SCV WATER AGENCY TELECONFERENCE ENGINEERING AND OPERATIONS COMMITTEE MEETING

THURSDAY, JUNE 3, 2021

START TIME: 5:30 PM (PST)

Join the Committee meeting from your computer, tablet or smartphone:
https://scvwa.zoomgov.com/j/1611036034

-OR-

Listen in Toll Free by Phone
+1-(833)-568-8864
Webinar ID: 161 103 6034

<u>To participate in public comment from your computer, tablet, or smartphone:</u>
When the Chair announces the agenda item you wish to speak on, click the **"raise hand" feature in Zoom***. You will be notified when it is your turn to speak.

<u>To participate in public comment via phone:</u>
When the Chair announces the agenda item you wish to speak on, **dial *9 to raise your hand**. Phone participants will be called on by the **LAST TWO digits** of their phone number. **When it is your turn to speak, dial *6 to unmute**. When you are finished with your public comment dial ***6 to mute**.

Can't attend? If you wish to still have your comments/concerns addressed by the Committee, all written public comments can be submitted by 4:00 PM the day of the meeting by either e-mail or mail.** Please send all written comments to Elizabeth Gallo. Refer to the Committee Agenda for more information.

*For more information on how to use Zoom go to **support.zoom.us** or for "raise hand" feature instructions, visit **https://support.zoom.us/hc/en-us/articles/205566129-Raise-Hand-In-Webinar**

**All written comments received after 4:00 PM the day of the meeting will be posted to yourscvwater.com the next day. Public comments can also be heard the night of the meeting.

Disclaimer: Pursuant to the Executive Order N-29-20 issued by Governor Newsom, public may not attend meetings in person. Public may use the above methods to attend and participate in the public meetings.

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Date: May 24, 2021

To: **Engineering and Operations Committee**
William Cooper, Chair
Jeff Ford
Gary Martin
Piotr Orzechowski
Lynne Plambeck

From: Courtney Mael, Chief Engineer CM
Keith Abercrombie, Chief Operating Officer KA

The **Engineering and Operations Committee** is scheduled to meet via teleconference on **Thursday, June 3, 2021** at **5:30 PM,** dial in information is listed below.

TELECONFERENCE ONLY
NO PHYSICAL LOCATION FOR MEETING

TELECONFERENCING NOTICE

Pursuant to the provisions of Executive Order N-29-20 issued by Governor Gavin Newsom on March 17, 2020, any Director may call into an Agency Committee meeting using the Agency's **Call-In Number 1-877-568-8864, Access Code 161 103 6034 or Zoom Webinar by clicking on the link https://scvwa.zoomgov.com/j/1611036034** without otherwise complying with the Brown Act's teleconferencing requirements.

Pursuant to the above Executive Order, the public may not attend the meeting in person. Any member of the public may listen to the meeting or make comments to the Committee using the call-in number or Zoom Webinar link above. Please see the notice below if you have a disability and require an accommodation in order to participate in the meeting.

We request that the public submit any comments in writing if practicable, which can be sent to **egallo@scvwa.org** or mailed to **Elizabeth Gallo, Executive Assistant**, Santa Clarita Valley Water Agency, 26515 Summit Circle, Santa Clarita, CA 91350. All written comments received before 4:00 PM the day of the meeting will be distributed to the Committee members and posted on the Santa Clarita Valley Water Agency website prior to the meeting. Anything received after 4:00 PM the day of the meeting will be posted on the SCV Water website the following day.

MEETING AGENDA

* Indicates attachments
♦ To be distributed

NOTICES:

Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by telephoning Elizabeth Gallo, Executive Assistant, at (661) 297-1600, or in writing to Santa Clarita Valley Water Agency at 27234 Bouquet Canyon Road, Santa Clarita, CA 91350. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that Agency staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the Agency to provide the requested accommodation.

Pursuant to Government Code Section 54957.5, non-exempt public records that relate to open session agenda items and are distributed to a majority of the Board less than seventy-two (72) hours prior to the meeting will be available for public inspection at the Santa Clarita Valley Water Agency, located at 27234 Bouquet Canyon Road, Santa Clarita, CA 91350, during regular business hours. When practical, these public records will also be made available on the Agency's Internet Website, accessible at http://www.yourscvwater.com.

Posted on May 26, 2021.

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ITEM NO. 2

COMMITTEE MEMORANDUM

DATE: May 22, 2021

TO: Engineering & Operations Committee

FROM: Courtney Mael, P.E.
Chief Engineer

SUBJECT: Recommend Approval of a Resolution to Adopt the Final Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program Under the California Environmental Quality Act and a Work Authorization to Civiltec Engineering, Inc. for Final Design Services for the new 1.7 MG Deane Tank Expansion at the Existing Deane Zone Tank Site

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SUMMARY

Staff recommends the approval of a resolution adopting the Final Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program under the California Environmental Quality Act for the Deane Tank Site Expansion, and a work authorization to Civiltec Engineering, Inc. for final design of the new 1.7 MG Deane Tank and Site Improvements. This project will provide necessary emergency storage for the Deane Zone and provide new storage required for the proposed Sand Canyon Plaza development.

DISCUSSION

The 2013 Water Master Plan for Santa Clarita Water Division identifies a 4.22 million-gallon (MG) storage deficiency in the existing Deane Pressure Zone system that provides water to the east side of our service area. The Deane Zone will undergo further expansion as a result of the proposed Tract 53074 Sand Canyon Plaza development and Skyline Ranch development. The Sand Canyon development is expected to add 0.65 MG and the Skyline Ranch development is expected to add 0.87 MG of storage demand to the Deane Zone, resulting in a combined storage deficiency of 5.74 MG.

A new 1.7 MG storage tank is proposed to be constructed at the existing SCV Water Deane Tank property located just south of the College of the Canyons - East Campus that will provide new storage required for the proposed Sand Canyon Plaza development and will help to address a portion of the existing storage deficiency in the Deane Zone system. As a separate project, two 2.08 MG tanks will ultimately be constructed within the Skyline Ranch development that will satisfy storage demand requirements for the Skyline Ranch project and address the remaining Deane Zone storage deficiency.

A portion of the existing storage deficiencies and additional project demands will be addressed jointly by SCV Water and the Sand Canyon developer that will serve existing SCV Water customers in the Deane Zone and the new Sand Canyon Plaza community. The developer will pay their fair share of the costs to design and construct the new tank as determined by the Sand Canyon Planning Phase Analysis, dated May 14, 2021, prepared by Civiltec Engineering, Inc. The Planning Phase Analysis provided a hydraulic analysis and preliminary design for the new water system infrastructure required for the Sand Canyon Plaza development. Based on the analysis, since the Sand Canyon Plaza development will add to the existing deficiencies in the

Deane Zone, the developer will be responsible to fund 38.2 percent of the project costs, with the remainder to be funded by the SCV Water Capital Improvement Program.

On March 25, 2021, Request for Proposals (RFP) for final design were sent to six of the Agency's on-call engineering firms based on their qualifications and experience. On April 14, 2021, four firms submitted fee proposals in response to the RFP: Cannon Corporation, Civiltec Engineering Inc., Michael Baker International, and Kennedy Jenks.

A selection committee reviewed the proposals and assigned a score based on the following criteria: project approach, qualifications, project team, and schedule. Based on a review of the proposals, staff recommends Civiltec Engineering, Inc. be awarded the Purchase Order to prepare the final design for the Deane tank expansion project. Civiltec Engineering Inc. is well qualified with recent and relevant experience working for SCV Water, including similar facilities for the Skyline Ranch and Sand Canyon Plaza projects.

