20:09
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/25/2020 20:09
Naphthalene	ND	0.0013	1	02/25/2020 20:09
2-Nitroaniline	ND	1.2	1	02/25/2020 20:09
3-Nitroaniline	ND	1.2	1	02/25/2020 20:09
4-Nitroaniline	ND	1.2	1	02/25/2020 20:09
Nitrobenzene	ND	0.25	1	02/25/2020 20:09
2-Nitrophenol	ND	1.2	1	02/25/2020 20:09
4-Nitrophenol	ND	1.2	1	02/25/2020 20:09
N-Nitrosodiphenylamine	ND	0.25	1	02/25/2020 20:09
N-Nitrosodi-n-propylamine	ND	0.25	1	02/25/2020 20:09
Pentachlorophenol	ND	0.031	1	02/25/2020 20:09
Phenanthrene	ND	0.0050	1	02/25/2020 20:09
Phenol	ND	0.0050	1	02/25/2020 20:09
Pyrene	ND	0.0025	1	02/25/2020 20:09
Pyridine	ND	0.25	1	02/25/2020 20:09
1,2,4-Trichlorobenzene	ND	0.25	1	02/25/2020 20:09
2,4,5-Trichlorophenol	ND	0.0025	1	02/25/2020 20:09
2,4,6-Trichlorophenol	ND	0.013	1	02/25/2020 20:09

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	GC17 02252024.D	194583

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	107	56-152		02/25/2020 20:09
Phenol-d5	102	54-146		02/25/2020 20:09
Nitrobenzene-d5	82	47-147		02/25/2020 20:09
2-Fluorobiphenyl	76	46-141		02/25/2020 20:09
2,4,6-Tribromophenol	62	25-166		02/25/2020 20:09
4-Terphenyl-d14	68	39-153		02/25/2020 20:09

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	GC17 02252025.D	194583

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/25/2020 20:36
Acenaphthylene	ND	0.0013	1	02/25/2020 20:36
Acetochlor	ND	0.25	1	02/25/2020 20:36
Anthracene	ND	0.0013	1	02/25/2020 20:36
Benzidine	ND	1.2	1	02/25/2020 20:36
Benzo (a) anthracene	ND	0.0050	1	02/25/2020 20:36
Benzo (a) pyrene	ND	0.0025	1	02/25/2020 20:36
Benzo (b) fluoranthene	ND	0.0063	1	02/25/2020 20:36
Benzo (g,h,i) perylene	ND	0.0025	1	02/25/2020 20:36
Benzo (k) fluoranthene	ND	0.0013	1	02/25/2020 20:36
Benzyl Alcohol	ND	1.2	1	02/25/2020 20:36
1,1-Biphenyl	ND	0.013	1	02/25/2020 20:36
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/25/2020 20:36
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/25/2020 20:36
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/25/2020 20:36
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/25/2020 20:36
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/25/2020 20:36
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/25/2020 20:36
Butylbenzyl Phthalate	ND	0.025	1	02/25/2020 20:36
4-Chloroaniline	ND	0.0025	1	02/25/2020 20:36
4-Chloro-3-methylphenol	ND	0.25	1	02/25/2020 20:36
2-Chloronaphthalene	ND	0.25	1	02/25/2020 20:36
2-Chlorophenol	ND	0.0050	1	02/25/2020 20:36
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/25/2020 20:36
Chrysene	ND	0.0025	1	02/25/2020 20:36
Dibenzo (a,h) anthracene	ND	0.0025	1	02/25/2020 20:36
Dibenzofuran	ND	0.25	1	02/25/2020 20:36
Di-n-butyl Phthalate	ND	0.0050	1	02/25/2020 20:36
1,2-Dichlorobenzene	ND	0.25	1	02/25/2020 20:36
1,3-Dichlorobenzene	ND	0.25	1	02/25/2020 20:36
1,4-Dichlorobenzene	ND	0.25	1	02/25/2020 20:36
3,3-Dichlorobenzidine	ND	0.0025	1	02/25/2020 20:36
2,4-Dichlorophenol	ND	0.013	1	02/25/2020 20:36
Diethyl Phthalate	ND	0.0050	1	02/25/2020 20:36
2,4-Dimethylphenol	ND	0.25	1	02/25/2020 20:36
Dimethyl Phthalate	ND	0.0025	1	02/25/2020 20:36
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/25/2020 20:36

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	GC17 02252025.D	194583

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/25/2020 20:36
2,4-Dinitrotoluene	ND	0.0063	1	02/25/2020 20:36
2,6-Dinitrotoluene	ND	0.0025	1	02/25/2020 20:36
Di-n-octyl Phthalate	ND	0.0050	1	02/25/2020 20:36
1,2-Diphenylhydrazine	ND	0.25	1	02/25/2020 20:36
Fluoranthene	**0.0014**	0.0013	1	02/25/2020 20:36
Fluorene	ND	0.0025	1	02/25/2020 20:36
Hexachlorobenzene	ND	0.0013	1	02/25/2020 20:36
Hexachlorobutadiene	ND	0.0025	1	02/25/2020 20:36
Hexachlorocyclopentadiene	ND	2.0	1	02/25/2020 20:36
Hexachloroethane	ND	0.0025	1	02/25/2020 20:36
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/25/2020 20:36
Isophorone	ND	0.25	1	02/25/2020 20:36
1-Methylnaphthalene	ND	0.0013	1	02/25/2020 20:36
2-Methylnaphthalene	ND	0.0025	1	02/25/2020 20:36
2-Methylphenol (o-Cresol)	ND	0.50	1	02/25/2020 20:36
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/25/2020 20:36
Naphthalene	ND	0.0013	1	02/25/2020 20:36
2-Nitroaniline	ND	1.2	1	02/25/2020 20:36
3-Nitroaniline	ND	1.2	1	02/25/2020 20:36
4-Nitroaniline	ND	1.2	1	02/25/2020 20:36
Nitrobenzene	ND	0.25	1	02/25/2020 20:36
2-Nitrophenol	ND	1.2	1	02/25/2020 20:36
4-Nitrophenol	ND	1.2	1	02/25/2020 20:36
N-Nitrosodiphenylamine	ND	0.25	1	02/25/2020 20:36
N-Nitrosodi-n-propylamine	ND	0.25	1	02/25/2020 20:36
Pentachlorophenol	ND	0.031	1	02/25/2020 20:36
Phenanthrene	ND	0.0050	1	02/25/2020 20:36
Phenol	ND	0.0050	1	02/25/2020 20:36
Pyrene	ND	0.0025	1	02/25/2020 20:36
Pyridine	ND	0.25	1	02/25/2020 20:36
1,2,4-Trichlorobenzene	ND	0.25	1	02/25/2020 20:36
2,4,5-Trichlorophenol	ND	0.0025	1	02/25/2020 20:36
2,4,6-Trichlorophenol	ND	0.013	1	02/25/2020 20:36

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	GC17 02252025.D	194583

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	106	56-152		02/25/2020 20:36
Phenol-d5	103	54-146		02/25/2020 20:36
Nitrobenzene-d5	81	47-147		02/25/2020 20:36
2-Fluorobiphenyl	81	46-141		02/25/2020 20:36
2,4,6-Tribromophenol	52	25-166		02/25/2020 20:36
4-Terphenyl-d14	67	39-153		02/25/2020 20:36

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	GC21 02262008.D	194583

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/26/2020 11:38
Acenaphthylene	ND	0.0013	1	02/26/2020 11:38
Acetochlor	ND	0.25	1	02/26/2020 11:38
Anthracene	ND	0.0013	1	02/26/2020 11:38
Benzidine	ND	1.2	1	02/26/2020 11:38
Benzo (a) anthracene	ND	0.0050	1	02/26/2020 11:38
Benzo (a) pyrene	ND	0.0025	1	02/26/2020 11:38
Benzo (b) fluoranthene	ND	0.0063	1	02/26/2020 11:38
Benzo (g,h,i) perylene	ND	0.0025	1	02/26/2020 11:38
Benzo (k) fluoranthene	ND	0.0013	1	02/26/2020 11:38
Benzyl Alcohol	ND	1.2	1	02/26/2020 11:38
1,1-Biphenyl	ND	0.013	1	02/26/2020 11:38
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/26/2020 11:38
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/26/2020 11:38
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/26/2020 11:38
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/26/2020 11:38
Bis (2-ethylhexyl) Phthalate	**0.0053**	0.0050	1	02/26/2020 11:38
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/26/2020 11:38
Butylbenzyl Phthalate	ND	0.025	1	02/26/2020 11:38
4-Chloroaniline	ND	0.0025	1	02/26/2020 11:38
4-Chloro-3-methylphenol	ND	0.25	1	02/26/2020 11:38
2-Chloronaphthalene	ND	0.25	1	02/26/2020 11:38
2-Chlorophenol	ND	0.0050	1	02/26/2020 11:38
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/26/2020 11:38
Chrysene	ND	0.0025	1	02/26/2020 11:38
Dibenzo (a,h) anthracene	ND	0.0025	1	02/26/2020 11:38
Dibenzofuran	ND	0.25	1	02/26/2020 11:38
Di-n-butyl Phthalate	ND	0.0050	1	02/26/2020 11:38
1,2-Dichlorobenzene	ND	0.25	1	02/26/2020 11:38
1,3-Dichlorobenzene	ND	0.25	1	02/26/2020 11:38
1,4-Dichlorobenzene	ND	0.25	1	02/26/2020 11:38
3,3-Dichlorobenzidine	ND	0.0025	1	02/26/2020 11:38
2,4-Dichlorophenol	ND	0.013	1	02/26/2020 11:38
Diethyl Phthalate	ND	0.0050	1	02/26/2020 11:38
2,4-Dimethylphenol	ND	0.25	1	02/26/2020 11:38
Dimethyl Phthalate	ND	0.0025	1	02/26/2020 11:38
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/26/2020 11:38

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	GC21 02262008.D	194583

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/26/2020 11:38
2,4-Dinitrotoluene	ND	0.0063	1	02/26/2020 11:38
2,6-Dinitrotoluene	ND	0.0025	1	02/26/2020 11:38
Di-n-octyl Phthalate	ND	0.0050	1	02/26/2020 11:38
1,2-Diphenylhydrazine	ND	0.25	1	02/26/2020 11:38
Fluoranthene	ND	0.0013	1	02/26/2020 11:38
Fluorene	ND	0.0025	1	02/26/2020 11:38
Hexachlorobenzene	ND	0.0013	1	02/26/2020 11:38
Hexachlorobutadiene	ND	0.0025	1	02/26/2020 11:38
Hexachlorocyclopentadiene	ND	2.0	1	02/26/2020 11:38
Hexachloroethane	ND	0.0025	1	02/26/2020 11:38
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/26/2020 11:38
Isophorone	ND	0.25	1	02/26/2020 11:38
1-Methylnaphthalene	ND	0.0013	1	02/26/2020 11:38
2-Methylnaphthalene	ND	0.0025	1	02/26/2020 11:38
2-Methylphenol (o-Cresol)	ND	0.50	1	02/26/2020 11:38
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/26/2020 11:38
Naphthalene	ND	0.0013	1	02/26/2020 11:38
2-Nitroaniline	ND	1.2	1	02/26/2020 11:38
3-Nitroaniline	ND	1.2	1	02/26/2020 11:38
4-Nitroaniline	ND	1.2	1	02/26/2020 11:38
Nitrobenzene	ND	0.25	1	02/26/2020 11:38
2-Nitrophenol	ND	1.2	1	02/26/2020 11:38
4-Nitrophenol	ND	1.2	1	02/26/2020 11:38
N-Nitrosodiphenylamine	ND	0.25	1	02/26/2020 11:38
N-Nitrosodi-n-propylamine	ND	0.25	1	02/26/2020 11:38
Pentachlorophenol	ND	0.031	1	02/26/2020 11:38
Phenanthrene	ND	0.0050	1	02/26/2020 11:38
Phenol	ND	0.0050	1	02/26/2020 11:38
Pyrene	ND	0.0025	1	02/26/2020 11:38
Pyridine	ND	0.25	1	02/26/2020 11:38
1,2,4-Trichlorobenzene	ND	0.25	1	02/26/2020 11:38
2,4,5-Trichlorophenol	ND	0.0025	1	02/26/2020 11:38
2,4,6-Trichlorophenol	ND	0.013	1	02/26/2020 11:38

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	GC21 02262008.D	194583

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	104	56-152		02/26/2020 11:38
Phenol-d5	102	54-146		02/26/2020 11:38
Nitrobenzene-d5	89	47-147		02/26/2020 11:38
2-Fluorobiphenyl	89	46-141		02/26/2020 11:38
2,4,6-Tribromophenol	64	25-166		02/26/2020 11:38
4-Terphenyl-d14	72	39-153		02/26/2020 11:38

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	GC21 02262011.D	194583

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/26/2020 13:00
Acenaphthylene	ND	0.0013	1	02/26/2020 13:00
Acetochlor	ND	0.25	1	02/26/2020 13:00
Anthracene	ND	0.0013	1	02/26/2020 13:00
Benzidine	ND	1.2	1	02/26/2020 13:00
Benzo (a) anthracene	ND	0.0050	1	02/26/2020 13:00
Benzo (a) pyrene	ND	0.0025	1	02/26/2020 13:00
Benzo (b) fluoranthene	ND	0.0063	1	02/26/2020 13:00
Benzo (g,h,i) perylene	ND	0.0025	1	02/26/2020 13:00
Benzo (k) fluoranthene	ND	0.0013	1	02/26/2020 13:00
Benzyl Alcohol	ND	1.2	1	02/26/2020 13:00
1,1-Biphenyl	ND	0.013	1	02/26/2020 13:00
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/26/2020 13:00
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/26/2020 13:00
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/26/2020 13:00
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/26/2020 13:00
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/26/2020 13:00
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/26/2020 13:00
Butylbenzyl Phthalate	ND	0.025	1	02/26/2020 13:00
4-Chloroaniline	ND	0.0025	1	02/26/2020 13:00
4-Chloro-3-methylphenol	ND	0.25	1	02/26/2020 13:00
2-Chloronaphthalene	ND	0.25	1	02/26/2020 13:00
2-Chlorophenol	ND	0.0050	1	02/26/2020 13:00
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/26/2020 13:00
Chrysene	ND	0.0025	1	02/26/2020 13:00
Dibenzo (a,h) anthracene	ND	0.0025	1	02/26/2020 13:00
Dibenzofuran	ND	0.25	1	02/26/2020 13:00
Di-n-butyl Phthalate	ND	0.0050	1	02/26/2020 13:00
1,2-Dichlorobenzene	ND	0.25	1	02/26/2020 13:00
1,3-Dichlorobenzene	ND	0.25	1	02/26/2020 13:00
1,4-Dichlorobenzene	ND	0.25	1	02/26/2020 13:00
3,3-Dichlorobenzidine	ND	0.0025	1	02/26/2020 13:00
2,4-Dichlorophenol	ND	0.013	1	02/26/2020 13:00
Diethyl Phthalate	ND	0.0050	1	02/26/2020 13:00
2,4-Dimethylphenol	ND	0.25	1	02/26/2020 13:00
Dimethyl Phthalate	ND	0.0025	1	02/26/2020 13:00
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/26/2020 13:00

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	GC21 02262011.D	194583

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/26/2020 13:00
2,4-Dinitrotoluene	ND	0.0063	1	02/26/2020 13:00
2,6-Dinitrotoluene	ND	0.0025	1	02/26/2020 13:00
Di-n-octyl Phthalate	ND	0.0050	1	02/26/2020 13:00
1,2-Diphenylhydrazine	ND	0.25	1	02/26/2020 13:00
Fluoranthene	ND	0.0013	1	02/26/2020 13:00
Fluorene	ND	0.0025	1	02/26/2020 13:00
Hexachlorobenzene	ND	0.0013	1	02/26/2020 13:00
Hexachlorobutadiene	ND	0.0025	1	02/26/2020 13:00
Hexachlorocyclopentadiene	ND	2.0	1	02/26/2020 13:00
Hexachloroethane	ND	0.0025	1	02/26/2020 13:00
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/26/2020 13:00
Isophorone	ND	0.25	1	02/26/2020 13:00
1-Methylnaphthalene	ND	0.0013	1	02/26/2020 13:00
2-Methylnaphthalene	ND	0.0025	1	02/26/2020 13:00
2-Methylphenol (o-Cresol)	ND	0.50	1	02/26/2020 13:00
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/26/2020 13:00
Naphthalene	ND	0.0013	1	02/26/2020 13:00
2-Nitroaniline	ND	1.2	1	02/26/2020 13:00
3-Nitroaniline	ND	1.2	1	02/26/2020 13:00
4-Nitroaniline	ND	1.2	1	02/26/2020 13:00
Nitrobenzene	ND	0.25	1	02/26/2020 13:00
2-Nitrophenol	ND	1.2	1	02/26/2020 13:00
4-Nitrophenol	ND	1.2	1	02/26/2020 13:00
N-Nitrosodiphenylamine	ND	0.25	1	02/26/2020 13:00
N-Nitrosodi-n-propylamine	ND	0.25	1	02/26/2020 13:00
Pentachlorophenol	ND	0.031	1	02/26/2020 13:00
Phenanthrene	**0.0066**	0.0050	1	02/26/2020 13:00
Phenol	ND	0.0050	1	02/26/2020 13:00
Pyrene	ND	0.0025	1	02/26/2020 13:00
Pyridine	ND	0.25	1	02/26/2020 13:00
1,2,4-Trichlorobenzene	ND	0.25	1	02/26/2020 13:00
2,4,5-Trichlorophenol	ND	0.0025	1	02/26/2020 13:00
2,4,6-Trichlorophenol	ND	0.013	1	02/26/2020 13:00

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	GC21 02262011.D	194583

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	108	56-152		02/26/2020 13:00
Phenol-d5	104	54-146		02/26/2020 13:00
Nitrobenzene-d5	94	47-147		02/26/2020 13:00
2-Fluorobiphenyl	93	46-141		02/26/2020 13:00
2,4,6-Tribromophenol	53	25-166		02/26/2020 13:00
4-Terphenyl-d14	74	39-153		02/26/2020 13:00

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_16-17	2002901-028A	Soil	02/20/2020 11:20	GC21 02262012.D	194583

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acenaphthene	ND		0.0013	1	02/26/2020 13:27
Acenaphthylene	ND		0.0013	1	02/26/2020 13:27
Acetochlor	ND		0.25	1	02/26/2020 13:27
Anthracene	ND		0.0013	1	02/26/2020 13:27
Benzidine	ND		1.2	1	02/26/2020 13:27
Benzo (a) anthracene	ND		0.0050	1	02/26/2020 13:27
Benzo (a) pyrene	ND		0.0025	1	02/26/2020 13:27
Benzo (b) fluoranthene	ND		0.0063	1	02/26/2020 13:27
Benzo (g,h,i) perylene	ND		0.0025	1	02/26/2020 13:27
Benzo (k) fluoranthene	ND		0.0013	1	02/26/2020 13:27
Benzyl Alcohol	ND		1.2	1	02/26/2020 13:27
1,1-Biphenyl	ND		0.013	1	02/26/2020 13:27
Bis (2-chloroethoxy) Methane	ND		0.25	1	02/26/2020 13:27
Bis (2-chloroethyl) Ether	ND		0.0025	1	02/26/2020 13:27
Bis (2-chloroisopropyl) Ether	ND		0.0025	1	02/26/2020 13:27
Bis (2-ethylhexyl) Adipate	ND		0.50	1	02/26/2020 13:27
Bis (2-ethylhexyl) Phthalate	ND		0.0050	1	02/26/2020 13:27
4-Bromophenyl Phenyl Ether	ND		0.25	1	02/26/2020 13:27
Butylbenzyl Phthalate	ND		0.025	1	02/26/2020 13:27
4-Chloroaniline	ND		0.0025	1	02/26/2020 13:27
4-Chloro-3-methylphenol	ND		0.25	1	02/26/2020 13:27
2-Chloronaphthalene	ND		0.25	1	02/26/2020 13:27
2-Chlorophenol	ND		0.0050	1	02/26/2020 13:27
4-Chlorophenyl Phenyl Ether	ND		0.25	1	02/26/2020 13:27
Chrysene	ND		0.0025	1	02/26/2020 13:27
Dibenzo (a,h) anthracene	ND		0.0025	1	02/26/2020 13:27
Dibenzofuran	ND		0.25	1	02/26/2020 13:27
Di-n-butyl Phthalate	**0.0053**	B	0.0050	1	02/26/2020 13:27
1,2-Dichlorobenzene	ND		0.25	1	02/26/2020 13:27
1,3-Dichlorobenzene	ND		0.25	1	02/26/2020 13:27
1,4-Dichlorobenzene	ND		0.25	1	02/26/2020 13:27
3,3-Dichlorobenzidine	ND		0.0025	1	02/26/2020 13:27
2,4-Dichlorophenol	ND		0.013	1	02/26/2020 13:27
Diethyl Phthalate	ND		0.0050	1	02/26/2020 13:27
2,4-Dimethylphenol	ND		0.25	1	02/26/2020 13:27
Dimethyl Phthalate	ND		0.0025	1	02/26/2020 13:27
4,6-Dinitro-2-methylphenol	ND		1.2	1	02/26/2020 13:27

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_16-17	2002901-028A	Soil	02/20/2020 11:20	GC21 02262012.D	194583

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		0.13	1	02/26/2020 13:27
2,4-Dinitrotoluene	ND		0.0063	1	02/26/2020 13:27
2,6-Dinitrotoluene	ND		0.0025	1	02/26/2020 13:27
Di-n-octyl Phthalate	ND		0.0050	1	02/26/2020 13:27
1,2-Diphenylhydrazine	ND		0.25	1	02/26/2020 13:27
Fluoranthene	ND		0.0013	1	02/26/2020 13:27
Fluorene	ND		0.0025	1	02/26/2020 13:27
Hexachlorobenzene	ND		0.0013	1	02/26/2020 13:27
Hexachlorobutadiene	ND		0.0025	1	02/26/2020 13:27
Hexachlorocyclopentadiene	ND		2.0	1	02/26/2020 13:27
Hexachloroethane	ND		0.0025	1	02/26/2020 13:27
Indeno (1,2,3-cd) pyrene	ND		0.0025	1	02/26/2020 13:27
Isophorone	ND		0.25	1	02/26/2020 13:27
1-Methylnaphthalene	ND		0.0013	1	02/26/2020 13:27
2-Methylnaphthalene	ND		0.0025	1	02/26/2020 13:27
2-Methylphenol (o-Cresol)	ND		0.50	1	02/26/2020 13:27
3 & 4-Methylphenol (m,p-Cresol)	ND		0.25	1	02/26/2020 13:27
Naphthalene	ND		0.0013	1	02/26/2020 13:27
2-Nitroaniline	ND		1.2	1	02/26/2020 13:27
3-Nitroaniline	ND		1.2	1	02/26/2020 13:27
4-Nitroaniline	ND		1.2	1	02/26/2020 13:27
Nitrobenzene	ND		0.25	1	02/26/2020 13:27
2-Nitrophenol	ND		1.2	1	02/26/2020 13:27
4-Nitrophenol	ND		1.2	1	02/26/2020 13:27
N-Nitrosodiphenylamine	ND		0.25	1	02/26/2020 13:27
N-Nitrosodi-n-propylamine	ND		0.25	1	02/26/2020 13:27
Pentachlorophenol	ND		0.031	1	02/26/2020 13:27
Phenanthrene	ND		0.0050	1	02/26/2020 13:27
Phenol	ND		0.0050	1	02/26/2020 13:27
Pyrene	ND		0.0025	1	02/26/2020 13:27
Pyridine	ND		0.25	1	02/26/2020 13:27
1,2,4-Trichlorobenzene	ND		0.25	1	02/26/2020 13:27
2,4,5-Trichlorophenol	ND		0.0025	1	02/26/2020 13:27
2,4,6-Trichlorophenol	ND		0.013	1	02/26/2020 13:27

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_16-17	2002901-028A	Soil	02/20/2020 11:20	GC21 02262012.D	194583

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Surrogates	**REC (%)**		**Limits**		
2-Fluorophenol	99		56-152		02/26/2020 13:27
Phenol-d5	95		54-146		02/26/2020 13:27
Nitrobenzene-d5	84		47-147		02/26/2020 13:27
2-Fluorobiphenyl	84		46-141		02/26/2020 13:27
2,4,6-Tribromophenol	57		25-166		02/26/2020 13:27
4-Terphenyl-d14	72		39-153		02/26/2020 13:27

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	GC21 02262013.D	194583

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/26/2020 13:54
Acenaphthylene	ND	0.0013	1	02/26/2020 13:54
Acetochlor	ND	0.25	1	02/26/2020 13:54
Anthracene	ND	0.0013	1	02/26/2020 13:54
Benzidine	ND	1.2	1	02/26/2020 13:54
Benzo (a) anthracene	ND	0.0050	1	02/26/2020 13:54
Benzo (a) pyrene	**0.0052**	0.0025	1	02/26/2020 13:54
Benzo (b) fluoranthene	ND	0.0063	1	02/26/2020 13:54
Benzo (g,h,i) perylene	ND	0.0025	1	02/26/2020 13:54
Benzo (k) fluoranthene	ND	0.0013	1	02/26/2020 13:54
Benzyl Alcohol	ND	1.2	1	02/26/2020 13:54
1,1-Biphenyl	ND	0.013	1	02/26/2020 13:54
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/26/2020 13:54
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/26/2020 13:54
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/26/2020 13:54
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/26/2020 13:54
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/26/2020 13:54
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/26/2020 13:54
Butylbenzyl Phthalate	ND	0.025	1	02/26/2020 13:54
4-Chloroaniline	ND	0.0025	1	02/26/2020 13:54
4-Chloro-3-methylphenol	ND	0.25	1	02/26/2020 13:54
2-Chloronaphthalene	ND	0.25	1	02/26/2020 13:54
2-Chlorophenol	ND	0.0050	1	02/26/2020 13:54
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/26/2020 13:54
Chrysene	ND	0.0025	1	02/26/2020 13:54
Dibenzo (a,h) anthracene	ND	0.0025	1	02/26/2020 13:54
Dibenzofuran	ND	0.25	1	02/26/2020 13:54
Di-n-butyl Phthalate	ND	0.0050	1	02/26/2020 13:54
1,2-Dichlorobenzene	ND	0.25	1	02/26/2020 13:54
1,3-Dichlorobenzene	ND	0.25	1	02/26/2020 13:54
1,4-Dichlorobenzene	ND	0.25	1	02/26/2020 13:54
3,3-Dichlorobenzidine	ND	0.0025	1	02/26/2020 13:54
2,4-Dichlorophenol	ND	0.013	1	02/26/2020 13:54
Diethyl Phthalate	ND	0.0050	1	02/26/2020 13:54
2,4-Dimethylphenol	ND	0.25	1	02/26/2020 13:54
Dimethyl Phthalate	ND	0.0025	1	02/26/2020 13:54
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/26/2020 13:54

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	GC21 02262013.D	194583

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/26/2020 13:54
2,4-Dinitrotoluene	ND	0.0063	1	02/26/2020 13:54
2,6-Dinitrotoluene	ND	0.0025	1	02/26/2020 13:54
Di-n-octyl Phthalate	ND	0.0050	1	02/26/2020 13:54
1,2-Diphenylhydrazine	ND	0.25	1	02/26/2020 13:54
Fluoranthene	ND	0.0013	1	02/26/2020 13:54
Fluorene	ND	0.0025	1	02/26/2020 13:54
Hexachlorobenzene	ND	0.0013	1	02/26/2020 13:54
Hexachlorobutadiene	ND	0.0025	1	02/26/2020 13:54
Hexachlorocyclopentadiene	ND	2.0	1	02/26/2020 13:54
Hexachloroethane	ND	0.0025	1	02/26/2020 13:54
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/26/2020 13:54
Isophorone	ND	0.25	1	02/26/2020 13:54
1-Methylnaphthalene	ND	0.0013	1	02/26/2020 13:54
2-Methylnaphthalene	ND	0.0025	1	02/26/2020 13:54
2-Methylphenol (o-Cresol)	ND	0.50	1	02/26/2020 13:54
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/26/2020 13:54
Naphthalene	ND	0.0013	1	02/26/2020 13:54
2-Nitroaniline	ND	1.2	1	02/26/2020 13:54
3-Nitroaniline	ND	1.2	1	02/26/2020 13:54
4-Nitroaniline	ND	1.2	1	02/26/2020 13:54
Nitrobenzene	ND	0.25	1	02/26/2020 13:54
2-Nitrophenol	ND	1.2	1	02/26/2020 13:54
4-Nitrophenol	ND	1.2	1	02/26/2020 13:54
N-Nitrosodiphenylamine	ND	0.25	1	02/26/2020 13:54
N-Nitrosodi-n-propylamine	ND	0.25	1	02/26/2020 13:54
Pentachlorophenol	ND	0.031	1	02/26/2020 13:54
Phenanthrene	ND	0.0050	1	02/26/2020 13:54
Phenol	ND	0.0050	1	02/26/2020 13:54
Pyrene	ND	0.0025	1	02/26/2020 13:54
Pyridine	ND	0.25	1	02/26/2020 13:54
1,2,4-Trichlorobenzene	ND	0.25	1	02/26/2020 13:54
2,4,5-Trichlorophenol	ND	0.0025	1	02/26/2020 13:54
2,4,6-Trichlorophenol	ND	0.013	1	02/26/2020 13:54

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	GC21 02262013.D	194583

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	107	56-152		02/26/2020 13:54
Phenol-d5	104	54-146		02/26/2020 13:54
Nitrobenzene-d5	92	47-147		02/26/2020 13:54
2-Fluorobiphenyl	91	46-141		02/26/2020 13:54
2,4,6-Tribromophenol	42	25-166		02/26/2020 13:54
4-Terphenyl-d14	73	39-153		02/26/2020 13:54

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	GC21 02262014.D	194583

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acenaphthene	ND		0.0013	1	02/26/2020 14:22
Acenaphthylene	ND		0.0013	1	02/26/2020 14:22
Acetochlor	ND		0.25	1	02/26/2020 14:22
Anthracene	ND		0.0013	1	02/26/2020 14:22
Benzidine	ND		1.2	1	02/26/2020 14:22
Benzo (a) anthracene	ND		0.0050	1	02/26/2020 14:22
Benzo (a) pyrene	ND		0.0025	1	02/26/2020 14:22
Benzo (b) fluoranthene	ND		0.0063	1	02/26/2020 14:22
Benzo (g,h,i) perylene	ND		0.0025	1	02/26/2020 14:22
Benzo (k) fluoranthene	ND		0.0013	1	02/26/2020 14:22
Benzyl Alcohol	ND		1.2	1	02/26/2020 14:22
1,1-Biphenyl	ND		0.013	1	02/26/2020 14:22
Bis (2-chloroethoxy) Methane	ND		0.25	1	02/26/2020 14:22
Bis (2-chloroethyl) Ether	ND		0.0025	1	02/26/2020 14:22
Bis (2-chloroisopropyl) Ether	ND		0.0025	1	02/26/2020 14:22
Bis (2-ethylhexyl) Adipate	ND		0.50	1	02/26/2020 14:22
Bis (2-ethylhexyl) Phthalate	ND		0.0050	1	02/26/2020 14:22
4-Bromophenyl Phenyl Ether	ND		0.25	1	02/26/2020 14:22
Butylbenzyl Phthalate	ND		0.025	1	02/26/2020 14:22
4-Chloroaniline	ND		0.0025	1	02/26/2020 14:22
4-Chloro-3-methylphenol	ND		0.25	1	02/26/2020 14:22
2-Chloronaphthalene	ND		0.25	1	02/26/2020 14:22
2-Chlorophenol	ND		0.0050	1	02/26/2020 14:22
4-Chlorophenyl Phenyl Ether	ND		0.25	1	02/26/2020 14:22
Chrysene	**0.0028**	B	0.0025	1	02/26/2020 14:22
Dibenzo (a,h) anthracene	ND		0.0025	1	02/26/2020 14:22
Dibenzofuran	ND		0.25	1	02/26/2020 14:22
Di-n-butyl Phthalate	ND		0.0050	1	02/26/2020 14:22
1,2-Dichlorobenzene	ND		0.25	1	02/26/2020 14:22
1,3-Dichlorobenzene	ND		0.25	1	02/26/2020 14:22
1,4-Dichlorobenzene	ND		0.25	1	02/26/2020 14:22
3,3-Dichlorobenzidine	ND		0.0025	1	02/26/2020 14:22
2,4-Dichlorophenol	ND		0.013	1	02/26/2020 14:22
Diethyl Phthalate	ND		0.0050	1	02/26/2020 14:22
2,4-Dimethylphenol	ND		0.25	1	02/26/2020 14:22
Dimethyl Phthalate	ND		0.0025	1	02/26/2020 14:22
4,6-Dinitro-2-methylphenol	ND		1.2	1	02/26/2020 14:22

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	GC21 02262014.D	194583

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		0.13	1	02/26/2020 14:22
2,4-Dinitrotoluene	ND		0.0063	1	02/26/2020 14:22
2,6-Dinitrotoluene	ND		0.0025	1	02/26/2020 14:22
Di-n-octyl Phthalate	ND		0.0050	1	02/26/2020 14:22
1,2-Diphenylhydrazine	ND		0.25	1	02/26/2020 14:22
Fluoranthene	**0.0015**	B	0.0013	1	02/26/2020 14:22
Fluorene	ND		0.0025	1	02/26/2020 14:22
Hexachlorobenzene	ND		0.0013	1	02/26/2020 14:22
Hexachlorobutadiene	ND		0.0025	1	02/26/2020 14:22
Hexachlorocyclopentadiene	ND		2.0	1	02/26/2020 14:22
Hexachloroethane	ND		0.0025	1	02/26/2020 14:22
Indeno (1,2,3-cd) pyrene	ND		0.0025	1	02/26/2020 14:22
Isophorone	ND		0.25	1	02/26/2020 14:22
1-Methylnaphthalene	ND		0.0013	1	02/26/2020 14:22
2-Methylnaphthalene	ND		0.0025	1	02/26/2020 14:22
2-Methylphenol (o-Cresol)	ND		0.50	1	02/26/2020 14:22
3 & 4-Methylphenol (m,p-Cresol)	ND		0.25	1	02/26/2020 14:22
Naphthalene	ND		0.0013	1	02/26/2020 14:22
2-Nitroaniline	ND		1.2	1	02/26/2020 14:22
3-Nitroaniline	ND		1.2	1	02/26/2020 14:22
4-Nitroaniline	ND		1.2	1	02/26/2020 14:22
Nitrobenzene	ND		0.25	1	02/26/2020 14:22
2-Nitrophenol	ND		1.2	1	02/26/2020 14:22
4-Nitrophenol	ND		1.2	1	02/26/2020 14:22
N-Nitrosodiphenylamine	ND		0.25	1	02/26/2020 14:22
N-Nitrosodi-n-propylamine	ND		0.25	1	02/26/2020 14:22
Pentachlorophenol	ND		0.031	1	02/26/2020 14:22
Phenanthrene	**0.011**		0.0050	1	02/26/2020 14:22
Phenol	ND		0.0050	1	02/26/2020 14:22
Pyrene	ND		0.0025	1	02/26/2020 14:22
Pyridine	ND		0.25	1	02/26/2020 14:22
1,2,4-Trichlorobenzene	ND		0.25	1	02/26/2020 14:22
2,4,5-Trichlorophenol	ND		0.0025	1	02/26/2020 14:22
2,4,6-Trichlorophenol	ND		0.013	1	02/26/2020 14:22

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	GC21 02262014.D	194583

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Surrogates	**REC (%)**		**Limits**		
2-Fluorophenol	104		56-152		02/26/2020 14:22
Phenol-d5	104		54-146		02/26/2020 14:22
Nitrobenzene-d5	91		47-147		02/26/2020 14:22
2-Fluorobiphenyl	91		46-141		02/26/2020 14:22
2,4,6-Tribromophenol	47		25-166		02/26/2020 14:22
4-Terphenyl-d14	75		39-153		02/26/2020 14:22

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	2002901-031A	Soil	02/20/2020 11:50	GC21 02262015.D	194583

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/26/2020 15:57
Acenaphthylene	ND	0.0013	1	02/26/2020 15:57
Acetochlor	ND	0.25	1	02/26/2020 15:57
Anthracene	ND	0.0013	1	02/26/2020 15:57
Benzidine	ND	1.2	1	02/26/2020 15:57
Benzo (a) anthracene	ND	0.0050	1	02/26/2020 15:57
Benzo (a) pyrene	ND	0.0025	1	02/26/2020 15:57
Benzo (b) fluoranthene	ND	0.0063	1	02/26/2020 15:57
Benzo (g,h,i) perylene	ND	0.0025	1	02/26/2020 15:57
Benzo (k) fluoranthene	ND	0.0013	1	02/26/2020 15:57
Benzyl Alcohol	ND	1.2	1	02/26/2020 15:57
1,1-Biphenyl	ND	0.013	1	02/26/2020 15:57
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/26/2020 15:57
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/26/2020 15:57
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/26/2020 15:57
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/26/2020 15:57
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/26/2020 15:57
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/26/2020 15:57
Butylbenzyl Phthalate	ND	0.025	1	02/26/2020 15:57
4-Chloroaniline	ND	0.0025	1	02/26/2020 15:57
4-Chloro-3-methylphenol	ND	0.25	1	02/26/2020 15:57
2-Chloronaphthalene	ND	0.25	1	02/26/2020 15:57
2-Chlorophenol	ND	0.0050	1	02/26/2020 15:57
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/26/2020 15:57
Chrysene	ND	0.0025	1	02/26/2020 15:57
Dibenzo (a,h) anthracene	ND	0.0025	1	02/26/2020 15:57
Dibenzofuran	ND	0.25	1	02/26/2020 15:57
Di-n-butyl Phthalate	ND	0.0050	1	02/26/2020 15:57
1,2-Dichlorobenzene	ND	0.25	1	02/26/2020 15:57
1,3-Dichlorobenzene	ND	0.25	1	02/26/2020 15:57
1,4-Dichlorobenzene	ND	0.25	1	02/26/2020 15:57
3,3-Dichlorobenzidine	ND	0.0025	1	02/26/2020 15:57
2,4-Dichlorophenol	ND	0.013	1	02/26/2020 15:57
Diethyl Phthalate	ND	0.0050	1	02/26/2020 15:57
2,4-Dimethylphenol	ND	0.25	1	02/26/2020 15:57
Dimethyl Phthalate	ND	0.0025	1	02/26/2020 15:57
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/26/2020 15:57

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	2002901-031A	Soil	02/20/2020 11:50	GC21 02262015.D	194583

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/26/2020 15:57
2,4-Dinitrotoluene	ND	0.0063	1	02/26/2020 15:57
2,6-Dinitrotoluene	ND	0.0025	1	02/26/2020 15:57
Di-n-octyl Phthalate	ND	0.0050	1	02/26/2020 15:57
1,2-Diphenylhydrazine	ND	0.25	1	02/26/2020 15:57
Fluoranthene	ND	0.0013	1	02/26/2020 15:57
Fluorene	ND	0.0025	1	02/26/2020 15:57
Hexachlorobenzene	ND	0.0013	1	02/26/2020 15:57
Hexachlorobutadiene	ND	0.0025	1	02/26/2020 15:57
Hexachlorocyclopentadiene	ND	2.0	1	02/26/2020 15:57
Hexachloroethane	ND	0.0025	1	02/26/2020 15:57
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/26/2020 15:57
Isophorone	ND	0.25	1	02/26/2020 15:57
1-Methylnaphthalene	ND	0.0013	1	02/26/2020 15:57
2-Methylnaphthalene	ND	0.0025	1	02/26/2020 15:57
2-Methylphenol (o-Cresol)	ND	0.50	1	02/26/2020 15:57
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/26/2020 15:57
Naphthalene	ND	0.0013	1	02/26/2020 15:57
2-Nitroaniline	ND	1.2	1	02/26/2020 15:57
3-Nitroaniline	ND	1.2	1	02/26/2020 15:57
4-Nitroaniline	ND	1.2	1	02/26/2020 15:57
Nitrobenzene	ND	0.25	1	02/26/2020 15:57
2-Nitrophenol	ND	1.2	1	02/26/2020 15:57
4-Nitrophenol	ND	1.2	1	02/26/2020 15:57
N-Nitrosodiphenylamine	ND	0.25	1	02/26/2020 15:57
N-Nitrosodi-n-propylamine	ND	0.25	1	02/26/2020 15:57
Pentachlorophenol	ND	0.031	1	02/26/2020 15:57
Phenanthrene	ND	0.0050	1	02/26/2020 15:57
Phenol	ND	0.0050	1	02/26/2020 15:57
Pyrene	ND	0.0025	1	02/26/2020 15:57
Pyridine	ND	0.25	1	02/26/2020 15:57
1,2,4-Trichlorobenzene	ND	0.25	1	02/26/2020 15:57
2,4,5-Trichlorophenol	ND	0.0025	1	02/26/2020 15:57
2,4,6-Trichlorophenol	ND	0.013	1	02/26/2020 15:57

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	2002901-031A	Soil	02/20/2020 11:50	GC21 02262015.D	194583

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	107	56-152		02/26/2020 15:57
Phenol-d5	101	54-146		02/26/2020 15:57
Nitrobenzene-d5	90	47-147		02/26/2020 15:57
2-Fluorobiphenyl	85	46-141		02/26/2020 15:57
2,4,6-Tribromophenol	43	25-166		02/26/2020 15:57
4-Terphenyl-d14	70	39-153		02/26/2020 15:57

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	2002901-032A	Soil	02/20/2020 11:55	GC21 02262016.D	194583

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	02/26/2020 16:25
Acenaphthylene	ND	0.0013	1	02/26/2020 16:25
Acetochlor	ND	0.25	1	02/26/2020 16:25
Anthracene	ND	0.0013	1	02/26/2020 16:25
Benzidine	ND	1.2	1	02/26/2020 16:25
Benzo (a) anthracene	ND	0.0050	1	02/26/2020 16:25
Benzo (a) pyrene	ND	0.0025	1	02/26/2020 16:25
Benzo (b) fluoranthene	ND	0.0063	1	02/26/2020 16:25
Benzo (g,h,i) perylene	ND	0.0025	1	02/26/2020 16:25
Benzo (k) fluoranthene	ND	0.0013	1	02/26/2020 16:25
Benzyl Alcohol	ND	1.2	1	02/26/2020 16:25
1,1-Biphenyl	ND	0.013	1	02/26/2020 16:25
Bis (2-chloroethoxy) Methane	ND	0.25	1	02/26/2020 16:25
Bis (2-chloroethyl) Ether	ND	0.0025	1	02/26/2020 16:25
Bis (2-chloroisopropyl) Ether	ND	0.0025	1	02/26/2020 16:25
Bis (2-ethylhexyl) Adipate	ND	0.50	1	02/26/2020 16:25
Bis (2-ethylhexyl) Phthalate	ND	0.0050	1	02/26/2020 16:25
4-Bromophenyl Phenyl Ether	ND	0.25	1	02/26/2020 16:25
Butylbenzyl Phthalate	ND	0.025	1	02/26/2020 16:25
4-Chloroaniline	ND	0.0025	1	02/26/2020 16:25
4-Chloro-3-methylphenol	ND	0.25	1	02/26/2020 16:25
2-Chloronaphthalene	ND	0.25	1	02/26/2020 16:25
2-Chlorophenol	ND	0.0050	1	02/26/2020 16:25
4-Chlorophenyl Phenyl Ether	ND	0.25	1	02/26/2020 16:25
Chrysene	ND	0.0025	1	02/26/2020 16:25
Dibenzo (a,h) anthracene	ND	0.0025	1	02/26/2020 16:25
Dibenzofuran	ND	0.25	1	02/26/2020 16:25
Di-n-butyl Phthalate	ND	0.0050	1	02/26/2020 16:25
1,2-Dichlorobenzene	ND	0.25	1	02/26/2020 16:25
1,3-Dichlorobenzene	ND	0.25	1	02/26/2020 16:25
1,4-Dichlorobenzene	ND	0.25	1	02/26/2020 16:25
3,3-Dichlorobenzidine	ND	0.0025	1	02/26/2020 16:25
2,4-Dichlorophenol	ND	0.013	1	02/26/2020 16:25
Diethyl Phthalate	ND	0.0050	1	02/26/2020 16:25
2,4-Dimethylphenol	ND	0.25	1	02/26/2020 16:25
Dimethyl Phthalate	ND	0.0025	1	02/26/2020 16:25
4,6-Dinitro-2-methylphenol	ND	1.2	1	02/26/2020 16:25

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	2002901-032A	Soil	02/20/2020 11:55	GC21 02262016.D	194583

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	0.13	1	02/26/2020 16:25
2,4-Dinitrotoluene	ND	0.0063	1	02/26/2020 16:25
2,6-Dinitrotoluene	ND	0.0025	1	02/26/2020 16:25
Di-n-octyl Phthalate	ND	0.0050	1	02/26/2020 16:25
1,2-Diphenylhydrazine	ND	0.25	1	02/26/2020 16:25
Fluoranthene	ND	0.0013	1	02/26/2020 16:25
Fluorene	ND	0.0025	1	02/26/2020 16:25
Hexachlorobenzene	ND	0.0013	1	02/26/2020 16:25
Hexachlorobutadiene	ND	0.0025	1	02/26/2020 16:25
Hexachlorocyclopentadiene	ND	2.0	1	02/26/2020 16:25
Hexachloroethane	ND	0.0025	1	02/26/2020 16:25
Indeno (1,2,3-cd) pyrene	ND	0.0025	1	02/26/2020 16:25
Isophorone	ND	0.25	1	02/26/2020 16:25
1-Methylnaphthalene	ND	0.0013	1	02/26/2020 16:25
2-Methylnaphthalene	ND	0.0025	1	02/26/2020 16:25
2-Methylphenol (o-Cresol)	ND	0.50	1	02/26/2020 16:25
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	02/26/2020 16:25
Naphthalene	ND	0.0013	1	02/26/2020 16:25
2-Nitroaniline	ND	1.2	1	02/26/2020 16:25
3-Nitroaniline	ND	1.2	1	02/26/2020 16:25
4-Nitroaniline	ND	1.2	1	02/26/2020 16:25
Nitrobenzene	ND	0.25	1	02/26/2020 16:25
2-Nitrophenol	ND	1.2	1	02/26/2020 16:25
4-Nitrophenol	ND	1.2	1	02/26/2020 16:25
N-Nitrosodiphenylamine	ND	0.25	1	02/26/2020 16:25
N-Nitrosodi-n-propylamine	ND	0.25	1	02/26/2020 16:25
Pentachlorophenol	ND	0.031	1	02/26/2020 16:25
Phenanthrene	ND	0.0050	1	02/26/2020 16:25
Phenol	ND	0.0050	1	02/26/2020 16:25
Pyrene	ND	0.0025	1	02/26/2020 16:25
Pyridine	ND	0.25	1	02/26/2020 16:25
1,2,4-Trichlorobenzene	ND	0.25	1	02/26/2020 16:25
2,4,5-Trichlorophenol	ND	0.0025	1	02/26/2020 16:25
2,4,6-Trichlorophenol	ND	0.013	1	02/26/2020 16:25

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/25/2020	**Analytical Method:**	SW8270C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	2002901-032A	Soil	02/20/2020 11:55	GC21 02262016.D	194583

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	106	56-152		02/26/2020 16:25
Phenol-d5	98	54-146		02/26/2020 16:25
Nitrobenzene-d5	85	47-147		02/26/2020 16:25
2-Fluorobiphenyl	86	46-141		02/26/2020 16:25
2,4,6-Tribromophenol	42	25-166		02/26/2020 16:25
4-Terphenyl-d14	70	39-153		02/26/2020 16:25

Analyst(s): REB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_2-3	2002901-001A	Soil	02/21/2020 13:35	ICP-MS2 054SMPL.D	194520

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.59**	0.50	1	02/26/2020 01:54
Arsenic	**6.8**	0.50	1	02/26/2020 01:54
Barium	**190**	5.0	1	02/26/2020 01:54
Beryllium	ND	0.50	1	02/26/2020 01:54
Cadmium	ND	0.25	1	02/26/2020 01:54
Chromium	**47**	0.50	1	02/26/2020 01:54
Cobalt	**9.9**	0.50	1	02/26/2020 01:54
Copper	**24**	0.50	1	02/26/2020 01:54
Lead	**7.6**	0.50	1	02/26/2020 01:54
Mercury	ND	0.050	1	02/26/2020 01:54
Molybdenum	ND	0.50	1	02/26/2020 01:54
Nickel	**66**	0.50	1	02/26/2020 01:54
Selenium	ND	0.50	1	02/26/2020 01:54
Silver	ND	0.50	1	02/26/2020 01:54
Thallium	ND	0.50	1	02/26/2020 01:54
Vanadium	**42**	0.50	1	02/26/2020 01:54
Zinc	**51**	5.0	1	02/26/2020 01:54

Surrogates	REC (%)	Limits	
Terbium	86	70-130	02/26/2020 01:54

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	ICP-MS3 081SMPL.D	194520

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.83**	0.50	1	02/26/2020 17:23
Arsenic	**11**	0.50	1	02/26/2020 17:23
Barium	**220**	5.0	1	02/26/2020 17:23
Beryllium	**0.54**	0.50	1	02/26/2020 17:23
Cadmium	ND	0.25	1	02/26/2020 17:23
Chromium	**57**	0.50	1	02/26/2020 17:23
Cobalt	**15**	0.50	1	02/26/2020 17:23
Copper	**32**	0.50	1	02/26/2020 17:23
Lead	**11**	0.50	1	02/26/2020 17:23
Mercury	**0.067**	0.050	1	02/26/2020 17:23
Molybdenum	**0.89**	0.50	1	02/26/2020 17:23
Nickel	**89**	0.50	1	02/26/2020 17:23
Selenium	ND	0.50	1	02/26/2020 17:23
Silver	ND	0.50	1	02/26/2020 17:23
Thallium	ND	0.50	1	02/26/2020 17:23
Vanadium	**50**	0.50	1	02/26/2020 17:23
Zinc	**67**	5.0	1	02/26/2020 17:23

Surrogates	REC (%)	Limits	
Terbium	109	70-130	02/26/2020 17:23

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	2002901-003A	Soil	02/20/2020 14:00	ICP-MS3 082SMPL.D	194520

Analytes	Result	RL	DF	Date Analyzed
Antimony	**1.1**	0.50	1	02/26/2020 17:29
Arsenic	**12**	0.50	1	02/26/2020 17:29
Barium	**330**	5.0	1	02/26/2020 17:29
Beryllium	**0.76**	0.50	1	02/26/2020 17:29
Cadmium	ND	0.25	1	02/26/2020 17:29
Chromium	**76**	0.50	1	02/26/2020 17:29
Cobalt	**15**	0.50	1	02/26/2020 17:29
Copper	**39**	0.50	1	02/26/2020 17:29
Lead	**12**	0.50	1	02/26/2020 17:29
Mercury	**0.054**	0.050	1	02/26/2020 17:29
Molybdenum	**0.67**	0.50	1	02/26/2020 17:29
Nickel	**120**	0.50	1	02/26/2020 17:29
Selenium	ND	0.50	1	02/26/2020 17:29
Silver	ND	0.50	1	02/26/2020 17:29
Thallium	ND	0.50	1	02/26/2020 17:29
Vanadium	**56**	0.50	1	02/26/2020 17:29
Zinc	**76**	5.0	1	02/26/2020 17:29

Surrogates	REC (%)	Limits	
Terbium	104	70-130	02/26/2020 17:29

Analyst(s): ND

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	2002901-004A	Soil	02/20/2020 14:05	ICP-MS3 083SMPL.D	194520

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.96**	0.50	1	02/26/2020 17:35
Arsenic	**11**	0.50	1	02/26/2020 17:35
Barium	**290**	5.0	1	02/26/2020 17:35
Beryllium	**0.70**	0.50	1	02/26/2020 17:35
Cadmium	ND	0.25	1	02/26/2020 17:35
Chromium	**64**	0.50	1	02/26/2020 17:35
Cobalt	**14**	0.50	1	02/26/2020 17:35
Copper	**37**	0.50	1	02/26/2020 17:35
Lead	**11**	0.50	1	02/26/2020 17:35
Mercury	**0.096**	0.050	1	02/26/2020 17:35
Molybdenum	**0.60**	0.50	1	02/26/2020 17:35
Nickel	**98**	0.50	1	02/26/2020 17:35
Selenium	ND	0.50	1	02/26/2020 17:35
Silver	ND	0.50	1	02/26/2020 17:35
Thallium	ND	0.50	1	02/26/2020 17:35
Vanadium	**52**	0.50	1	02/26/2020 17:35
Zinc	**76**	5.0	1	02/26/2020 17:35

Surrogates	REC (%)	Limits	
Terbium	102	70-130	02/26/2020 17:35

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	ICP-MS3 087SMPL.D	194520

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.65**	0.50	1	02/26/2020 18:00
Arsenic	**6.6**	0.50	1	02/26/2020 18:00
Barium	**190**	5.0	1	02/26/2020 18:00
Beryllium	**0.56**	0.50	1	02/26/2020 18:00
Cadmium	ND	0.25	1	02/26/2020 18:00
Chromium	**53**	0.50	1	02/26/2020 18:00
Cobalt	**12**	0.50	1	02/26/2020 18:00
Copper	**23**	0.50	1	02/26/2020 18:00
Lead	**8.5**	0.50	1	02/26/2020 18:00
Mercury	ND	0.050	1	02/26/2020 18:00
Molybdenum	**0.50**	0.50	1	02/26/2020 18:00
Nickel	**56**	0.50	1	02/26/2020 18:00
Selenium	ND	0.50	1	02/26/2020 18:00
Silver	ND	0.50	1	02/26/2020 18:00
Thallium	ND	0.50	1	02/26/2020 18:00
Vanadium	**43**	0.50	1	02/26/2020 18:00
Zinc	**50**	5.0	1	02/26/2020 18:00

Surrogates	REC (%)	Limits	
Terbium	100	70-130	02/26/2020 18:00

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_5-6	2002901-006A	Soil	02/20/2020 14:25	ICP-MS2 059SMPL.D	194520

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	02/26/2020 02:24
Arsenic	**6.1**	0.50	1	02/26/2020 02:24
Barium	**210**	5.0	1	02/26/2020 02:24
Beryllium	ND	0.50	1	02/26/2020 02:24
Cadmium	ND	0.25	1	02/26/2020 02:24
Chromium	**44**	0.50	1	02/26/2020 02:24
Cobalt	**11**	0.50	1	02/26/2020 02:24
Copper	**21**	0.50	1	02/26/2020 02:24
Lead	**16**	0.50	1	02/26/2020 02:24
Mercury	**0.056**	0.050	1	02/26/2020 02:24
Molybdenum	**0.52**	0.50	1	02/26/2020 02:24
Nickel	**52**	0.50	1	02/26/2020 02:24
Selenium	ND	0.50	1	02/26/2020 02:24
Silver	ND	0.50	1	02/26/2020 02:24
Thallium	ND	0.50	1	02/26/2020 02:24
Vanadium	**39**	0.50	1	02/26/2020 02:24
Zinc	**45**	5.0	1	02/26/2020 02:24

Surrogates	REC (%)	Limits	
Terbium	96	70-130	02/26/2020 02:24

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	2002901-007A	Soil	02/20/2020 14:35	ICP-MS3 088SMPL.D	194520

Analytes	Result	RL	DF	Date Analyzed
Antimony	**1.0**	0.50	1	02/26/2020 18:06
Arsenic	**12**	0.50	1	02/26/2020 18:06
Barium	**300**	5.0	1	02/26/2020 18:06
Beryllium	**0.76**	0.50	1	02/26/2020 18:06
Cadmium	ND	0.25	1	02/26/2020 18:06
Chromium	**74**	0.50	1	02/26/2020 18:06
Cobalt	**15**	0.50	1	02/26/2020 18:06
Copper	**36**	0.50	1	02/26/2020 18:06
Lead	**11**	0.50	1	02/26/2020 18:06
Mercury	**0.10**	0.050	1	02/26/2020 18:06
Molybdenum	**0.70**	0.50	1	02/26/2020 18:06
Nickel	**110**	0.50	1	02/26/2020 18:06
Selenium	ND	0.50	1	02/26/2020 18:06
Silver	ND	0.50	1	02/26/2020 18:06
Thallium	ND	0.50	1	02/26/2020 18:06
Vanadium	**55**	0.50	1	02/26/2020 18:06
Zinc	**67**	5.0	1	02/26/2020 18:06

Surrogates	REC (%)	Limits	
Terbium	106	70-130	02/26/2020 18:06

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	2002901-008A	Soil	02/20/2020 14:40	ICP-MS4 117SMPL.d	194536

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.85**		0.50	1	02/26/2020 14:35
Arsenic	**13**		0.50	1	02/26/2020 14:35
Barium	**250**		5.0	1	02/26/2020 14:35
Beryllium	**0.60**		0.50	1	02/26/2020 14:35
Cadmium	ND		0.25	1	02/26/2020 14:35
Chromium	**75**		0.50	1	02/26/2020 14:35
Cobalt	**12**		0.50	1	02/26/2020 14:35
Copper	**36**		0.50	1	02/26/2020 14:35
Lead	**9.3**		0.50	1	02/26/2020 14:35
Mercury	**0.13**	B	0.050	1	02/26/2020 14:35
Molybdenum	**0.79**		0.50	1	02/26/2020 14:35
Nickel	**94**		0.50	1	02/26/2020 14:35
Selenium	**1.3**		0.50	1	02/26/2020 14:35
Silver	ND		0.50	1	02/26/2020 14:35
Thallium	ND		0.50	1	02/26/2020 14:35
Vanadium	**53**		0.50	1	02/26/2020 14:35
Zinc	**76**		5.0	1	02/26/2020 14:35

Surrogates	REC (%)	Limits	
Terbium	108	70-130	02/26/2020 14:35

Analyst(s): DB

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_2-3	2002901-009A	Soil	02/20/2020 15:25	ICP-MS4 153SMPL.d	194536

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	02/26/2020 17:05
Arsenic	**5.5**	0.50	1	02/26/2020 17:05
Barium	**210**	5.0	1	02/26/2020 17:05
Beryllium	ND	0.50	1	02/26/2020 17:05
Cadmium	ND	0.25	1	02/26/2020 17:05
Chromium	**46**	0.50	1	02/26/2020 17:05
Cobalt	**12**	0.50	1	02/26/2020 17:05
Copper	**21**	0.50	1	02/26/2020 17:05
Lead	**10**	0.50	1	02/26/2020 17:05
Mercury	ND	0.050	1	02/26/2020 17:05
Molybdenum	**0.56**	0.50	1	02/26/2020 17:05
Nickel	**54**	0.50	1	02/26/2020 17:05
Selenium	**0.91**	0.50	1	02/26/2020 17:05
Silver	ND	0.50	1	02/26/2020 17:05
Thallium	ND	0.50	1	02/26/2020 17:05
Vanadium	**39**	0.50	1	02/26/2020 17:05
Zinc	**52**	5.0	1	02/26/2020 17:05

Surrogates	REC (%)	Limits	
Terbium	104	70-130	02/26/2020 17:05

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	ICP-MS4 154SMPL.d	194536

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.74**	0.50	1	02/26/2020 17:09
Arsenic	**9.4**	0.50	1	02/26/2020 17:09
Barium	**180**	5.0	1	02/26/2020 17:09
Beryllium	**0.60**	0.50	1	02/26/2020 17:09
Cadmium	ND	0.25	1	02/26/2020 17:09
Chromium	**64**	0.50	1	02/26/2020 17:09
Cobalt	**13**	0.50	1	02/26/2020 17:09
Copper	**31**	0.50	1	02/26/2020 17:09
Lead	**9.3**	0.50	1	02/26/2020 17:09
Mercury	ND	0.050	1	02/26/2020 17:09
Molybdenum	**0.67**	0.50	1	02/26/2020 17:09
Nickel	**85**	0.50	1	02/26/2020 17:09
Selenium	**1.2**	0.50	1	02/26/2020 17:09
Silver	ND	0.50	1	02/26/2020 17:09
Thallium	ND	0.50	1	02/26/2020 17:09
Vanadium	**54**	0.50	1	02/26/2020 17:09
Zinc	**70**	5.0	1	02/26/2020 17:09

Surrogates	REC (%)	Limits	
Terbium	108	70-130	02/26/2020 17:09

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	2002901-011A	Soil	02/20/2020 15:35	ICP-MS4 155SMPL.d	194536

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.77**		0.50	1	02/26/2020 17:14
Arsenic	**9.5**		0.50	1	02/26/2020 17:14
Barium	**240**		5.0	1	02/26/2020 17:14
Beryllium	**0.58**		0.50	1	02/26/2020 17:14
Cadmium	ND		0.25	1	02/26/2020 17:14
Chromium	**57**		0.50	1	02/26/2020 17:14
Cobalt	**12**		0.50	1	02/26/2020 17:14
Copper	**32**		0.50	1	02/26/2020 17:14
Lead	**8.6**		0.50	1	02/26/2020 17:14
Mercury	**0.076**	B	0.050	1	02/26/2020 17:14
Molybdenum	**0.59**		0.50	1	02/26/2020 17:14
Nickel	**88**		0.50	1	02/26/2020 17:14
Selenium	**1.0**		0.50	1	02/26/2020 17:14
Silver	ND		0.50	1	02/26/2020 17:14
Thallium	ND		0.50	1	02/26/2020 17:14
Vanadium	**46**		0.50	1	02/26/2020 17:14
Zinc	**70**		5.0	1	02/26/2020 17:14

Surrogates	REC (%)	Limits	
Terbium	111	70-130	02/26/2020 17:14

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	ICP-MS4 156SMPL.d	194536

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.77**		0.50	1	02/26/2020 17:18
Arsenic	**10**		0.50	1	02/26/2020 17:18
Barium	**240**		5.0	1	02/26/2020 17:18
Beryllium	**0.62**		0.50	1	02/26/2020 17:18
Cadmium	ND		0.25	1	02/26/2020 17:18
Chromium	**72**		0.50	1	02/26/2020 17:18
Cobalt	**14**		0.50	1	02/26/2020 17:18
Copper	**34**		0.50	1	02/26/2020 17:18
Lead	**9.9**		0.50	1	02/26/2020 17:18
Mercury	**0.067**	B	0.050	1	02/26/2020 17:18
Molybdenum	**0.61**		0.50	1	02/26/2020 17:18
Nickel	**87**		0.50	1	02/26/2020 17:18
Selenium	**1.3**		0.50	1	02/26/2020 17:18
Silver	ND		0.50	1	02/26/2020 17:18
Thallium	ND		0.50	1	02/26/2020 17:18
Vanadium	**53**		0.50	1	02/26/2020 17:18
Zinc	**69**		5.0	1	02/26/2020 17:18

Surrogates	REC (%)	Limits	
Terbium	104	70-130	02/26/2020 17:18

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_1-2	2002901-013A	Soil	02/20/2020 16:00	ICP-MS4 157SMPL.d	194536

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.59**	0.50	1	02/26/2020 17:22
Arsenic	**7.1**	0.50	1	02/26/2020 17:22
Barium	**190**	5.0	1	02/26/2020 17:22
Beryllium	ND	0.50	1	02/26/2020 17:22
Cadmium	ND	0.25	1	02/26/2020 17:22
Chromium	**50**	0.50	1	02/26/2020 17:22
Cobalt	**13**	0.50	1	02/26/2020 17:22
Copper	**24**	0.50	1	02/26/2020 17:22
Lead	**9.3**	0.50	1	02/26/2020 17:22
Mercury	ND	0.050	1	02/26/2020 17:22
Molybdenum	ND	0.50	1	02/26/2020 17:22
Nickel	**62**	0.50	1	02/26/2020 17:22
Selenium	**0.98**	0.50	1	02/26/2020 17:22
Silver	ND	0.50	1	02/26/2020 17:22
Thallium	ND	0.50	1	02/26/2020 17:22
Vanadium	**44**	0.50	1	02/26/2020 17:22
Zinc	**56**	5.0	1	02/26/2020 17:22

Surrogates	REC (%)	Limits	
Terbium	101	70-130	02/26/2020 17:22

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	ICP-MS4 158SMPL.d	194536

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.62**		0.50	1	02/26/2020 17:26
Arsenic	**7.4**		0.50	1	02/26/2020 17:26
Barium	**220**		5.0	1	02/26/2020 17:26
Beryllium	**0.52**		0.50	1	02/26/2020 17:26
Cadmium	ND		0.25	1	02/26/2020 17:26
Chromium	**54**		0.50	1	02/26/2020 17:26
Cobalt	**13**		0.50	1	02/26/2020 17:26
Copper	**26**		0.50	1	02/26/2020 17:26
Lead	**11**		0.50	1	02/26/2020 17:26
Mercury	**0.058**	B	0.050	1	02/26/2020 17:26
Molybdenum	ND		0.50	1	02/26/2020 17:26
Nickel	**71**		0.50	1	02/26/2020 17:26
Selenium	**0.92**		0.50	1	02/26/2020 17:26
Silver	ND		0.50	1	02/26/2020 17:26
Thallium	ND		0.50	1	02/26/2020 17:26
Vanadium	**47**		0.50	1	02/26/2020 17:26
Zinc	**63**		5.0	1	02/26/2020 17:26

Surrogates	REC (%)	Limits	
Terbium	101	70-130	02/26/2020 17:26

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	2002901-015A	Soil	02/20/2020 16:15	ICP-MS4 159SMPL.d	194536

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.63**		0.50	1	02/26/2020 17:30
Arsenic	**8.1**		0.50	1	02/26/2020 17:30
Barium	**200**		5.0	1	02/26/2020 17:30
Beryllium	ND		0.50	1	02/26/2020 17:30
Cadmium	ND		0.25	1	02/26/2020 17:30
Chromium	**56**		0.50	1	02/26/2020 17:30
Cobalt	**13**		0.50	1	02/26/2020 17:30
Copper	**28**		0.50	1	02/26/2020 17:30
Lead	**7.8**		0.50	1	02/26/2020 17:30
Mercury	**0.050**	B	0.050	1	02/26/2020 17:30
Molybdenum	ND		0.50	1	02/26/2020 17:30
Nickel	**75**		0.50	1	02/26/2020 17:30
Selenium	**0.96**		0.50	1	02/26/2020 17:30
Silver	ND		0.50	1	02/26/2020 17:30
Thallium	ND		0.50	1	02/26/2020 17:30
Vanadium	**46**		0.50	1	02/26/2020 17:30
Zinc	**60**		5.0	1	02/26/2020 17:30

Surrogates	REC (%)	Limits	
Terbium	104	70-130	02/26/2020 17:30

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	2002901-016A	Soil	02/20/2020 16:20	ICP-MS4 160SMPL.d	194536

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.81**		0.50	1	02/26/2020 17:34
Arsenic	**11**		0.50	1	02/26/2020 17:34
Barium	**220**		5.0	1	02/26/2020 17:34
Beryllium	**0.57**		0.50	1	02/26/2020 17:34
Cadmium	ND		0.25	1	02/26/2020 17:34
Chromium	**61**		0.50	1	02/26/2020 17:34
Cobalt	**12**		0.50	1	02/26/2020 17:34
Copper	**34**		0.50	1	02/26/2020 17:34
Lead	**8.9**		0.50	1	02/26/2020 17:34
Mercury	**0.098**	B	0.050	1	02/26/2020 17:34
Molybdenum	ND		0.50	1	02/26/2020 17:34
Nickel	**97**		0.50	1	02/26/2020 17:34
Selenium	**1.1**		0.50	1	02/26/2020 17:34
Silver	ND		0.50	1	02/26/2020 17:34
Thallium	ND		0.50	1	02/26/2020 17:34
Vanadium	**47**		0.50	1	02/26/2020 17:34
Zinc	**66**		5.0	1	02/26/2020 17:34

Surrogates	REC (%)	Limits	
Terbium	105	70-130	02/26/2020 17:34

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	ICP-MS4 164SMPL.d	194536

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.67**	0.50	1	02/26/2020 17:51
Arsenic	**9.0**	0.50	1	02/26/2020 17:51
Barium	**210**	5.0	1	02/26/2020 17:51
Beryllium	**0.54**	0.50	1	02/26/2020 17:51
Cadmium	ND	0.25	1	02/26/2020 17:51
Chromium	**70**	0.50	1	02/26/2020 17:51
Cobalt	**11**	0.50	1	02/26/2020 17:51
Copper	**31**	0.50	1	02/26/2020 17:51
Lead	**7.9**	0.50	1	02/26/2020 17:51
Mercury	ND	0.050	1	02/26/2020 17:51
Molybdenum	ND	0.50	1	02/26/2020 17:51
Nickel	**82**	0.50	1	02/26/2020 17:51
Selenium	**1.1**	0.50	1	02/26/2020 17:51
Silver	ND	0.50	1	02/26/2020 17:51
Thallium	ND	0.50	1	02/26/2020 17:51
Vanadium	**51**	0.50	1	02/26/2020 17:51
Zinc	**69**	5.0	1	02/26/2020 17:51

Surrogates	REC (%)	Limits	
Terbium	108	70-130	02/26/2020 17:51

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	ICP-MS4 165SMPL.d	194536

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.96**		0.50	1	02/26/2020 17:55
Arsenic	**11**		0.50	1	02/26/2020 17:55
Barium	**250**		5.0	1	02/26/2020 17:55
Beryllium	**0.65**		0.50	1	02/26/2020 17:55
Cadmium	ND		0.25	1	02/26/2020 17:55
Chromium	**59**		0.50	1	02/26/2020 17:55
Cobalt	**23**		0.50	1	02/26/2020 17:55
Copper	**35**		0.50	1	02/26/2020 17:55
Lead	**14**		0.50	1	02/26/2020 17:55
Mercury	**0.062**	B	0.050	1	02/26/2020 17:55
Molybdenum	**0.66**		0.50	1	02/26/2020 17:55
Nickel	**110**		0.50	1	02/26/2020 17:55
Selenium	**1.2**		0.50	1	02/26/2020 17:55
Silver	ND		0.50	1	02/26/2020 17:55
Thallium	ND		0.50	1	02/26/2020 17:55
Vanadium	**51**		0.50	1	02/26/2020 17:55
Zinc	**72**		5.0	1	02/26/2020 17:55

Surrogates	REC (%)	Limits	
Terbium	109	70-130	02/26/2020 17:55

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	2002901-019A	Soil	02/21/2020 09:55	ICP-MS4 095SMPL.d	194536

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.61**	0.50	1	02/27/2020 12:34
Arsenic	**12**	0.50	1	02/27/2020 12:34
Barium	**210**	5.0	1	02/27/2020 12:34
Beryllium	**0.58**	0.50	1	02/27/2020 12:34
Cadmium	ND	0.25	1	02/27/2020 12:34
Chromium	**59**	0.50	1	02/27/2020 12:34
Cobalt	**15**	0.50	1	02/27/2020 12:34
Copper	**32**	0.50	1	02/27/2020 12:34
Lead	**8.9**	0.50	1	02/27/2020 12:34
Mercury	ND	0.050	1	02/27/2020 12:34
Molybdenum	**0.72**	0.50	1	02/27/2020 12:34
Nickel	**80**	0.50	1	02/27/2020 12:34
Selenium	**1.1**	0.50	1	02/27/2020 12:34
Silver	ND	0.50	1	02/27/2020 12:34
Thallium	ND	0.50	1	02/27/2020 12:34
Vanadium	**51**	0.50	1	02/27/2020 12:34
Zinc	**70**	5.0	1	02/27/2020 12:34

Surrogates	REC (%)	Limits	
Terbium	101	70-130	02/27/2020 12:34

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	2002901-020A	Soil	02/21/2020 10:00	ICP-MS4 167SMPL.d	194536