CALIFORNIA ENVIRONMENTAL QUALITY ACT CONSIDERATIONS

With the assistance of Meridian Consultants, Inc., an Initial Study-Mitigated Negative Declaration (IS-MND) and Mitigation Monitoring and Reporting Program (MMRP) was prepared for the project in accordance with the requirements of the California Environmental Quality Act (CEQA) and the State CEQA Guidelines,

The IS-MND and MMRP was prepared to identify potentially significant impacts on the environment which would result from the project and concludes that these impacts can be avoided or reduced to a level of insignificance with adoption and implementation of the mitigation measures outlined in the MMRP. Environmental factors that require mitigation measures to reduce impacts to less than significant include aesthetics, biological resources, cultural resources, geology and soils, hazards and hazardous materials, noise and tribal cultural resources.

CEQA PUBLIC REVIEW PROCESS

On January 6, 2021, SCV Water circulated a Notice of Intent (NOI), provided notice in the Santa Clarita Valley Signal, and released the draft MND in compliance with CEQA requirements for a 30-day review and comment period by the public and reviewing agencies. The review period ended on February 5, 2021.

One comment letter was received from the California Department of Transportation which requested that a permit be obtained for any oversized-transport vehicles on State highways. A response to the comment letter has been provided in the Final MND.

FINAL CEQA DOCUMENTS FOR BOARD APPROVAL

The State CEQA Guidelines (California Code of Regulations ("CCR") Section 15074, Public Resources Code Section 21092) require public agencies to review and consider an MND, the IS, and comments received during the public review period prior to the adoption of the MND. Adoption of the Final MND is dependent on the finding by the Board that, based on the whole record before it, there is no substantial evidence, with the mitigation measures required by the MND, that the proposed project will have a significant impact on the environment, and that the MND reflects the Lead Agency's independent judgment and analysis. The Final MND is attached as Exhibit A.

Additionally, the State CEQA guidelines (CCR, sec 15097) require public agencies adopting an IS/MND to adopt a program for monitoring or reporting to ensure that mitigation measures in the IS/MND are implemented to mitigate or avoid potentially significant environmental impacts. The Mitigation Monitoring and Reporting Program (MMRP) is incorporated into the Final MND in Exhibit A.

All the above documentation, including other materials that constitute the record of proceedings upon which the Lead Agency decision is based, is on file at the Santa Clarita Valley Water Agency, 26521 Summit Circle, Santa Clarita, CA 91350.

FINANCIAL CONSIDERATIONS

The project is included in the Agency's FY 2021/22 Capital Improvement Budget for design of the new Deane Tank for Sand Canyon Plaza. Since this is a joint project with the developer, the developer will pay a portion of the costs for these facilities; the approved CIP design budget of $230,000 is for the Agency's portion of the design. Civiltec's proposal is $249,565 for final design. The developer is responsible for $95,334, based on their fair share of the facility. The Agency's portion of the design is $154,231 and is within the approved design budget of $230,000.

Funding for the Agency's portion of this retail CIP project is based on the increased storage capacity that is needed for existing customers (paid by rates) and future customers (paid by developer's capacity fees). The percentage of capacity fees (for future users) was determined during the approved budget process, as follows: 50% of the costs (Agency's portion) will be funded by SCWD pay-go budget, and the remaining 50% (Agency's portion) will be funded by capacity fees (future users).

RECOMMENDATION

That the Engineering & Operations Committee recommends that the Board of Directors approve (1) a resolution adopting the Final Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program under the California Environmental Quality Act for the Deane Tank Expansion Project and (2) the General Manager to issue a work authorization to Civiltec Engineering, Inc. for final engineering services in the amount of $154,231 for SCV Water's portion of the New 1.7 MG Deane Tank Expansion at the existing Deane Zone Tank site.

Attachments

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RESOLUTION NO. XXX

**RESOLUTION OF THE BOARD OF DIRECTORS
OF THE SANTA CLARITA VALLEY WATER AGENCY
ADOPTING THE FINAL MITIGATED NEGATIVE DECLARATION AND MITIGATION MONITORING AND REPORTING PROGRAM
UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT
FOR THE DEANE TANK SITE EXPANSION PROJECT**

WHEREAS, the Santa Clarita Valley Water Agency (SCV Water) proposes to construct a new 1.7-million-gallon potable water tank to provide additional storage capacity to address a water storage deficiency in the Deane Pressure Zone as outlined in the Santa Clarita Valley Water Agency's 2013 Water Master Plan; and

WHEREAS, the new Deane Tank will provide water storage for the future Sand Canyon Plaza development which will increase the existing storage deficiency in the Deane Pressure Zone; and

WHEREAS, the project consists of constructing one new 1.7-million-gallon steel water storage, and site improvements, including grading, retaining walls, underground piping, access road, paving and appurtenances; and

WHEREAS, an Initial Study for the project has been completed pursuant to the California Environmental Quality Act (CEQA) which identifies potentially significant effects on the environment which would result from the project, and concludes that these impacts can be avoided or reduced to a level of insignificance with adoption and implementation of certain mitigation measures therein identified and listed; and

WHEREAS, based on the Initial Study, a Mitigated Negative Declaration (MND) and Mitigation Monitoring and Reporting Plan (MMRP) was prepared in accordance with CEQA, which finds that any potentially significant environmental effects of the proposed project would be sufficiently mitigated to a level of insignificance with implementation of the mitigation measures specified therein; and

WHEREAS, in accordance with State CEQA Guidelines Section 15072(b), on January 6, 2021, SCV Water mailed a Notice of Intent to Adopt the Draft MND to all responsible and reviewing agencies, the Office of Planning and Research, and members of the public that have requested notice; the Agency also published the Notice of Intent to Adopt the Draft MND in the Santa Clarita Valley Signal, a newspaper of general circulation; and

WHEREAS, as required by State CEQA Guidelines section 15072(d), the Notice of Intent to Adopt the Draft MND was concurrently posted by the Clerk of the Board for the County of Los Angeles; and

WHEREAS, in accordance with State CEQA Guidelines section 15073, the Draft MND was circulated for at least 30 days, from January 6, 2021 to February 5, 2021; and

WHEREAS, SCV Water received one written comment from the public or reviewing agencies during the comment review period and a response has been prepared and included in the Final MND; and

WHEREAS, the Final MND and the MMRP are attached as Exhibit A; and

WHEREAS, a notice of public meeting relating to the MND was duly given and posted in the manner and for the time frame prescribed by law, and the Engineering and Operations Committee held a public on-line meeting on June 3, 2021 at 5:30 P.M., as part of its decision process concerning the project; and

WHEREAS, the Engineering and Operations Committee recommended that the Santa Clarita Valley Water Agency's Board of Directors (Board) approve a resolution adopting the Final MND and MMRP; and

WHEREAS, a notice of public meeting relating to the MND was duly given and posted in the manner and for the time frame prescribed by law, and the Board held a public on-line meeting on the project on July 6, 2021, at 6:30 P.M., as part of its decision process concerning the project, at which time all persons wishing to comment in connection to the MND were heard; and

WHEREAS, no comments made during the public review period, and no additional information submitted to SCV Water have produced substantial new information requiring recirculation of the MND or additional environmental review of the project under State CEQA Guidelines section 15073.5; and

WHEREAS, all the requirements of the Public Resources Code and the State CEQA Guidelines have been satisfied in connection with the preparation of the MND, which is sufficiently detailed so that all of the potentially significant environmental effects of the project, as well as feasible mitigation measures, have been adequately evaluated; and

WHEREAS, the Board reviewed the MND and MMRP; and

WHEREAS, the Board, acting as a Lead Agency, will need to adopt the IS/MND; and

WHEREAS, the Board has determined that the proposed project can be approved because there is no substantial evidence in light of the whole record that the project may have a significant effect on the environment; and

WHEREAS, the SCV Water and its Board have considered all of the information presented to it as set forth above and this Resolution and action taken hereby is a result of the Board's independent judgment and analysis.

NOW, THEREFORE, BE IT RESOLVED that the Board does hereby find and determine as follows:

SECTION 1. RECITALS. The SCV Water finds that the foregoing recitals are true and correct and are incorporated herein as substantive findings of this Resolution.

SECTION 2. COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT. As a decision-making body for the project, the SCV Water has reviewed and considered the information contained in the MND, comments received, and other documents contained in the administrative record for the project. Based on the Agency's independent review and analysis, the SCV Water finds that the MND and administrative record contain a complete and accurate reporting of the environmental impacts

associated with the project, and that the MND has been completed in compliance with CEQA and the State CEQA Guidelines.

SECTION 3. FINDINGS ON ENVIRONMENTAL IMPACTS. Based on the whole record before it, including the MND, the administrative record, and all other written and oral evidence presented to the SCV Water, the SCV Water finds that all environmental impacts of the project are either less than significant or can be mitigated to a level of less than significant under the mitigation measures outlined in the MND and the MMRP. The SCV Water finds that substantial evidence fully supports the conclusion that no significant and unavoidable impacts will occur and that, alternatively, there is no substantial evidence in the administrative record supporting a fair argument that the project may result in any significant environmental impacts. The SCV Water finds that the MND contains a complete, objective, and accurate reporting of the environmental impacts associated with the project and reflects the independent judgment and analysis of the SCV Water.

SECTION 4. ADOPTION OF THE MITIGATED NEGATIVE DECLARATION. The SCV Water hereby approves and adopts the MND as the Lead Agency.

SECTION 5. ADOPTION OF THE MITIGATION MONITORING AND REPORTING PROGRAM. In accordance with Public Resources Code section 21081.6, the SCV Water hereby adopts the MMRP, attached hereto as Exhibit “A”. In the event of any inconsistencies between the Mitigation Measures as set forth in the MND and the MMRP, the MMRP shall control.

SECTION 6. LOCATION AND CUSTODIAN OF RECORDS. The documents and materials associated with the project and the MND that constitute the record of proceedings on which these findings are based are located at the offices of the Santa Clarita Valley Water Agency, 26521 Summit Circle, Santa Clarita, CA 91350. The Custodian of Record is Mr. Courtney Mael.

SECTION 7. NOTICE OF DETERMINATION. The SCV Water hereby directs staff to prepare, execute, and file a Notice of Determination with the Los Angeles County Clerk’s office and the Office of Planning and Research within five (5) working days of adoption of this Resolution.

EXHIBIT "A"
ATTACHED
THE FINAL MITIGATED NEGATIVE DECLARATION AND MITIGATION MONITORING AND REPORTING PROGRAM
FOR THE DEANE TANK SITE EXPANSION PROJECT

Final Mitigated Negative Declaration

Prepared For:

Santa Clarita Valley Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

Deane Tank Site Expansion Project

SCH #201010051

Westlake Village Office
920 Hampshire Road, Suite A5
Westlake Village, CA 91361

Meridian Consultants

Los Angeles Office
706 S. Hill Street, 11th Floor
Los Angeles, CA 90014

March 2021

FINAL MITIGATED NEGATIVE DECLARATION AND MITIGATION MONITORING AND REPORTING PROGRAM

Deane Tank Expansion Project

Prepared for:

Santa Clarita Valley Water Agency
26521 Summit Circle
Santa Clarita, CA 91350

Prepared by:

WESTLAKE VILLAGE OFFICE
920 Hampshire Road, Suite A5
Westlake Village, CA 91361

Meridian Consultants

LOS ANGELES OFFICE
706 S. Hill Street, 11th Floor
Los Angeles, CA 90014

March 2021

Table of Contents

1.0 INTRODUCTION

1.1 PURPOSE

This Final Initial Study (IS) and Mitigated Negative Declaration (MND; together, IS/MND) has been prepared for the Deane Tank Expansion Project (proposed Project) in accordance with the requirements of the California Environmental Quality Act (CEQA)[1] and the State CEQA Guidelines.[2] Santa Clarita Valley Water Agency (SCVWA) is acting as the Lead Agency as defined by CEQA for the environmental review of the proposed Project. A Mitigation Monitoring and Reporting Program (MMRP), which provides a summary of impacts, mitigation measures, and implementation procedures (see **Appendix A**) and the Draft IS/MND (see **Appendix B**) are also included.

1.2 DESCRIPTION OF THE PROPOSED PROJECT

The purpose of the proposed Project is to provide additional water storage capacity for fire protection, emergency and operational needs at the Deane Pressure Zone, which is deficient in storage by 4.22 million gallons (MG), as of 2013. New developments within the Deane Pressure Zone will increase the existing deficiency to 5.74 MG. New developments within the Deane Pressure Zone include the Skyline Ranch development, which requires an additional 0.87 MG of water demand, and the Sand Canyon Plaza development, which requires 0.65 MG of water demand. The proposed Project includes the construction of a new steel water storage tank with approximately 1.70 MG of storage capacity to address the water storage deficiency related to recent developments.

The proposed Project would be located on the Deane Zone hilltop site (Project Site) within Accessor Parcel Number (APN) 2839-002-902, which is west of Winterdale Drive and south of Sierra Highway. The new steel water storage tank proposed at the Project Site would be approximately 100 feet in diameter, constructed with 29 feet[3] operation water depth, with the capacity to store approximately 1.70 MG of potable water for the Deane Pressure Zone. The water supply for the new steel tank would be delivered from two existing pump stations located north of the site on Sierra Highway- the Linda Vista Pump Station and Honby House Pump Station and an existing 14-inch line that is located along the access road to the proposed tank. The two pump stations and 14-inch water line currently supply water to the existing tanks at the Project Site and would be connected to the newly constructed water storage tank at project completion. The proposed steel water storage tank is located south by southwest of the existing tanks.

1 California Code of Regulations, sec. 21000 et seq.
2 California Code of Regulations, sec. 15070 – 15075, State CEQA Guidelines.
3 The actual tank will be 32 feet to match the height of the existing tanks, and depth of water within tank would be 29 feet.

As part of the proposed Project, other infrastructure-related components include: the installation of new underground water piping and electrical lines and the relocation of existing utilities; a 20 foot wide asphalt paved access road adjacent to each tank; a new drainage system around the proposed steel water storage tank and along the access roadway; retaining walls; and an extra fill pad to assist with balancing earthwork on site. An optional access road may be constructed north of the Project Site that would connect the Project Site to the College of Canyons property to the north and downslope of the hilltop.