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.72**		0.50	1	02/26/2020 18:04
Arsenic	**11**		0.50	1	02/26/2020 18:04
Barium	**290**		5.0	1	02/26/2020 18:04
Beryllium	**0.58**		0.50	1	02/26/2020 18:04
Cadmium	ND		0.25	1	02/26/2020 18:04
Chromium	**67**		0.50	1	02/26/2020 18:04
Cobalt	**11**		0.50	1	02/26/2020 18:04
Copper	**33**		0.50	1	02/26/2020 18:04
Lead	**9.2**		0.50	1	02/26/2020 18:04
Mercury	**0.11**	B	0.050	1	02/26/2020 18:04
Molybdenum	**0.50**		0.50	1	02/26/2020 18:04
Nickel	**100**		0.50	1	02/26/2020 18:04
Selenium	**1.6**		0.50	1	02/26/2020 18:04
Silver	ND		0.50	1	02/26/2020 18:04
Thallium	ND		0.50	1	02/26/2020 18:04
Vanadium	**56**		0.50	1	02/26/2020 18:04
Zinc	**65**		5.0	1	02/26/2020 18:04

Surrogates	REC (%)	Limits	
Terbium	114	70-130	02/26/2020 18:04

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	ICP-MS4 151SMPL.d	194712

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.58**		0.50	1	02/28/2020 15:28
Arsenic	**7.4**		0.50	1	02/28/2020 15:28
Barium	**230**		5.0	1	02/28/2020 15:28
Beryllium	ND		0.50	1	02/28/2020 15:28
Cadmium	ND		0.25	1	02/28/2020 15:28
Chromium	**67**		0.50	1	02/28/2020 15:28
Cobalt	**13**		0.50	1	02/28/2020 15:28
Copper	**29**		0.50	1	02/28/2020 15:28
Lead	**11**		0.50	1	02/28/2020 15:28
Mercury	**0.050**	B	0.050	1	02/28/2020 15:28
Molybdenum	ND		0.50	1	02/28/2020 15:28
Nickel	**72**		0.50	1	02/28/2020 15:28
Selenium	**1.3**		0.50	1	02/28/2020 15:28
Silver	ND		0.50	1	02/28/2020 15:28
Thallium	ND		0.50	1	02/28/2020 15:28
Vanadium	**48**		0.50	1	02/28/2020 15:28
Zinc	**71**		5.0	1	02/28/2020 15:28

Surrogates	REC (%)	Limits	
Terbium	107	70-130	02/28/2020 15:28

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	ICP-MS4 152SMPL.d	194712

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.73**		0.50	1	02/28/2020 15:32
Arsenic	**9.5**		0.50	1	02/28/2020 15:32
Barium	**250**		5.0	1	02/28/2020 15:32
Beryllium	**0.64**		0.50	1	02/28/2020 15:32
Cadmium	ND		0.25	1	02/28/2020 15:32
Chromium	**69**		0.50	1	02/28/2020 15:32
Cobalt	**12**		0.50	1	02/28/2020 15:32
Copper	**31**		0.50	1	02/28/2020 15:32
Lead	**9.4**		0.50	1	02/28/2020 15:32
Mercury	**0.063**	B	0.050	1	02/28/2020 15:32
Molybdenum	ND		0.50	1	02/28/2020 15:32
Nickel	**89**		0.50	1	02/28/2020 15:32
Selenium	**1.6**		0.50	1	02/28/2020 15:32
Silver	ND		0.50	1	02/28/2020 15:32
Thallium	ND		0.50	1	02/28/2020 15:32
Vanadium	**55**		0.50	1	02/28/2020 15:32
Zinc	**74**		5.0	1	02/28/2020 15:32

Surrogates	REC (%)	Limits	
Terbium	109	70-130	02/28/2020 15:32

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	ICP-MS4 153SMPL.d	194712

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.84**		0.50	1	02/28/2020 15:36
Arsenic	**11**		0.50	1	02/28/2020 15:36
Barium	**270**		5.0	1	02/28/2020 15:36
Beryllium	**0.61**		0.50	1	02/28/2020 15:36
Cadmium	ND		0.25	1	02/28/2020 15:36
Chromium	**66**		0.50	1	02/28/2020 15:36
Cobalt	**14**		0.50	1	02/28/2020 15:36
Copper	**36**		0.50	1	02/28/2020 15:36
Lead	**10**		0.50	1	02/28/2020 15:36
Mercury	**0.067**	B	0.050	1	02/28/2020 15:36
Molybdenum	ND		0.50	1	02/28/2020 15:36
Nickel	**93**		0.50	1	02/28/2020 15:36
Selenium	**1.3**		0.50	1	02/28/2020 15:36
Silver	ND		0.50	1	02/28/2020 15:36
Thallium	ND		0.50	1	02/28/2020 15:36
Vanadium	**55**		0.50	1	02/28/2020 15:36
Zinc	**79**		5.0	1	02/28/2020 15:36

Surrogates	REC (%)	Limits	
Terbium	106	70-130	02/28/2020 15:36

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	ICP-MS4 154SMPL.d	194712

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.79**		0.50	1	02/28/2020 15:40
Arsenic	**9.6**		0.50	1	02/28/2020 15:40
Barium	**180**		5.0	1	02/28/2020 15:40
Beryllium	**0.54**		0.50	1	02/28/2020 15:40
Cadmium	ND		0.25	1	02/28/2020 15:40
Chromium	**60**		0.50	1	02/28/2020 15:40
Cobalt	**13**		0.50	1	02/28/2020 15:40
Copper	**50**		0.50	1	02/28/2020 15:40
Lead	**7.8**		0.50	1	02/28/2020 15:40
Mercury	**0.057**	B	0.050	1	02/28/2020 15:40
Molybdenum	ND		0.50	1	02/28/2020 15:40
Nickel	**73**		0.50	1	02/28/2020 15:40
Selenium	**1.0**		0.50	1	02/28/2020 15:40
Silver	ND		0.50	1	02/28/2020 15:40
Thallium	ND		0.50	1	02/28/2020 15:40
Vanadium	**46**		0.50	1	02/28/2020 15:40
Zinc	**61**		5.0	1	02/28/2020 15:40

Surrogates	REC (%)	Limits	
Terbium	111	70-130	02/28/2020 15:40

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	ICP-MS4 155SMPL.d	194712

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.74**		0.50	1	02/28/2020 15:44
Arsenic	**8.7**		0.50	1	02/28/2020 15:44
Barium	**250**		5.0	1	02/28/2020 15:44
Beryllium	**0.63**		0.50	1	02/28/2020 15:44
Cadmium	ND		0.25	1	02/28/2020 15:44
Chromium	**66**		0.50	1	02/28/2020 15:44
Cobalt	**19**		0.50	1	02/28/2020 15:44
Copper	**29**		0.50	1	02/28/2020 15:44
Lead	**9.8**		0.50	1	02/28/2020 15:44
Mercury	**0.053**	B	0.050	1	02/28/2020 15:44
Molybdenum	ND		0.50	1	02/28/2020 15:44
Nickel	**78**		0.50	1	02/28/2020 15:44
Selenium	**1.3**		0.50	1	02/28/2020 15:44
Silver	ND		0.50	1	02/28/2020 15:44
Thallium	ND		0.50	1	02/28/2020 15:44
Vanadium	**51**		0.50	1	02/28/2020 15:44
Zinc	**69**		5.0	1	02/28/2020 15:44

Surrogates	REC (%)	Limits	
Terbium	110	70-130	02/28/2020 15:44

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	ICP-MS4 173SMPL.d	194536

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.76**	0.50	1	02/26/2020 18:29
Arsenic	**9.7**	0.50	1	02/26/2020 18:29
Barium	**240**	5.0	1	02/26/2020 18:29
Beryllium	**0.61**	0.50	1	02/26/2020 18:29
Cadmium	ND	0.25	1	02/26/2020 18:29
Chromium	**68**	0.50	1	02/26/2020 18:29
Cobalt	**10**	0.50	1	02/26/2020 18:29
Copper	**33**	0.50	1	02/26/2020 18:29
Lead	**9.3**	0.50	1	02/26/2020 18:29
Mercury	ND	0.050	1	02/26/2020 18:29
Molybdenum	**0.58**	0.50	1	02/26/2020 18:29
Nickel	**79**	0.50	1	02/26/2020 18:29
Selenium	**1.2**	0.50	1	02/26/2020 18:29
Silver	ND	0.50	1	02/26/2020 18:29
Thallium	ND	0.50	1	02/26/2020 18:29
Vanadium	**52**	0.50	1	02/26/2020 18:29
Zinc	**76**	5.0	1	02/26/2020 18:29

Surrogates	REC (%)	Limits	
Terbium	111	70-130	02/26/2020 18:29

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	ICP-MS4 177SMPL.d	194536

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	**0.79**		0.50	1	02/26/2020 18:46
Arsenic	**13**		0.50	1	02/26/2020 18:46
Barium	**280**		5.0	1	02/26/2020 18:46
Beryllium	**0.71**		0.50	1	02/26/2020 18:46
Cadmium	ND		0.25	1	02/26/2020 18:46
Chromium	**85**		0.50	1	02/26/2020 18:46
Cobalt	**16**		0.50	1	02/26/2020 18:46
Copper	**48**		0.50	1	02/26/2020 18:46
Lead	**11**		0.50	1	02/26/2020 18:46
Mercury	**0.10**	B	0.050	1	02/26/2020 18:46
Molybdenum	**0.68**		0.50	1	02/26/2020 18:46
Nickel	**120**		0.50	1	02/26/2020 18:46
Selenium	**1.5**		0.50	1	02/26/2020 18:46
Silver	ND		0.50	1	02/26/2020 18:46
Thallium	ND		0.50	1	02/26/2020 18:46
Vanadium	**66**		0.50	1	02/26/2020 18:46
Zinc	**98**		5.0	1	02/26/2020 18:46

Surrogates	REC (%)	Limits	
Terbium	110	70-130	02/26/2020 18:46

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_16-17	2002901-028A	Soil	02/20/2020 11:20	ICP-MS3 072SMPL.D	194537

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.54**	0.50	1	02/25/2020 23:28
Arsenic	**6.0**	0.50	1	02/25/2020 23:28
Barium	**140**	5.0	1	02/25/2020 23:28
Beryllium	ND	0.50	1	02/25/2020 23:28
Cadmium	ND	0.25	1	02/25/2020 23:28
Chromium	**39**	0.50	1	02/25/2020 23:28
Cobalt	**11**	0.50	1	02/25/2020 23:28
Copper	**21**	0.50	1	02/25/2020 23:28
Lead	**6.7**	0.50	1	02/25/2020 23:28
Mercury	ND	0.050	1	02/25/2020 23:28
Molybdenum	ND	0.50	1	02/25/2020 23:28
Nickel	**54**	0.50	1	02/25/2020 23:28
Selenium	ND	0.50	1	02/25/2020 23:28
Silver	ND	0.50	1	02/25/2020 23:28
Thallium	ND	0.50	1	02/25/2020 23:28
Vanadium	**34**	0.50	1	02/25/2020 23:28
Zinc	**47**	5.0	1	02/25/2020 23:28

Surrogates	REC (%)	Limits	
Terbium	87	70-130	02/25/2020 23:28

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	ICP-MS3 125SMPL.D	194537

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.95**	0.50	1	02/26/2020 04:53
Arsenic	**11**	0.50	1	02/26/2020 04:53
Barium	**250**	5.0	1	02/26/2020 04:53
Beryllium	**0.66**	0.50	1	02/26/2020 04:53
Cadmium	ND	0.25	1	02/26/2020 04:53
Chromium	**74**	0.50	1	02/26/2020 04:53
Cobalt	**9.7**	0.50	1	02/26/2020 04:53
Copper	**34**	0.50	1	02/26/2020 04:53
Lead	**9.3**	0.50	1	02/26/2020 04:53
Mercury	**0.14**	0.050	1	02/26/2020 04:53
Molybdenum	**0.56**	0.50	1	02/26/2020 04:53
Nickel	**100**	0.50	1	02/26/2020 04:53
Selenium	ND	0.50	1	02/26/2020 04:53
Silver	ND	0.50	1	02/26/2020 04:53
Thallium	ND	0.50	1	02/26/2020 04:53
Vanadium	**53**	0.50	1	02/26/2020 04:53
Zinc	**61**	5.0	1	02/26/2020 04:53

Surrogates	REC (%)	Limits	
Terbium	98	70-130	02/26/2020 04:53

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	ICP-MS3 126SMPL.D	194537

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.69**	0.50	1	02/26/2020 04:59
Arsenic	**10**	0.50	1	02/26/2020 04:59
Barium	**270**	5.0	1	02/26/2020 04:59
Beryllium	**0.56**	0.50	1	02/26/2020 04:59
Cadmium	ND	0.25	1	02/26/2020 04:59
Chromium	**67**	0.50	1	02/26/2020 04:59
Cobalt	**11**	0.50	1	02/26/2020 04:59
Copper	**40**	0.50	1	02/26/2020 04:59
Lead	**9.0**	0.50	1	02/26/2020 04:59
Mercury	**0.12**	0.050	1	02/26/2020 04:59
Molybdenum	**0.60**	0.50	1	02/26/2020 04:59
Nickel	**82**	0.50	1	02/26/2020 04:59
Selenium	ND	0.50	1	02/26/2020 04:59
Silver	ND	0.50	1	02/26/2020 04:59
Thallium	ND	0.50	1	02/26/2020 04:59
Vanadium	**54**	0.50	1	02/26/2020 04:59
Zinc	**77**	5.0	1	02/26/2020 04:59

Surrogates	REC (%)	Limits	
Terbium	99	70-130	02/26/2020 04:59

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	2002901-031A	Soil	02/20/2020 11:50	ICP-MS3 127SMPL.D	194537

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.94**	0.50	1	02/26/2020 05:05
Arsenic	**11**	0.50	1	02/26/2020 05:05
Barium	**250**	5.0	1	02/26/2020 05:05
Beryllium	**0.68**	0.50	1	02/26/2020 05:05
Cadmium	ND	0.25	1	02/26/2020 05:05
Chromium	**75**	0.50	1	02/26/2020 05:05
Cobalt	**13**	0.50	1	02/26/2020 05:05
Copper	**41**	0.50	1	02/26/2020 05:05
Lead	**10**	0.50	1	02/26/2020 05:05
Mercury	**0.092**	0.050	1	02/26/2020 05:05
Molybdenum	**0.62**	0.50	1	02/26/2020 05:05
Nickel	**100**	0.50	1	02/26/2020 05:05
Selenium	ND	0.50	1	02/26/2020 05:05
Silver	ND	0.50	1	02/26/2020 05:05
Thallium	ND	0.50	1	02/26/2020 05:05
Vanadium	**59**	0.50	1	02/26/2020 05:05
Zinc	**81**	5.0	1	02/26/2020 05:05

Surrogates	REC (%)	Limits	
Terbium	103	70-130	02/26/2020 05:05

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3050B
Date Prepared:	02/25/2020-02/27/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	2002901-032A	Soil	02/20/2020 11:55	ICP-MS3 128SMPL.D	194537

Analytes	Result	RL	DF	Date Analyzed
Antimony	**0.64**	0.50	1	02/26/2020 05:11
Arsenic	**8.8**	0.50	1	02/26/2020 05:11
Barium	**220**	5.0	1	02/26/2020 05:11
Beryllium	**0.52**	0.50	1	02/26/2020 05:11
Cadmium	ND	0.25	1	02/26/2020 05:11
Chromium	**63**	0.50	1	02/26/2020 05:11
Cobalt	**9.3**	0.50	1	02/26/2020 05:11
Copper	**36**	0.50	1	02/26/2020 05:11
Lead	**7.9**	0.50	1	02/26/2020 05:11
Mercury	**0.13**	0.050	1	02/26/2020 05:11
Molybdenum	**0.90**	0.50	1	02/26/2020 05:11
Nickel	**75**	0.50	1	02/26/2020 05:11
Selenium	ND	0.50	1	02/26/2020 05:11
Silver	ND	0.50	1	02/26/2020 05:11
Thallium	ND	0.50	1	02/26/2020 05:11
Vanadium	**56**	0.50	1	02/26/2020 05:11
Zinc	**79**	5.0	1	02/26/2020 05:11

Surrogates	REC (%)	Limits	
Terbium	99	70-130	02/26/2020 05:11

Analyst(s): ND

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CARB 435 Asbestos
Date Prepared:	02/25/2020	**Analytical Method:**	435 CARB
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	%

Asbestos (CARB 435) 400 Point Count

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_2-3	2002901-001A	Soil	02/21/2020 13:35	Microscope	194751

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/26/2020 14:00

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	Microscope	194751

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/26/2020 14:50

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	2002901-003A	Soil	02/20/2020 14:00	Microscope	194751

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/26/2020 15:15

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	2002901-004A	Soil	02/20/2020 14:05	Microscope	194751

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/26/2020 15:40

Analyst(s): DA Analytical Comments: k10

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CARB 435 Asbestos
Date Prepared:	02/25/2020	**Analytical Method:**	435 CARB
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	%

Asbestos (CARB 435) 400 Point Count

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	Microscope	194751

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/26/2020 16:05

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_5-6	2002901-006A	Soil	02/20/2020 14:25	Microscope	194751

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 10:00

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	2002901-007A	Soil	02/20/2020 14:35	Microscope	194751

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 10:25

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	2002901-008A	Soil	02/20/2020 14:40	Microscope	194751

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 10:50

Analyst(s): DA Analytical Comments: k10

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CARB 435 Asbestos
Date Prepared:	02/25/2020	**Analytical Method:**	435 CARB
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	%

Asbestos (CARB 435) 400 Point Count

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_2-3	2002901-009A	Soil	02/20/2020 15:25	Microscope	194751

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 11:15

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	Microscope	194751

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 11:40

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	2002901-011A	Soil	02/20/2020 15:35	Microscope	194795

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 12:35

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	Microscope	194795

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 13:25

Analyst(s): DA Analytical Comments: k10

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CARB 435 Asbestos
Date Prepared:	02/25/2020	**Analytical Method:**	435 CARB
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	%

Asbestos (CARB 435) 400 Point Count

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_1-2	2002901-013A	Soil	02/20/2020 16:00	Microscope	194795

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 13:50

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	Microscope	194795

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 14:15

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	2002901-015A	Soil	02/20/2020 16:15	Microscope	194795

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 14:40

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	2002901-016A	Soil	02/20/2020 16:20	Microscope	194795

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 15:05

Analyst(s): DA Analytical Comments: k10

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CARB 435 Asbestos
Date Prepared:	02/25/2020	**Analytical Method:**	435 CARB
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	%

Asbestos (CARB 435) 400 Point Count

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	Microscope	194795

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 15:30

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	Microscope	194795

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 15:55

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	2002901-019A	Soil	02/21/2020 09:55	Microscope	194795

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 16:20

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	2002901-020A	Soil	02/21/2020 10:00	Microscope	194795

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/27/2020 16:45

Analyst(s): DA Analytical Comments: k10

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CARB 435 Asbestos
Date Prepared:	02/25/2020	**Analytical Method:**	435 CARB
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	%

Asbestos (CARB 435) 400 Point Count

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	Microscope	194855

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/28/2020 10:30

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	Microscope	194855

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/28/2020 11:20

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	Microscope	194855

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/28/2020 11:45

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	Microscope	194855

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/28/2020 12:10

Analyst(s): DA Analytical Comments: k10

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CARB 435 Asbestos
Date Prepared:	02/25/2020	**Analytical Method:**	435 CARB
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	%

Asbestos (CARB 435) 400 Point Count

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	Microscope	194855

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/28/2020 12:35

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	Microscope	194855

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/28/2020 13:00

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	Microscope	194855

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/28/2020 13:25

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_16-17	2002901-028A	Soil	02/20/2020 11:20	Microscope	194855

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/28/2020 13:50

Analyst(s): DA Analytical Comments: k10

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CARB 435 Asbestos
Date Prepared:	02/25/2020	**Analytical Method:**	435 CARB
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	%

Asbestos (CARB 435) 400 Point Count

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	Microscope	194855

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/28/2020 14:15

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	Microscope	194855

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/28/2020 14:40

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	2002901-031A	Soil	02/20/2020 11:50	Microscope	194855

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/28/2020 15:05

Analyst(s): DA Analytical Comments: k10

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	2002901-032A	Soil	02/20/2020 11:55	Microscope	194855

Analytes	Result	RL	DF	Date Analyzed
Asbestos	ND	N/A	1	02/28/2020 15:55

Analyst(s): DA Analytical Comments: k10

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_2-3	2002901-001A	Soil	02/21/2020 13:35	GC7 02252028.D	194495

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 01:52
MTBE	---	0.050	1	02/26/2020 01:52
Benzene	---	0.0050	1	02/26/2020 01:52
Toluene	---	0.0050	1	02/26/2020 01:52
Ethylbenzene	---	0.0050	1	02/26/2020 01:52
m,p-Xylene	---	0.010	1	02/26/2020 01:52
o-Xylene	---	0.0050	1	02/26/2020 01:52
Xylenes	---	0.0050	1	02/26/2020 01:52

Surrogates	REC (%)	Limits	
2-Fluorotoluene	97	62-126	02/26/2020 01:52

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	GC7 02252029.D	194495

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 02:22
MTBE	---	0.050	1	02/26/2020 02:22
Benzene	---	0.0050	1	02/26/2020 02:22
Toluene	---	0.0050	1	02/26/2020 02:22
Ethylbenzene	---	0.0050	1	02/26/2020 02:22
m,p-Xylene	---	0.010	1	02/26/2020 02:22
o-Xylene	---	0.0050	1	02/26/2020 02:22
Xylenes	---	0.0050	1	02/26/2020 02:22

Surrogates	REC (%)	Limits	
2-Fluorotoluene	90	62-126	02/26/2020 02:22

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	2002901-003A	Soil	02/20/2020 14:00	GC7 02252030.D	194495

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 02:52
MTBE	---	0.050	1	02/26/2020 02:52
Benzene	---	0.0050	1	02/26/2020 02:52
Toluene	---	0.0050	1	02/26/2020 02:52
Ethylbenzene	---	0.0050	1	02/26/2020 02:52
m,p-Xylene	---	0.010	1	02/26/2020 02:52
o-Xylene	---	0.0050	1	02/26/2020 02:52
Xylenes	---	0.0050	1	02/26/2020 02:52

Surrogates	REC (%)	Limits	
2-Fluorotoluene	92	62-126	02/26/2020 02:52

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	2002901-004A	Soil	02/20/2020 14:05	GC7 02252031.D	194495

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 03:22
MTBE	---	0.050	1	02/26/2020 03:22
Benzene	---	0.0050	1	02/26/2020 03:22
Toluene	---	0.0050	1	02/26/2020 03:22
Ethylbenzene	---	0.0050	1	02/26/2020 03:22
m,p-Xylene	---	0.010	1	02/26/2020 03:22
o-Xylene	---	0.0050	1	02/26/2020 03:22
Xylenes	---	0.0050	1	02/26/2020 03:22

Surrogates	REC (%)	Limits	
2-Fluorotoluene	89	62-126	02/26/2020 03:22

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	GC19 02252013.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/25/2020 18:20
MTBE	---	0.050	1	02/25/2020 18:20
Benzene	---	0.0050	1	02/25/2020 18:20
Toluene	---	0.0050	1	02/25/2020 18:20
Ethylbenzene	---	0.0050	1	02/25/2020 18:20
m,p-Xylene	---	0.010	1	02/25/2020 18:20
o-Xylene	---	0.0050	1	02/25/2020 18:20
Xylenes	---	0.0050	1	02/25/2020 18:20

Surrogates	REC (%)	Limits	
2-Fluorotoluene	87	62-126	02/25/2020 18:20

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_5-6	2002901-006A	Soil	02/20/2020 14:25	GC7 02252032.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 03:51
MTBE	---	0.050	1	02/26/2020 03:51
Benzene	---	0.0050	1	02/26/2020 03:51
Toluene	---	0.0050	1	02/26/2020 03:51
Ethylbenzene	---	0.0050	1	02/26/2020 03:51
m,p-Xylene	---	0.010	1	02/26/2020 03:51
o-Xylene	---	0.0050	1	02/26/2020 03:51
Xylenes	---	0.0050	1	02/26/2020 03:51

Surrogates	REC (%)	Limits	
2-Fluorotoluene	95	62-126	02/26/2020 03:51

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	2002901-007A	Soil	02/20/2020 14:35	GC7 02252033.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 04:21
MTBE	---	0.050	1	02/26/2020 04:21
Benzene	---	0.0050	1	02/26/2020 04:21
Toluene	---	0.0050	1	02/26/2020 04:21
Ethylbenzene	---	0.0050	1	02/26/2020 04:21
m,p-Xylene	---	0.010	1	02/26/2020 04:21
o-Xylene	---	0.0050	1	02/26/2020 04:21
Xylenes	---	0.0050	1	02/26/2020 04:21

Surrogates	REC (%)	Limits	
2-Fluorotoluene	92	62-126	02/26/2020 04:21

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	2002901-008A	Soil	02/20/2020 14:40	GC7 02252036.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 05:51
MTBE	---	0.050	1	02/26/2020 05:51
Benzene	---	0.0050	1	02/26/2020 05:51
Toluene	---	0.0050	1	02/26/2020 05:51
Ethylbenzene	---	0.0050	1	02/26/2020 05:51
m,p-Xylene	---	0.010	1	02/26/2020 05:51
o-Xylene	---	0.0050	1	02/26/2020 05:51
Xylenes	---	0.0050	1	02/26/2020 05:51

Surrogates	REC (%)	Limits	
2-Fluorotoluene	92	62-126	02/26/2020 05:51

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_2-3	2002901-009A	Soil	02/20/2020 15:25	GC7 02252037.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 06:20
MTBE	---	0.050	1	02/26/2020 06:20
Benzene	---	0.0050	1	02/26/2020 06:20
Toluene	---	0.0050	1	02/26/2020 06:20
Ethylbenzene	---	0.0050	1	02/26/2020 06:20
m,p-Xylene	---	0.010	1	02/26/2020 06:20
o-Xylene	---	0.0050	1	02/26/2020 06:20
Xylenes	---	0.0050	1	02/26/2020 06:20

Surrogates	REC (%)	Limits	
2-Fluorotoluene	91	62-126	02/26/2020 06:20

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	GC19 02252030.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 02:51
MTBE	---	0.050	1	02/26/2020 02:51
Benzene	---	0.0050	1	02/26/2020 02:51
Toluene	---	0.0050	1	02/26/2020 02:51
Ethylbenzene	---	0.0050	1	02/26/2020 02:51
m,p-Xylene	---	0.010	1	02/26/2020 02:51
o-Xylene	---	0.0050	1	02/26/2020 02:51
Xylenes	---	0.0050	1	02/26/2020 02:51

Surrogates	REC (%)	Limits	
2-Fluorotoluene	99	62-126	02/26/2020 02:51

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	2002901-011A	Soil	02/20/2020 15:35	GC19 02252035.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 05:19
MTBE	---	0.050	1	02/26/2020 05:19
Benzene	---	0.0050	1	02/26/2020 05:19
Toluene	---	0.0050	1	02/26/2020 05:19
Ethylbenzene	---	0.0050	1	02/26/2020 05:19
m,p-Xylene	---	0.010	1	02/26/2020 05:19
o-Xylene	---	0.0050	1	02/26/2020 05:19
Xylenes	---	0.0050	1	02/26/2020 05:19

Surrogates	REC (%)	Limits	
2-Fluorotoluene	98	62-126	02/26/2020 05:19

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	GC19 02252032.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 03:50
MTBE	---	0.050	1	02/26/2020 03:50
Benzene	---	0.0050	1	02/26/2020 03:50
Toluene	---	0.0050	1	02/26/2020 03:50
Ethylbenzene	---	0.0050	1	02/26/2020 03:50
m,p-Xylene	---	0.010	1	02/26/2020 03:50
o-Xylene	---	0.0050	1	02/26/2020 03:50
Xylenes	---	0.0050	1	02/26/2020 03:50

Surrogates	REC (%)	Limits	
2-Fluorotoluene	94	62-126	02/26/2020 03:50

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_1-2	2002901-013A	Soil	02/20/2020 16:00	GC19 02262014.D	194618

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 17:56
MTBE	---	0.050	1	02/26/2020 17:56
Benzene	---	0.0050	1	02/26/2020 17:56
Toluene	---	0.0050	1	02/26/2020 17:56
Ethylbenzene	---	0.0050	1	02/26/2020 17:56
m,p-Xylene	---	0.010	1	02/26/2020 17:56
o-Xylene	---	0.0050	1	02/26/2020 17:56
Xylenes	---	0.0050	1	02/26/2020 17:56

Surrogates	REC (%)	Limits	
2-Fluorotoluene	97	62-126	02/26/2020 17:56

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	GC7 02262013.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 18:44
MTBE	---	0.050	1	02/26/2020 18:44
Benzene	---	0.0050	1	02/26/2020 18:44
Toluene	---	0.0050	1	02/26/2020 18:44
Ethylbenzene	---	0.0050	1	02/26/2020 18:44
m,p-Xylene	---	0.010	1	02/26/2020 18:44
o-Xylene	---	0.0050	1	02/26/2020 18:44
Xylenes	---	0.0050	1	02/26/2020 18:44

Surrogates	REC (%)	Limits	
2-Fluorotoluene	88	62-126	02/26/2020 18:44

Analyst(s): IA

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	2002901-015A	Soil	02/20/2020 16:15	GC7 02262015.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 19:46
MTBE	---	0.050	1	02/26/2020 19:46
Benzene	---	0.0050	1	02/26/2020 19:46
Toluene	---	0.0050	1	02/26/2020 19:46
Ethylbenzene	---	0.0050	1	02/26/2020 19:46
m,p-Xylene	---	0.010	1	02/26/2020 19:46
o-Xylene	---	0.0050	1	02/26/2020 19:46
Xylenes	---	0.0050	1	02/26/2020 19:46

Surrogates	REC (%)	Limits	
2-Fluorotoluene	92	62-126	02/26/2020 19:46

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	2002901-016A	Soil	02/20/2020 16:20	GC7 02262016.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 20:16
MTBE	---	0.050	1	02/26/2020 20:16
Benzene	---	0.0050	1	02/26/2020 20:16
Toluene	---	0.0050	1	02/26/2020 20:16
Ethylbenzene	---	0.0050	1	02/26/2020 20:16
m,p-Xylene	---	0.010	1	02/26/2020 20:16
o-Xylene	---	0.0050	1	02/26/2020 20:16
Xylenes	---	0.0050	1	02/26/2020 20:16

Surrogates	REC (%)	Limits	
2-Fluorotoluene	92	62-126	02/26/2020 20:16

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	GC7 02262022.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 23:17
MTBE	---	0.050	1	02/26/2020 23:17
Benzene	---	0.0050	1	02/26/2020 23:17
Toluene	---	0.0050	1	02/26/2020 23:17
Ethylbenzene	---	0.0050	1	02/26/2020 23:17
m,p-Xylene	---	0.010	1	02/26/2020 23:17
o-Xylene	---	0.0050	1	02/26/2020 23:17
Xylenes	---	0.0050	1	02/26/2020 23:17

Surrogates	REC (%)	Limits	
2-Fluorotoluene	90	62-126	02/26/2020 23:17

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	GC7 02262023.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 23:47
MTBE	---	0.050	1	02/26/2020 23:47
Benzene	---	0.0050	1	02/26/2020 23:47
Toluene	---	0.0050	1	02/26/2020 23:47
Ethylbenzene	---	0.0050	1	02/26/2020 23:47
m,p-Xylene	---	0.010	1	02/26/2020 23:47
o-Xylene	---	0.0050	1	02/26/2020 23:47
Xylenes	---	0.0050	1	02/26/2020 23:47

Surrogates	REC (%)	Limits	
2-Fluorotoluene	93	62-126	02/26/2020 23:47

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	2002901-019A	Soil	02/21/2020 09:55	GC7 02262024.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/27/2020 00:17
MTBE	---	0.050	1	02/27/2020 00:17
Benzene	---	0.0050	1	02/27/2020 00:17
Toluene	---	0.0050	1	02/27/2020 00:17
Ethylbenzene	---	0.0050	1	02/27/2020 00:17
m,p-Xylene	---	0.010	1	02/27/2020 00:17
o-Xylene	---	0.0050	1	02/27/2020 00:17
Xylenes	---	0.0050	1	02/27/2020 00:17

Surrogates	REC (%)	Limits	
2-Fluorotoluene	86	62-126	02/27/2020 00:17

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	2002901-020A	Soil	02/21/2020 10:00	GC7 02262025.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/27/2020 00:47
MTBE	---	0.050	1	02/27/2020 00:47
Benzene	---	0.0050	1	02/27/2020 00:47
Toluene	---	0.0050	1	02/27/2020 00:47
Ethylbenzene	---	0.0050	1	02/27/2020 00:47
m,p-Xylene	---	0.010	1	02/27/2020 00:47
o-Xylene	---	0.0050	1	02/27/2020 00:47
Xylenes	---	0.0050	1	02/27/2020 00:47

Surrogates	REC (%)	Limits	
2-Fluorotoluene	94	62-126	02/27/2020 00:47

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	GC7 02262027.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/27/2020 01:47
MTBE	---	0.050	1	02/27/2020 01:47
Benzene	---	0.0050	1	02/27/2020 01:47
Toluene	---	0.0050	1	02/27/2020 01:47
Ethylbenzene	---	0.0050	1	02/27/2020 01:47
m,p-Xylene	---	0.010	1	02/27/2020 01:47
o-Xylene	---	0.0050	1	02/27/2020 01:47
Xylenes	---	0.0050	1	02/27/2020 01:47

Surrogates	REC (%)	Limits	
2-Fluorotoluene	92	62-126	02/27/2020 01:47

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	GC7 02262028.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/27/2020 02:17
MTBE	---	0.050	1	02/27/2020 02:17
Benzene	---	0.0050	1	02/27/2020 02:17
Toluene	---	0.0050	1	02/27/2020 02:17
Ethylbenzene	---	0.0050	1	02/27/2020 02:17
m,p-Xylene	---	0.010	1	02/27/2020 02:17
o-Xylene	---	0.0050	1	02/27/2020 02:17
Xylenes	---	0.0050	1	02/27/2020 02:17

Surrogates	REC (%)	Limits	
2-Fluorotoluene	87	62-126	02/27/2020 02:17

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	GC7 02262029.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/27/2020 02:47
MTBE	---	0.050	1	02/27/2020 02:47
Benzene	---	0.0050	1	02/27/2020 02:47
Toluene	---	0.0050	1	02/27/2020 02:47
Ethylbenzene	---	0.0050	1	02/27/2020 02:47
m,p-Xylene	---	0.010	1	02/27/2020 02:47
o-Xylene	---	0.0050	1	02/27/2020 02:47
Xylenes	---	0.0050	1	02/27/2020 02:47

Surrogates	REC (%)	Limits	
2-Fluorotoluene	87	62-126	02/27/2020 02:47

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	GC7 02262030.D	194533

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/27/2020 03:17
MTBE	---	0.050	1	02/27/2020 03:17
Benzene	---	0.0050	1	02/27/2020 03:17
Toluene	---	0.0050	1	02/27/2020 03:17
Ethylbenzene	---	0.0050	1	02/27/2020 03:17
m,p-Xylene	---	0.010	1	02/27/2020 03:17
o-Xylene	---	0.0050	1	02/27/2020 03:17
Xylenes	---	0.0050	1	02/27/2020 03:17

Surrogates	REC (%)	Limits	
2-Fluorotoluene	89	62-126	02/27/2020 03:17

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	GC19 02252015.D	194534

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/25/2020 19:21
MTBE	---	0.050	1	02/25/2020 19:21
Benzene	---	0.0050	1	02/25/2020 19:21
Toluene	---	0.0050	1	02/25/2020 19:21
Ethylbenzene	---	0.0050	1	02/25/2020 19:21
m,p-Xylene	---	0.010	1	02/25/2020 19:21
o-Xylene	---	0.0050	1	02/25/2020 19:21
Xylenes	---	0.0050	1	02/25/2020 19:21

Surrogates	REC (%)	Limits	
2-Fluorotoluene	89	62-126	02/25/2020 19:21

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	GC7 02262031.D	194534

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/27/2020 03:46
MTBE	---	0.050	1	02/27/2020 03:46
Benzene	---	0.0050	1	02/27/2020 03:46
Toluene	---	0.0050	1	02/27/2020 03:46
Ethylbenzene	---	0.0050	1	02/27/2020 03:46
m,p-Xylene	---	0.010	1	02/27/2020 03:46
o-Xylene	---	0.0050	1	02/27/2020 03:46
Xylenes	---	0.0050	1	02/27/2020 03:46

Surrogates	REC (%)	Limits	
2-Fluorotoluene	93	62-126	02/27/2020 03:46

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	GC19 02262013.D	194534

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/26/2020 17:26
MTBE	---	0.050	1	02/26/2020 17:26
Benzene	---	0.0050	1	02/26/2020 17:26
Toluene	---	0.0050	1	02/26/2020 17:26
Ethylbenzene	---	0.0050	1	02/26/2020 17:26
m,p-Xylene	---	0.010	1	02/26/2020 17:26
o-Xylene	---	0.0050	1	02/26/2020 17:26
Xylenes	---	0.0050	1	02/26/2020 17:26

Surrogates	REC (%)	Limits	
2-Fluorotoluene	91	62-126	02/26/2020 17:26

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_16-17	2002901-028A	Soil	02/20/2020 11:20	GC7 02262032.D	194534

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/27/2020 04:16
MTBE	---	0.050	1	02/27/2020 04:16
Benzene	---	0.0050	1	02/27/2020 04:16
Toluene	---	0.0050	1	02/27/2020 04:16
Ethylbenzene	---	0.0050	1	02/27/2020 04:16
m,p-Xylene	---	0.010	1	02/27/2020 04:16
o-Xylene	---	0.0050	1	02/27/2020 04:16
Xylenes	---	0.0050	1	02/27/2020 04:16

Surrogates	REC (%)	Limits	
2-Fluorotoluene	88	62-126	02/27/2020 04:16

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	GC7 02262035.D	194534

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/27/2020 05:46
MTBE	---	0.050	1	02/27/2020 05:46
Benzene	---	0.0050	1	02/27/2020 05:46
Toluene	---	0.0050	1	02/27/2020 05:46
Ethylbenzene	---	0.0050	1	02/27/2020 05:46
m,p-Xylene	---	0.010	1	02/27/2020 05:46
o-Xylene	---	0.0050	1	02/27/2020 05:46
Xylenes	---	0.0050	1	02/27/2020 05:46

Surrogates	REC (%)	Limits	
2-Fluorotoluene	92	62-126	02/27/2020 05:46

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	GC7 02262036.D	194534

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/27/2020 06:16
MTBE	---	0.050	1	02/27/2020 06:16
Benzene	---	0.0050	1	02/27/2020 06:16
Toluene	---	0.0050	1	02/27/2020 06:16
Ethylbenzene	---	0.0050	1	02/27/2020 06:16
m,p-Xylene	---	0.010	1	02/27/2020 06:16
o-Xylene	---	0.0050	1	02/27/2020 06:16
Xylenes	---	0.0050	1	02/27/2020 06:16

Surrogates	REC (%)	Limits	
2-Fluorotoluene	91	62-126	02/27/2020 06:16

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW5035
Date Prepared:	02/24/2020-02/26/2020	**Analytical Method:**	SW8021B/8015Bm
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	2002901-031A	Soil	02/20/2020 11:50	GC7 02272029.D	194534

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/28/2020 02:33
MTBE	---	0.050	1	02/28/2020 02:33
Benzene	---	0.0050	1	02/28/2020 02:33
Toluene	---	0.0050	1	02/28/2020 02:33
Ethylbenzene	---	0.0050	1	02/28/2020 02:33
m,p-Xylene	---	0.010	1	02/28/2020 02:33
o-Xylene	---	0.0050	1	02/28/2020 02:33
Xylenes	---	0.0050	1	02/28/2020 02:33

Surrogates	REC (%)	Limits	
2-Fluorotoluene	89	62-126	02/28/2020 02:33

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	2002901-032A	Soil	02/20/2020 11:55	GC7 02272030.D	194534

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	02/28/2020 03:03
MTBE	---	0.050	1	02/28/2020 03:03
Benzene	---	0.0050	1	02/28/2020 03:03
Toluene	---	0.0050	1	02/28/2020 03:03
Ethylbenzene	---	0.0050	1	02/28/2020 03:03
m,p-Xylene	---	0.010	1	02/28/2020 03:03
o-Xylene	---	0.0050	1	02/28/2020 03:03
Xylenes	---	0.0050	1	02/28/2020 03:03

Surrogates	REC (%)	Limits	
2-Fluorotoluene	98	62-126	02/28/2020 03:03

Analyst(s): IA

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW9045C
Date Prepared:	02/25/2020	**Analytical Method:**	SW9045C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	pH units @ 25°C

pH

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_2-3	2002901-001A	Soil	02/21/2020 13:35	WetChem	194623

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.23**	±0.1	1	02/25/2020 20:05

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	WetChem	194623

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.11**	±0.1	1	02/25/2020 20:07

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	2002901-003A	Soil	02/20/2020 14:00	WetChem	194623

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.86**	±0.1	1	02/25/2020 20:08

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	2002901-004A	Soil	02/20/2020 14:05	WetChem	194623

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.05**	±0.1	1	02/25/2020 20:09

Analyst(s): HAD

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW9045C
Date Prepared:	02/25/2020	**Analytical Method:**	SW9045C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	pH units @ 25°C

pH

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	WetChem	194623

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.50**	±0.1	1	02/25/2020 20:10

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_5-6	2002901-006A	Soil	02/20/2020 14:25	WetChem	194623

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.05**	±0.1	1	02/25/2020 20:11

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	2002901-007A	Soil	02/20/2020 14:35	WetChem	194623

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.79**	±0.1	1	02/25/2020 20:12

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	2002901-008A	Soil	02/20/2020 14:40	WetChem	194623

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.50**	±0.1	1	02/25/2020 20:13

Analyst(s): HAD

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW9045C
Date Prepared:	02/25/2020	**Analytical Method:**	SW9045C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	pH units @ 25°C

pH

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_2-3	2002901-009A	Soil	02/20/2020 15:25	WetChem	194623

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.39**	±0.1	1	02/25/2020 20:14

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	WetChem	194623

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.92**	±0.1	1	02/25/2020 20:15

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	2002901-011A	Soil	02/20/2020 15:35	WetChem	194625

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**8.07**	±0.1	1	02/25/2020 20:17

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	WetChem	194625

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**8.13**	±0.1	1	02/25/2020 20:23

Analyst(s): HAD

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW9045C
Date Prepared:	02/25/2020	**Analytical Method:**	SW9045C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	pH units @ 25°C

pH

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_1-2	2002901-013A	Soil	02/20/2020 16:00	WetChem	194625

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.60**	±0.1	1	02/25/2020 20:26

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	WetChem	194625

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.34**	±0.1	1	02/25/2020 20:29

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	2002901-015A	Soil	02/20/2020 16:15	WetChem	194625

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.15**	±0.1	1	02/25/2020 20:32

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	2002901-016A	Soil	02/20/2020 16:20	WetChem	194625

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**8.03**	±0.1	1	02/25/2020 20:35

Analyst(s): HAD

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW9045C
Date Prepared:	02/25/2020	**Analytical Method:**	SW9045C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	pH units @ 25°C

pH

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	WetChem	194625

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.02**	±0.1	1	02/25/2020 20:38

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	WetChem	194625

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.98**	±0.1	1	02/25/2020 20:41

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	2002901-019A	Soil	02/21/2020 09:55	WetChem	194625

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.14**	±0.1	1	02/25/2020 20:44

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	2002901-020A	Soil	02/21/2020 10:00	WetChem	194625

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.15**	±0.1	1	02/25/2020 20:47

Analyst(s): HAD

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW9045C
Date Prepared:	02/25/2020	**Analytical Method:**	SW9045C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	pH units @ 25°C

pH

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	WetChem	194626

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.41**	±0.1	1	02/25/2020 20:51

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	WetChem	194626

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.22**	±0.1	1	02/25/2020 20:57

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	WetChem	194626

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.24**	±0.1	1	02/25/2020 21:00

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	WetChem	194626

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.26**	±0.1	1	02/25/2020 21:03

Analyst(s): HAD

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW9045C
Date Prepared:	02/25/2020	**Analytical Method:**	SW9045C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	pH units @ 25°C

pH

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	WetChem	194626

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**5.67**	±0.1	1	02/25/2020 21:06

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	WetChem	194626

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.62**	±0.1	1	02/25/2020 21:09

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	WetChem	194626

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.17**	±0.1	1	02/25/2020 21:12

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_16-17	2002901-028A	Soil	02/20/2020 11:20	WetChem	194626

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.23**	±0.1	1	02/25/2020 21:15

Analyst(s): HAD

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW9045C
Date Prepared:	02/25/2020	**Analytical Method:**	SW9045C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	pH units @ 25°C

pH

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	WetChem	194626

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.78**	±0.1	1	02/25/2020 21:18

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	WetChem	194626

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.35**	±0.1	1	02/25/2020 21:21

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	2002901-031A	Soil	02/20/2020 11:50	WetChem	194627

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**6.95**	±0.1	1	02/25/2020 21:27

Analyst(s): HAD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	2002901-032A	Soil	02/20/2020 11:55	WetChem	194627

Analytes	Result	Accuracy	DF	Date Analyzed
pH	**7.40**	±0.1	1	02/25/2020 21:33

Analyst(s): HAD

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8015B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_2-3	2002901-001A	Soil	02/21/2020 13:35	GC11A 02252050.D	194496

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 01:44
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 01:44

Surrogates	REC (%)	Limits	
C9	92	70-130	02/26/2020 01:44

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	GC11A 02252052.D	194496

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 02:21
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 02:21

Surrogates	REC (%)	Limits	
C9	93	70-130	02/26/2020 02:21

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	2002901-003A	Soil	02/20/2020 14:00	GC11A 02252054.D	194496

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 02:58
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 02:58

Surrogates	REC (%)	Limits	
C9	93	70-130	02/26/2020 02:58

Analyst(s): JIS

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8015B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	2002901-004A	Soil	02/20/2020 14:05	GC11A 02252046.D	194496

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 00:29
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 00:29

Surrogates	REC (%)	Limits	
C9	93	70-130	02/26/2020 00:29

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	GC11A 02252048.D	194496

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 01:06
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 01:06

Surrogates	REC (%)	Limits	
C9	91	70-130	02/26/2020 01:06

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_5-6	2002901-006A	Soil	02/20/2020 14:25	GC11A 02262032.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 18:23
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 18:23

Surrogates	REC (%)	Limits	
C9	92	70-130	02/26/2020 18:23

Analyst(s): JIS

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8015B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	2002901-007A	Soil	02/20/2020 14:35	GC11B 02262031.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 18:23
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 18:23

Surrogates	REC (%)	Limits	
C9	107	70-130	02/26/2020 18:23

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	2002901-008A	Soil	02/20/2020 14:40	GC6A 02262034.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 19:24
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 19:24

Surrogates	REC (%)	Limits	
C9	100	70-130	02/26/2020 19:24

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_2-3	2002901-009A	Soil	02/20/2020 15:25	GC6A 02282090.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/29/2020 21:07
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/29/2020 21:07

Surrogates	REC (%)	Limits	
C9	98	70-130	02/29/2020 21:07

Analyst(s): JIS

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8015B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	GC11B 02262015.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 13:10
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 13:10

Surrogates	REC (%)	Limits	
C9	107	70-130	02/26/2020 13:10

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	2002901-011A	Soil	02/20/2020 15:35	GC11B 02262017.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 13:49
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 13:49

Surrogates	REC (%)	Limits	
C9	107	70-130	02/26/2020 13:49

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	GC11B 02262019.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 14:28
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 14:28

Surrogates	REC (%)	Limits	
C9	107	70-130	02/26/2020 14:28

Analyst(s): JIS

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8015B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_1-2	2002901-013A	Soil	02/20/2020 16:00	GC11A 02262040.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 20:57
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 20:57

Surrogates	REC (%)	Limits	
C9	92	70-130	02/26/2020 20:57

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	GC11B 02262035.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 19:40
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 19:40

Surrogates	REC (%)	Limits	
C9	91	70-130	02/26/2020 19:40

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	2002901-015A	Soil	02/20/2020 16:15	GC11B 02262037.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 20:18
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 20:18

Surrogates	REC (%)	Limits	
C9	107	70-130	02/26/2020 20:18

Analyst(s): JIS

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8015B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	2002901-016A	Soil	02/20/2020 16:20	GC11B 02262041.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 21:35
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 21:35

Surrogates	REC (%)	Limits	
C9	107	70-130	02/26/2020 21:35

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	GC11A 02262042.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 21:35
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 21:35

Surrogates	REC (%)	Limits	
C9	92	70-130	02/26/2020 21:35

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	GC11B 02262043.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 22:13
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 22:13

Surrogates	REC (%)	Limits	
C9	107	70-130	02/26/2020 22:13

Analyst(s): JIS

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8015B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	2002901-019A	Soil	02/21/2020 09:55	GC6A 02262030.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 18:05
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 18:05

Surrogates	REC (%)	Limits	
C9	100	70-130	02/26/2020 18:05

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	2002901-020A	Soil	02/21/2020 10:00	GC11B 02262029.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 17:44
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 17:44

Surrogates	REC (%)	Limits	
C9	107	70-130	02/26/2020 17:44

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	GC11B 02262027.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 17:05
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 17:05

Surrogates	REC (%)	Limits	
C9	107	70-130	02/26/2020 17:05

Analyst(s): JIS

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8015B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	GC11A 02262030.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 17:44
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 17:44

Surrogates	REC (%)	Limits	
C9	91	70-130	02/26/2020 17:44

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	GC6A 02262032.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 18:45
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 18:45

Surrogates	REC (%)	Limits	
C9	100	70-130	02/26/2020 18:45

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	GC6B 02262017.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 14:02
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 14:02

Surrogates	REC (%)	Limits	
C9	99	70-130	02/26/2020 14:02

Analyst(s): JIS

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8015B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	GC11B 02262033.D	194527

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 19:01
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 19:01

Surrogates	REC (%)	Limits	
C9	90	70-130	02/26/2020 19:01

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	GC11B 02262047.D	194528

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 23:28
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 23:28

Surrogates	REC (%)	Limits	
C9	108	70-130	02/26/2020 23:28

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	GC6A 02252036.D	194528

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 03:52
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 03:52

Surrogates	REC (%)	Limits	
C9	97	70-130	02/26/2020 03:52

Analyst(s): JIS

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8015B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_16-17	2002901-028A	Soil	02/20/2020 11:20	GC11B 02262013.D	194528

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 12:31
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 12:31

Surrogates	REC (%)	Limits	
C9	107	70-130	02/26/2020 12:31

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	GC6A 02252034.D	194528

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 03:14
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 03:14

Surrogates	REC (%)	Limits	
C9	97	70-130	02/26/2020 03:14

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	GC6A 02252022.D	194528

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/25/2020 23:20
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/25/2020 23:20

Surrogates	REC (%)	Limits	
C9	98	70-130	02/25/2020 23:20

Analyst(s): JIS

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	SW3550B
Date Prepared:	02/24/2020	**Analytical Method:**	SW8015B
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	2002901-031A	Soil	02/20/2020 11:50	GC6A 02252030.D	194528

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 01:56
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 01:56

Surrogates	REC (%)	Limits	
C9	97	70-130	02/26/2020 01:56

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	2002901-032A	Soil	02/20/2020 11:55	GC6A 02252026.D	194528

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/26/2020 00:38
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/26/2020 00:38

Surrogates	REC (%)	Limits	
C9	97	70-130	02/26/2020 00:38

Analyst(s): JIS

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194497
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3550B
Instrument:	GC23	**Analytical Method:**	SW8081A/8082
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194497

QC Summary Report for SW8081A/8082

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Aldrin	ND	0.000270	0.00100	-	-	-
a-BHC	ND	0.000100	0.00100	-	-	-
b-BHC	ND	0.000250	0.00100	-	-	-
d-BHC	ND	0.000370	0.00100	-	-	-
g-BHC	ND	0.0000970	0.00100	-	-	-
Chlordane (Technical)	ND	0.0160	0.0250	-	-	-
a-Chlordane	ND	0.000470	0.00100	-	-	-
g-Chlordane	ND	0.000210	0.00100	-	-	-
p,p-DDD	ND	0.000140	0.00100	-	-	-
p,p-DDE	ND	0.000320	0.00100	-	-	-
p,p-DDT	ND	0.000430	0.00100	-	-	-
Dieldrin	ND	0.000330	0.00100	-	-	-
Endosulfan I	ND	0.000650	0.00100	-	-	-
Endosulfan II	ND	0.000200	0.00100	-	-	-
Endosulfan sulfate	ND	0.000630	0.00100	-	-	-
Endrin	ND	0.000420	0.00100	-	-	-
Endrin aldehyde	ND	0.000200	0.00100	-	-	-
Endrin ketone	ND	0.000130	0.00100	-	-	-
Heptachlor	ND	0.000210	0.00100	-	-	-
Heptachlor epoxide	ND	0.000200	0.00100	-	-	-
Hexachlorobenzene	ND	0.000270	0.0100	-	-	-
Hexachlorocyclopentadiene	ND	0.000400	0.0200	-	-	-
Methoxychlor	ND	0.000890	0.00100	-	-	-
Toxaphene	ND	0.0350	0.0500	-	-	-
Aroclor1016	ND	0.00510	0.0500	-	-	-
Aroclor1221	ND	0.0110	0.0500	-	-	-
Aroclor1232	ND	0.00630	0.0500	-	-	-
Aroclor1242	ND	0.00670	0.0500	-	-	-
Aroclor1248	ND	0.00400	0.0500	-	-	-
Aroclor1254	ND	0.00680	0.0500	-	-	-
Aroclor1260	ND	0.00610	0.0500	-	-	-
Surrogate Recovery						
Decachlorobiphenyl	0.0531			0.05	106	75-136

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194497
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3550B
Instrument:	GC23	**Analytical Method:**	SW8081A/8082
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194497

QC Summary Report for SW8081A/8082

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aldrin	0.0583	0.0608	0.050	117	122	92-133	4.19	20
a-BHC	0.0532	0.0550	0.050	106	110	96-140	3.43	20
b-BHC	0.0568	0.0591	0.050	114	118	77-137	3.99	20
d-BHC	0.0616	0.0649	0.050	123	130	89-145	5.26	20
g-BHC	0.0532	0.0556	0.050	106	111	92-134	4.44	20
a-Chlordane	0.0497	0.0522	0.050	99	104	72-134	4.90	20
g-Chlordane	0.0551	0.0581	0.050	110	116	86-132	5.19	20
p,p-DDD	0.0465	0.0499	0.050	93	100	35-140	7.05	20
p,p-DDE	0.0531	0.0564	0.050	106	113	83-138	5.96	20
p,p-DDT	0.0517	0.0563	0.050	103	113	70-137	8.47	20
Dieldrin	0.0509	0.0538	0.050	102	108	99-141	5.60	20
Endosulfan I	0.0481	0.0506	0.050	96	101	93-121	5.07	20
Endosulfan II	0.0485	0.0517	0.050	97	103	74-125	6.34	20
Endosulfan sulfate	0.0515	0.0556	0.050	103	111	66-138	7.63	20
Endrin	0.0467	0.0499	0.050	93	100	92-137	6.56	20
Endrin aldehyde	0.0466	0.0499	0.050	93	100	77-135	6.76	20
Endrin ketone	0.0487	0.0519	0.050	97	104	72-126	6.47	20
Heptachlor	0.0550	0.0587	0.050	110	117	89-136	6.38	20
Heptachlor epoxide	0.0522	0.0546	0.050	104	109	85-121	4.43	20
Hexachlorobenzene	0.0461	0.0485	0.050	92	97	87-127	4.99	20
Hexachlorocyclopentadiene	0.0489	0.0520	0.050	98	104	41-145	6.01	20
Methoxychlor	0.0472	0.0510	0.050	94	102	82-142	7.66	20
Aroclor1016	0.161	0.159	0.15	107	106	90-125	0.877	20
Aroclor1260	0.161	0.160	0.15	108	107	77-122	0.881	20
Surrogate Recovery								
Decachlorobiphenyl	0.0498	0.0519	0.050	100	104	75-136	3.96	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194538
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3550B
Instrument:	GC23	**Analytical Method:**	SW8081A/8082
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194538 2002901-018AMS/MSD

QC Summary Report for SW8081A/8082

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Aldrin	ND	0.000270	0.00100	-	-	-
a-BHC	ND	0.000100	0.00100	-	-	-
b-BHC	ND	0.000250	0.00100	-	-	-
d-BHC	ND	0.000370	0.00100	-	-	-
g-BHC	ND	0.0000970	0.00100	-	-	-
Chlordane (Technical)	ND	0.0160	0.0250	-	-	-
a-Chlordane	ND	0.000470	0.00100	-	-	-
g-Chlordane	ND	0.000210	0.00100	-	-	-
p,p-DDD	ND	0.000140	0.00100	-	-	-
p,p-DDE	ND	0.000320	0.00100	-	-	-
p,p-DDT	ND	0.000430	0.00100	-	-	-
Dieldrin	ND	0.000330	0.00100	-	-	-
Endosulfan I	ND	0.000650	0.00100	-	-	-
Endosulfan II	ND	0.000200	0.00100	-	-	-
Endosulfan sulfate	ND	0.000630	0.00100	-	-	-
Endrin	ND	0.000420	0.00100	-	-	-
Endrin aldehyde	ND	0.000200	0.00100	-	-	-
Endrin ketone	ND	0.000130	0.00100	-	-	-
Heptachlor	ND	0.000210	0.00100	-	-	-
Heptachlor epoxide	ND	0.000200	0.00100	-	-	-
Hexachlorobenzene	ND	0.000270	0.0100	-	-	-
Hexachlorocyclopentadiene	ND	0.000400	0.0200	-	-	-
Methoxychlor	ND	0.000890	0.00100	-	-	-
Toxaphene	ND	0.0350	0.0500	-	-	-
Aroclor1016	ND	0.00510	0.0500	-	-	-
Aroclor1221	ND	0.0110	0.0500	-	-	-
Aroclor1232	ND	0.00630	0.0500	-	-	-
Aroclor1242	ND	0.00670	0.0500	-	-	-
Aroclor1248	ND	0.00400	0.0500	-	-	-
Aroclor1254	ND	0.00680	0.0500	-	-	-
Aroclor1260	ND	0.00610	0.0500	-	-	-
Surrogate Recovery						
Decachlorobiphenyl	0.0452			0.05	90	75-136

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194538
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3550B
Instrument:	GC23	**Analytical Method:**	SW8081A/8082
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194538 2002901-018AMS/MSD

QC Summary Report for SW8081A/8082

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aldrin	0.0587	0.0592	0.050	117	118	92-133	0.930	20
a-BHC	0.0529	0.0535	0.050	106	107	96-140	1.13	20
b-BHC	0.0576	0.0580	0.050	115	116	77-137	0.785	20
d-BHC	0.0633	0.0638	0.050	127	128	89-145	0.743	20
g-BHC	0.0541	0.0543	0.050	108	109	92-134	0.476	20
a-Chlordane	0.0504	0.0510	0.050	101	102	72-134	1.25	20
g-Chlordane	0.0561	0.0567	0.050	112	113	86-132	1.11	20
p,p-DDD	0.0492	0.0498	0.050	98	100	35-140	1.17	20
p,p-DDE	0.0546	0.0553	0.050	109	111	83-138	1.37	20
p,p-DDT	0.0547	0.0555	0.050	109	111	70-137	1.54	20
Dieldrin	0.0513	0.0520	0.050	103	104	99-141	1.51	20
Endosulfan I	0.0484	0.0491	0.050	97	98	93-121	1.48	20
Endosulfan II	0.0493	0.0504	0.050	99	101	74-125	2.16	20
Endosulfan sulfate	0.0536	0.0547	0.050	107	109	66-138	2.03	20
Endrin	0.0482	0.0491	0.050	96	98	92-137	1.78	20
Endrin aldehyde	0.0493	0.0502	0.050	99	100	77-135	1.89	20
Endrin ketone	0.0514	0.0523	0.050	103	105	72-126	1.57	20
Heptachlor	0.0584	0.0590	0.050	117	118	89-136	0.990	20
Heptachlor epoxide	0.0530	0.0537	0.050	106	107	85-121	1.32	20
Hexachlorobenzene	0.0471	0.0474	0.050	94	95	87-127	0.560	20
Hexachlorocyclopentadiene	0.0495	0.0495	0.050	99	99	41-145	0.0491	20
Methoxychlor	0.0528	0.0530	0.050	106	106	82-142	0.521	20
Aroclor1016	0.165	0.163	0.15	110	109	90-125	0.915	20
Aroclor1260	0.164	0.161	0.15	109	108	77-122	1.82	20
Surrogate Recovery								
Decachlorobiphenyl	0.0472	0.0472	0.050	94	94	75-136	0.169	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aldrin	1	0.0601	0.0577	0.050	ND	120	115	59-143	4.19	20
a-BHC	1	0.0541	0.0520	0.050	ND	108	104	42-159	3.95	20
b-BHC	1	0.0598	0.0575	0.050	ND	120	115	67-141	3.88	20
d-BHC	1	0.0655	0.0631	0.050	ND	131	126	38-164	3.78	20
g-BHC	1	0.0543	0.0524	0.050	ND	109	105	51-148	3.65	20
a-Chlordane	1	0.0519	0.0501	0.050	ND	104	100	70-130	3.52	20
g-Chlordane	1	0.0579	0.0557	0.050	ND	116	111	61-146	3.91	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194538
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3550B
Instrument:	GC23	**Analytical Method:**	SW8081A/8082
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194538 2002901-018AMS/MSD

QC Summary Report for SW8081A/8082

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
p,p-DDD	1	0.0488	0.0475	0.050	ND	98	95	10-158	2.68	20
p,p-DDE	1	0.0562	0.0548	0.050	ND	112	109	52-151	2.65	20
p,p-DDT	1	0.0540	0.0531	0.050	ND	108	106	53-137	1.73	20
Dieldrin	1	0.0534	0.0516	0.050	ND	107	103	58-163	3.41	20
Endosulfan I	1	0.0500	0.0483	0.050	ND	100	97	64-136	3.42	20
Endosulfan II	1	0.0505	0.0488	0.050	ND	101	98	46-141	3.34	20
Endosulfan sulfate	1	0.0547	0.0532	0.050	ND	109	106	45-144	2.84	20
Endrin	1	0.0499	0.0485	0.050	ND	100	97	56-153	2.78	20
Endrin aldehyde	1	0.0506	0.0496	0.050	ND	101	99	63-134	1.89	20
Endrin ketone	1	0.0515	0.0504	0.050	ND	103	101	53-130	2.25	20
Heptachlor	1	0.0599	0.0576	0.050	ND	120	115	55-147	3.99	20
Heptachlor epoxide	1	0.0546	0.0527	0.050	ND	109	105	63-128	3.58	20
Hexachlorobenzene	1	0.0483	0.0465	0.050	ND	97	93	71-132	3.76	20
Hexachlorocyclopentadiene	1	0.0402	0.0393	0.050	ND	81	79	12-144	2.32	20
Methoxychlor	1	0.0523	0.0516	0.050	ND	105	103	70-150	1.40	20
Surrogate Recovery										
Decachlorobiphenyl	1	0.0448	0.0456	0.050		90	91	69-143	1.83	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194475
Date Analyzed:	02/24/2020 - 02/25/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC16, GC18	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194475

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Acetone	ND	0.0390	0.100	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.00100	0.00500	-	-	-
Benzene	ND	0.00160	0.00500	-	-	-
Bromobenzene	ND	0.00300	0.00500	-	-	-
Bromochloromethane	ND	0.00150	0.00500	-	-	-
Bromodichloromethane	ND	0.00120	0.00500	-	-	-
Bromoform	ND	0.00120	0.00500	-	-	-
Bromomethane	ND	0.00200	0.00500	-	-	-
2-Butanone (MEK)	ND	0.0210	0.0500	-	-	-
t-Butyl alcohol (TBA)	ND	0.00530	0.0500	-	-	-
n-Butyl benzene	ND	0.00350	0.00500	-	-	-
sec-Butyl benzene	ND	0.00340	0.00500	-	-	-
tert-Butyl benzene	ND	0.00290	0.00500	-	-	-
Carbon Disulfide	ND	0.00360	0.00500	-	-	-
Carbon Tetrachloride	ND	0.00170	0.00500	-	-	-
Chlorobenzene	ND	0.00180	0.00500	-	-	-
Chloroethane	ND	0.00160	0.00500	-	-	-
Chloroform	ND	0.00160	0.00500	-	-	-
Chloromethane	ND	0.00170	0.00500	-	-	-
2-Chlorotoluene	ND	0.00220	0.00500	-	-	-
4-Chlorotoluene	ND	0.00240	0.00500	-	-	-
Dibromochloromethane	ND	0.00110	0.00500	-	-	-
1,2-Dibromo-3-chloropropane	ND	0.00370	0.00500	-	-	-
1,2-Dibromoethane (EDB)	ND	0.00130	0.00400	-	-	-
Dibromomethane	ND	0.00140	0.00500	-	-	-
1,2-Dichlorobenzene	ND	0.00320	0.00500	-	-	-
1,3-Dichlorobenzene	ND	0.00180	0.00500	-	-	-
1,4-Dichlorobenzene	ND	0.00180	0.00500	-	-	-
Dichlorodifluoromethane	ND	0.00110	0.00500	-	-	-
1,1-Dichloroethane	ND	0.00170	0.00500	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.00140	0.00400	-	-	-
1,1-Dichloroethene	ND	0.00170	0.00500	-	-	-
cis-1,2-Dichloroethene	ND	0.00150	0.00500	-	-	-
trans-1,2-Dichloroethene	ND	0.00160	0.00500	-	-	-
1,2-Dichloropropane	ND	0.00140	0.00500	-	-	-
1,3-Dichloropropane	ND	0.00160	0.00500	-	-	-
2,2-Dichloropropane	ND	0.00130	0.00500	-	-	-
1,1-Dichloropropene	ND	0.00180	0.00500	-	-	-

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194475
Date Analyzed:	02/24/2020 - 02/25/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC16, GC18	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194475

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
cis-1,3-Dichloropropene	ND	0.00150	0.00500	-	-	-
trans-1,3-Dichloropropene	ND	0.00140	0.00500	-	-	-
Diisopropyl ether (DIPE)	ND	0.00140	0.00500	-	-	-
Ethylbenzene	ND	0.00250	0.00500	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.00130	0.00500	-	-	-
Freon 113	ND	0.00160	0.00500	-	-	-
Hexachlorobutadiene	ND	0.00500	0.00500	-	-	-
Hexachloroethane	ND	0.00250	0.00500	-	-	-
2-Hexanone	ND	0.00220	0.00500	-	-	-
Isopropylbenzene	ND	0.00320	0.00500	-	-	-
4-Isopropyl toluene	ND	0.00320	0.00500	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.00130	0.00500	-	-	-
Methylene chloride	ND	0.0100	0.0200	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	0.000800	0.00500	-	-	-
Naphthalene	ND	0.00440	0.00500	-	-	-
n-Propyl benzene	ND	0.00290	0.00500	-	-	-
Styrene	ND	0.00300	0.00500	-	-	-
1,1,1,2-Tetrachloroethane	ND	0.00160	0.00500	-	-	-
1,1,2,2-Tetrachloroethane	ND	0.00130	0.00500	-	-	-
Tetrachloroethene	ND	0.00230	0.00500	-	-	-
Toluene	ND	0.00240	0.00500	-	-	-
1,2,3-Trichlorobenzene	ND	0.00300	0.00500	-	-	-
1,2,4-Trichlorobenzene	ND	0.00290	0.00500	-	-	-
1,1,1-Trichloroethane	ND	0.00180	0.00500	-	-	-
1,1,2-Trichloroethane	ND	0.00190	0.00500	-	-	-
Trichloroethene	ND	0.00170	0.00500	-	-	-
Trichlorofluoromethane	ND	0.00160	0.00500	-	-	-
1,2,3-Trichloropropane	ND	0.00190	0.00500	-	-	-
1,2,4-Trimethylbenzene	ND	0.00280	0.00500	-	-	-
1,3,5-Trimethylbenzene	ND	0.00260	0.00500	-	-	-
Vinyl Chloride	ND	0.00150	0.00500	-	-	-
m,p-Xylene	ND	0.00400	0.00500	-	-	-
o-Xylene	ND	0.00180	0.00500	-	-	-

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194475
Date Analyzed:	02/24/2020 - 02/25/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC16, GC18	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194475

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Surrogate Recovery						
Dibromofluoromethane	0.110			0.125	88	66-112
Toluene-d8	0.130			0.125	104	92-109
4-BFB	0.0100			0.0125	80	72-112
Benzene-d6	0.0860			0.1	86	81-126
Ethylbenzene-d10	0.104			0.1	103	92-138
1,2-DCB-d4	0.0784			0.1	78	68-108

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194475
Date Analyzed:	02/24/2020 - 02/25/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC16, GC18	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194475

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acetone	0.256	0.265	0.20	128,F2	133,F2	59-127	3.78	20
tert-Amyl methyl ether (TAME)	0.0181	0.0188	0.020	91	94	54-98	3.53	20
Benzene	0.0201	0.0210	0.020	100	105	71-115	4.49	20
Bromobenzene	0.0176	0.0181	0.020	88	90	69-120	2.56	20
Bromochloromethane	0.0200	0.0206	0.020	100	103	63-117	2.85	20
Bromodichloromethane	0.0192	0.0201	0.020	96	100	61-109	4.24	20
Bromoform	0.0144	0.0149	0.020	72	74	46-87	3.47	20
Bromomethane	0.0171	0.0178	0.020	85	89	22-195	4.05	20
2-Butanone (MEK)	0.0810	0.0888	0.080	101	111	53-124	9.21	20
t-Butyl alcohol (TBA)	0.0846	0.0887	0.080	106	111	29-142	4.74	20
n-Butyl benzene	0.0266	0.0271	0.020	133	135	102-169	1.97	20
sec-Butyl benzene	0.0262	0.0270	0.020	131	135	100-166	3.25	20
tert-Butyl benzene	0.0232	0.0236	0.020	116	118	91-153	1.89	20
Carbon Disulfide	0.0194	0.0201	0.020	97	100	60-125	3.40	20
Carbon Tetrachloride	0.0198	0.0208	0.020	99	104	69-124	4.76	20
Chlorobenzene	0.0185	0.0191	0.020	93	96	73-116	3.06	20
Chloroethane	0.0181	0.0186	0.020	91	93	47-140	2.58	20
Chloroform	0.0205	0.0215	0.020	103	108	69-118	4.59	20
Chloromethane	0.0142	0.0145	0.020	71	73	30-132	2.07	20
2-Chlorotoluene	0.0205	0.0211	0.020	102	105	75-147	2.88	20
4-Chlorotoluene	0.0202	0.0208	0.020	101	104	75-137	2.71	20
Dibromochloromethane	0.0180	0.0188	0.020	90	94	57-105	4.55	20
1,2-Dibromo-3-chloropropane	0.00853	0.00897	0.010	85	90	36-103	5.10	20
1,2-Dibromoethane (EDB)	0.00933	0.00986	0.010	93	99	66-101	5.56	20
Dibromomethane	0.0183	0.0193	0.020	92	96	61-103	4.97	20
1,2-Dichlorobenzene	0.0162	0.0168	0.020	81	84	59-104	3.88	20
1,3-Dichlorobenzene	0.0187	0.0194	0.020	93	97	70-133	3.69	20
1,4-Dichlorobenzene	0.0191	0.0196	0.020	96	98	68-123	2.62	20
Dichlorodifluoromethane	0.00452	0.00478	0.020	23	24	13-107	5.70	20
1,1-Dichloroethane	0.0208	0.0216	0.020	104	108	69-118	4.06	20
1,2-Dichloroethane (1,2-DCA)	0.0204	0.0213	0.020	102	106	59-112	4.56	20
1,1-Dichloroethene	0.0196	0.0206	0.020	98	103	69-126	4.63	20
cis-1,2-Dichloroethene	0.0198	0.0206	0.020	99	103	69-116	4.31	20
trans-1,2-Dichloroethene	0.0200	0.0208	0.020	100	104	73-116	4.24	20
1,2-Dichloropropane	0.0189	0.0198	0.020	94	99	65-111	4.70	20
1,3-Dichloropropane	0.0196	0.0201	0.020	98	100	67-110	2.08	20
2,2-Dichloropropane	0.0225	0.0233	0.020	112	116	65-125	3.37	20
1,1-Dichloropropene	0.0204	0.0213	0.020	102	107	70-123	4.19	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194475
Date Analyzed:	02/24/2020 - 02/25/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC16, GC18	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194475