Existing on-site utilities would remain operational during construction to keep the existing tanks in service. The existing water storage tanks, along with the new steel water storage tank to be constructed, would be supported by the delivery of water through a 14-inch water pipeline from the pump stations and electrical conduit located below the access driveway. Proposed drainage improvements at the tank site would include the removal of an existing catch basin and drain line. The existing drain line runs from the catch basin down the north-facing slope to a point above an existing terrace drain. The existing drainage patterns of the slope would not be changed by the removal of the drain line. The existing supervisory control and data acquisition system would be modified to accept input from the new tank mixer, the seismic isolation valve, and limit switches that provide intrusion alarm notification on the tank hatches.

1.3 PUBLIC REVIEW PROCESS

On January 6, 2021, SCVWA circulated a Notice of Intent of the IS for a 30-day review and comment period by the public and by responsible and reviewing agencies. The review period ended on February 5, 2021. Additionally, a notice was published in the *Signal Newspaper* on January 7, 2021 (See **Appendix C**).

The Final IS/MND and Draft IS are also available at:

Santa Clarita Valley Water Agency
26521 Summit Circle
Santa Clarita, California 91350

In addition, the Draft IS/MND is available on the SCVWA website:

https://yourscvwater.com

The State CEQA Guidelines[4] require that the decision-making body of the Lead Agency consider the proposed IS together with any comments received during the public review process prior to approving a project.

4 California Code of Regulations, sec. 15074(b), State CEQA Guidelines.

One comment letter was received regarding the Draft IS. The letter was from the California Department of Transportation on February 3, 2021. The comment letter notes Vehicle Miles Traveled (VMT) as the primary metric in identifying transportation impacts and requests permits to be applied for the use of oversized-transport vehicles on State highways.

The Final MND, when combined with the Draft IS, constitutes the complete environmental review document for the proposed Project to be considered by the SCVWA Board of Directors, as the decision-making body, before it makes its decision on the proposed Project. The decision-making body shall adopt the Final IS/MND only if it finds, on the basis of the whole record before it (including the IS and any comments received), that no substantial evidence exists that the proposed Project will have a significant effect on the environment and that the Final IS/MND reflects the Lead Agency's independent judgment and analysis.

Additionally, the State CEQA Guidelines[5] require that the Lead Agency adopt a mitigation monitoring program for reporting on or monitoring the physical changes of the Project Site and mitigating significant environmental effects.

1.4 ORGANIZATION OF THE FINAL IS/MND

As required by the State CEQA Guidelines, the Final IS/MND consists of the following elements:

- Comments received from reviewing agencies and the public on the Draft IS during the public review process and responses to those comments (see **Section 2.0**).
- A MMRP, which provides a summary of impacts, mitigation measures, and implementation procedures (see **Appendix A**.)
- The Draft IS (see **Appendix B**).
- Signal Newspaper Proof (see **Appendix C**).

A disc containing these documents is also attached to the inside back cover of this Final IS/MND.

5 California Code of Regulations, sec. 15074(b), State CEQA Guidelines.

2.0 COMMENTS ON THE DRAFT IS AND MND

The State CEQA Guidelines[6] require that the decision-making body of the Lead Agency consider the proposed IS together with any comments received during the public review process prior to approving a project.

One comment letter was received regarding the Draft IS from the California Department of Transportation, dated February 3, 2021.

Response to California Department of Transportation

The comment letter notes VMT as the primary metric in identifying transportation impacts and requests permits to be applied for the use of oversized-transport vehicles on State highways.

As indicated in Section 2.3: Project Description and Section 5.17: Transportation and Traffic of the Draft IS/MND, the proposed Project would include the use of on- and off-road construction vehicles and equipment within the Project Site, construction worker commute trips, haul trips, and delivery trips. Construction activities are anticipated to generate up to 15 trips per week for the duration of the construction period. Construction related trips will be temporary in nature and cease from operation once construction is completed. During operation, the proposed Project is anticipated to maintain comparable vehicle trips to existing trips to the Project Site for maintenance and operating staff. Therefore, operational vehicle miles generated would be similar to existing conditions and potential construction and operation impacts would be less than significant as identified in the Draft IS/MND and mitigation measures would not be required.

As required by the California Department of Transportation for any oversized vehicles transported to the Project Site in the event that they are needed for construction, the SCVWA will attain the necessary permits for heavy duty construction vehicles being transported on State facilities prior to construction. Therefore, potential transportation impacts related to the transport of oversized vehicles to the Project Site would be less than significant as identified in the Draft IS/MND and mitigation measures would not be required.

6 California Code of Regulations, sec. 15074(b), State CEQA Guidelines.

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APPENDIX A

Mitigation Monitoring and Reporting Program

MITIGATION MONITORING AND REPORTING PROGRAM

A Mitigation Monitoring and Reporting Program (MMRP) has been prepared, pursuant to the requirements of the State CEQA Guidelines,[1] identifying the monitoring of mitigation measures that would reduce potential significant impacts as stated in the Draft Initial Study and Mitigated Negative Declaration (IS/MND) for the Deane Tank Site Expansion Project (proposed Project).

The State CEQA Guidelines[2] require public agencies adopting an IS/MND to also adopt a program for monitoring or reporting to ensure that the mitigation measures it has imposed to mitigate or avoid significant environmental effects are implemented.

Santa Clarita Valley Water Agency (SCVWA) will be required to adopt the MMRP should the Board of Directors approve the proposed Project.

The MMRP is available at Santa Clarita Valley Water Agency, 26521 Summit Circle, Santa Clarita, California 91350.

The MMRP may be modified by SCVWA in response to changing conditions or circumstances. A summary table (**Table 1: Summary of Project Impacts, Mitigation Measures, and Implementation Responsibility**) will guide SCVWA in its evaluation and documentation of the implementation of mitigation measures. The MMRP is organized as follows:

- **Mitigation Measure:** Provides the text of the mitigation measures identified in the IS/MND.
- **Timing/Schedule:** Identifies the timeframe in which the mitigation will take place.
- **Implementation Responsibility:** Identifies the entity responsible for complying with mitigation measure requirements.
- **Action:** Describes the type of action taken to verify implementation.
- **Date Completed:** Provides for the acknowledgement of completion of each mitigation measure as it is implemented. Entries should be dated and initialed by SCVWA personnel based on the documentation noted in the mitigation measure and provided by the individual or entity responsible for implementing the measure.

Unless otherwise specified herein, SCVWA is responsible for taking all actions necessary to implement the mitigation measures according to the provided specifications and for demonstrating that each action has been successfully completed. SCVWA, at its discretion, may delegate implementation responsibility or portions thereof to a licensed contractor.

Table 1

Summary of Project Impacts, Mitigation Measures, and Implementation Responsibility

Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
			Action	Date Completed
Aesthetics				
AES-1 Any necessary security lighting during construction of planned facilities shall be designed to be consistent with City zoning codes and applicable design guidelines and to minimize light to adjacent areas. Construction activities shall be restricted to daytime hours on residential streets. If nighttime construction is required, temporary lighting must be directed onto the worksite and avoid any spill-over light or glare onto adjacent properties.	During final engineering plan design/plan check During construction	SCVWA and/or construction contractor	1. Minimize lighting impacts to adjacent areas by following applicable City zoning codes and applicable design guidelines. 2. Construction activities shall be restricted to daytime hours on residential streets. 3. If nighttime construction lighting is required, then lighting shall be temporary and directed onto the worksite to avoid any spill-over light onto adjacent properties	
Biological Resources				
BIO-1 A pre-construction coastal whiptail survey shall be conducted by a qualified biologist within 3 days prior to initiating ground disturbance activities. The survey shall include full coverage of the proposed disturbance limits and a 500- foot buffer, and can be performed concurrently with the nesting bird survey if during February 1 through August 31. Any coastal whiptail observed during the pre-construction survey shall be relocated to a suitable area within the adjacent habitat and outside of the construction zone.	Prior to construction activities or vegetable removal	SCVWA	1a. A qualified biologist, who is also referred to as a Biological Monitor, will perform a preconstruction survey within 500 feet of construction limits no earlier than 3 days prior to initiation of ground or vegetation disturbance to determine the presence of coastal whiptail on site. 1b. If coastal whiptail is observed during the pre-construction survey the species shall be relocated to a suitable area within the adjacent habitat and outside of the construction zone.	