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
cis-1,3-Dichloropropene	0.0215	0.0224	0.020	107	112	68-126	4.48	20
trans-1,3-Dichloropropene	0.0204	0.0214	0.020	102	107	69-117	4.75	20
Diisopropyl ether (DIPE)	0.0194	0.0202	0.020	97	101	57-110	4.11	20
Ethylbenzene	0.0203	0.0210	0.020	101	105	80-128	3.33	20
Ethyl tert-butyl ether (ETBE)	0.0194	0.0202	0.020	97	101	54-106	4.04	20
Freon 113	0.0169	0.0178	0.020	85	89	60-108	5.35	20
Hexachlorobutadiene	0.0263	0.0271	0.020	132	136	67-182	3.09	20
Hexachloroethane	0.0213	0.0220	0.020	107	110	85-156	3.23	20
2-Hexanone	0.0160	0.0166	0.020	80	83	37-90	3.80	20
Isopropylbenzene	0.0234	0.0241	0.020	117	121	64-167	3.00	20
4-Isopropyl toluene	0.0243	0.0251	0.020	121	125	88-167	3.20	20
Methyl-t-butyl ether (MTBE)	0.0195	0.0203	0.020	97	101	60-102	4.22	20
Methylene chloride	0.0207	0.0214	0.020	104	107	71-117	3.35	20
4-Methyl-2-pentanone (MIBK)	0.0165	0.0170	0.020	83	85	48-90	2.59	20
Naphthalene	0.0112	0.0114	0.020	56	57	29-65	1.10	20
n-Propyl benzene	0.0240	0.0244	0.020	120	122	88-161	1.84	20
Styrene	0.0164	0.0169	0.020	82	85	70-108	3.01	20
1,1,1,2-Tetrachloroethane	0.0190	0.0197	0.020	95	98	69-117	3.42	20
1,1,2,2-Tetrachloroethane	0.0182	0.0185	0.020	91	92	53-96	1.54	20
Tetrachloroethene	0.0216	0.0224	0.020	108	112	78-128	3.76	20
Toluene	0.0198	0.0204	0.020	99	102	78-121	2.83	20
1,2,3-Trichlorobenzene	0.0115	0.0115	0.020	57	58	35-80	0.427	20
1,2,4-Trichlorobenzene	0.0149	0.0155	0.020	75	77	46-101	3.78	20
1,1,1-Trichloroethane	0.0201	0.0212	0.020	100	106	69-121	5.59	20
1,1,2-Trichloroethane	0.0197	0.0205	0.020	98	103	64-104	4.27	20
Trichloroethene	0.0202	0.0214	0.020	101	107	73-118	5.83	20
Trichlorofluoromethane	0.0178	0.0185	0.020	89	93	31-119	4.09	20
1,2,3-Trichloropropane	0.00982	0.00995	0.010	98	100	65-107	1.33	20
1,2,4-Trimethylbenzene	0.0212	0.0217	0.020	106	108	80-147	2.05	20
1,3,5-Trimethylbenzene	0.0228	0.0232	0.020	114	116	83-156	1.71	20
Vinyl Chloride	0.00765	0.00793	0.010	77	79	40-125	3.56	20
m,p-Xylene	0.0385	0.0400	0.040	96	100	80-122	3.79	20
o-Xylene	0.0182	0.0190	0.020	91	95	79-116	4.29	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194475
Date Analyzed:	02/24/2020 - 02/25/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC16, GC18	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194475

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Surrogate Recovery								
Dibromofluoromethane	0.116	0.118	0.12	92	95	66-112	2.50	20
Toluene-d8	0.133	0.135	0.12	106	108	92-109	1.58	20
4-BFB	0.0136	0.0132	0.012	109	105	72-112	3.10	20
Benzene-d6	0.112	0.115	0.10	112	115	81-126	2.84	20
Ethylbenzene-d10	0.132	0.137	0.10	132	137	92-138	3.15	20
1,2-DCB-d4	0.0840	0.0856	0.10	84	86	68-108	1.87	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194541
Date Analyzed:	02/26/2020 - 02/29/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194541 2002901-006AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Acetone	ND	0.0390	0.100	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.00100	0.00500	-	-	-
Benzene	ND	0.00160	0.00500	-	-	-
Bromobenzene	ND	0.00300	0.00500	-	-	-
Bromochloromethane	ND	0.00150	0.00500	-	-	-
Bromodichloromethane	ND	0.00120	0.00500	-	-	-
Bromoform	0.00140,J	0.00120	0.00500	-	-	-
Bromomethane	ND	0.00200	0.00500	-	-	-
2-Butanone (MEK)	ND	0.0210	0.0500	-	-	-
t-Butyl alcohol (TBA)	ND	0.00530	0.0500	-	-	-
n-Butyl benzene	ND	0.00350	0.00500	-	-	-
sec-Butyl benzene	ND	0.00340	0.00500	-	-	-
tert-Butyl benzene	ND	0.00290	0.00500	-	-	-
Carbon Disulfide	ND	0.00360	0.00500	-	-	-
Carbon Tetrachloride	ND	0.00170	0.00500	-	-	-
Chlorobenzene	ND	0.00180	0.00500	-	-	-
Chloroethane	ND	0.00160	0.00500	-	-	-
Chloroform	ND	0.00160	0.00500	-	-	-
Chloromethane	ND	0.00170	0.00500	-	-	-
2-Chlorotoluene	ND	0.00220	0.00500	-	-	-
4-Chlorotoluene	ND	0.00240	0.00500	-	-	-
Dibromochloromethane	ND	0.00110	0.00500	-	-	-
1,2-Dibromo-3-chloropropane	ND	0.00370	0.00500	-	-	-
1,2-Dibromoethane (EDB)	ND	0.00130	0.00400	-	-	-
Dibromomethane	ND	0.00140	0.00500	-	-	-
1,2-Dichlorobenzene	ND	0.00320	0.00500	-	-	-
1,3-Dichlorobenzene	ND	0.00180	0.00500	-	-	-
1,4-Dichlorobenzene	ND	0.00180	0.00500	-	-	-
Dichlorodifluoromethane	ND	0.00110	0.00500	-	-	-
1,1-Dichloroethane	ND	0.00170	0.00500	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.00140	0.00400	-	-	-
1,1-Dichloroethene	ND	0.00170	0.00500	-	-	-
cis-1,2-Dichloroethene	ND	0.00150	0.00500	-	-	-
trans-1,2-Dichloroethene	ND	0.00160	0.00500	-	-	-
1,2-Dichloropropane	ND	0.00140	0.00500	-	-	-
1,3-Dichloropropane	ND	0.00160	0.00500	-	-	-
2,2-Dichloropropane	ND	0.00130	0.00500	-	-	-
1,1-Dichloropropene	ND	0.00180	0.00500	-	-	-

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194541
Date Analyzed:	02/26/2020 - 02/29/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194541 2002901-006AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
cis-1,3-Dichloropropene	ND	0.00150	0.00500	-	-	-
trans-1,3-Dichloropropene	ND	0.00140	0.00500	-	-	-
Diisopropyl ether (DIPE)	ND	0.00140	0.00500	-	-	-
Ethylbenzene	ND	0.00250	0.00500	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.00130	0.00500	-	-	-
Freon 113	ND	0.00160	0.00500	-	-	-
Hexachlorobutadiene	ND	0.00500	0.00500	-	-	-
Hexachloroethane	ND	0.00250	0.00500	-	-	-
2-Hexanone	ND	0.00220	0.00500	-	-	-
Isopropylbenzene	ND	0.00320	0.00500	-	-	-
4-Isopropyl toluene	ND	0.00320	0.00500	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.00130	0.00500	-	-	-
Methylene chloride	ND	0.0100	0.0200	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	0.000800	0.00500	-	-	-
Naphthalene	ND	0.00440	0.00500	-	-	-
n-Propyl benzene	ND	0.00290	0.00500	-	-	-
Styrene	ND	0.00300	0.00500	-	-	-
1,1,1,2-Tetrachloroethane	ND	0.00160	0.00500	-	-	-
1,1,2,2-Tetrachloroethane	ND	0.00130	0.00500	-	-	-
Tetrachloroethene	ND	0.00230	0.00500	-	-	-
Toluene	ND	0.00240	0.00500	-	-	-
1,2,3-Trichlorobenzene	ND	0.00300	0.00500	-	-	-
1,2,4-Trichlorobenzene	ND	0.00290	0.00500	-	-	-
1,1,1-Trichloroethane	ND	0.00180	0.00500	-	-	-
1,1,2-Trichloroethane	ND	0.00190	0.00500	-	-	-
Trichloroethene	ND	0.00170	0.00500	-	-	-
Trichlorofluoromethane	ND	0.00160	0.00500	-	-	-
1,2,3-Trichloropropane	ND	0.00190	0.00500	-	-	-
1,2,4-Trimethylbenzene	ND	0.00280	0.00500	-	-	-
1,3,5-Trimethylbenzene	ND	0.00260	0.00500	-	-	-
Vinyl Chloride	ND	0.00150	0.00500	-	-	-
m,p-Xylene	ND	0.00400	0.00500	-	-	-
o-Xylene	ND	0.00180	0.00500	-	-	-

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194541
Date Analyzed:	02/26/2020 - 02/29/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194541 2002901-006AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Surrogate Recovery						
Dibromofluoromethane	0.124			0.125	100	66-112
Toluene-d8	0.130			0.125	104	92-109
4-BFB	0.0113			0.0125	91	72-112
Benzene-d6	0.0893			0.1	89	81-126
Ethylbenzene-d10	0.104			0.1	104	92-138
1,2-DCB-d4	0.0808			0.1	81	68-108

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194541
Date Analyzed:	02/26/2020 - 02/29/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194541 2002901-006AMS/MSD

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acetone	0.230	0.182	0.20	115	91	59-127	23.5,F2	20
tert-Amyl methyl ether (TAME)	0.0155	0.0134	0.020	77	67	54-98	14.5	20
Benzene	0.0171	0.0152	0.020	85	76	71-115	11.5	20
Bromobenzene	0.0181	0.0177	0.020	91	89	69-120	2.31	20
Bromochloromethane	0.0191	0.0167	0.020	95	83	63-117	13.5	20
Bromodichloromethane	0.0171	0.0150	0.020	86	75	61-109	13.4	20
Bromoform	0.0164	0.0152	0.020	82	76	46-87	7.95	20
Bromomethane	0.00846	0.00742	0.020	42	37	22-195	13.0	20
2-Butanone (MEK)	0.0747	0.0656	0.080	93	82	53-124	12.9	20
t-Butyl alcohol (TBA)	0.0730	0.0610	0.080	91	76	29-142	17.9	20
n-Butyl benzene	0.0218	0.0218	0.020	109	109	102-169	0.206	20
sec-Butyl benzene	0.0225	0.0227	0.020	112	113	100-166	0.830	20
tert-Butyl benzene	0.0214	0.0214	0.020	107	107	91-153	0.0311	20
Carbon Disulfide	0.0160	0.0142	0.020	80	71	60-125	11.5	20
Carbon Tetrachloride	0.0178	0.0160	0.020	89	80	69-124	11.0	20
Chlorobenzene	0.0168	0.0164	0.020	84	82	73-116	2.93	20
Chloroethane	0.0157	0.0140	0.020	79	70	47-140	11.4	20
Chloroform	0.0184	0.0163	0.020	92	82	69-118	12.0	20
Chloromethane	0.0109	0.00980	0.020	55	49	30-132	11.0	20
2-Chlorotoluene	0.0196	0.0195	0.020	98	98	75-147	0.277	20
4-Chlorotoluene	0.0188	0.0188	0.020	94	94	75-137	0.260	20
Dibromochloromethane	0.0150	0.0142	0.020	75	71	57-105	5.34	20
1,2-Dibromo-3-chloropropane	0.00641	0.00591	0.010	64	59	36-103	8.00	20
1,2-Dibromoethane (EDB)	0.00776	0.00737	0.010	78	74	66-101	5.27	20
Dibromomethane	0.0166	0.0144	0.020	83	72	61-103	14.2	20
1,2-Dichlorobenzene	0.0152	0.0143	0.020	76	71	59-104	6.38	20
1,3-Dichlorobenzene	0.0185	0.0179	0.020	92	90	70-133	3.16	20
1,4-Dichlorobenzene	0.0170	0.0163	0.020	85	82	68-123	3.82	20
Dichlorodifluoromethane	0.00372	0.00344	0.020	19	17	13-107	7.81	20
1,1-Dichloroethane	0.0174	0.0155	0.020	87	77	69-118	11.6	20
1,2-Dichloroethane (1,2-DCA)	0.0169	0.0148	0.020	85	74	59-112	13.5	20
1,1-Dichloroethene	0.0162	0.0145	0.020	81	73	69-126	11.1	20
cis-1,2-Dichloroethene	0.0179	0.0159	0.020	90	80	69-116	11.9	20
trans-1,2-Dichloroethene	0.0172	0.0155	0.020	86	78	73-116	10.1	20
1,2-Dichloropropane	0.0167	0.0148	0.020	83	74	65-111	12.1	20
1,3-Dichloropropane	0.0174	0.0169	0.020	87	84	67-110	2.93	20
2,2-Dichloropropane	0.0187	0.0167	0.020	93	83	65-125	11.2	20
1,1-Dichloropropene	0.0169	0.0152	0.020	85	76	70-123	10.8	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194541
Date Analyzed:	02/26/2020 - 02/29/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194541 2002901-006AMS/MSD

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
cis-1,3-Dichloropropene	0.0171	0.0165	0.020	85	83	68-126	3.30	20
trans-1,3-Dichloropropene	0.0166	0.0158	0.020	83	79	69-117	4.45	20
Diisopropyl ether (DIPE)	0.0166	0.0145	0.020	83	73	57-110	13.7	20
Ethylbenzene	0.0184	0.0180	0.020	92	90	80-128	2.01	20
Ethyl tert-butyl ether (ETBE)	0.0162	0.0142	0.020	81	71	54-106	13.6	20
Freon 113	0.0147	0.0132	0.020	73	66	60-108	10.4	20
Hexachlorobutadiene	0.0221	0.0217	0.020	111	109	67-182	1.80	20
Hexachloroethane	0.0171	0.0174	0.020	86	87	85-156	1.37	20
2-Hexanone	0.0136	0.0125	0.020	68	63	37-90	8.65	20
Isopropylbenzene	0.0213	0.0214	0.020	106	107	64-167	0.331	20
4-Isopropyl toluene	0.0222	0.0220	0.020	111	110	88-167	0.561	20
Methyl-t-butyl ether (MTBE)	0.0164	0.0143	0.020	82	71	60-102	13.9	20
Methylene chloride	0.0174	0.0153	0.020	87	76	71-117	13.4	20
4-Methyl-2-pentanone (MIBK)	0.0138	0.0137	0.020	69	68	48-90	0.669	20
Naphthalene	0.00977	0.00826	0.020	49	41	29-65	16.7	20
n-Propyl benzene	0.0223	0.0224	0.020	112	112	88-161	0.637	20
Styrene	0.0163	0.0158	0.020	82	79	70-108	3.07	20
1,1,1,2-Tetrachloroethane	0.0169	0.0163	0.020	85	81	69-117	3.98	20
1,1,2,2-Tetrachloroethane	0.0150	0.0144	0.020	75	72	53-96	4.12	20
Tetrachloroethene	0.0200	0.0198	0.020	100	99	78-128	1.12	20
Toluene	0.0176	0.0173	0.020	88	86	78-121	1.85	20
1,2,3-Trichlorobenzene	0.0111	0.00984	0.020	55	49	35-80	12.0	20
1,2,4-Trichlorobenzene	0.0136	0.0129	0.020	68	64	46-101	5.57	20
1,1,1-Trichloroethane	0.0179	0.0160	0.020	90	80	69-121	11.1	20
1,1,2-Trichloroethane	0.0158	0.0152	0.020	79	76	64-104	4.09	20
Trichloroethene	0.0182	0.0162	0.020	91	81	73-118	11.3	20
Trichlorofluoromethane	0.0147	0.0133	0.020	73	66	31-119	10.2	20
1,2,3-Trichloropropane	0.00817	0.00790	0.010	82	79	65-107	3.36	20
1,2,4-Trimethylbenzene	0.0194	0.0194	0.020	97	97	80-147	0.174	20
1,3,5-Trimethylbenzene	0.0196	0.0197	0.020	98	99	83-156	0.475	20
Vinyl Chloride	0.00601	0.00533	0.010	60	53	40-125	12.0	20
m,p-Xylene	0.0357	0.0354	0.040	89	89	80-122	0.800	20
o-Xylene	0.0174	0.0170	0.020	87	85	79-116	2.67	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194541
Date Analyzed:	02/26/2020 - 02/29/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194541 2002901-006AMS/MSD

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Surrogate Recovery								
Dibromofluoromethane	0.138	0.120	0.12	111	96	66-112	14.2	20
Toluene-d8	0.129	0.130	0.12	103	104	92-109	0.811	20
4-BFB	0.0116	0.0117	0.012	93	93	72-112	0.314	20
Benzene-d6	0.0917	0.0860	0.10	92	86	81-126	6.42	20
Ethylbenzene-d10	0.0970	0.101	0.10	97	101	92-138	3.82	20
1,2-DCB-d4	0.0779	0.0787	0.10	78	79	68-108	1.06	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acetone	1	0.173	0.156	0.20	ND	86	78	48-114	9.87	20
tert-Amyl methyl ether (TAME)	1	0.0138	0.0131	0.020	ND	69	66	44-94	5.42	20
Benzene	1	0.0165	0.0152	0.020	ND	83	76	50-115	8.03	20
Bromobenzene	1	0.0144	0.0138	0.020	ND	72	69	60-114	4.08	20
Bromochloromethane	1	0.0153	0.0143	0.020	ND	77	71	50-113	7.12	20
Bromodichloromethane	1	0.0145	0.0136	0.020	ND	73	68	46-109	6.39	20
Bromoform	1	0.0132	0.0124	0.020	ND	66	62	38-83	6.10	20
Bromomethane	1	0.0158	0.0151	0.020	ND	79	75	10-149	4.71	20
2-Butanone (MEK)	1	0.0663	0.0626	0.080	ND	83	78	46-111	5.69	20
t-Butyl alcohol (TBA)	1	0.0525	0.0473	0.080	ND	66	59	32-112	10.3	20
n-Butyl benzene	1	0.0204	0.0180	0.020	ND	102	90	71-156	12.1	20
sec-Butyl benzene	1	0.0195	0.0176	0.020	ND	98	88	28-190	10.5	20
tert-Butyl benzene	1	0.0188	0.0170	0.020	ND	94	85	69-145	9.64	20
Carbon Disulfide	1	0.0150	0.0137	0.020	ND	75	68	19-135	8.90	20
Carbon Tetrachloride	1	0.0160	0.0150	0.020	ND	80	75	51-120	6.53	20
Chlorobenzene	1	0.0155	0.0144	0.020	ND	78	72	63-108	7.00	20
Chloroethane	1	0.0124	0.0113	0.020	ND	62	57	40-122	8.56	20
Chloroform	1	0.0169	0.0157	0.020	ND	84	79	55-114	7.18	20
Chloromethane	1	0.0105	0.00998	0.020	ND	52	50	14-128	4.52	20
2-Chlorotoluene	1	0.0168	0.0156	0.020	ND	84	78	45-153	7.18	20
4-Chlorotoluene	1	0.0177	0.0164	0.020	ND	88	82	65-126	7.15	20
Dibromochloromethane	1	0.0155	0.0147	0.020	ND	78	73	48-97	5.76	20
1,2-Dibromo-3-chloropropane	1	0.00809	0.00701	0.010	ND	81	70	32-95	14.2	20
1,2-Dibromoethane (EDB)	1	0.00693	0.00657	0.010	ND	69	66	52-99	5.25	20
Dibromomethane	1	0.0142	0.0135	0.020	ND	71	67	50-100	5.14	20
1,2-Dichlorobenzene	1	0.0131	0.0123	0.020	ND	65	62	38-116	5.76	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194541
Date Analyzed:	02/26/2020 - 02/29/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194541 2002901-006AMS/MSD

QC Summary Report for SW8260B

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
1,3-Dichlorobenzene	1	0.0156	0.0147	0.020	ND	78	74	58-127	6.18	20
1,4-Dichlorobenzene	1	0.0162	0.0149	0.020	ND	81	74	54-123	8.32	20
Dichlorodifluoromethane	1	0.00302	0.00281	0.020	ND	15	14	8-93	7.22	20
1,1-Dichloroethane	1	0.0162	0.0150	0.020	ND	81	75	53-115	7.89	20
1,2-Dichloroethane (1,2-DCA)	1	0.0159	0.0147	0.020	ND	79	74	48-105	7.35	20
1,1-Dichloroethene	1	0.0142	0.0131	0.020	ND	71	65	47-127	8.17	20
cis-1,2-Dichloroethene	1	0.0156	0.0144	0.020	ND	78	72	56-111	7.97	20
trans-1,2-Dichloroethene	1	0.0164	0.0152	0.020	ND	82	76	51-115	7.54	20
1,2-Dichloropropane	1	0.0156	0.0144	0.020	ND	78	72	51-111	8.20	20
1,3-Dichloropropane	1	0.0148	0.0139	0.020	ND	74	70	51-109	6.12	20
2,2-Dichloropropane	1	0.0157	0.0144	0.020	ND	79	72	50-116	9.01	20
1,1-Dichloropropene	1	0.0164	0.0150	0.020	ND	82	75	46-124	9.00	20
cis-1,3-Dichloropropene	1	0.0157	0.0149	0.020	ND	79	74	41-127	5.30	20
trans-1,3-Dichloropropene	1	0.0146	0.0139	0.020	ND	73	70	50-111	4.35	20
Diisopropyl ether (DIPE)	1	0.0147	0.0138	0.020	ND	74	69	50-103	6.57	20
Ethylbenzene	1	0.0167	0.0154	0.020	ND	84	77	65-119	8.17	20
Ethyl tert-butyl ether (ETBE)	1	0.0144	0.0136	0.020	ND	72	68	47-100	6.22	20
Freon 113	1	0.0111	0.0102	0.020	ND	55	51	48-98	8.32	20
Hexachlorobutadiene	1	0.0188	0.0174	0.020	ND	94	87	36-166	7.79	20
Hexachloroethane	1	0.0180	0.0168	0.020	ND	90	84	61-146	6.49	20
2-Hexanone	1	0.0138	0.0129	0.020	ND	69	65	31-87	6.73	20
Isopropylbenzene	1	0.0175	0.0160	0.020	ND	87	80	24-171	8.72	20
4-Isopropyl toluene	1	0.0175	0.0154	0.020	ND	88	77	69-150	12.9	20
Methyl-t-butyl ether (MTBE)	1	0.0144	0.0136	0.020	ND	72	68	50-95	6.23	20
Methylene chloride	1	0.0158	0.0145	0.020	ND	79	72	39-123	8.49	20
4-Methyl-2-pentanone (MIBK)	1	0.0131	0.0120	0.020	ND	65	60	41-83	8.60	20
Naphthalene	1	0.00860	0.00838	0.020	ND	43	42	13-77	2.56	20
n-Propyl benzene	1	0.0196	0.0180	0.020	ND	98	90	26-184	8.80	20
Styrene	1	0.0152	0.0142	0.020	ND	76	71	54-105	7.14	20
1,1,1,2-Tetrachloroethane	1	0.0151	0.0144	0.020	ND	76	72	60-108	5.23	20
1,1,2,2-Tetrachloroethane	1	0.0138	0.0134	0.020	ND	69	67	37-108	2.80	20
Tetrachloroethene	1	0.0174	0.0159	0.020	ND	87	79	54-127	8.97	20
Toluene	1	0.0168	0.0155	0.020	ND	84	78	63-114	8.15	20
1,2,3-Trichlorobenzene	1	0.0104	0.0100	0.020	ND	52	50	14-97	3.48	20
1,2,4-Trichlorobenzene	1	0.0124	0.0120	0.020	ND	62	60	31-106	3.17	20
1,1,1-Trichloroethane	1	0.0167	0.0153	0.020	ND	84	77	55-114	8.69	20
1,1,2-Trichloroethane	1	0.0147	0.0138	0.020	ND	73	69	50-104	6.39	20
Trichloroethene	1	0.0156	0.0143	0.020	ND	78	72	47-127	8.70	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194541
Date Analyzed:	02/26/2020 - 02/29/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194541 2002901-006AMS/MSD

QC Summary Report for SW8260B

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Trichlorofluoromethane	1	0.0135	0.0124	0.020	ND	67	62	9-119	8.64	20
1,2,3-Trichloropropane	1	0.00786	0.00777	0.010	ND	79	78	45-115	1.21	20
1,2,4-Trimethylbenzene	1	0.0190	0.0173	0.020	ND	95	87	69-133	9.09	20
1,3,5-Trimethylbenzene	1	0.0184	0.0167	0.020	ND	92	84	27-172	9.44	20
Vinyl Chloride	1	0.00532	0.00506	0.010	ND	53	51	33-114	5.02	20
m,p-Xylene	1	0.0332	0.0306	0.040	ND	83	76	62-117	8.26	20
o-Xylene	1	0.0162	0.0150	0.020	ND	81	75	19-144	8.08	20
Surrogate Recovery										
Dibromofluoromethane	1	0.110	0.110	0.12		88	88	66-116	0.537	20
Toluene-d8	1	0.129	0.129	0.12		104	103	86-110	0.398	20
4-BFB	1	0.0120	0.0124	0.012		96	100	71-114	3.39	20
Benzene-d6	1	0.0739	0.0689	0.10		74	69	62-122	6.99	20
Ethylbenzene-d10	1	0.0848	0.0785	0.10		85	79	69-130	7.68	20
1,2-DCB-d4	1	0.0714	0.0680	0.10		71	68	55-108	4.85	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194542
Date Analyzed:	02/29/2020 - 03/01/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194542 2002901-026AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Acetone	ND	0.0390	0.100	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.00100	0.00500	-	-	-
Benzene	ND	0.00160	0.00500	-	-	-
Bromobenzene	ND	0.00300	0.00500	-	-	-
Bromochloromethane	ND	0.00150	0.00500	-	-	-
Bromodichloromethane	ND	0.00120	0.00500	-	-	-
Bromoform	0.00122,J	0.00120	0.00500	-	-	-
Bromomethane	ND	0.00200	0.00500	-	-	-
2-Butanone (MEK)	ND	0.0210	0.0500	-	-	-
t-Butyl alcohol (TBA)	ND	0.00530	0.0500	-	-	-
n-Butyl benzene	ND	0.00350	0.00500	-	-	-
sec-Butyl benzene	ND	0.00340	0.00500	-	-	-
tert-Butyl benzene	ND	0.00290	0.00500	-	-	-
Carbon Disulfide	ND	0.00360	0.00500	-	-	-
Carbon Tetrachloride	ND	0.00170	0.00500	-	-	-
Chlorobenzene	ND	0.00180	0.00500	-	-	-
Chloroethane	ND	0.00160	0.00500	-	-	-
Chloroform	ND	0.00160	0.00500	-	-	-
Chloromethane	ND	0.00170	0.00500	-	-	-
2-Chlorotoluene	ND	0.00220	0.00500	-	-	-
4-Chlorotoluene	ND	0.00240	0.00500	-	-	-
Dibromochloromethane	ND	0.00110	0.00500	-	-	-
1,2-Dibromo-3-chloropropane	ND	0.00370	0.00500	-	-	-
1,2-Dibromoethane (EDB)	ND	0.00130	0.00400	-	-	-
Dibromomethane	ND	0.00140	0.00500	-	-	-
1,2-Dichlorobenzene	ND	0.00320	0.00500	-	-	-
1,3-Dichlorobenzene	ND	0.00180	0.00500	-	-	-
1,4-Dichlorobenzene	ND	0.00180	0.00500	-	-	-
Dichlorodifluoromethane	ND	0.00110	0.00500	-	-	-
1,1-Dichloroethane	ND	0.00170	0.00500	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.00140	0.00400	-	-	-
1,1-Dichloroethene	ND	0.00170	0.00500	-	-	-
cis-1,2-Dichloroethene	ND	0.00150	0.00500	-	-	-
trans-1,2-Dichloroethene	ND	0.00160	0.00500	-	-	-
1,2-Dichloropropane	ND	0.00140	0.00500	-	-	-
1,3-Dichloropropane	ND	0.00160	0.00500	-	-	-
2,2-Dichloropropane	ND	0.00130	0.00500	-	-	-
1,1-Dichloropropene	ND	0.00180	0.00500	-	-	-

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Date Prepared:	02/24/2020	**BatchID:**	194542
Date Analyzed:	02/29/2020 - 03/01/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194542 2002901-026AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
cis-1,3-Dichloropropene	ND	0.00150	0.00500	-	-	-
trans-1,3-Dichloropropene	ND	0.00140	0.00500	-	-	-
Diisopropyl ether (DIPE)	ND	0.00140	0.00500	-	-	-
Ethylbenzene	ND	0.00250	0.00500	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.00130	0.00500	-	-	-
Freon 113	ND	0.00160	0.00500	-	-	-
Hexachlorobutadiene	ND	0.00500	0.00500	-	-	-
Hexachloroethane	ND	0.00250	0.00500	-	-	-
2-Hexanone	ND	0.00220	0.00500	-	-	-
Isopropylbenzene	ND	0.00320	0.00500	-	-	-
4-Isopropyl toluene	ND	0.00320	0.00500	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.00130	0.00500	-	-	-
Methylene chloride	ND	0.0100	0.0200	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	0.000800	0.00500	-	-	-
Naphthalene	ND	0.00440	0.00500	-	-	-
n-Propyl benzene	ND	0.00290	0.00500	-	-	-
Styrene	ND	0.00300	0.00500	-	-	-
1,1,1,2-Tetrachloroethane	ND	0.00160	0.00500	-	-	-
1,1,2,2-Tetrachloroethane	ND	0.00130	0.00500	-	-	-
Tetrachloroethene	ND	0.00230	0.00500	-	-	-
Toluene	ND	0.00240	0.00500	-	-	-
1,2,3-Trichlorobenzene	ND	0.00300	0.00500	-	-	-
1,2,4-Trichlorobenzene	ND	0.00290	0.00500	-	-	-
1,1,1-Trichloroethane	ND	0.00180	0.00500	-	-	-
1,1,2-Trichloroethane	ND	0.00190	0.00500	-	-	-
Trichloroethene	ND	0.00170	0.00500	-	-	-
Trichlorofluoromethane	ND	0.00160	0.00500	-	-	-
1,2,3-Trichloropropane	ND	0.00190	0.00500	-	-	-
1,2,4-Trimethylbenzene	ND	0.00280	0.00500	-	-	-
1,3,5-Trimethylbenzene	ND	0.00260	0.00500	-	-	-
Vinyl Chloride	ND	0.00150	0.00500	-	-	-
m,p-Xylene	ND	0.00400	0.00500	-	-	-
o-Xylene	ND	0.00180	0.00500	-	-	-

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Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194542 2002901-026AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Surrogate Recovery						
Dibromofluoromethane	0.124			0.125	99	66-112
Toluene-d8	0.127			0.125	101	92-109
4-BFB	0.0110			0.0125	88	72-112
Benzene-d6	0.0797			0.1	80,F3	81-126
Ethylbenzene-d10	0.0953			0.1	95	92-138
1,2-DCB-d4	0.0769			0.1	77	68-108

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Date Analyzed:	02/29/2020 - 03/01/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194542 2002901-026AMS/MSD

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acetone	0.239	0.213	0.20	119	107	59-127	11.3	20
tert-Amyl methyl ether (TAME)	0.0159	0.0154	0.020	79	77	54-98	2.91	20
Benzene	0.0186	0.0183	0.020	93	92	71-115	1.64	20
Bromobenzene	0.0166	0.0163	0.020	83	82	69-120	1.48	20
Bromochloromethane	0.0171	0.0169	0.020	85	84	63-117	1.22	20
Bromodichloromethane	0.0164	0.0162	0.020	82	81	61-109	1.51	20
Bromoform	0.0148	0.0143	0.020	74	71	46-87	3.55	20
Bromomethane	0.0171	0.0171	0.020	86	85	22-195	0.359	20
2-Butanone (MEK)	0.0814	0.0762	0.080	102	95	53-124	6.58	20
t-Butyl alcohol (TBA)	0.0637	0.0730	0.080	80	91	29-142	13.7	20
n-Butyl benzene	0.0221	0.0236	0.020	111	118	102-169	6.36	20
sec-Butyl benzene	0.0215	0.0225	0.020	107	112	100-166	4.62	20
tert-Butyl benzene	0.0209	0.0214	0.020	104	107	91-153	2.68	20
Carbon Disulfide	0.0163	0.0161	0.020	81	80	60-125	1.36	20
Carbon Tetrachloride	0.0181	0.0178	0.020	91	89	69-124	1.44	20
Chlorobenzene	0.0173	0.0173	0.020	86	87	73-116	0.257	20
Chloroethane	0.0136	0.0137	0.020	68	69	47-140	1.17	20
Chloroform	0.0190	0.0189	0.020	95	95	69-118	0.551	20
Chloromethane	0.0110	0.0111	0.020	55	56	30-132	0.845	20
2-Chlorotoluene	0.0188	0.0191	0.020	94	96	75-147	1.55	20
4-Chlorotoluene	0.0196	0.0198	0.020	98	99	75-137	0.988	20
Dibromochloromethane	0.0175	0.0173	0.020	88	86	57-105	1.57	20
1,2-Dibromo-3-chloropropane	0.00867	0.00904	0.010	87	90	36-103	4.12	20
1,2-Dibromoethane (EDB)	0.00778	0.00768	0.010	78	77	66-101	1.37	20
Dibromomethane	0.0159	0.0156	0.020	80	78	61-103	1.75	20
1,2-Dichlorobenzene	0.0142	0.0142	0.020	71	71	59-104	0.0158	20
1,3-Dichlorobenzene	0.0175	0.0176	0.020	88	88	70-133	0.108	20
1,4-Dichlorobenzene	0.0177	0.0178	0.020	88	89	68-123	0.794	20
Dichlorodifluoromethane	0.00346	0.00338	0.020	17	17	13-107	2.52	20
1,1-Dichloroethane	0.0183	0.0182	0.020	91	91	69-118	0.460	20
1,2-Dichloroethane (1,2-DCA)	0.0178	0.0175	0.020	89	87	59-112	1.97	20
1,1-Dichloroethene	0.0160	0.0156	0.020	80	78	69-126	2.22	20
cis-1,2-Dichloroethene	0.0176	0.0174	0.020	88	87	69-116	1.36	20
trans-1,2-Dichloroethene	0.0183	0.0181	0.020	92	90	73-116	1.43	20
1,2-Dichloropropane	0.0175	0.0170	0.020	87	85	65-111	2.64	20
1,3-Dichloropropane	0.0166	0.0166	0.020	83	83	67-110	0.0323	20
2,2-Dichloropropane	0.0178	0.0175	0.020	89	87	65-125	1.63	20
1,1-Dichloropropene	0.0183	0.0180	0.020	92	90	70-123	1.50	20

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Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194542
Date Analyzed:	02/29/2020 - 03/01/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194542 2002901-026AMS/MSD

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
cis-1,3-Dichloropropene	0.0176	0.0176	0.020	88	88	68-126	0.196	20
trans-1,3-Dichloropropene	0.0164	0.0161	0.020	82	81	69-117	1.68	20
Diisopropyl ether (DIPE)	0.0165	0.0162	0.020	82	81	57-110	1.65	20
Ethylbenzene	0.0187	0.0189	0.020	94	95	80-128	0.931	20
Ethyl tert-butyl ether (ETBE)	0.0163	0.0160	0.020	82	80	54-106	2.23	20
Freon 113	0.0125	0.0122	0.020	63	61	60-108	2.54	20
Hexachlorobutadiene	0.0213	0.0222	0.020	107	111	67-182	3.79	20
Hexachloroethane	0.0208	0.0209	0.020	104	105	85-156	0.311	20
2-Hexanone	0.0153	0.0154	0.020	77	77	37-90	0.363	20
Isopropylbenzene	0.0193	0.0196	0.020	97	98	64-167	1.24	20
4-Isopropyl toluene	0.0191	0.0201	0.020	95	100	88-167	4.98	20
Methyl-t-butyl ether (MTBE)	0.0166	0.0162	0.020	83	81	60-102	3.04	20
Methylene chloride	0.0177	0.0174	0.020	88	87	71-117	1.69	20
4-Methyl-2-pentanone (MIBK)	0.0149	0.0143	0.020	74	72	48-90	3.94	20
Naphthalene	0.00927	0.00876	0.020	46	44	29-65	5.60	20
n-Propyl benzene	0.0222	0.0226	0.020	111	113	88-161	1.89	20
Styrene	0.0167	0.0167	0.020	83	84	70-108	0.198	20
1,1,1,2-Tetrachloroethane	0.0171	0.0170	0.020	85	85	69-117	0.268	20
1,1,2,2-Tetrachloroethane	0.0158	0.0151	0.020	79	76	53-96	4.09	20
Tetrachloroethene	0.0194	0.0196	0.020	97	98	78-128	1.01	20
Toluene	0.0190	0.0191	0.020	95	96	78-121	0.749	20
1,2,3-Trichlorobenzene	0.0111	0.0108	0.020	55	54	35-80	2.50	20
1,2,4-Trichlorobenzene	0.0135	0.0134	0.020	68	67	46-101	0.998	20
1,1,1-Trichloroethane	0.0186	0.0185	0.020	93	92	69-121	0.519	20
1,1,2-Trichloroethane	0.0175	0.0170	0.020	87	85	64-104	3.05	20
Trichloroethene	0.0179	0.0174	0.020	89	87	73-118	2.39	20
Trichlorofluoromethane	0.0149	0.0148	0.020	74	74	31-119	0.425	20
1,2,3-Trichloropropane	0.00933	0.00915	0.010	93	91	65-107	2.02	20
1,2,4-Trimethylbenzene	0.0209	0.0218	0.020	104	109	80-147	4.15	20
1,3,5-Trimethylbenzene	0.0203	0.0211	0.020	101	106	83-156	4.04	20
Vinyl Chloride	0.00572	0.00571	0.010	57	57	40-125	0.164	20
m,p-Xylene	0.0369	0.0373	0.040	92	93	80-122	1.02	20
o-Xylene	0.0178	0.0179	0.020	89	90	79-116	0.443	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194542
Date Analyzed:	02/29/2020 - 03/01/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194542 2002901-026AMS/MSD

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Surrogate Recovery								
Dibromofluoromethane	0.112	0.111	0.12	90	89	66-112	0.841	20
Toluene-d8	0.130	0.132	0.12	104	105	92-109	1.65	20
4-BFB	0.0127	0.0125	0.012	102	100	72-112	1.72	20
Benzene-d6	0.0833	0.0823	0.10	83	82	81-126	1.12	20
Ethylbenzene-d10	0.0934	0.0949	0.10	93	95	92-138	1.62	20
1,2-DCB-d4	0.0784	0.0789	0.10	78	79	68-108	0.674	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acetone	1	0.104	0.112	0.20	ND	52	56	48-114	7.43	20
tert-Amyl methyl ether (TAME)	1	0.00841	0.00940	0.020	ND	42,F1	47	44-94	11.2	20
Benzene	1	0.00838	0.00963	0.020	ND	42,F1	48,F1	50-115	14.0	20
Bromobenzene	1	0.0113	0.0120	0.020	ND	56,F1	60	60-114	6.33	20
Bromochloromethane	1	0.00754	0.00850	0.020	ND	38,F1	43,F1	50-113	12.0	20
Bromodichloromethane	1	0.00876	0.00962	0.020	ND	44,F1	48	46-109	9.42	20
Bromoform	1	0.0108	0.0113	0.020	ND	54	56	38-83	4.39	20
Bromomethane	1	0.00570	0.00675	0.020	ND	29	34	10-149	16.8	20
2-Butanone (MEK)	1	0.0431	0.0447	0.080	ND	54	56	46-111	3.60	20
t-Butyl alcohol (TBA)	1	0.0465	0.0489	0.080	ND	58	61	32-112	5.01	20
n-Butyl benzene	1	0.0148	0.0158	0.020	ND	74	79	71-156	6.58	20
sec-Butyl benzene	1	0.0137	0.0150	0.020	ND	68	75	28-190	9.19	20
tert-Butyl benzene	1	0.0132	0.0147	0.020	ND	66,F1	73	69-145	10.5	20
Carbon Disulfide	1	0.00578	0.00676	0.020	ND	29	34	19-135	15.6	20
Carbon Tetrachloride	1	0.00857	0.00989	0.020	ND	43,F1	49,F1	51-120	14.4	20
Chlorobenzene	1	0.0104	0.0113	0.020	ND	52,F1	57,F1	63-108	9.10	20
Chloroethane	1	0.00470	0.00563	0.020	ND	23,F1	28,F1	40-122	18.0	20
Chloroform	1	0.00922	0.0104	0.020	ND	46,F1	52,F1	55-114	12.3	20
Chloromethane	1	0.00300	0.00383	0.020	ND	15	19	14-128	24.2,F1	20
2-Chlorotoluene	1	0.0126	0.0137	0.020	ND	63	68	45-153	7.94	20
4-Chlorotoluene	1	0.0131	0.0141	0.020	ND	66	70	65-126	7.05	20
Dibromochloromethane	1	0.0109	0.0118	0.020	ND	55	59	48-97	7.55	20
1,2-Dibromo-3-chloropropane	1	0.00862	0.00913	0.010	ND	86	91	32-95	5.75	20
1,2-Dibromoethane (EDB)	1	0.00439	0.00488	0.010	ND	44,F1	49,F1	52-99	10.6	20
Dibromomethane	1	0.00804	0.00897	0.020	ND	40,F1	45,F1	50-100	10.9	20
1,2-Dichlorobenzene	1	0.0115	0.0119	0.020	ND	57	59	38-116	3.26	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194542
Date Analyzed:	02/29/2020 - 03/01/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194542 2002901-026AMS/MSD

QC Summary Report for SW8260B

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
1,3-Dichlorobenzene	1	0.0128	0.0134	0.020	ND	64	67	58-127	4.80	20
1,4-Dichlorobenzene	1	0.0133	0.0139	0.020	ND	66	70	54-123	4.93	20
Dichlorodifluoromethane	1	ND	0.00112	0.020	ND	0,F1	6,F1	8-93	200,F1	20
1,1-Dichloroethane	1	0.00799	0.00912	0.020	ND	40,F1	46,F1	53-115	13.2	20
1,2-Dichloroethane (1,2-DCA)	1	0.00833	0.00955	0.020	ND	42,F1	48	48-105	13.6	20
1,1-Dichloroethene	1	0.00610	0.00706	0.020	ND	30,F1	35,F1	47-127	14.7	20
cis-1,2-Dichloroethene	1	0.00767	0.00871	0.020	ND	38,F1	44,F1	56-111	12.7	20
trans-1,2-Dichloroethene	1	0.00697	0.00816	0.020	ND	35,F1	41,F1	51-115	15.8	20
1,2-Dichloropropane	1	0.00851	0.00973	0.020	ND	43,F1	49,F1	51-111	13.3	20
1,3-Dichloropropane	1	0.00953	0.0104	0.020	ND	48,F1	52	51-109	8.66	20
2,2-Dichloropropane	1	0.00798	0.00920	0.020	ND	40,F1	46,F1	50-116	14.3	20
1,1-Dichloropropene	1	0.00801	0.00924	0.020	ND	40,F1	46	46-124	14.3	20
cis-1,3-Dichloropropene	1	0.00883	0.00996	0.020	ND	44	50	41-127	12.0	20
trans-1,3-Dichloropropene	1	0.00870	0.00958	0.020	ND	44,F1	48,F1	50-111	9.55	20
Diisopropyl ether (DIPE)	1	0.00811	0.00926	0.020	ND	41,F1	46,F1	50-103	13.3	20
Ethylbenzene	1	0.0103	0.0116	0.020	ND	52,F1	58,F1	65-119	11.7	20
Ethyl tert-butyl ether (ETBE)	1	0.00828	0.00933	0.020	ND	41,F1	47	47-100	11.9	20
Freon 113	1	0.00498	0.00575	0.020	ND	25,F1	29,F1	48-98	14.3	20
Hexachlorobutadiene	1	0.0170	0.0179	0.020	ND	85	90	36-166	5.14	20
Hexachloroethane	1	0.0145	0.0160	0.020	ND	73	80	61-146	9.58	20
2-Hexanone	1	0.0104	0.0112	0.020	ND	52	56	31-87	7.45	20
Isopropylbenzene	1	0.0113	0.0126	0.020	ND	57	63	24-171	10.9	20
4-Isopropyl toluene	1	0.0127	0.0134	0.020	ND	63,F1	67,F1	69-150	5.16	20
Methyl-t-butyl ether (MTBE)	1	0.00825	0.00930	0.020	ND	41,F1	47,F1	50-95	12.1	20
Methylene chloride	1	ND	ND	0.020	ND	0,F1	0,F1	39-123	0	20
4-Methyl-2-pentanone (MIBK)	1	0.00910	0.00981	0.020	ND	46	49	41-83	7.47	20
Naphthalene	1	0.00843	0.00859	0.020	ND	42	43	13-77	1.84	20
n-Propyl benzene	1	0.0130	0.0144	0.020	ND	65	72	26-184	10.2	20
Styrene	1	0.0106	0.0114	0.020	ND	53,F1	57	54-105	7.48	20
1,1,1,2-Tetrachloroethane	1	0.0106	0.0116	0.020	ND	53,F1	58,F1	60-108	9.38	20
1,1,2,2-Tetrachloroethane	1	0.0124	0.0129	0.020	ND	62	64	37-108	3.65	20
Tetrachloroethene	1	0.00984	0.0112	0.020	ND	49,F1	56	54-127	12.6	20
Toluene	1	0.00950	0.0108	0.020	ND	47,F1	54,F1	63-114	13.0	20
1,2,3-Trichlorobenzene	1	0.0102	0.0104	0.020	ND	51	52	14-97	1.42	20
1,2,4-Trichlorobenzene	1	0.0117	0.0120	0.020	ND	58	60	31-106	2.46	20
1,1,1-Trichloroethane	1	0.00876	0.0102	0.020	ND	44,F1	51,F1	55-114	15.3	20
1,1,2-Trichloroethane	1	0.0110	0.0104	0.020	ND	55	52	50-104	5.01	20
Trichloroethene	1	0.00815	0.00917	0.020	ND	41,F1	46,F1	47-127	11.8	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194542
Date Analyzed:	02/29/2020 - 03/01/2020	**Extraction Method:**	SW5030B
Instrument:	GC10, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194542 2002901-026AMS/MSD

QC Summary Report for SW8260B

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Trichlorofluoromethane	1	0.00572	0.00670	0.020	ND	29	33	9-119	15.7	20
1,2,3-Trichloropropane	1	0.00693	0.00709	0.010	ND	69	71	45-115	2.18	20
1,2,4-Trimethylbenzene	1	0.0144	0.0155	0.020	ND	72	78	69-133	7.46	20
1,3,5-Trimethylbenzene	1	0.0134	0.0144	0.020	ND	67	72	27-172	7.73	20
Vinyl Chloride	1	0.00162	0.00199	0.010	ND	16,F1	20,F1	33-114	20.5,F1	20
m,p-Xylene	1	0.0208	0.0231	0.040	ND	52,F1	58,F1	62-117	10.3	20
o-Xylene	1	0.0109	0.0121	0.020	ND	55	60	19-144	10.1	20
Surrogate Recovery										
Dibromofluoromethane	1	0.111	0.111	0.12		89	89	66-116	0.111	20
Toluene-d8	1	0.130	0.131	0.12		104	105	86-110	0.405	20
4-BFB	1	0.0125	0.0125	0.012		100	100	71-114	0.163	20
Benzene-d6	1	0.0389	0.0445	0.10		39,F3	45,F3	62-122	13.6	20
Ethylbenzene-d10	1	0.0534	0.0593	0.10		53,F3	59,F3	69-130	10.6	20
1,2-DCB-d4	1	0.0634	0.0659	0.10		63	66	55-108	3.91	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194582
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194582 2002901-005AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
1,1-Biphenyl	ND	0.00230	0.0130	-	-	-
1,2,4-Trichlorobenzene	ND	0.150	0.250	-	-	-
1,2-Dichlorobenzene	ND	0.150	0.250	-	-	-
1,2-Diphenylhydrazine	ND	0.150	0.250	-	-	-
1,3-Dichlorobenzene	ND	0.130	0.250	-	-	-
1,4-Dichlorobenzene	ND	0.180	0.250	-	-	-
1-Methylnaphthalene	ND	0.00110	0.00130	-	-	-
2,4,5-Trichlorophenol	ND	0.00130	0.00250	-	-	-
2,4,6-Trichlorophenol	ND	0.00120	0.0130	-	-	-
2,4-Dichlorophenol	ND	0.00170	0.0130	-	-	-
2,4-Dimethylphenol	ND	0.160	0.250	-	-	-
2,4-Dinitrophenol	ND	0.0510	0.130	-	-	-
2,4-Dinitrotoluene	ND	0.00110	0.00630	-	-	-
2,6-Dinitrotoluene	ND	0.00130	0.00250	-	-	-
2-Chloronaphthalene	ND	0.140	0.250	-	-	-
2-Chlorophenol	ND	0.00200	0.00500	-	-	-
2-Methylnaphthalene	ND	0.00170	0.00250	-	-	-
2-Methylphenol (o-Cresol)	ND	0.270	0.500	-	-	-
2-Nitroaniline	ND	0.690	1.20	-	-	-
2-Nitrophenol	ND	0.660	1.20	-	-	-
3 & 4-Methylphenol (m,p-Cresol)	ND	0.240	0.250	-	-	-
3,3-Dichlorobenzidine	ND	0.00160	0.00250	-	-	-
3-Nitroaniline	ND	0.840	1.20	-	-	-
4,6-Dinitro-2-methylphenol	ND	0.810	1.20	-	-	-
4-Bromophenyl Phenyl Ether	ND	0.150	0.250	-	-	-
4-Chloro-3-methylphenol	ND	0.200	0.250	-	-	-
4-Chloroaniline	ND	0.00160	0.00250	-	-	-
4-Chlorophenyl Phenyl Ether	ND	0.160	0.250	-	-	-
4-Nitroaniline	ND	1.10	1.20	-	-	-
4-Nitrophenol	ND	0.770	1.20	-	-	-
Acenaphthene	ND	0.000770	0.00130	-	-	-
Acenaphthylene	ND	0.000410	0.00130	-	-	-
Acetochlor	ND	0.250	0.250	-	-	-
Anthracene	ND	0.000820	0.00130	-	-	-
Benzidine	ND	0.670	1.20	-	-	-
Benzo (a) anthracene	ND	0.00430	0.00500	-	-	-
Benzo (a) pyrene	ND	0.00120	0.00250	-	-	-
Benzo (b) fluoranthene	ND	0.00160	0.00630	-	-	-

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194582
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194582 2002901-005AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Benzo (g,h,i) perylene	ND	0.00110	0.00250	-	-	-
Benzo (k) fluoranthene	ND	0.000790	0.00130	-	-	-
Benzyl Alcohol	ND	0.760	1.20	-	-	-
Bis (2-chloroethoxy) Methane	ND	0.150	0.250	-	-	-
Bis (2-chloroethyl) Ether	ND	0.00160	0.00250	-	-	-
Bis (2-chloroisopropyl) Ether	ND	0.00140	0.00250	-	-	-
Bis (2-ethylhexyl) Adipate	ND	0.150	0.500	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	0.00340	0.00500	-	-	-
Butylbenzyl Phthalate	ND	0.0210	0.0250	-	-	-
Chrysene	ND	0.000800	0.00250	-	-	-
Dibenzo (a,h) anthracene	ND	0.00150	0.00250	-	-	-
Dibenzofuran	ND	0.160	0.250	-	-	-
Diethyl Phthalate	ND	0.00360	0.00500	-	-	-
Dimethyl Phthalate	ND	0.00250	0.00250	-	-	-
Di-n-butyl Phthalate	0.00438,J	0.00250	0.00500	-	-	-
Di-n-octyl Phthalate	ND	0.00430	0.00500	-	-	-
Fluoranthene	ND	0.00110	0.00130	-	-	-
Fluorene	ND	0.000860	0.00250	-	-	-
Hexachlorobenzene	ND	0.000570	0.00130	-	-	-
Hexachlorobutadiene	ND	0.000420	0.00250	-	-	-
Hexachlorocyclopentadiene	ND	0.110	2.00	-	-	-
Hexachloroethane	ND	0.00110	0.00250	-	-	-
Indeno (1,2,3-cd) pyrene	0.00184,J	0.00100	0.00250	-	-	-
Isophorone	ND	0.150	0.250	-	-	-
Naphthalene	ND	0.000690	0.00130	-	-	-
Nitrobenzene	ND	0.160	0.250	-	-	-
N-Nitrosodimethylamine	ND	0.650	1.20	-	-	-
N-Nitrosodi-n-propylamine	ND	0.140	0.250	-	-	-
N-Nitrosodiphenylamine	ND	0.150	0.250	-	-	-
Pentachlorophenol	ND	0.0140	0.0310	-	-	-
Phenanthrene	ND	0.000670	0.00500	-	-	-
Phenol	ND	0.000940	0.00500	-	-	-
Pyrene	ND	0.00140	0.00250	-	-	-
Pyridine	ND	0.180	0.250	-	-	-

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194582
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194582 2002901-005AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Surrogate Recovery						
2-Fluorophenol	1.19			1.25	95	54-131
Phenol-d5	1.17			1.25	94	52-129
Nitrobenzene-d5	1.10			1.25	88	43-127
2-Fluorobiphenyl	1.10			1.25	88	42-116
2,4,6-Tribromophenol	0.600			1.25	48	39-119
4-Terphenyl-d14	0.884			1.25	71	36-118

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194582
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194582 2002901-005AMS/MSD

QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
1,1-Biphenyl	0.120	0.113	0.12	96	91	67-130	5.28	30
1,2,4-Trichlorobenzene	2.84	2.70	2.5	113	108	69-130	4.89	30
1,2-Dichlorobenzene	2.04	2.04	2.5	82	82	68-114	0.233	30
1,2-Diphenylhydrazine	2.61	2.43	2.5	104	97	62-142	6.91	30
1,3-Dichlorobenzene	2.02	2.02	2.5	81	81	69-116	0.111	30
1,4-Dichlorobenzene	2.14	2.13	2.5	86	85	64-117	0.884	30
1-Methylnaphthalene	0.117	0.111	0.12	93	89	65-134	4.84	30
2,4,5-Trichlorophenol	0.139	0.132	0.12	111	105	68-150	5.22	30
2,4,6-Trichlorophenol	0.134	0.128	0.12	107	102	70-144	4.40	30
2,4-Dichlorophenol	0.140	0.135	0.12	112	108	78-144	3.42	30
2,4-Dimethylphenol	2.80	2.70	2.5	112	108	71-152	3.71	30
2,4-Dinitrophenol	0.413	0.398	2.5	17	16	1-156	3.80	30
2,4-Dinitrotoluene	0.139	0.135	0.12	111	108	68-144	2.98	30
2,6-Dinitrotoluene	0.125	0.121	0.12	100	97	69-148	3.69	30
2-Chloronaphthalene	2.66	2.51	2.5	107	100	71-133	6.01	30
2-Chlorophenol	0.115	0.115	0.12	92	92	73-133	0.240	30
2-Methylnaphthalene	0.113	0.107	0.12	90	86	72-139	5.03	30
2-Methylphenol (o-Cresol)	2.77	2.74	2.5	111	110	69-138	1.14	30
2-Nitroaniline	13.8	13.1	12.5	110	105	72-143	5.04	30
2-Nitrophenol	13.7	13.2	12.5	109	106	80-141	3.46	30
3 & 4-Methylphenol (m,p-Cresol)	2.53	2.48	2.5	101	99	69-128	1.84	30
3,3-Dichlorobenzidine	0.126	0.122	0.12	101	98	11-163	3.03	30
3-Nitroaniline	13.6	13.0	12.5	109	104	57-122	4.66	30
4,6-Dinitro-2-methylphenol	3.42	3.16	12.5	27	25	14-155	7.84	30
4-Bromophenyl Phenyl Ether	2.47	2.41	2.5	99	96	68-136	2.79	30
4-Chloro-3-methylphenol	2.72	2.58	2.5	109	103	78-149	5.56	30
4-Chloroaniline	0.125	0.118	0.12	100	95	46-130	5.25	30
4-Chlorophenyl Phenyl Ether	2.54	2.38	2.5	102	95	71-132	6.65	30
4-Nitroaniline	13.5	12.7	12.5	108	101	68-133	5.94	30
4-Nitrophenol	12.2	11.6	12.5	97	93	67-144	4.44	30
Acenaphthene	0.134	0.126	0.12	107	101	68-134	5.49	30
Acenaphthylene	0.100	0.0950	0.12	80	76	65-141	5.64	30
Acetochlor	2.55	2.41	2.5	102	96	65-136	5.43	30
Anthracene	0.153	0.144	0.12	122	115	65-147	5.97	30
Benzidine	10.2	9.69	12.5	82	78	7-97	5.08	30
Benzo (a) anthracene	0.111	0.108	0.12	89	86	61-136	2.98	30
Benzo (a) pyrene	0.117	0.112	0.12	93	90	59-150	4.09	30
Benzo (b) fluoranthene	0.102	0.0901	0.12	82	72	43-160	12.7	30

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194582
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194582 2002901-005AMS/MSD

QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Benzo (g,h,i) perylene	0.129	0.124	0.12	103	99	54-142	4.32	30
Benzo (k) fluoranthene	0.129	0.131	0.12	103	105	59-141	1.80	30
Benzyl Alcohol	12.1	11.9	12.5	97	95	48-145	1.95	30
Bis (2-chloroethoxy) Methane	2.52	2.43	2.5	101	97	71-138	3.55	30
Bis (2-chloroethyl) Ether	0.0925	0.0908	0.12	74	73	60-128	1.93	30
Bis (2-chloroisopropyl) Ether	0.112	0.104	0.12	89	83	67-129	7.23	30
Bis (2-ethylhexyl) Adipate	2.60	2.50	2.5	104	100	56-162	3.86	30
Bis (2-ethylhexyl) Phthalate	0.128	0.124	0.12	102	99	49-168	3.59	30
Butylbenzyl Phthalate	0.124	0.118	0.12	99	95	57-161	4.52	30
Chrysene	0.121	0.116	0.12	97	92	58-140	4.70	30
Dibenzo (a,h) anthracene	0.122	0.120	0.12	98	96	57-151	2.48	30
Dibenzofuran	2.41	2.28	2.5	96	91	70-134	5.48	30
Diethyl Phthalate	0.130	0.125	0.12	104	100	67-146	3.93	30
Dimethyl Phthalate	0.124	0.117	0.12	99	94	70-135	5.38	30
Di-n-butyl Phthalate	0.119	0.113	0.12	95	91	65-147	4.91	30
Di-n-octyl Phthalate	0.126	0.120	0.12	101	96	51-175	4.70	30
Fluoranthene	0.118	0.111	0.12	94	89	66-146	5.70	30
Fluorene	0.133	0.127	0.12	106	102	72-142	4.49	30
Hexachlorobenzene	0.117	0.111	0.12	94	89	65-127	5.35	30
Hexachlorobutadiene	0.117	0.112	0.12	94	89	68-131	5.06	30
Hexachlorocyclopentadiene	13.4	12.6	12.5	107	101	38-134	5.71	30
Hexachloroethane	0.0994	0.0980	0.12	80	78	57-117	1.43	30
Indeno (1,2,3-cd) pyrene	0.118	0.114	0.12	95	91	57-145	3.58	30
Isophorone	2.56	2.43	2.5	102	97	69-139	4.88	30
Naphthalene	0.108	0.103	0.12	87	83	64-127	4.86	30
Nitrobenzene	2.48	2.43	2.5	99	97	66-136	2.10	30
N-Nitrosodi-n-propylamine	2.03	1.98	2.5	81	79	74-118	2.77	30
N-Nitrosodiphenylamine	2.58	2.44	2.5	103	97	67-138	5.61	30
Pentachlorophenol	0.439	0.426	0.62	70	68	50-153	3.02	30
Phenanthrene	0.124	0.117	0.12	99	94	66-129	5.46	30
Phenol	0.484	0.478	0.50	97	96	58-136	1.26	30
Pyrene	0.129	0.124	0.12	103	99	55-148	3.82	30
Pyridine	1.58	1.57	2.5	63	63	46-93	0.328	30

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194582
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194582 2002901-005AMS/MSD

QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Surrogate Recovery								
2-Fluorophenol	1.03	1.06	1.25	83	85	68-128	2.48	30
Phenol-d5	1.07	1.07	1.25	85	85	73-121	0.194	30
Nitrobenzene-d5	1.10	1.09	1.25	88	87	59-138	1.28	30
2-Fluorobiphenyl	1.10	1.06	1.25	88	85	59-129	3.84	30
2,4,6-Tribromophenol	1.06	1.03	1.25	85	83	46-142	3.12	30
4-Terphenyl-d14	0.910	0.876	1.25	73	70	50-143	3.79	30

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
1,1-Biphenyl	1	0.116	0.117	0.12	ND	93	94	2-199	1.44	30
1,2,4-Trichlorobenzene	1	2.70	2.84	2.5	ND	108	114	36-129	5.17	30
1,2-Dichlorobenzene	1	1.93	2.04	2.5	ND	77	82	31-136	5.65	30
1,2-Diphenylhydrazine	1	2.43	2.60	2.5	ND	97	104	37-127	6.65	30
1,3-Dichlorobenzene	1	1.94	2.03	2.5	ND	78	81	33-129	4.45	30
1,4-Dichlorobenzene	1	2.07	2.16	2.5	ND	83	86	30-129	4.08	30
1-Methylnaphthalene	1	0.113	0.118	0.12	ND	90	95	28-150	4.60	30
2,4,5-Trichlorophenol	1	0.146	0.150	0.12	ND	117	120	36-143	2.61	30
2,4,6-Trichlorophenol	1	0.139	0.142	0.12	ND	111	114	30-139	1.98	30
2,4-Dichlorophenol	1	0.150	0.158	2.5	ND	6,F1	6,F1	45-134	5.09	30
2,4-Dimethylphenol	1	2.82	3.00	2.5	ND	113	120	27-149	6.09	30
2,4-Dinitrophenol	1	1.60	1.65	2.5	ND	64	66	2-153	3.04	30
2,4-Dinitrotoluene	1	0.146	0.146	0.12	ND	117	117	20-153	0.247	30
2,6-Dinitrotoluene	1	0.131	0.132	0.12	ND	105	105	24-153	0.509	30
2-Chloronaphthalene	1	2.55	2.60	2.5	ND	102	104	35-124	1.82	30
2-Chlorophenol	1	0.123	0.126	0.12	ND	98	101	44-140	2.67	30
2-Methylnaphthalene	1	0.111	0.115	0.12	ND	89	92	38-139	3.30	30
2-Methylphenol (o-Cresol)	1	2.89	3.00	2.5	ND	115	120	36-145	3.75	30
2-Nitroaniline	1	13.8	13.6	12.5	ND	110	109	35-133	1.68	30
2-Nitrophenol	1	13.7	14.5	12.5	ND	110	116	38-127	5.19	30
3 & 4-Methylphenol (m,p-Cresol)	1	2.62	2.73	2.5	ND	105	109	29-158	3.90	30
3,3-Dichlorobenzidine	1	0.127	0.134	0.12	ND	102	107	16-152	5.39	30
3-Nitroaniline	1	13.6	13.7	12.5	ND	109	109	32-127	0.0496	30
4,6-Dinitro-2-methylphenol	1	9.79	10.0	12.5	ND	78	80	2-145	2.21	30
4-Bromophenyl Phenyl Ether	1	2.36	2.50	2.5	ND	95	100	34-128	5.62	30
4-Chloro-3-methylphenol	1	2.77	2.88	2.5	ND	111	115	37-148	4.20	30

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194582
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194582 2002901-005AMS/MSD

QC Summary Report for SW8270C

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
4-Chloroaniline	1	0.127	0.130	0.12	ND	102	104	25-134	1.83	30
4-Chlorophenyl Phenyl Ether	1	2.42	2.50	2.5	ND	97	100	35-131	3.39	30
4-Nitroaniline	1	13.9	13.6	12.5	ND	111	109	34-132	1.61	30
4-Nitrophenol	1	12.4	12.1	12.5	ND	99	97	28-137	2.33	30
Acenaphthene	1	0.131	0.133	0.12	ND	105	106	31-140	1.41	30
Acenaphthylene	1	0.0986	0.100	0.12	ND	79	80	23-142	1.87	30
Acetochlor	1	2.46	2.51	2.5	ND	98	100	3-151	2.06	30
Anthracene	1	0.148	0.156	0.12	0.001302	118	124	27-142	4.76	30
Benzidine	1	ND	0.745	12.5	ND	0,F1	6	2-88	200,F1	30
Benzo (a) anthracene	1	0.110	0.111	0.12	ND	84	85	2-149	1.58	30
Benzo (a) pyrene	1	0.115	0.118	0.12	ND	91	92	15-158	1.84	30
Benzo (b) fluoranthene	1	0.0932	0.0953	0.62	ND	15	15	2-145	2.21	30
Benzo (g,h,i) perylene	1	0.125	0.129	0.12	ND	99	102	4-155	3.26	30
Benzo (k) fluoranthene	1	0.133	0.132	0.12	ND	106	105	19-148	0.495	30
Benzyl Alcohol	1	12.4	12.8	12.5	ND	99	102	2-163	2.69	30
Bis (2-chloroethoxy) Methane	1	2.52	2.65	2.5	ND	101	106	35-132	5.02	30
Bis (2-chloroethyl) Ether	1	0.0912	0.0955	0.12	ND	73	76	40-140	4.55	30
Bis (2-chloroisopropyl) Ether	1	0.107	0.106	0.12	ND	86	85	33-147	0.832	30
Bis (2-ethylhexyl) Adipate	1	2.45	2.51	2.5	ND	98	100	31-138	2.47	30
Bis (2-ethylhexyl) Phthalate	1	0.135	0.141	0.12	0.007606	102	107	6-195	4.58	30
Butylbenzyl Phthalate	1	0.123	0.125	0.12	ND	98	100	32-143	2.06	30
Chrysene	1	0.117	0.118	0.12	ND	92	93	18-137	1.02	30
Dibenzo (a,h) anthracene	1	0.116	0.120	0.12	ND	93	96	18-149	3.85	30
Dibenzofuran	1	2.36	2.39	2.5	ND	94	96	34-132	1.52	30
Diethyl Phthalate	1	0.130	0.130	0.12	ND	104	104	38-146	0.347	30
Dimethyl Phthalate	1	0.123	0.123	0.12	ND	98	98	36-133	0.146	30
Di-n-butyl Phthalate	1	0.120	0.126	0.12	0.005590	91	96	42-145	5.13	30
Di-n-octyl Phthalate	1	0.132	0.139	0.12	ND	105	111	23-198	5.36	30
Fluoranthene	1	0.122	0.126	0.12	0.005842	93	96	9-169	3.18	30
Fluorene	1	0.129	0.130	0.12	ND	103	104	31-148	0.899	30
Hexachlorobenzene	1	0.111	0.120	0.12	ND	89	96	33-124	7.34	30
Hexachlorobutadiene	1	0.108	0.115	0.12	ND	86	92	32-131	6.07	30
Hexachlorocyclopentadiene	1	12.0	12.7	12.5	ND	96	102	2-108	5.51	30
Hexachloroethane	1	0.0927	0.0987	0.12	ND	74	79	25-134	6.32	30
Indeno (1,2,3-cd) pyrene	1	0.114	0.118	0.12	ND	90	93	11-152	3.53	30
Isophorone	1	2.47	2.62	2.5	ND	99	105	34-126	5.90	30
Naphthalene	1	0.104	0.109	0.12	ND	83	87	20-146	5.02	30
Nitrobenzene	1	2.41	2.62	2.5	ND	96	105	29-139	8.27	30

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194582
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194582 2002901-005AMS/MSD

QC Summary Report for SW8270C

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
N-Nitrosodi-n-propylamine	1	2.06	2.13	2.5	ND	82	85	29-146	3.24	30
N-Nitrosodiphenylamine	1	2.46	2.58	2.5	ND	98	103	27-130	4.67	30
Pentachlorophenol	1	0.586	0.626	0.62	ND	94	100	3-129	6.60	30
Phenanthrene	1	0.122	0.128	0.12	0.005784	93	98	2-176	4.51	30
Phenol	1	0.505	0.521	0.50	ND	101	104	24-151	3.14	30
Pyrene	1	0.122	0.123	0.12	0.004255	94	95	17-144	1.04	30
Pyridine	1	1.41	1.53	2.5	ND	57	61	2-110	8.19	30
Surrogate Recovery										
2-Fluorophenol	1	1.10	1.15	1.25		88	92	56-152	4.30	30
Phenol-d5	1	1.09	1.16	1.25		87	93	54-146	5.89	30
Nitrobenzene-d5	1	1.06	1.17	1.25		85	93	47-147	9.33	30
2-Fluorobiphenyl	1	1.05	1.08	1.25		84	86	46-141	2.21	30
2,4,6-Tribromophenol	1	1.03	1.11	1.25		82	89	25-166	7.80	30
4-Terphenyl-d14	1	0.857	0.873	1.25		69	70	39-153	1.88	30

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194583
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194583

QC Summary Report for SW8270C

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
1,1-Biphenyl	ND	0.00230	0.0130	-	-	-
1,2,4-Trichlorobenzene	ND	0.150	0.250	-	-	-
1,2-Dichlorobenzene	ND	0.150	0.250	-	-	-
1,2-Diphenylhydrazine	ND	0.150	0.250	-	-	-
1,3-Dichlorobenzene	ND	0.130	0.250	-	-	-
1,4-Dichlorobenzene	ND	0.180	0.250	-	-	-
1-Methylnaphthalene	ND	0.00110	0.00130	-	-	-
2,4,5-Trichlorophenol	ND	0.00130	0.00250	-	-	-
2,4,6-Trichlorophenol	ND	0.00120	0.0130	-	-	-
2,4-Dichlorophenol	ND	0.00170	0.0130	-	-	-
2,4-Dimethylphenol	ND	0.160	0.250	-	-	-
2,4-Dinitrophenol	ND	0.0510	0.130	-	-	-
2,4-Dinitrotoluene	ND	0.00110	0.00630	-	-	-
2,6-Dinitrotoluene	ND	0.00130	0.00250	-	-	-
2-Chloronaphthalene	ND	0.140	0.250	-	-	-
2-Chlorophenol	ND	0.00200	0.00500	-	-	-
2-Methylnaphthalene	ND	0.00170	0.00250	-	-	-
2-Methylphenol (o-Cresol)	ND	0.270	0.500	-	-	-
2-Nitroaniline	ND	0.690	1.20	-	-	-
2-Nitrophenol	ND	0.660	1.20	-	-	-
3 & 4-Methylphenol (m,p-Cresol)	ND	0.240	0.250	-	-	-
3,3-Dichlorobenzidine	ND	0.00160	0.00250	-	-	-
3-Nitroaniline	ND	0.840	1.20	-	-	-
4,6-Dinitro-2-methylphenol	ND	0.810	1.20	-	-	-
4-Bromophenyl Phenyl Ether	ND	0.150	0.250	-	-	-
4-Chloro-3-methylphenol	ND	0.200	0.250	-	-	-
4-Chloroaniline	ND	0.00160	0.00250	-	-	-
4-Chlorophenyl Phenyl Ether	ND	0.160	0.250	-	-	-
4-Nitroaniline	ND	1.10	1.20	-	-	-
4-Nitrophenol	ND	0.770	1.20	-	-	-
Acenaphthene	ND	0.000770	0.00130	-	-	-
Acenaphthylene	ND	0.000410	0.00130	-	-	-
Acetochlor	ND	0.250	0.250	-	-	-
Anthracene	ND	0.000820	0.00130	-	-	-
Benzidine	ND	0.670	1.20	-	-	-
Benzo (a) anthracene	ND	0.00430	0.00500	-	-	-
Benzo (a) pyrene	ND	0.00120	0.00250	-	-	-
Benzo (b) fluoranthene	ND	0.00160	0.00630	-	-	-

(Cont.)