	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
				Action	Date Completed
BIO-2	If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds shall be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey shall document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities shall stay outside of a no-disturbance buffer. The size of the no-disturbance buffer shall be determined by the wildlife biologist and shall depend on the level of noise and/or surrounding anthropogenic disturbances, line of sight between the nest and the construction activity, type and duration of construction activity, ambient noise, species habituation, and topographical barriers. These factors will be evaluated on a case-by-case basis when developing buffer distances. Limits of construction to avoid an active nest shall be established in the field with flagging, fencing, or other appropriate barriers; and construction personnel shall be instructed on the sensitivity of nest areas. A biological monitor shall be present to delineate the	Prior to construction During construction activities if active nest has been determined by qualified biologist and/or proposed plan compliance monitor.	SCVWA	1a. A qualified biologist, who is also referred to as a Biological Monitor, will perform a nesting survey within 500 feet of construction limits no earlier than 3 days prior to initiation of ground or vegetation disturbance to determine the presence of nesting birds onsite. 1b. If an active nest is identified, then the Biological Monitor will determine the size of the no-disturbance buffer and any additional measures that may be needed to protect the nesting bird. 1c. The Biological Monitor, or proposed plan compliance monitor, shall be present to delineate boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by construction activities until the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions.	

Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
			Action	Date Completed
boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur.				
Cultural Resources				
CUL-1 Prior to the start of ground disturbing activities, the SCVWA project manager or designee shall ensure that a qualified archaeologist or another mitigation program staff member has conducted cultural and tribal cultural resources sensitivity training for all construction workers involved in moving soil or working near soil disturbance or documentation can be provided that construction workers have been trained to identify cultural and tribal cultural resources.	Prior to excavation and construction activities	SCVWA and/or construction contractor	1. The SCVWA Project manager or designee will ensure a qualified archaeologist or another mitigation program staff member has conducted cultural resources sensitivity training for all construction crews.	
CUL-2: Inadvertent Discoveries. During project-related construction and excavation activities, should subsurface archaeological resources be discovered, all activity in the vicinity of the find shall stop and a qualified archaeologist shall be contacted to assess the significance of the find according to CEQA Guidelines Section 15064.5. If any find is determined to be significant, the archaeologist shall determine, in consultation with SCVWA and	During excavation and construction activities	SCVWA	1. The SCVWA Project manager or designee shall monitor excavations during construction. If subsurface archaeological resources are discovered, the SCVWA Project manager or their designee will halt construction and contact a qualified archaeologist to assess the significance of the find. If find is determined to be significant, the archeologist will consult SCVWA and any local Native American groups (e.g., Fenandeño Tataviam Band of	

Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
			Action	Date Completed
any local Native American groups (e.g., Fernandeno Tataviam Band of Mission Indians) expressing interest for prehistoric resources, appropriate avoidance measures or other appropriate mitigation. Per CEQA Guidelines Section 15126.4(b)(3), preservation in place shall be the preferred means to avoid impacts to archaeological resources qualifying as historical resources. Methods of avoidance may include, but shall not be limited to, rerouting or redesign, cancellation, or identification of protection measures such as capping or fencing. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures, such as data recovery or other appropriate measures, in consultation with SCVWA and Fernandeno Tataviam Band of Mission Indians representatives expressing interest in prehistoic archaeological resources. If an archaeological site does not qualify as a historical resource but meets the criteria for a unique archaeological resource, as defined in Section 21083.2, then the site shall be treated in accordance with the provisions of Section 21083.2.			Mission Indians) to determine appropriate avoidance measures or appropriate mitigation.	

Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
			Action	Date Completed
Geology and Soils				
GEO-1 A qualified paleontologist shall be retained by the SCVWA prior to construction activities to develop and execute a paleontological monitoring plan (PMP) for the grading activities planned for the Project Site within the Miocene sedimentary units. The qualified paleontologist shall meet the qualifications established by the Society of Vertebrate Paleontology (SVP). The PMP shall include a construction monitoring schedule to be maintained when earthmoving occurs within Miocene sedimentary units so that the paleontologist may identify and evaluate fossil resources in the Project Site. The paleontologist shall become familiar with the proposed depths and patterns of grading for grading activities planned in the Project Site within the Miocene sedimentary units to support to the development of a monitoring program. The PMP shall be reviewed and approved by the SCVWA prior to the beginning of construction. The qualified paleontologist shall present the elements of the approved PMP to SCVWA staff and construction supervisors in a pre-construction meeting. The PMP shall present the fossil sensitivity of the geologic formation, the nature of the resources that have been or may be encountered within the	Prior to Construction. During excavation and construction activities.	SCVWA and/or construction contractor	1. The SCVWA project manager or their designee shall retain a qualified paleontologist prior to construction activities to develop and execute a paleontological monitoring plan (PMP) for ground disturbing activities. 2. If subsurface paleontologist resources are discovered, the SCVWA Project manager or their designee will halt construction and contact the paleontologist or their designee to evaluate the find in accordance with the PMP. Construction activities within the area may resume once the find is properly mitigated as defined in the PMP.	

Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
			Action	Date Completed
formation and steps to be undertaken to mitigate impacts to these resources to a level of less than significant. If fossils are found during earthmoving activities, the paleontologist shall be authorized to halt the ground-disturbing activities within the prescribed distance in the PMP to allow evaluation of the find and determination of appropriate treatment in accordance with SVP guidelines for identification, evaluation, disclosure, avoidance or recovery, and curation, as appropriate. The paleontologist shall prepare a final report on the monitoring. If fossils are identified, then the report shall contain an appropriate description of the fossils, treatment, and curation. A copy of the report shall be filed with the SCVWA and the Natural History Museum of Los Angeles.				
Hazards and Hazardous Materials				
HAZ-1: During construction activities, the construction contractor shall provide fire-fighting equipment, such as fire extinguishers, to the satisfaction of the Los Angeles County Fire Department (LAcoFD) and shall provide instruction on possible fire risk and the use of fire extinguishers as part of required construction-related safety training.	Prior to construction activities During construction activities	SCVWA and/or construction contractor	1. The construction contractor will provide fire-fighting equipment, such as fire extinguishers, to the satisfaction of the Los Angeles Fire Department, and will provide instruction on possible fire risk and the use of fire extinguishers as part of required construction-related safety training.	