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194583
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194583

QC Summary Report for SW8270C

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Benzo (g,h,i) perylene	ND	0.00110	0.00250	-	-	-
Benzo (k) fluoranthene	ND	0.000790	0.00130	-	-	-
Benzyl Alcohol	ND	0.760	1.20	-	-	-
Bis (2-chloroethoxy) Methane	ND	0.150	0.250	-	-	-
Bis (2-chloroethyl) Ether	ND	0.00160	0.00250	-	-	-
Bis (2-chloroisopropyl) Ether	ND	0.00140	0.00250	-	-	-
Bis (2-ethylhexyl) Adipate	ND	0.150	0.500	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	0.00340	0.00500	-	-	-
Butylbenzyl Phthalate	ND	0.0210	0.0250	-	-	-
Chrysene	0.00114,J	0.000800	0.00250	-	-	-
Dibenzo (a,h) anthracene	ND	0.00150	0.00250	-	-	-
Dibenzofuran	ND	0.160	0.250	-	-	-
Diethyl Phthalate	ND	0.00360	0.00500	-	-	-
Dimethyl Phthalate	ND	0.00250	0.00250	-	-	-
Di-n-butyl Phthalate	0.00259,J	0.00250	0.00500	-	-	-
Di-n-octyl Phthalate	ND	0.00430	0.00500	-	-	-
Fluoranthene	0.00112,J	0.00110	0.00130	-	-	-
Fluorene	ND	0.000860	0.00250	-	-	-
Hexachlorobenzene	ND	0.000570	0.00130	-	-	-
Hexachlorobutadiene	ND	0.000420	0.00250	-	-	-
Hexachlorocyclopentadiene	ND	0.110	2.00	-	-	-
Hexachloroethane	ND	0.00110	0.00250	-	-	-
Indeno (1,2,3-cd) pyrene	0.00177,J	0.00100	0.00250	-	-	-
Isophorone	ND	0.150	0.250	-	-	-
Naphthalene	ND	0.000690	0.00130	-	-	-
Nitrobenzene	ND	0.160	0.250	-	-	-
N-Nitrosodimethylamine	ND	0.650	1.20	-	-	-
N-Nitrosodi-n-propylamine	ND	0.140	0.250	-	-	-
N-Nitrosodiphenylamine	ND	0.150	0.250	-	-	-
Pentachlorophenol	ND	0.0140	0.0310	-	-	-
Phenanthrene	ND	0.000670	0.00500	-	-	-
Phenol	ND	0.000940	0.00500	-	-	-
Pyrene	ND	0.00140	0.00250	-	-	-
Pyridine	ND	0.180	0.250	-	-	-

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194583
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194583

QC Summary Report for SW8270C

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Surrogate Recovery						
2-Fluorophenol	1.21			1.25	97	54-131
Phenol-d5	1.21			1.25	97	52-129
Nitrobenzene-d5	1.13			1.25	90	43-127
2-Fluorobiphenyl	1.13			1.25	91	42-116
2,4,6-Tribromophenol	0.434			1.25	35,F3	39-119
4-Terphenyl-d14	0.919			1.25	74	36-118

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194583
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194583

QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
1,1-Biphenyl	0.115	0.119	0.12	92	95	67-130	3.57	30
1,2,4-Trichlorobenzene	2.81	2.85	2.5	112	114	69-130	1.54	30
1,2-Dichlorobenzene	2.08	2.03	2.5	83	81	68-114	2.21	30
1,2-Diphenylhydrazine	2.66	2.67	2.5	106	107	62-142	0.579	30
1,3-Dichlorobenzene	2.13	2.05	2.5	85	82	69-116	3.76	30
1,4-Dichlorobenzene	2.18	2.13	2.5	87	85	64-117	2.23	30
1-Methylnaphthalene	0.115	0.117	0.12	92	93	65-134	1.63	30
2,4,5-Trichlorophenol	0.128	0.139	0.12	102	111	68-150	8.57	30
2,4,6-Trichlorophenol	0.120	0.132	0.12	96	105	70-144	9.46	30
2,4-Dichlorophenol	0.134	0.145	0.12	107	116	78-144	8.06	30
2,4-Dimethylphenol	2.73	2.79	2.5	109	111	71-152	2.08	30
2,4-Dinitrophenol	0.369	0.496	2.5	15	20	1-156	29.4	30
2,4-Dinitrotoluene	0.135	0.145	0.12	108	116	68-144	7.00	30
2,6-Dinitrotoluene	0.117	0.126	0.12	94	101	69-148	7.01	30
2-Chloronaphthalene	2.48	2.77	2.5	99	111	71-133	11.1	30
2-Chlorophenol	0.109	0.111	0.12	87	89	73-133	1.89	30
2-Methylnaphthalene	0.110	0.112	0.12	88	90	72-139	2.35	30
2-Methylphenol (o-Cresol)	2.83	2.78	2.5	113	111	69-138	1.88	30
2-Nitroaniline	13.9	14.3	12.5	111	114	72-143	2.68	30
2-Nitrophenol	13.2	13.9	12.5	106	111	80-141	4.80	30
3 & 4-Methylphenol (m,p-Cresol)	2.60	2.48	2.5	104	99	69-128	4.68	30
3,3-Dichlorobenzidine	0.110	0.115	0.12	88	92	11-163	4.36	30
3-Nitroaniline	13.8	13.9	12.5	110	111	57-122	0.710	30
4,6-Dinitro-2-methylphenol	3.20	4.12	12.5	26	33	14-155	25.3	30
4-Bromophenyl Phenyl Ether	2.47	2.52	2.5	99	101	68-136	1.66	30
4-Chloro-3-methylphenol	2.65	2.80	2.5	106	112	78-149	5.60	30
4-Chloroaniline	0.116	0.120	0.12	93	96	46-130	3.42	30
4-Chlorophenyl Phenyl Ether	2.46	2.57	2.5	98	103	71-132	4.18	30
4-Nitroaniline	13.9	13.9	12.5	111	112	68-133	0.452	30
4-Nitrophenol	12.6	13.2	12.5	101	105	67-144	4.08	30
Acenaphthene	0.131	0.136	0.12	105	109	68-134	3.77	30
Acenaphthylene	0.0936	0.0976	0.12	75	78	65-141	4.18	30
Acetochlor	2.59	2.66	2.5	104	106	65-136	2.82	30
Anthracene	0.150	0.152	0.12	120	121	65-147	1.25	30
Benzidine	9.52	9.12	12.5	76	73	7-97	4.36	30
Benzo (a) anthracene	0.108	0.113	0.12	87	90	61-136	4.37	30
Benzo (a) pyrene	0.101	0.109	0.12	81	87	59-150	7.72	30
Benzo (b) fluoranthene	0.0863	0.0905	0.12	69	72	43-160	4.73	30

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194583
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194583

QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Benzo (g,h,i) perylene	0.114	0.121	0.12	91	97	54-142	6.27	30
Benzo (k) fluoranthene	0.140	0.142	0.12	112	114	59-141	1.12	30
Benzyl Alcohol	12.4	12.1	12.5	100	97	48-145	2.51	30
Bis (2-chloroethoxy) Methane	2.57	2.57	2.5	103	103	71-138	0.0662	30
Bis (2-chloroethyl) Ether	0.0929	0.0909	0.12	74	73	60-128	2.11	30
Bis (2-chloroisopropyl) Ether	0.105	0.102	0.12	84	82	67-129	2.25	30
Bis (2-ethylhexyl) Adipate	2.42	2.52	2.5	97	101	56-162	4.10	30
Bis (2-ethylhexyl) Phthalate	0.104	0.110	0.12	83	88	49-168	5.92	30
Butylbenzyl Phthalate	0.107	0.115	0.12	86	92	57-161	7.31	30
Chrysene	0.123	0.126	0.12	99	100	58-140	1.86	30
Dibenzo (a,h) anthracene	0.107	0.114	0.12	85	92	57-151	7.06	30
Dibenzofuran	2.39	2.48	2.5	96	99	70-134	3.63	30
Diethyl Phthalate	0.130	0.136	0.12	104	109	67-146	4.46	30
Dimethyl Phthalate	0.120	0.125	0.12	96	100	70-135	3.80	30
Di-n-butyl Phthalate	0.110	0.114	0.12	88	91	65-147	4.05	30
Di-n-octyl Phthalate	0.0958	0.104	0.12	77	83	51-175	8.23	30
Fluoranthene	0.115	0.117	0.12	92	94	66-146	1.83	30
Fluorene	0.130	0.136	0.12	104	109	72-142	4.34	30
Hexachlorobenzene	0.120	0.119	0.12	96	95	65-127	1.12	30
Hexachlorobutadiene	0.116	0.119	0.12	93	96	68-131	2.54	30
Hexachlorocyclopentadiene	12.2	13.3	12.5	97	106	38-134	8.58	30
Hexachloroethane	0.101	0.0995	0.12	81	80	57-117	1.47	30
Indeno (1,2,3-cd) pyrene	0.104	0.111	0.12	83	89	57-145	6.56	30
Isophorone	2.50	2.55	2.5	100	102	69-139	2.00	30
Naphthalene	0.108	0.109	0.12	86	87	64-127	1.41	30
Nitrobenzene	2.46	2.56	2.5	98	102	66-136	3.83	30
N-Nitrosodi-n-propylamine	2.14	2.08	2.5	86	83	74-118	3.06	30
N-Nitrosodiphenylamine	2.66	2.65	2.5	106	106	67-138	0.568	30
Pentachlorophenol	0.412	0.474	0.62	66	76	50-153	14.0	30
Phenanthrene	0.126	0.126	0.12	100	101	66-129	0.406	30
Phenol	0.496	0.485	0.50	99	97	58-136	2.25	30
Pyrene	0.128	0.131	0.12	102	105	55-148	2.70	30
Pyridine	1.56	1.56	2.5	62	62	46-93	0.165	30

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194583
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3550B
Instrument:	GC21	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194583

QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Surrogate Recovery								
2-Fluorophenol	1.04	1.04	1.25	83	83	68-128	0.277	30
Phenol-d5	1.06	1.07	1.25	85	86	73-121	1.39	30
Nitrobenzene-d5	1.05	1.12	1.25	84	90	59-138	7.17	30
2-Fluorobiphenyl	1.05	1.12	1.25	84	90	59-129	6.09	30
2,4,6-Tribromophenol	1.07	1.11	1.25	86	89	46-142	3.76	30
4-Terphenyl-d14	0.885	0.929	1.25	71	74	50-143	4.91	30

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020 - 02/25/2020	**BatchID:**	194520
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3050B
Instrument:	ICP-MS2	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194520

QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Antimony	ND	0.0940	0.500	-	-	-
Arsenic	ND	0.140	0.500	-	-	-
Barium	ND	0.970	5.00	-	-	-
Beryllium	ND	0.0720	0.500	-	-	-
Cadmium	ND	0.0580	0.250	-	-	-
Chromium	ND	0.0920	0.500	-	-	-
Cobalt	ND	0.0560	0.500	-	-	-
Copper	ND	0.0690	0.500	-	-	-
Lead	ND	0.0940	0.500	-	-	-
Mercury	ND	0.00500	0.0500	-	-	-
Molybdenum	ND	0.230	0.500	-	-	-
Nickel	ND	0.0720	0.500	-	-	-
Selenium	ND	0.130	0.500	-	-	-
Silver	ND	0.0550	0.500	-	-	-
Thallium	ND	0.100	0.500	-	-	-
Vanadium	ND	0.0640	0.500	-	-	-
Zinc	ND	1.40	5.00	-	-	-
Surrogate Recovery						
Terbium	478			500	96	70-130

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020 - 02/25/2020	**BatchID:**	194520
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3050B
Instrument:	ICP-MS2	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194520

QC Summary Report for Metals

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Antimony	47.1	47.2	50	94	94	75-125	0.297	20
Arsenic	47.8	49.3	50	96	99	75-125	3.03	20
Barium	486	488	500	97	98	75-125	0.328	20
Beryllium	47.2	47.3	50	94	95	75-125	0.0635	20
Cadmium	48.0	48.0	50	96	96	75-125	0.0417	20
Chromium	49.0	48.8	50	98	98	75-125	0.327	20
Cobalt	49.5	49.6	50	99	99	75-125	0.0202	20
Copper	48.9	49.4	50	98	99	75-125	1.18	20
Lead	48.7	48.4	50	97	97	75-125	0.659	20
Mercury	1.17	1.17	1.25	94	94	75-125	0.171	20
Molybdenum	48.8	49.2	50	98	98	75-125	0.755	20
Nickel	48.9	49.6	50	98	99	75-125	1.46	20
Selenium	48.9	48.2	50	98	96	75-125	1.44	20
Silver	45.5	45.1	50	91	90	75-125	0.927	20
Thallium	49.3	49.8	50	99	100	75-125	0.929	20
Vanadium	49.0	48.9	50	98	98	75-125	0.266	20
Zinc	484	489	500	97	98	75-125	1.01	20
Surrogate Recovery								
Terbium	499	506	500	100	101	70-130	1.41	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020 - 02/25/2020	**BatchID:**	194536
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3050B
Instrument:	ICP-MS4	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194536 2002901-008AMS/MSD

QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Antimony	ND	0.0940	0.500	-	-	-
Arsenic	ND	0.140	0.500	-	-	-
Barium	ND	0.970	5.00	-	-	-
Beryllium	ND	0.0720	0.500	-	-	-
Cadmium	ND	0.0580	0.250	-	-	-
Chromium	ND	0.0920	0.500	-	-	-
Cobalt	ND	0.0560	0.500	-	-	-
Copper	ND	0.0690	0.500	-	-	-
Lead	ND	0.0940	0.500	-	-	-
Mercury	0.0210,J	0.00500	0.0500	-	-	-
Molybdenum	ND	0.230	0.500	-	-	-
Nickel	ND	0.0720	0.500	-	-	-
Selenium	ND	0.130	0.500	-	-	-
Silver	ND	0.0550	0.500	-	-	-
Thallium	ND	0.100	0.500	-	-	-
Vanadium	ND	0.0640	0.500	-	-	-
Zinc	ND	1.40	5.00	-	-	-
Surrogate Recovery						
Terbium	533			500	107	70-130

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020 - 02/25/2020	**BatchID:**	194536
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3050B
Instrument:	ICP-MS4	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194536 2002901-008AMS/MSD

QC Summary Report for Metals

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Antimony	52.3	56.3	50	105	113	75-125	7.31	20
Arsenic	51.8	54.4	50	104	109	75-125	4.97	20
Barium	510	533	500	102	107	75-125	4.27	20
Beryllium	50.9	53.3	50	102	107	75-125	4.57	20
Cadmium	50.1	53.5	50	100	107	75-125	6.54	20
Chromium	51.0	54.4	50	102	109	75-125	6.33	20
Cobalt	51.1	54.0	50	102	108	75-125	5.45	20
Copper	51.7	54.9	50	103	110	75-125	6.02	20
Lead	51.9	54.2	50	104	108	75-125	4.29	20
Mercury	1.23	1.35	1.25	98	108	75-125	9.41	20
Molybdenum	51.2	55.2	50	102	110	75-125	7.50	20
Nickel	52.1	55.5	50	104	111	75-125	6.37	20
Selenium	50.4	53.3	50	101	107	75-125	5.59	20
Silver	50.9	53.3	50	102	107	75-125	4.66	20
Thallium	51.7	54.2	50	103	108	75-125	4.54	20
Vanadium	50.6	54.4	50	101	109	75-125	7.29	20
Zinc	527	555	500	105	111	75-125	5.04	20
Surrogate Recovery								
Terbium	527	571	500	105	114	70-130	8.09	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	1	53.5	53.6	50	0.8530	105	105	75-125	0.239	20
Arsenic	1	62.8	60.9	50	12.51	101	97	75-125	3.11	20
Barium	1	801	809	500	249.4	110	112	75-125	0.986	20
Beryllium	1	48.4	48.2	50	0.5980	96	95	75-125	0.311	20
Cadmium	1	50.3	49.6	50	ND	101	99	75-125	1.42	20
Chromium	1	125	133	50	74.71	100	116	75-125	5.97	20
Cobalt	1	58.7	58.2	50	12.41	93	92	75-125	0.713	20
Copper	1	84.4	84.0	50	35.75	97	96	75-125	0.545	20
Lead	1	60.6	60.5	50	9.265	103	102	75-125	0.177	20
Mercury	1	1.39	1.37	1.25	0.1280	101	99	75-125	1.38	20
Molybdenum	1	52.8	53.3	50	0.7930	104	105	75-125	0.964	20
Nickel	1	141	139	50	93.70	95	90	75-125	1.76	20
Selenium	1	50.9	50.7	50	1.273	99	99	75-125	0.342	20
Silver	1	50.4	50.6	50	ND	101	101	75-125	0.410	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020 - 02/25/2020	**BatchID:**	194536
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3050B
Instrument:	ICP-MS4	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194536 2002901-008AMS/MSD

QC Summary Report for Metals

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Thallium	1	52.1	52.1	50	ND	104	104	75-125	0.104	20
Vanadium	1	111	107	50	52.95	117	108	75-125	3.98	20
Zinc	1	592	590	500	75.51	103	103	75-125	0.197	20
Surrogate Recovery										
Terbium	1	542	537	500		108	107	70-130	0.916	20

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Antimony	ND<2.50	0.8530	-	-
Arsenic	12.8	12.51	2.32	20
Barium	244	249.4	2.17	20
Beryllium	ND<2.50	0.5980	-	-
Cadmium	ND<1.20	ND	-	-
Chromium	80.6	74.71	7.88	20
Cobalt	12.9	12.41	3.95	20
Copper	36.7	35.75	2.66	20
Lead	8.95	9.265	3.40	-
Mercury	ND<0.250	0.1280	-	-
Molybdenum	ND<2.50	0.7930	-	-
Nickel	95.2	93.70	1.60	20
Selenium	ND<2.50	1.273	-	-
Silver	ND<2.50	ND	-	-
Thallium	ND<2.50	ND	-	-
Vanadium	55.0	52.95	3.87	20
Zinc	101	75.51	33.8	-

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020 - 02/25/2020	**BatchID:**	194537
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3050B
Instrument:	ICP-MS3, ICP-MS4	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194537 2002901-028AMS/MSD

QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Antimony	ND	0.0940	0.500	-	-	-
Arsenic	ND	0.140	0.500	-	-	-
Barium	ND	0.970	5.00	-	-	-
Beryllium	ND	0.0720	0.500	-	-	-
Cadmium	ND	0.0580	0.250	-	-	-
Chromium	ND	0.0920	0.500	-	-	-
Cobalt	ND	0.0560	0.500	-	-	-
Copper	ND	0.0690	0.500	-	-	-
Lead	ND	0.0940	0.500	-	-	-
Mercury	ND	0.00500	0.0500	-	-	-
Molybdenum	ND	0.230	0.500	-	-	-
Nickel	ND	0.0720	0.500	-	-	-
Selenium	ND	0.130	0.500	-	-	-
Silver	ND	0.0550	0.500	-	-	-
Thallium	ND	0.100	0.500	-	-	-
Vanadium	ND	0.0640	0.500	-	-	-
Zinc	ND	1.40	5.00	-	-	-
Surrogate Recovery						
Terbium	507			500	101	70-130

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020 - 02/25/2020	**BatchID:**	194537
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3050B
Instrument:	ICP-MS3, ICP-MS4	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194537 2002901-028AMS/MSD

QC Summary Report for Metals

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Antimony	49.1	49.1	50	98	98	75-125	0	20
Arsenic	48.5	48.6	50	97	97	75-125	0.124	20
Barium	482	480	500	96	96	75-125	0.312	20
Beryllium	46.9	46.9	50	94	94	75-125	0.128	20
Cadmium	47.1	47.6	50	94	95	75-125	1.14	20
Chromium	47.8	47.4	50	96	95	75-125	0.735	20
Cobalt	48.9	48.5	50	98	97	75-125	0.801	20
Copper	48.6	48.3	50	97	97	75-125	0.558	20
Lead	46.5	46.2	50	93	92	75-125	0.518	20
Mercury	1.17	1.18	1.25	94	94	75-125	0.596	20
Molybdenum	48.7	48.6	50	97	97	75-125	0.185	20
Nickel	48.0	47.9	50	96	96	75-125	0.0626	20
Selenium	47.2	47.3	50	94	95	75-125	0.106	20
Silver	45.2	44.9	50	90	90	75-125	0.600	20
Thallium	44.5	44.2	50	89	88	75-125	0.541	20
Vanadium	47.8	47.4	50	96	95	75-125	0.757	20
Zinc	481	482	500	96	96	75-125	0.0623	20
Surrogate Recovery								
Terbium	498	495	500	100	99	70-130	0.544	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	1	50.4	50.1	50	0.5438	100	99	75-125	0.577	20
Arsenic	1	54.9	55.9	50	6.040	98	100	75-125	1.81	20
Barium	1	671	683	500	137.5	107	109	75-125	1.74	20
Beryllium	1	46.4	46.8	50	ND	92	93	75-125	0.837	20
Cadmium	1	47.9	48.1	50	ND	96	96	75-125	0.354	20
Chromium	1	95.4	97.4	50	39.25	112	116	75-125	2.02	20
Cobalt	1	57.5	59.2	50	10.57	94	97	75-125	3.00	20
Copper	1	71.2	73.6	50	21.01	100	105	75-125	3.44	20
Lead	1	54.2	54.6	50	6.692	95	96	75-125	0.772	20
Mercury	1	1.21	1.24	1.25	ND	94	96	75-125	1.80	20
Molybdenum	1	50.0	49.5	50	ND	99	98	75-125	1.06	20
Nickel	1	108	116	50	53.88	108	124	75-125	7.07	20
Selenium	1	47.9	48.6	50	ND	95	97	75-125	1.45	20
Silver	1	45.9	45.5	50	ND	92	91	75-125	0.810	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020 - 02/25/2020	**BatchID:**	194537
Date Analyzed:	02/25/2020	**Extraction Method:**	SW3050B
Instrument:	ICP-MS3, ICP-MS4	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194537 2002901-028AMS/MSD

QC Summary Report for Metals

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Thallium	1	44.9	44.5	50	ND	90	89	75-125	0.940	20
Vanadium	1	89.9	92.9	50	34.00	112	118	75-125	3.34	20
Zinc	1	528	537	500	46.62	96	98	75-125	1.67	20
Surrogate Recovery										
Terbium	1	506	503	500		101	101	70-130	0.753	20

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Antimony	ND<2.50	0.5438	-	-
Arsenic	6.06	6.040	0.331	-
Barium	142	137.5	3.27	20
Beryllium	ND<2.50	ND	-	-
Cadmium	ND<1.20	ND	-	-
Chromium	41.0	39.25	4.46	20
Cobalt	11.5	10.57	8.80	-
Copper	21.7	21.01	3.28	20
Lead	7.02	6.692	4.90	-
Mercury	ND<0.250	ND	-	-
Molybdenum	ND<2.50	ND	-	-
Nickel	55.6	53.88	3.19	20
Selenium	ND<2.50	ND	-	-
Silver	ND<2.50	ND	-	-
Thallium	ND<2.50	ND	-	-
Vanadium	35.2	34.00	3.53	20
Zinc	47.9	46.62	2.75	-

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/26/2020 - 02/27/2020	**BatchID:**	194712
Date Analyzed:	02/28/2020	**Extraction Method:**	SW3050B
Instrument:	ICP-MS4	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194712

QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Antimony	ND	0.0940	0.500	-	-	-
Arsenic	ND	0.140	0.500	-	-	-
Barium	ND	0.970	5.00	-	-	-
Beryllium	ND	0.0720	0.500	-	-	-
Cadmium	ND	0.0580	0.250	-	-	-
Chromium	ND	0.0920	0.500	-	-	-
Cobalt	ND	0.0560	0.500	-	-	-
Copper	ND	0.0690	0.500	-	-	-
Lead	ND	0.0940	0.500	-	-	-
Mercury	0.0100,J	0.00500	0.0500	-	-	-
Molybdenum	ND	0.230	0.500	-	-	-
Nickel	ND	0.0720	0.500	-	-	-
Selenium	ND	0.130	0.500	-	-	-
Silver	ND	0.0550	0.500	-	-	-
Thallium	ND	0.100	0.500	-	-	-
Vanadium	ND	0.0640	0.500	-	-	-
Zinc	ND	1.40	5.00	-	-	-
Surrogate Recovery						
Terbium	502			500	100	70-130

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/26/2020 - 02/27/2020	**BatchID:**	194712
Date Analyzed:	02/28/2020	**Extraction Method:**	SW3050B
Instrument:	ICP-MS4	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194712

QC Summary Report for Metals

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Antimony	48.6	50.2	50	97	100	75-125	3.19	20
Arsenic	48.6	49.2	50	97	99	75-125	1.38	20
Barium	467	478	500	93	96	75-125	2.38	20
Beryllium	48.2	49.4	50	96	99	75-125	2.38	20
Cadmium	47.6	48.3	50	95	97	75-125	1.49	20
Chromium	47.9	49.0	50	96	98	75-125	2.38	20
Cobalt	47.6	48.8	50	95	98	75-125	2.48	20
Copper	48.5	48.8	50	97	98	75-125	0.660	20
Lead	47.3	48.2	50	95	96	75-125	1.87	20
Mercury	1.18	1.22	1.25	94	98	75-125	3.41	20
Molybdenum	49.6	50.7	50	99	101	75-125	2.19	20
Nickel	48.6	49.4	50	97	99	75-125	1.56	20
Selenium	46.9	48.8	50	94	98	75-125	3.94	20
Silver	46.4	47.6	50	93	95	75-125	2.54	20
Thallium	47.5	48.5	50	95	97	75-125	2.23	20
Vanadium	47.7	49.2	50	95	98	75-125	3.14	20
Zinc	486	486	500	97	97	75-125	0.0549	20
Surrogate Recovery								
Terbium	503	511	500	101	102	70-130	1.51	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194495
Date Analyzed:	02/24/2020 - 02/25/2020	**Extraction Method:**	SW5035
Instrument:	GC19, GC7	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194495

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
TPH(g) (C6-C12)	ND	0.700	1.00	-	-	-
MTBE	ND	0.00400	0.0500	-	-	-
Benzene	ND	0.00300	0.00500	-	-	-
Toluene	ND	0.00200	0.00500	-	-	-
Ethylbenzene	ND	0.00220	0.00500	-	-	-
m,p-Xylene	ND	0.00300	0.0100	-	-	-
o-Xylene	ND	0.00100	0.00500	-	-	-
Surrogate Recovery						
2-Fluorotoluene	0.0944			0.1	94	75-134

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH(btex)	0.529	0.520	0.60	88	87	82-118	1.54	20
MTBE	0.0779	0.0786	0.10	78	79	61-119	0.794	20
Benzene	0.0987	0.0954	0.10	99	95	77-128	3.36	20
Toluene	0.0997	0.0969	0.10	100	97	74-132	2.79	20
Ethylbenzene	0.101	0.0982	0.10	101	98	84-127	2.66	20
m,p-Xylene	0.208	0.203	0.20	104	102	80-120	2.35	20
o-Xylene	0.101	0.0995	0.10	101	99	80-120	1.94	20
Surrogate Recovery								
2-Fluorotoluene	0.0977	0.0962	0.10	98	96	75-134	1.49	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194533
Date Analyzed:	02/25/2020 - 02/26/2020	**Extraction Method:**	SW5035
Instrument:	GC7	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194533 2002901-005AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
TPH(g) (C6-C12)	ND	0.700	1.00	-	-	-
MTBE	ND	0.00400	0.0500	-	-	-
Benzene	ND	0.00300	0.00500	-	-	-
Toluene	ND	0.00200	0.00500	-	-	-
Ethylbenzene	ND	0.00220	0.00500	-	-	-
m,p-Xylene	ND	0.00300	0.0100	-	-	-
o-Xylene	ND	0.00100	0.00500	-	-	-
Surrogate Recovery						
2-Fluorotoluene	0.0939			0.1	94	75-134

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194533
Date Analyzed:	02/25/2020 - 02/26/2020	**Extraction Method:**	SW5035
Instrument:	GC7	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194533 2002901-005AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH(btex)	0.631	0.646	0.60	105	108	82-118	2.22	20
MTBE	0.116	0.101	0.10	116	101	61-119	13.6	20
Benzene	0.107	0.103	0.10	107	103	77-128	3.43	20
Toluene	0.108	0.106	0.10	108	106	74-132	2.11	20
Ethylbenzene	0.105	0.104	0.10	105	104	84-127	0.884	20
m,p-Xylene	0.222	0.220	0.20	111	110	80-120	0.593	20
o-Xylene	0.103	0.103	0.10	103	103	80-120	0.378	20
Surrogate Recovery								
2-Fluorotoluene	0.0990	0.0980	0.10	99	98	75-134	1.08	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	1	0.515	0.614	0.60	ND	86	102	58-129	17.6	20
MTBE	1	0.101	0.0908	0.10	ND	101	91	47-118	10.7	20
Benzene	1	0.0905	0.102	0.10	ND	90	102	55-129	11.9	20
Toluene	1	0.0939	0.104	0.10	ND	94	104	56-130	10.6	20
Ethylbenzene	1	0.0933	0.102	0.10	ND	93	102	63-129	9.34	20
m,p-Xylene	1	0.195	0.212	0.20	ND	95	103	80-120	8.30	20
o-Xylene	1	0.0933	0.0988	0.10	ND	93	99	80-120	5.75	20
Surrogate Recovery										
2-Fluorotoluene	1	0.0891	0.0989	0.10		89	99	62-126	10.5	20

(Cont.)

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194534
Date Analyzed:	02/25/2020 - 02/26/2020	**Extraction Method:**	SW5035
Instrument:	GC7	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194534 2002901-025AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
TPH(g) (C6-C12)	ND	0.700	1.00	-	-	-
MTBE	ND	0.00400	0.0500	-	-	-
Benzene	ND	0.00300	0.00500	-	-	-
Toluene	ND	0.00200	0.00500	-	-	-
Ethylbenzene	ND	0.00220	0.00500	-	-	-
m,p-Xylene	ND	0.00300	0.0100	-	-	-
o-Xylene	ND	0.00100	0.00500	-	-	-
Surrogate Recovery						
2-Fluorotoluene	0.102			0.1	102	75-134

(Cont.)

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194534
Date Analyzed:	02/25/2020 - 02/26/2020	**Extraction Method:**	SW5035
Instrument:	GC7	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194534 2002901-025AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH(btex)	0.656	0.664	0.60	109	111	82-118	1.21	20
MTBE	0.0955	0.0979	0.10	95	98	61-119	2.48	20
Benzene	0.105	0.106	0.10	105	106	77-128	0.882	20
Toluene	0.108	0.110	0.10	107	110	74-132	2.06	20
Ethylbenzene	0.106	0.109	0.10	106	109	84-127	2.66	20
m,p-Xylene	0.225	0.231	0.20	112	115	80-120	2.76	20
o-Xylene	0.106	0.108	0.10	106	108	80-120	2.39	20
Surrogate Recovery								
2-Fluorotoluene	0.101	0.102	0.10	101	102	75-134	0.931	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	1	0.544	0.571	0.60	ND	91	95	58-129	4.87	20
MTBE	1	0.0898	0.102	0.10	ND	90	102	47-118	12.2	20
Benzene	1	0.0931	0.0956	0.10	ND	93	96	55-129	2.66	20
Toluene	1	0.0970	0.0996	0.10	ND	97	100	56-130	2.69	20
Ethylbenzene	1	0.0966	0.0992	0.10	ND	97	99	63-129	2.55	20
m,p-Xylene	1	0.207	0.207	0.20	ND	104	104	80-120	0.0959	20
o-Xylene	1	0.0970	0.0970	0.10	ND	97	97	80-120	0.0592	20
Surrogate Recovery										
2-Fluorotoluene	1	0.0927	0.0945	0.10		93	94	62-126	1.92	20

(Cont.)

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194618
Date Analyzed:	02/25/2020 - 02/26/2020	**Extraction Method:**	SW5035
Instrument:	GC19, GC7	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194618

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
TPH(g) (C6-C12)	ND	0.700	1.00	-	-	-
MTBE	ND	0.00400	0.0500	-	-	-
Benzene	ND	0.00300	0.00500	-	-	-
Toluene	ND	0.00200	0.00500	-	-	-
Ethylbenzene	ND	0.00220	0.00500	-	-	-
m,p-Xylene	ND	0.00300	0.0100	-	-	-
o-Xylene	ND	0.00100	0.00500	-	-	-
Surrogate Recovery						
2-Fluorotoluene	0.0978			0.1	98	75-134

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH(btex)	0.539	0.558	0.60	90	93	82-118	3.45	20
MTBE	0.0852	0.0858	0.10	85	86	61-119	0.775	20
Benzene	0.0946	0.0963	0.10	95	96	77-128	1.83	20
Toluene	0.0969	0.0984	0.10	97	98	74-132	1.51	20
Ethylbenzene	0.0995	0.101	0.10	99	101	84-127	1.12	20
m,p-Xylene	0.208	0.208	0.20	104	104	80-120	0.317	20
o-Xylene	0.101	0.103	0.10	101	103	80-120	1.28	20
Surrogate Recovery								
2-Fluorotoluene	0.0941	0.0961	0.10	94	96	75-134	2.12	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194623
Date Analyzed:	02/25/2020	**Extraction Method:**	SW9045C
Instrument:	WetChem	**Analytical Method:**	SW9045C
Matrix:	Water	**Unit:**	pH units @ 25°C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	CCV-194623

QC Summary Report for pH

Analyte	CCV Result	CCV Limits
pH	6.98	6.8-7.2

(Cont.)

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194625
Date Analyzed:	02/25/2020	**Extraction Method:**	SW9045C
Instrument:	WetChem	**Analytical Method:**	SW9045C
Matrix:	Water	**Unit:**	pH units @ 25°C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	CCV-194625

QC Summary Report for pH

Analyte	CCV Result	CCV Limits
pH	7.01	6.8-7.2

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194626
Date Analyzed:	02/25/2020	**Extraction Method:**	SW9045C
Instrument:	WetChem	**Analytical Method:**	SW9045C
Matrix:	Water	**Unit:**	pH units @ 25°C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	CCV-194626

QC Summary Report for pH

Analyte	CCV Result	CCV Limits
pH	6.98	6.8-7.2

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/25/2020	**BatchID:**	194627
Date Analyzed:	02/25/2020	**Extraction Method:**	SW9045C
Instrument:	WetChem	**Analytical Method:**	SW9045C
Matrix:	Water	**Unit:**	pH units @ 25°C
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	CCV-194627

QC Summary Report for pH

Analyte	CCV Result	CCV Limits
pH	7.04	6.8-7.2

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194496
Date Analyzed:	02/24/2020 - 02/25/2020	**Extraction Method:**	SW3550B
Instrument:	GC31B	**Analytical Method:**	SW8015B
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194496

QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	0.830	1.00	-	-	-
TPH-Motor Oil (C18-C36)	ND	3.80	5.00	-	-	-
Surrogate Recovery						
C9	23.3			25	93	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	45.3	45.2	40	113	113	70-130	0.180	20
Surrogate Recovery								
C9	23.1	22.9	25	92	92	70-130	0.919	20

(Cont.)