	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
				Action	Date Completed
Noise					
N-1	**Construction Noise**. SCVWA and its contractors shall implement the following measures during all Project-related construction activities: • Noise-generating project construction activities, including haul truck deliveries, shall only occur between the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, 8:00 a.m. to 6:00 p.m. on Saturdays, and with no activity allowed on Sundays or federal holidays. • During all project construction, construction contractor shall equip all construction equipment, fixed or mobile, to be equipped with properly operating and maintained optimal mufflers of 10 dB or more. • Limit the number of noise-generating heavy-duty off-road construction equipment (e.g., backhoes, dozers, excavators, rollers, etc.) simultaneously used on the Project Site within 25 feet of off-site noise sensitive receptors surrounding the site. A sign, legible at a distance of 50 feet, shall be posted at the project construction site providing a contact name and a telephone number where residents can inquire about the construction process and register complaints. This sign would indicate the dates and duration of construction activities. In conjunction with this required posting, a	During construction activities	SCVWA and/or construction contractor	1. Noise-generating project construction activities, including haul truck deliveries, shall only occur between the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, 8:00 a.m. to 6:00 p.m. on Saturdays, and with no activity allowed on Sundays or federal holidays. 2. During all project construction, construction contractor shall equip all construction equipment, fixed or mobile, to be equipped with properly operating and maintained optimal mufflers of 10 dB or more. 3. Limit the number of noise-generating heavy-duty off-road construction equipment (e.g., backhoes, dozers, excavators, rollers, etc.) simultaneously used on the Project Site within 25 feet of off-site noise sensitive receptors surrounding the site.	

	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
				Action	Date Completed
	noise disturbance coordinator would be identified to address construction noise concerns received. The contact name and the telephone number for the noise disturbance coordinator would be posted on the sign. The coordinator would be responsible for responding to any local complaints about construction noise.				
Tribal Cultural Resources					
TCR-1	Prior to the commencement of grading, the Santa Clarita Valley Water Agency shall consult with the Fernandeño Tataviam Band of Mission Indians on the disposition and treatment of any Tribal Cultural Resource encountered during subsurface excavation activities on the Project site.	Prior to construction activities During construction activities	SCVWA and/or construction contractor	1. Prior to the commencement of grading, the SCVWA shall consult with the Fernandeno Tataviam Band of Mission Indians on the disposition and treatment of any Tribal Cultural Resource encountered during subsurface excavation activities on the Project site 2. If the find is determined to be significant, the archaelogist will consult SCVWA and the Fernandeno Tataviam Band of Mission Indians to determine appropriate avoidance measures or appropriate mitigation	

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Note: SCVWA=Santa Clarita Valley Water Agency

APPENDIX B

Santa Clarita Valley Water Agency, Deane Tank Expansion Project, Draft Initial Study

Mitigated Negative Declaration

SCV WATER

Prepared For:

Santa Clarita Valley Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

for the

Deane Tank Site Expansion Project

Westlake Village Office
920 Hampshire Road, Suite A5
Westlake Village, CA 91361

Meridian Consultants

Los Angeles Office
706 S. Hill Street, 11th Floor
Los Angeles, CA 90014

January 2021

Mitigated Negative Declaration

for the

Deane Tank Site Expansion Project

PREPARED FOR:

Santa Clarita Valley Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350

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Westlake Village Office
920 Hampshire Road, Suite A5
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January 2021

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1.0 INTRODUCTION

1.1 OVERVIEW

The Santa Clarita Valley Water Agency (SCV Water or SCVWA) prepared this Mitigated Negative Declaration (MND) and Initial Study (IS) to evaluate the potential environmental impacts associated with the Deane Tank Expansion Project (proposed Project).

The SCVWA was created January 1, 2018, by an act of the State Legislature (SB 634) through the merger of the three water agencies in the Santa Clarita Valley and serves a population of 273,000 through 70,000 retail water connections. The merger included Castaic Lake Water Agency and its Santa Clarita Water Division, Newhall County Water District, and the Valencia Water Company. The Castaic Lake Water Agency was formed as a wholesale water agency to acquire, treat, and deliver State Water Project water supply throughout the Santa Clarita Valley. The Santa Clarita Water Division (SCWD), Newhall County Water District, and the Valencia Water Company were the retail water purveyors. The SCV Water service area has a population of 273,000 and covers approximately 195 square miles or 124,000 acres. Population at build-out is estimated to be 420,000. SCV Water also provides wholesale water to Los Angeles County Waterworks District No. 36.

The SCWD prepared the 2013 Water Master Plan Update to direct future infrastructure plans within the SCWD's service area.[1] The 2013 Water Master Plan Update was developed based on build-out population estimates and water demand needs for the City of Santa Clarita (City) and unincorporated portions of Los Angeles County within the SCWD service area. Documents prepared prior to January 1st, 2018, were created by prior water agencies and retailers before the formation of the SCVWA.

1.2 AUTHORITY

As part of the SCVWA's approval process, the Project is required to undergo an environmental review pursuant to the California Environmental Quality Act (CEQA).

The preparation of an IS and MND is governed by CEQA[2] and, more specifically, the State *CEQA Guidelines*,[3] which guide the process for the preparation of an IS and negative declaration (ND) or MND. Where appropriate and supportive to an understanding of the issues, reference will be made to the statute, the State *CEQA Guidelines*, or the appropriate case law.

1 Santa Clarita Water Division. *Overview of Santa Clarita Water Division*. Accessed October 2020. https://scvhistory.com/scvhistory/files/clwa_scwd_2012/clwa_scwd_2012.pdf
2 California Code of Regulations, sec. 15000, et seq., State CEQA Guidelines.
3 California Code of Regulations, sec. 15000, et seq.

This IS, as required by CEQA, contains a project description; a description of the environmental setting; an analysis of potential environmental impacts; mitigation measures for any significant effects; an evaluation of the proposed Project's consistency with applicable plans and policies; and the names of preparers.

SCVWA is the lead agency for the proposed Project as defined by CEQA, with the primary responsibility for carrying out and approving a project within its jurisdiction. As the lead agency, SCVWA is required to conduct an environmental review to analyze the potential environmental effects associated with the proposed project described in this IS. An MND is prepared for a project when the IS has identified mitigation measures required to reduced potentially significant effects on the environment to less than significant effects. If the proposed Project is found to have a less than significant or no impact to an environmental topic, the IS will show that no substantial evidence indicates the proposed Project will have a significant impact on that resource.

1.3 ORGANIZATION OF THE INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

The content and format of this Initial Study are designed to meet the requirements of CEQA. The IS/MND consists of the proposed findings that the project, as mitigated, would have no significant impacts. The IS/MND contains the following sections and supporting studies:

- **Section 1.0: Introduction** identifies the purpose and scope of the IS/MND and the terminology used in the report.
- **Section 2.0: Project Description** identifies the location, background, and planning objectives of the proposed Project in detail.
- **Section 3.0: Environmental Setting** describes the existing conditions, surrounding land use, general plan, and existing zoning in the Project area.
- **Section 4.0: Environmental Checklist** presents the checklist responses and evaluation for each resource topic.
- **Section 5.0: Environmental Analysis** includes an analysis for each resource topic and identifies potential impacts of implementing the Project. It also identifies mitigation measures, if applicable.
- **Section 6.0: References** identifies all printed references and individuals citied in this IS/MND.
- **Section 7.0: List of Preparers** identifies the individuals who prepared this report and their areas of technical specialty.
- Appendices present data supporting the analysis or contents of this IS/MND. These include:
  - **Appendix A: Air Quality and Greenhouse Gas Modeling Results**
  - **Appendix B: Biological Resource Survey Report**

- **Appendix C: Cultural Resource Report**
- **Appendix D: Energy Calculations**
- **Appendix E: Geologic and Soils Report**
- **Appendix F: Noise Measurement Data**
- **Appendix G: AB 52 Consultation Letters**

1.4 PUBLIC AND AGENCY REVIEW OF THE DRAFT IS/MND

CEQA requires that the lead agency provide the public and agencies the opportunity to review and comment on a Draft IS/MND. As outlined by CEQA, the SCVWA is providing a 30-day period for review and comment on the Draft IS/MND. Upon completion of the public and agency review period, the SCVWA, as lead agency, will evaluate comments on environmental issues received from persons who reviewed the Draft IS/MND and prepare written responses. The SCVWA will include these comments and responses in a Final MND along with any changes that will be reviewed and considered for adoption by the SCVWA Board of Directors.