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194527
Date Analyzed:	02/26/2020	**Extraction Method:**	SW3550B
Instrument:	GC11A, GC6B	**Analytical Method:**	SW8015B
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194527 2002901-006AMS/MSD

QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	0.830	1.00	-	-	-
TPH-Motor Oil (C18-C36)	ND	3.80	5.00	-	-	-
Surrogate Recovery						
C9	24.6			25	98	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	40.6	40.6	40	101	101	70-130	0.0148	20
Surrogate Recovery								
C9	24.4	24.4	25	98	98	70-130	0.100	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1	52.1	42.7	40	ND	130	107	70-130	19.8	20
Surrogate Recovery										
C9	1	21.8	21.8	25		87	87	70-130	0.192	20

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	02/24/2020	**BatchID:**	194528
Date Analyzed:	02/26/2020 - 02/27/2020	**Extraction Method:**	SW3550B
Instrument:	GC11A, GC11B	**Analytical Method:**	SW8015B
Matrix:	Soil	**Unit:**	mg/Kg
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-194528 2002901-026AMS/MSD

QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	0.830	1.00	-	-	-
TPH-Motor Oil (C18-C36)	ND	3.80	5.00	-	-	-
Surrogate Recovery						
C9	22.6			25	90	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	37.1	37.1	40	93	93	70-130	0.00162	20
Surrogate Recovery								
C9	22.8	22.8	25	91	91	70-130	0.0635	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1	43.1	43.2	40	ND	108	108	70-130	0.172	20
Surrogate Recovery										
C9	1	26.5	26.6	25		106	106	70-130	0.360	20

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 2002901 **ClientCode: KFSJ**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☒ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☒ Detection Summary ☒ Dry-Weight

Report to:
Craig Riddle
Kleinfelder, Inc.
380 North 1st Street
San Jose, CA 95132
(408) 586-7611 FAX: (408) 586-7688

Email: criddle@kleinfelder.com
cc/3rd Party:
PO:
Project: 20203748.001A; Morgan Hill Fisher Basin

Bill to:
F. Mwape
Kleinfelder, Inc.
380 North 1st Street
San Jose, CA 95132

Requested TAT: 5 days;

Date Received: **02/24/2020**
Date Logged: **02/24/2020**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2002901-001	B-1_2-3	Soil	2/21/2020 13:35	☐	A	A	A	A	A	A	A	A	A			
2002901-002	B-1_6-7	Soil	2/20/2020 13:55	☐	A	A	A	A	A	A	A	A	A			
2002901-003	B-1_12-13	Soil	2/20/2020 14:00	☐	A	A	A	A	A	A	A	A	A			
2002901-004	B-1_16-17	Soil	2/20/2020 14:05	☐	A	A	A	A	A	A	A	A	A			
2002901-005	B-2_1-2	Soil	2/20/2020 14:20	☐	A	A	A	A	A	A	A	A	A			
2002901-006	B-2_5-6	Soil	2/20/2020 14:25	☐	A	A	A	A	A	A	A	A	A			
2002901-007	B-2_11-12	Soil	2/20/2020 14:35	☐	A	A	A	A	A	A	A	A	A			
2002901-008	B-2_15-16	Soil	2/20/2020 14:40	☐	A	A	A	A	A	A	A	A	A			
2002901-009	B-3_2-3	Soil	2/20/2020 15:25	☐	A	A	A	A	A	A	A	A	A			
2002901-010	B-3_6-7	Soil	2/20/2020 15:30	☐	A	A	A	A	A	A	A	A	A			
2002901-011	B-3_12-13	Soil	2/20/2020 15:35	☐	A	A	A	A	A	A	A	A	A			
2002901-012	B-3_16-17	Soil	2/20/2020 15:40	☐	A	A	A	A	A	A	A	A	A			
2002901-013	B-4_1-2	Soil	2/20/2020 16:00	☐	A	A	A	A	A	A	A	A	A			
2002901-014	B-4_5-6	Soil	2/20/2020 16:10	☐	A	A	A	A	A	A	A	A	A			
2002901-015	B-4_11-12	Soil	2/20/2020 16:15	☐	A	A	A	A	A	A	A	A	A			

Test Legend:

1	8081PCB_S	2	8260B_S	3	8270_SCSM_S	4	CAM17MS_TTLC_S
5	CARB435_400	6	G-MBTEX_S	7	PH_S	8	PRDisposal Fee
9	TPH(DMO)_S	10		11		12	

Project Manager: Angela Rydelius **Prepared by: Lilly Ortiz**

The following SampIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A, 009A, 010A, 011A, 012A, 013A, 014A, 015A, 016A, 017A, 018A, 019A, 020A, 021A, 022A, 023A, 024A, 025A, 026A, 027A, 028A, 029A, 030A, 031A, 032A contain testgroup Multi Range_S.

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2002901 **ClientCode: KFSJ**

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☒ Detection Summary ☒ Dry-Weight

Report to:
Craig Riddle
Kleinfelder, Inc.
380 North 1st Street
San Jose, CA 95132
(408) 586-7611 FAX: (408) 586-7688

Email: criddle@kleinfelder.com
cc/3rd Party:
PO:
Project: 20203748.001A; Morgan Hill Fisher Basin

Bill to:
F. Mwape
Kleinfelder, Inc.
380 North 1st Street
San Jose, CA 95132

Requested TAT: **5 days;**

Date Received: **02/24/2020**
Date Logged: **02/24/2020**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2002901-016	B-4_15-16	Soil	2/20/2020 16:20	☐	A	A	A	A	A	A	A	A	A			
2002901-017	B-5_2-3	Soil	2/21/2020 09:10	☐	A	A	A	A	A	A	A	A	A			
2002901-018	B-5_6-7	Soil	2/21/2020 09:35	☐	A	A	A	A	A	A	A	A	A			
2002901-019	B-5_12-13	Soil	2/21/2020 09:55	☐	A	A	A	A	A	A	A	A	A			
2002901-020	B-5_16-17	Soil	2/21/2020 10:00	☐	A	A	A	A	A	A	A	A	A			
2002901-021	B-6_1-2	Soil	2/20/2020 09:45	☐	A	A	A	A	A	A	A	A	A			
2002901-022	B-6_5-6	Soil	2/20/2020 10:05	☐	A	A	A	A	A	A	A	A	A			
2002901-023	B-6_11-12	Soil	2/20/2020 10:20	☐	A	A	A	A	A	A	A	A	A			
2002901-024	B-6-15-16	Soil	2/20/2020 10:30	☐	A	A	A	A	A	A	A	A	A			
2002901-025	B-7_2-3	Soil	2/20/2020 11:00	☐	A	A	A	A	A	A	A	A	A			
2002901-026	B-7_6-7	Soil	2/20/2020 11:05	☐	A	A	A	A	A	A	A	A	A			
2002901-027	B-7_12-13	Soil	2/20/2020 11:10	☐	A	A	A	A	A	A	A	A	A			
2002901-028	B-7_16-17	Soil	2/20/2020 11:20	☐	A	A	A	A	A	A	A	A	A			
2002901-029	B-8_1-2	Soil	2/20/2020 11:35	☐	A	A	A	A	A	A	A	A	A			
2002901-030	B-8_5-6	Soil	2/20/2020 11:45	☐	A	A	A	A	A	A	A	A	A			

Test Legend:

1	8081PCB_S	2	8260B_S	3	8270_SCSM_S	4	CAM17MS_TTLC_S
5	CARB435_400	6	G-MBTEX_S	7	PH_S	8	PRDisposal Fee
9	TPH(DMO)_S	10		11		12	

Project Manager: Angela Rydelius **Prepared by: Lilly Ortiz**

The following SampIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A, 009A, 010A, 011A, 012A, 013A, 014A, 015A, 016A, 017A, 018A, 019A, 020A, 021A, 022A, 023A, 024A, 025A, 026A, 027A, 028A, 029A, 030A, 031A, 032A contain testgroup Multi Range_S.

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 2002901 **ClientCode: KFSJ**

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☐ Detection Summary ☐ Dry-Weight

Report to:
Craig Riddle
Kleinfelder, Inc.
380 North 1st Street
San Jose, CA 95132
(408) 586-7611 FAX: (408) 586-7688

Email: criddle@kleinfelder.com
cc/3rd Party:
PO:
Project: 20203748.001A; Morgan Hill Fisher Basin

Bill to:
F. Mwape
Kleinfelder, Inc.
380 North 1st Street
San Jose, CA 95132

Requested TAT: **5 days;**

Date Received: **02/24/2020**
Date Logged: **02/24/2020**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2002901-031	B-8_11-12	Soil	2/20/2020 11:50	☐	A	A	A	A	A	A	A	A	A			
2002901-032	B-8_15-16	Soil	2/20/2020 11:55	☐	A	A	A	A	A	A	A	A	A			

Test Legend:

1	8081PCB_S	2	8260B_S	3	8270_SCSM_S	4	CAM17MS_TTLC_S
5	CARB435_400	6	G-MBTEX_S	7	PH_S	8	PRDisposal Fee
9	TPH(DMO)_S	10		11		12	

Project Manager: Angela Rydelius **Prepared by: Lilly Ortiz**

The following SampIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A, 009A, 010A, 011A, 012A, 013A, 014A, 015A, 016A, 017A, 018A, 019A, 020A, 021A, 022A, 023A, 024A, 025A, 026A, 027A, 028A, 029A, 030A, 031A, 032A contain testgroup Multi Range_S.

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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1534 Willow Pass Road, Pittsburg, CA 94565-1701
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http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: KLEINFELDER, INC. **Project:** 20203748.001A; Morgan Hill Fisher Basin **Work Order:** 2002901
Client Contact: Craig Riddle **QC Level:** LEVEL 2
Contact's Email: criddle@kleinfelder.com **Comments:** **Date Logged:** 2/24/2020

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2002901-001A	B-1_2-3	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/21/2020 13:35	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-002A	B-1_6-7	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 13:55	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-003A	B-1_12-13	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 14:00	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2002901-003A	B-1_12-13	Soil	Asbestos, CARB 435, 400 Point	2	8OZ GJ, Unpres	☐	2/20/2020 14:00	5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-004A	B-1_16-17	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 14:05	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-005A	B-2_1-2	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 14:20	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	

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2002901-005A	B-2_1-2	Soil	SW8270C (SVOCs)	2	8OZ GJ, Unpres	☐	2/20/2020 14:20	5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-006A	B-2_5-6	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 14:25	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-007A	B-2_11-12	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 14:35	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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2002901-007A	B-2_11-12	Soil	SW8081A/8082 (OC Pesticides+PCBs)	2	8OZ GJ, Unpres	☐	2/20/2020 14:35	5 days		☐	
2002901-008A	B-2_15-16	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 14:40	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-009A	B-3_2-3	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 15:25	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-010A	B-3_6-7	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 15:30	5 days		☐	

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Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2002901-010A	B-3_6-7	Soil	Multi-Range TPH	2	8OZ GJ, Unpres	☐	2/20/2020 15:30	5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-011A	B-3_12-13	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 15:35	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-012A	B-3_16-17	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 15:40	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	

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2002901-012A	B-3_16-17	Soil	SW6020 (CAM 17)	2	8OZ GJ, Unpres	☐	2/20/2020 15:40	5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-013A	B-4_1-2	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 16:00	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-014A	B-4_5-6	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 16:10	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	

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Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2002901-014A	B-4_5-6	Soil	SW8260B (VOCs)	2	8OZ GJ, Unpres	☐	2/20/2020 16:10	5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-015A	B-4_11-12	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 16:15	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-016A	B-4_15-16	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 16:20	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	

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2002901-017A	B-5_2-3	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/21/2020 9:10	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-018A	B-5_6-7	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/21/2020 9:35	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-019A	B-5_12-13	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/21/2020 9:55	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	

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			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-020A	B-5_16-17	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/21/2020 10:00	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-021A	B-6_1-2	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 9:45	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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McCampbell Analytical, Inc.
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1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: KLEINFELDER, INC. **Project:** 20203748.001A; Morgan Hill Fisher Basin **Work Order:** 2002901
Client Contact: Craig Riddle **QC Level:** LEVEL 2
Contact's Email: criddle@kleinfelder.com **Comments:** **Date Logged:** 2/24/2020

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2002901-021A	B-6_1-2	Soil	SW8270C (SVOCs)	2	8OZ GJ, Unpres	☐	2/20/2020 9:45	5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-022A	B-6_5-6	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 10:05	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-023A	B-6_11-12	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 10:20	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	

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WORK ORDER SUMMARY

Client Name: KLEINFELDER, INC. **Project:** 20203748.001A; Morgan Hill Fisher Basin **Work Order:** 2002901
Client Contact: Craig Riddle **QC Level:** LEVEL 2
Contact's Email: criddle@kleinfelder.com **Comments:** **Date Logged:** 2/24/2020

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2002901-023A	B-6_11-12	Soil	SW8081A/8082 (OC Pesticides+PCBs)	2	8OZ GJ, Unpres	☐	2/20/2020 10:20	5 days		☐	
2002901-024A	B-6-15-16	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 10:30	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-025A	B-7_2-3	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 11:00	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-026A	B-7_6-7	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 11:05	5 days		☐	

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WORK ORDER SUMMARY

Client Name: KLEINFELDER, INC. **Project:** 20203748.001A; Morgan Hill Fisher Basin **Work Order:** 2002901
Client Contact: Craig Riddle **QC Level:** LEVEL 2
Contact's Email: criddle@kleinfelder.com **Comments:** **Date Logged:** 2/24/2020

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2002901-026A	B-7_6-7	Soil	Multi-Range TPH	2	8OZ GJ, Unpres	☐	2/20/2020 11:05	5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-027A	B-7_12-13	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 11:10	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-028A	B-7_16-17	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 11:20	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	

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WORK ORDER SUMMARY

Client Name: KLEINFELDER, INC. **Project:** 20203748.001A; Morgan Hill Fisher Basin **Work Order:** 2002901
Client Contact: Craig Riddle **QC Level:** LEVEL 2
Contact's Email: criddle@kleinfelder.com **Comments:** **Date Logged:** 2/24/2020

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2002901-028A	B-7_16-17	Soil	SW6020 (CAM 17)	2	8OZ GJ, Unpres	☐	2/20/2020 11:20	5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-029A	B-8_1-2	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 11:35	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-030A	B-8_5-6	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 11:45	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	

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WORK ORDER SUMMARY

Client Name: KLEINFELDER, INC. **Project:** 20203748.001A; Morgan Hill Fisher Basin **Work Order:** 2002901
Client Contact: Craig Riddle **QC Level:** LEVEL 2
Contact's Email: criddle@kleinfelder.com **Comments:** **Date Logged:** 2/24/2020

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2002901-030A	B-8_5-6	Soil	SW8260B (VOCs)	2	8OZ GJ, Unpres	☐	2/20/2020 11:45	5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-031A	B-8_11-12	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 11:50	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	
2002901-032A	B-8_15-16	Soil	SW9045C (pH)	2	8OZ GJ, Unpres	☐	2/20/2020 11:55	5 days		☐	
			Multi-Range TPH			☐		5 days		☐	
			Asbestos, CARB 435, 400 Point			☐		5 days		☐	
			SW6020 (CAM 17)			☐		5 days		☐	
			SW8270C (SVOCs)			☐		5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
			SW8081A/8082 (OC Pesticides+PCBs)			☐		5 days		☐	

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KLEINFELDER
Bright People. Right Solutions.

COC # 425320

2 coolers

20022901

Page 1 of 2

| Project No. | Project Name | | |

KLEINFELDER
Bright People. Right Solutions.

COC # 376506

20029901

* 2 COOLERS *

Page 1 of 2

Project No.	Project Name	No. of Containers	Type of Containers
20203748.001A	Morgan Hill Fisher Basin		

L.P. No. (PO No.):

Samplers: (Signature/Number) Victoria Golston Vicky Golston 405-426-2596

Receiving Lab:
McCampbell Analytical
1534 Willow Pass Rd
Pittsburg CA
1-877-252-9262

Instructions/Remarks:
McCampbell Analytical PM: Angela Rydelius

	Date MM/DD/YY	Sample I.D. Time HH-MM-SS	Sample I.D.	Matrix	No. of Containers	Type of Containers	SVOC (SW8270C)	PCBs only (SW8082)	Abestos CARB 435 400 point	pH (SW9045C)	Multi range TPH (SW8015M)	VOCs (SW8260B)	OC Pesticides (SW8081A)	CAM 17 Metals (SW6020)			
1	02/21/20	0910	B-5_2-3	Soil	2	Jars	X	X	X	X	X	X	X	X			
2		0935	B-5_6-7	Soil	2	Jars	X	X	X	X	X	X	X	X			
3		0955	B-5_12-13	Soil	2	Jars	X	X	X	X	X	X	X	X			
4		1000	B-5_16-17	Soil	2	Jars	X	X	X	X	X	X	X	X			
5	02/20/20	0945	B-6_1-2	Soil	2	Jars	X	X	X	X	X	X	X	X			
6		1005	B-6-_5-6	Soil	2	Jars	X	X	X	X	X	X	X	X			
7		1020	B-6_11-12	Soil	2	Jars	X	X	X	X	X	X	X	X			
8		1030	B-6_15-16	Soil	2	Jars	X	X	X	X	X	X	X	X			
9		1100	B-7_2-3	Soil	2	Jars	X	X	X	X	X	X	X	X			
10		1105	B-7_6-7	Soil	2	Jars	X	X	X	X	X	X	X	X			
11		1110	B-7_12-13	Soil	2	Jars	X	X	X	X	X	X	X	X			
12		1120	B-7_16-17	Soil	2	Jars	X	X	X	X	X	X	X	X			
13		1135	B-8_1-2	Soil	2	Jars	X	X	X	X	X	X	X	X			
14		1145	B-8_5-6	Soil	2	Jars	X	X	X	X	X	X	X	X			
15		1150	B-8_11-12	Soil	2	Jars	X	X	X	X	X	X	X	X			
16		1155	B-8_15-16	Soil	2	Jars	X	X	X	X	X	X	X	X			

HOLD remaining samples for potential STLC/TCLP

Relinquished By:	Date/Time	Received By:
	2/24 1850	
	2/24 1745	1745

Instructions/Remarks:
Standard turn around time

Send Results To:
Craig Riddle,
criddle@kleinfelder.com

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Sample Receipt Checklist

Client Name:	**Kleinfelder, Inc.**	Date and Time Received:	**2/24/2020 17:45**
Project:	**20203748.001A; Morgan Hill Fisher Basin**	Date Logged:	**2/24/2020**
		Received by:	Lilly Ortiz
WorkOrder №:	**2002901** Matrix: Soil	Logged by:	Lilly Ortiz
Carrier:	Laurie Moore (MAI Courier)		

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐		
Chain of custody signed when relinquished and received?	Yes	☑	No	☐		
Chain of custody agrees with sample labels?	Yes	☑	No	☐		
Sample IDs noted by Client on COC?	Yes	☑	No	☐		
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐		
Sampler's name noted on COC?	Yes	☑	No	☐		
COC agrees with Quote?	Yes	☐	No	☐	NA	☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA	☑
Shipping container/cooler in good condition?	Yes	☑	No	☐		
Samples in proper containers/bottles?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA	☐
Samples Received on Ice?	Yes	☑	No	☐		
(Ice Type: WET ICE)						
Sample/Temp Blank temperature	Temp: 0.8°C				NA	☐
Water - VOA vials have zero headspace / no bubbles?	Yes	☐	No	☐	NA	☑
Sample labels checked for correct preservation?	Yes	☑	No	☐		
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA	☑
UCMR Samples:						
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes	☐	No	☐	NA	☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes	☐	No	☐	NA	☑

Comments:

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 2002901 A

Report Created for: Kleinfelder, Inc.

380 North 1st Street
San Jose, CA 95132

Project Contact: Craig Riddle
Project P.O.:
Project: 20203748.001A; Morgan Hill Fisher Basin

Project Received: 02/24/2020

Analytical Report reviewed & approved for release on 03/11/2020 by:

Yen Cao
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.

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Glossary of Terms & Qualifier Definitions

Client: Kleinfelder, Inc.
Project: 20203748.001A; Morgan Hill Fisher Basin
WorkOrder: 2002901 A

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CA Title 22
Date Prepared:	03/04/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/L

Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_6-7	2002901-002A	Soil	02/20/2020 13:55	ICP-MS4 217SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/06/2020 23:24

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_12-13	2002901-003A	Soil	02/20/2020 14:00	ICP-MS4 218SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/06/2020 23:28

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1_16-17	2002901-004A	Soil	02/20/2020 14:05	ICP-MS4 219SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/06/2020 23:31

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_1-2	2002901-005A	Soil	02/20/2020 14:20	ICP-MS4 220SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/06/2020 23:35

Analyst(s): ND

(Cont.)

McCampbell Analytical, Inc.
"When Quality Counts"
1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CA Title 22
Date Prepared:	03/04/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/L

Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_11-12	2002901-007A	Soil	02/20/2020 14:35	ICP-MS4 221SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/06/2020 23:39

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2_15-16	2002901-008A	Soil	02/20/2020 14:40	ICP-MS4 222SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/06/2020 23:43

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_6-7	2002901-010A	Soil	02/20/2020 15:30	ICP-MS4 223SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/06/2020 23:47

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_12-13	2002901-011A	Soil	02/20/2020 15:35	ICP-MS4 224SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/06/2020 23:51

Analyst(s): ND

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CA Title 22
Date Prepared:	03/04/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/L

Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3_16-17	2002901-012A	Soil	02/20/2020 15:40	ICP-MS4 225SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/06/2020 23:54

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_5-6	2002901-014A	Soil	02/20/2020 16:10	ICP-MS4 226SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/06/2020 23:58

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_11-12	2002901-015A	Soil	02/20/2020 16:15	ICP-MS4 230SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/07/2020 00:14

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4_15-16	2002901-016A	Soil	02/20/2020 16:20	ICP-MS4 231SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/07/2020 00:17

Analyst(s): ND

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CA Title 22
Date Prepared:	03/04/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/L

Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_2-3	2002901-017A	Soil	02/21/2020 09:10	ICP-MS4 232SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/07/2020 00:21

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_6-7	2002901-018A	Soil	02/21/2020 09:35	ICP-MS4 233SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/07/2020 00:25

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_12-13	2002901-019A	Soil	02/21/2020 09:55	ICP-MS4 234SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/07/2020 00:29

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5_16-17	2002901-020A	Soil	02/21/2020 10:00	ICP-MS4 235SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/07/2020 00:33

Analyst(s): ND

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CA Title 22
Date Prepared:	03/04/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/L

Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_1-2	2002901-021A	Soil	02/20/2020 09:45	ICP-MS4 236SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/07/2020 00:37

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_5-6	2002901-022A	Soil	02/20/2020 10:05	ICP-MS4 237SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/07/2020 00:40

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6_11-12	2002901-023A	Soil	02/20/2020 10:20	ICP-MS4 238SMPL.d	195134

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/07/2020 00:44

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-15-16	2002901-024A	Soil	02/20/2020 10:30	ICP-MS4 208SMPL.d	195135

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/06/2020 22:49

Analyst(s): ND

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CA Title 22
Date Prepared:	03/04/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/L

Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_2-3	2002901-025A	Soil	02/20/2020 11:00	ICP-MS4 1385SMPL.d	195135

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/09/2020 19:49

Analyst(s): MIG

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_6-7	2002901-026A	Soil	02/20/2020 11:05	ICP-MS4 1386SMPL.d	195135

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/09/2020 19:53

Analyst(s): MIG

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7_12-13	2002901-027A	Soil	02/20/2020 11:10	ICP-MS4 1387SMPL.d	195135

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/09/2020 19:57

Analyst(s): MIG

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_1-2	2002901-029A	Soil	02/20/2020 11:35	ICP-MS4 1388SMPL.d	195135

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/09/2020 20:01

Analyst(s): MIG

(Cont.)

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Analytical Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Received:	02/24/2020 17:45	**Extraction Method:**	CA Title 22
Date Prepared:	03/04/2020	**Analytical Method:**	SW6020
Project:	20203748.001A; Morgan Hill Fisher Basin	**Unit:**	mg/L

Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_5-6	2002901-030A	Soil	02/20/2020 11:45	ICP-MS4 1389SMPL.d	195135

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/09/2020 20:05

Analyst(s): MIG

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_11-12	2002901-031A	Soil	02/20/2020 11:50	ICP-MS4 1390SMPL.d	195135

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/09/2020 20:08

Analyst(s): MIG

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8_15-16	2002901-032A	Soil	02/20/2020 11:55	ICP-MS4 1394SMPL.d	195135

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	03/09/2020 20:24

Analyst(s): DB

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	03/04/2020	**BatchID:**	195134
Date Analyzed:	03/06/2020	**Extraction Method:**	CA Title 22
Instrument:	ICP-MS4	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/L
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-195134

QC Summary Report for Metals (STLC)

Analyte	MB Result	MDL	RL			
Chromium	ND	0.100	0.100	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Chromium	9.31	9.55	10	93	95	75-125	2.54	20

(Cont.)

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Quality Control Report

Client:	Kleinfelder, Inc.	**WorkOrder:**	2002901
Date Prepared:	03/04/2020	**BatchID:**	195135
Date Analyzed:	03/06/2020	**Extraction Method:**	CA Title 22
Instrument:	ICP-MS4	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/L
Project:	20203748.001A; Morgan Hill Fisher Basin	**Sample ID:**	MB/LCS/LCSD-195135 2002901-024AMS/MSD

QC Summary Report for Metals (STLC)

Analyte	MB Result	MDL	RL			
Chromium	ND	0.100	0.100	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Chromium	9.42	9.28	10	94	93	75-125	1.56	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chromium	1	9.32	9.45	10	ND	93	94	75-125	1.40	20

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Chromium	ND<0.500	ND	-	-

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.

McCampbell Analytical, Inc.
1534 Willow Pass Rd
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CHAIN-OF-CUSTODY RECORD

WorkOrder: 2002901 A **ClientCode: KFSJ**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Dry-Weight

Report to:
Craig Riddle
Kleinfelder, Inc.
380 North 1st Street
San Jose, CA 95132
(408) 586-7611 FAX: (408) 586-7688

Email: criddle@kleinfelder.com
cc/3rd Party:
PO:
Project: 20203748.001A; Morgan Hill Fisher Basin

Bill to:
F. Mwape
Kleinfelder, Inc.
380 North 1st Street
San Jose, CA 95132

Requested TAT: 5 days;

Date Received: 02/24/2020
Date Logged: 02/24/2020
Date Add-On: 03/04/2020

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2002901-002	B-1_6-7	Soil	2/20/2020 13:55	☐	A											
2002901-003	B-1_12-13	Soil	2/20/2020 14:00	☐	A											
2002901-004	B-1_16-17	Soil	2/20/2020 14:05	☐	A											
2002901-005	B-2_1-2	Soil	2/20/2020 14:20	☐	A											
2002901-007	B-2_11-12	Soil	2/20/2020 14:35	☐	A											
2002901-008	B-2_15-16	Soil	2/20/2020 14:40	☐	A											
2002901-010	B-3_6-7	Soil	2/20/2020 15:30	☐	A											
2002901-011	B-3_12-13	Soil	2/20/2020 15:35	☐	A											
2002901-012	B-3_16-17	Soil	2/20/2020 15:40	☐	A											
2002901-014	B-4_5-6	Soil	2/20/2020 16:10	☐	A											
2002901-015	B-4_11-12	Soil	2/20/2020 16:15	☐	A											
2002901-016	B-4_15-16	Soil	2/20/2020 16:20	☐	A											
2002901-017	B-5_2-3	Soil	2/21/2020 09:10	☐	A											
2002901-018	B-5_6-7	Soil	2/21/2020 09:35	☐	A											
2002901-019	B-5_12-13	Soil	2/21/2020 09:55	☐	A											

Test Legend:

1	CRMS_STLC_S	2		3		4	
5		6		7		8	
9		10		11		12	

Project Manager: Angela Rydelius

Prepared by: Lilly Ortiz

Add-On Prepared By: Maria Venegas

Comments: STLC Cr added 3/4/2020 STAT.

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
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Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2002901 A **ClientCode: KFSJ**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Dry-Weight

Report to:
Craig Riddle
Kleinfelder, Inc.
380 North 1st Street
San Jose, CA 95132
(408) 586-7611 FAX: (408) 586-7688

Email: criddle@kleinfelder.com
cc/3rd Party:
PO:
Project: 20203748.001A; Morgan Hill Fisher Basin

Bill to:
F. Mwape
Kleinfelder, Inc.
380 North 1st Street
San Jose, CA 95132

Requested TAT: 5 days;

Date Received: **02/24/2020**
Date Logged: **02/24/2020**
Date Add-On: **03/04/2020**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2002901-020	B-5_16-17	Soil	2/21/2020 10:00	☐	A											
2002901-021	B-6_1-2	Soil	2/20/2020 09:45	☐	A											
2002901-022	B-6_5-6	Soil	2/20/2020 10:05	☐	A											
2002901-023	B-6_11-12	Soil	2/20/2020 10:20	☐	A											
2002901-024	B-6-15-16	Soil	2/20/2020 10:30	☐	A											
2002901-025	B-7_2-3	Soil	2/20/2020 11:00	☐	A											
2002901-026	B-7_6-7	Soil	2/20/2020 11:05	☐	A											
2002901-027	B-7_12-13	Soil	2/20/2020 11:10	☐	A											
2002901-029	B-8_1-2	Soil	2/20/2020 11:35	☐	A											
2002901-030	B-8_5-6	Soil	2/20/2020 11:45	☐	A											
2002901-031	B-8_11-12	Soil	2/20/2020 11:50	☐	A											
2002901-032	B-8_15-16	Soil	2/20/2020 11:55	☐	A											

Test Legend:

1	CRMS_STLC_S	2		3		4	
5		6		7		8	
9		10		11		12	

Project Manager: Angela Rydelius

Prepared by: Lilly Ortiz

Add-On Prepared By: Maria Venegas

Comments: STLC Cr added 3/4/2020 STAT.

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: KLEINFELDER, INC.
Client Contact: Craig Riddle
Contact's Email criddle@kleinfelder.com

Project: 20203748.001A; Morgan Hill Fisher Basin
Comments: STLC Cr added 3/4/2020 STAT.

Work Order: 2002901
QC Level: LEVEL 2
Date Logged: 2/24/2020
Date Add-On: 3/4/2020

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2002901-002A	B-1_6-7	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 13:55	5 days*		☐	
2002901-003A	B-1_12-13	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 14:00	5 days*		☐	
2002901-004A	B-1_16-17	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 14:05	5 days*		☐	
2002901-005A	B-2_1-2	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 14:20	5 days*		☐	
2002901-007A	B-2_11-12	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 14:35	5 days*		☐	
2002901-008A	B-2_15-16	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 14:40	5 days*		☐	
2002901-010A	B-3_6-7	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 15:30	5 days*		☐	
2002901-011A	B-3_12-13	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 15:35	5 days*		☐	
2002901-012A	B-3_16-17	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 15:40	5 days*		☐	
2002901-014A	B-4_5-6	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 16:10	5 days*		☐	
2002901-015A	B-4_11-12	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 16:15	5 days*		☐	
2002901-016A	B-4_15-16	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 16:20	5 days*		☐	
2002901-017A	B-5_2-3	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/21/2020 9:10	5 days*		☐	
2002901-018A	B-5_6-7	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/21/2020 9:35	5 days*		☐	
2002901-019A	B-5_12-13	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/21/2020 9:55	5 days*		☐	
2002901-020A	B-5_16-17	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/21/2020 10:00	5 days*		☐	
2002901-021A	B-6_1-2	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 9:45	5 days*		☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

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WORK ORDER SUMMARY

Client Name: KLEINFELDER, INC.
Client Contact: Craig Riddle
Contact's Email criddle@kleinfelder.com

Project: 20203748.001A; Morgan Hill Fisher Basin
Comments: STLC Cr added 3/4/2020 STAT.

Work Order: 2002901
QC Level: LEVEL 2
Date Logged: 2/24/2020
Date Add-On: 3/4/2020

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2002901-022A	B-6_5-6	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 10:05	5 days*		☐	
2002901-023A	B-6_11-12	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 10:20	5 days*		☐	
2002901-024A	B-6-15-16	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 10:30	5 days*		☐	
2002901-025A	B-7_2-3	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 11:00	5 days*		☐	
2002901-026A	B-7_6-7	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 11:05	5 days*		☐	
2002901-027A	B-7_12-13	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 11:10	5 days*		☐	
2002901-029A	B-8_1-2	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 11:35	5 days*		☐	
2002901-030A	B-8_5-6	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 11:45	5 days*		☐	
2002901-031A	B-8_11-12	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 11:50	5 days*		☐	
2002901-032A	B-8_15-16	Soil	SW6020 (Chromium) (STLC)	2	8OZ GJ, Unpres	2/20/2020 11:55	5 days*		☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

KLEINFELDER
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COC # 425320

2002901

2 coolers

Page 1 of 2

Project No.	Project Name	No. of Containers	Type of Containers
20203748.001A	Morgan Hill Fisher Basin		

L.P. No. (PO No.):

Samplers: (Signature/Number): Victoria Golston VictylGolston 4054262596

	Date MM/DD/YY	Sample I.D. Time HH-MM-SS	Sample I.D.	Matrix	No. of Containers	Type of Containers	SVOC (SW8270C)	PCBs only (SW8082)	Abestos CARB 435 400 point	pH (SW9045C)	Multi range TPH (SW8015M)	VOCs (SW8260B)	OC Pesticides (SW8081A)	CAM 17 Metals (SW6020)	STLC Cr		
1	02/20/20	1335	B-1_2-3	Soil	2	Jars	X	X	X	X	X	X	X	X			
2		1355	B-1_6-7	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
3		1400	B-1_12-13	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
4		1405	B-1_16-17	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
5		1420	B-2_1-2	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
6		1425	B-2_5-6	Soil	2	Jars	X	X	X	X	X	X	X	X			
7		1435	B-2_11-12	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
8		1440	B-2_15-16	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
9		1525	B-3_2-3	Soil	2	Jars	X	X	X	X	X	X	X	X			
10		1530	B-3_6-7	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
11		1535	B-3_12-13	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
12		1540	B-3_16-17	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
13		1600	B-4_1-2	Soil	2	Jars	X	X	X	X	X	X	X	X			
14		1610	B-4_5-6	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
15		1615	B-4_11-12	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
16		1620	B-4_15-16	Soil	2	Jars	X	X	X	X	X	X	X	X	X		

Receiving Lab:
McCampbell Analytical
1534 Willow Pass Rd
Pittsburg CA
1-877-252-9262

Instructions/Remarks:
McCampbell Analytical PM: Angela Rydelius

HOLD remaining samples for potential STLC/TCLP

Relinquished By:	Date/Time	Received By:
	2/24/20 1346	
Relinquished By:	Date/Time	Received By:
	2/24 1745	1745
Relinquished By:	Date/Time	Received By:

Instructions/Remarks:
Standard turn around time
Added 3/4/2020 STAT

Send Results To:
Craig Riddle,
criddle@kleinfelder.com

Project No.	Project Name	No. of Containers	Type of Containers
20203748.001A	Morgan Hill Fisher Basin		

L.P. No. (PO No.)

Samplers: (Signature/Number)
Victoria Golston Vicky Golston
405-426-2596

Receiving Lab:
McCampbell Analytical
1534 Willow Pass Rd
Pittsburg CA
1-877-252-9262

Instructions/Remarks
McCampbell Analytical PM: Angela Rydelius

	Date MM/DD/YY	Sample I.D. Time HH-MM-SS	Sample I.D.	Matrix	No. of Containers	Type of Containers	SVOC (SW8270C)	PCBs only (SW8082)	Abestos CARB 435 400 point	pH (SW9045C)	Multi range TPH (SW8015M)	VOCs (SW8260B)	OC Pesticides (SW8081A)	CAM 17 Metals (SW6020)	STLC Cr		
1	02/21/20	0910	B-5_2-3	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
2		0935	B-5_6-7	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
3		0955	B-5_12-13	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
4		1000	B-5_16-17	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
5	02/20/20	0945	B-6_1-2	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
6		1005	B-6-_5-6	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
7		1020	B-6_11-12	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
8		1030	B-6_15-16	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
9		1100	B-7_2-3	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
10		1105	B-7_6-7	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
11		1110	B-7_12-13	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
12		1120	B-7_16-17	Soil	2	Jars	X	X	X	X	X	X	X	X			
13		1135	B-8_1-2	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
14		1145	B-8_5-6	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
15		1150	B-8_11-12	Soil	2	Jars	X	X	X	X	X	X	X	X	X		
16		1155	B-8_15-16	Soil	2	Jars	X	X	X	X	X	X	X	X	X		

HOLD remaining samples for potential STLC/TCLP

Relinquished By:	Date/Time	Received By:
	2/24 1850	
	2/24 1745	1745

Instructions/Remarks

Standard turn around time

Send Results To:
Craig Riddle,
criddle@kleinfelder.com