Interested individuals, organizations, responsible agencies, and other agencies can provide written comments to:

Santa Clarita Valley Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350
Contact: Rick Vasilopulos, Water Resources Planner

Comments may also be sent by facsimile to (661) 705-7912, by email to rvasilopulos@scvwa.org, or by mail to the address below. Please put "Deane Tank Site Expansion Project" in the subject line. Agency responses should include the name of a contact person within the commenting agency.

The Draft IS/MND is available for review at the following location:

Santa Clarita Valley Water Agency
27234 Bouquet Canyon Road
Santa Clarita, California 91350

In addition, the Draft IS/MND is available on the SCVWA website:

https://yourscvwater.com/document-library/

2.0 PROJECT DESCRIPTION

2.1 PROJECT HISTORY

The Santa Clarita Valley Water Agency (SCV Water or SCVWA's) is planning to design and build additional water storage capacity to address an existing deficiency in potable water storage in the Deane Pressure Zone within the SCVWA's Santa Clarita Water Division region (proposed Project). The SCVWA operates two existing one-million-gallon potable water tanks on the Deane Zone hilltop site located in the Canyon Country area of the City of Santa Clarita in Los Angeles County, as shown in **Figure 2-1: Project Location Map**. The tanks were constructed around 1984 and provide water storage for wildfire, local operation, residential use, and emergency purposes that serve the areas within the Deane Pressure Zone.

A *Site Planning Summary Report* has been prepared for the proposed Project which addresses the existing storage deficiency.[4] According to the *2013 Water Master Plan*, the Deane Pressure Zone has a deficiency in storage of approximately 4.22 million gallons (MG). There are two large new developments within the existing Deane Pressure Zone that require additional storage over and above the existing storage deficiency. The new developments will increase the water storage deficiency to 5.74MG.

2.2 PROJECT LOCATION

The proposed Project would be located on the Deane Zone hilltop site (Project Site) within Accessor Parcel Number (APN) 2839-002-902, which is west of Winterdale Drive and south of Sierra Highway. The rectangular APN parcel is approximately 6.7 acres in size, with access to the existing water tank site provided through a paved roadway located west of Winterdale Drive near the intersection of Nearview Drive. **Figure 2-2: Project Site Plan** provides an aerial view of the Project Site.

2.3 PROJECT DESCRIPTION

The purpose of the proposed Project is to provide additional water storage capacity for fire protection, emergency and operational needs at the Deane Pressure Zone, which is deficient in storage by 4.22 MG, as of 2013. New developments within the Deane Pressure Zone will increase the existing deficiency to 5.74 MG. New developments within the Deane Pressure Zone include the Skyline Ranch development, which requires an additional 0.87 MG of water demand, and the Sand Canyon Plaza development, which requires 0.65 MG of water demand. The proposed Project includes the construction of a new steel water storage tank with approximately 1.70 MG of storage capacity to address the recent developments.

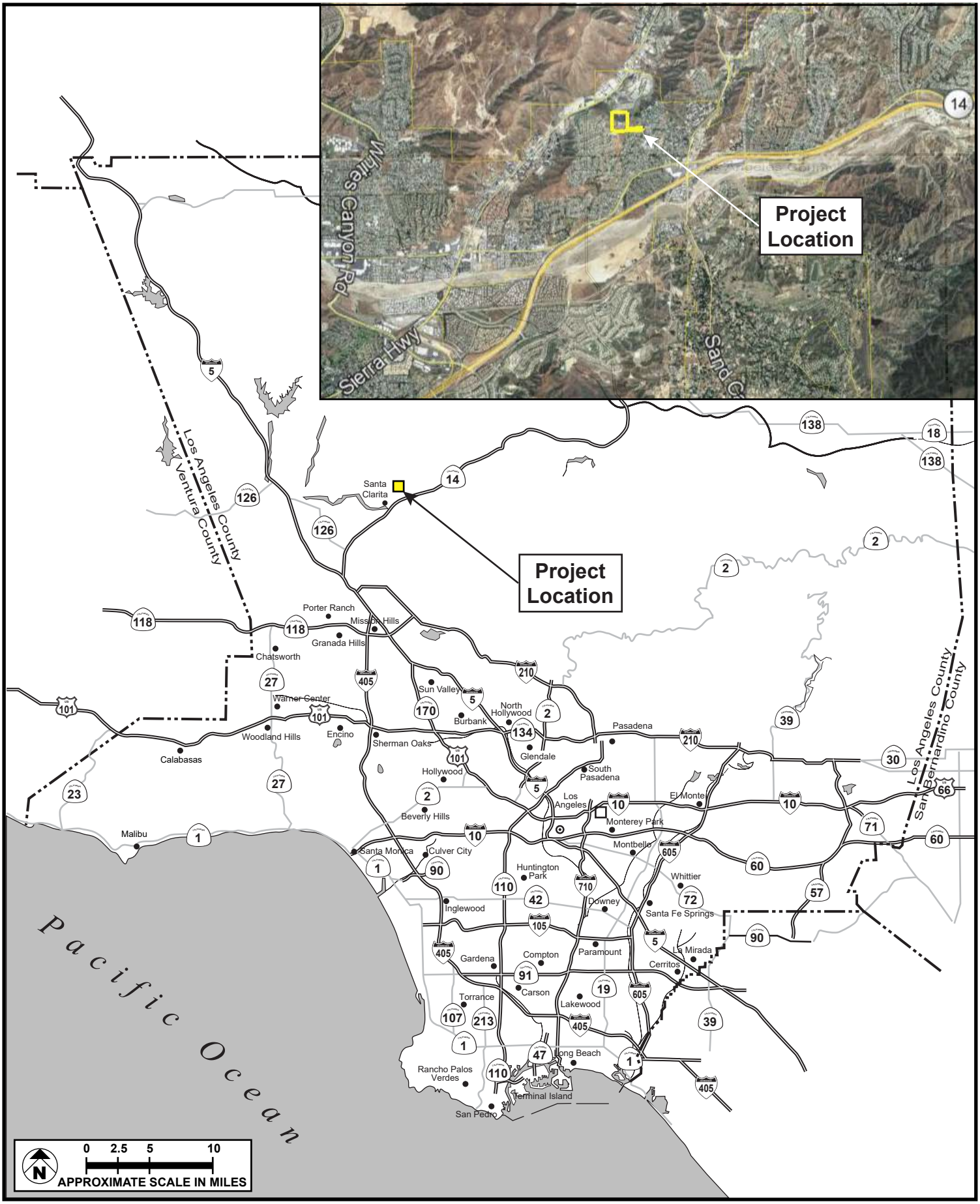
4 Santa Clarita Valley Water Agency, *Site Planning Study: New 1.7 MG Reservoir at Existing Deane Tank Site*, September 2020.

The new steel water storage tank proposed at the Project Site would be approximately 100 feet in diameter, constructed with 29 feet[5] operation water depth, with the capacity to store approximately 1.70 MG of potable water for the Deane Pressure Zone. The water supply for the new steel tank would be delivered from two existing pump stations located north of the site on Sierra Highway- the Linda Vista Pump Station and Honey House Pump Station and an existing 14-inch line that is located along the access road. The two pump stations and 14-inch water line currently supply water to the existing tanks at the Project Site and would be connected to the newly constructed water storage tank at project completion. As shown in **Figure 2-2**, the proposed steel water storage tank is located south by southwest of the existing tanks.

As part of the proposed Project, other infrastructure-related components include: the installation of new underground water piping and electrical lines and the relocation of existing utilities; a 20 foot wide asphalt paved access road adjacent to each tank; a new drainage system around the proposed steel water storage tank and along the access roadway; retaining walls; and an extra fill pad to assist with balancing earthwork on site. An optional access road may be constructed north of the Project Site that would connect the Project Site to the College of Canyons property to the north and downslope of the hilltop.

Existing on-site utilities would remain operational during construction to keep the existing tanks in service. The existing water storage tanks, along with the new steel water storage tank to be constructed, would be supported by the delivery of water through a 14-inch water pipeline from the pump stations and electrical conduit located below the access driveway. Proposed drainage improvements at the tank site would include the removal of an existing catch basin and drain line. The existing drain line runs from the catch basin down the north-facing slope to a point above an existing terrace drain. The existing drainage patterns of the slope would not be changed by the removal of the drain line. The existing supervisory control and data acquisition (SCADA) system would be modified to accept input from the new tank mixer, the seismic isolation valve, and limit switches that provide intrusion alarm notification on the tank hatches.

5 The actual tank will be 32 feet to match the height of the existing tanks, and depth of water within tank would be 29 feet.



SOURCE: Meridian Consultants, LLC - 2020

FIGURE **2-1**

Meridian Consultants

39

Project Location Map

299-002-20

SOURCE: Google Earth - 2020

FIGURE **2-2**

Meridian Consultants

Project Site Plan

299-002-20

Upon completion of the construction phase, the existing access road to the tank site would be repaved. New easements may be required for additional access area along the proposed roadway improvements.

The optional access road would be approximately 20-feet wide within the maximum disturbance area identified in **Figure 2-2**. The optional access road would consist of asphalt pavement over compacted base would be constructed along the north facing slope commencing at the existing fire access road within the College of the Canyons campus and connecting to the existing access road, just east of the existing water storage tanks. The north facing slope would be graded to provide a 20-foot wide pathway at a 20 percent maximum longitudinal gradient. Cut/fill slopes, along with required benches and terrace drains, would be constructed, as necessary. It is estimated that approximately 30,000 cubic yards of earthwork would be generated for the construction of the optional access road.

Construction

Construction would take approximately 12 months from March 2022 to February 2023. Construction activities would include grading, excavation, installation of utilities, and construction of new retaining walls and steel water storage tank. The Project would involve hill-top grading to create a pad for the new tank and access roads around the new and existing tanks (see **Figure 2-2**). The existing hilltop would be graded down by approximately 18 feet in order to maintain consistent floor elevation on site with the existing tanks. Approximately 8,000 to 10,000 cubic yards of soil would be removed and reused on-site at the fill pad, west of the proposed steel water storage tank. Retaining walls would be constructed on the southeastern and northeastern side of the proposed tank along the Project Site perimeter.

Temporary excavations would be required during grading to construct the proposed retaining walls. Site preparation would include removal of all vegetation, debris, and existing uncertified fill within disturbance areas. Approximately 9,000 cubic yards of soil may be exported from the site. Existing utilities on site would remain operational during the construction of the new steel water storage tank. Existing utilities would be removed and new drainage, water and electrical pipes would be constructed after the steel water storage tank is substantially completed.

During construction of the proposed Project, construction equipment would need to be stored at the end of each day. A construction staging area has been identified adjacent to the existing tank area (See **Figure 2-2**). SCVWA will comply with the City's construction noise ordinance[6] and limit construction activities to hours between 7:00 AM and 7:00 PM, Monday through Friday, and 8:00 AM and 6:00 PM on Saturday within 300 feet of residentially zoned properties. No work may be performed on the following public holidays: New Year's Day, Independence Day, Thanksgiving, Christmas Day, Memorial Day, and Labor Day. Construction equipment would include, but is not limited to, a backhoe, two trenchers, two off-highway

6 City of Santa Clarita Municipal Code, Section 11.44.080.

trucks, and traffic control measures including delineators, signs, and flaggers. Operation-related trips would generate up to 15 vehicle trips per week for the proposed tank infrastructure.

2.4 OTHER PUBLIC AGENCY REQUIRED APPROVALS

The proposed Project would include the construction of a new water storage tank and associated infrastructure. Construction and permanent easements are necessary to properly implement the goals for the proposed Project. Other permits that would be required for the proposed Project, but could be the contractor's responsibility, are General Construction Storm Water Permit from the Los Angeles Regional Water Quality Control Board, City Traffic Control Permit, and Trenching and Excavation Permit from the California Division of Occupational Safety and Health.

The following approvals and actions are required:

- Adoption of the Mitigated Negative Declaration

3.0 ENVIRONMENTAL SETTING

3.1 EXISTING CONDITIONS

The Project Site is located in the City of Santa Clarita (City). The Santa Clarita Valley is surrounded by the Angeles National Forest to the north and west, the San Gabriel Mountains to the east, and the Santa Susana Mountains to the south.

The Project Site is situated approximately half a mile north of the State Route (SR) 14 and a half mile west of Sand Canyon Road on top of an existing hillside adjacent to the existing water tanks.

3.1.1 Project Site

Access to the gated site is provided through an existing paved driveway off Winterdale Drive. Drainage at the site is currently collected in a catch basin and conveyed through a 14-inch steel pipe that is aligned from the tank site down the slope on the north side of the site. A catch basin is located at the bottom of the slope collects the on-site stormwater and any overflow or drain water from the tanks. The catch basin is connected to a 30-inch reinforced concrete pipe (RCP) storm drain in Winterdale Drive with a 12-inch private drain lateral.

The proposed Project Site currently contains two 1 million-gallon (MG) tanks constructed around 1984, which store potable water for water users within the Deane Pressure Zone. The existing steel tanks are 73 feet in diameter and 32 feet in height. The roof structures are conical. Based on review of the p*roposed Project Site Planning Summary Report*, the tanks are not constructed on a concrete ring footing. Each tank has a circumferential steel retaining ring located approximately 1 foot outside the tank finish floor. The existing tanks are set at a floor elevation of 1964 feet above mean sea level and have an overflow elevation of 1992 feet, which is the maximum flow under pressure of the Deane Pressure Zone.

3.1.2 Surrounding Land Uses

The surrounding land uses are residential to the east, west, and south.[7] This area is zoned for Open Space (OS) and Urban Residential 1 (UR1) for residential developments under 2 dwelling units per acre.[8] The land use designation to the north is commercial/industrial, single-family residential, and vacant land. This area is zoned for OS, Corridor Plan Mixed Use (CP), and Community Commercial (CC). The California

7 Los Angeles County Office of the Assessor, *Property Assessment Information System*. http://maps.assessor.lacounty.gov/GVH_2_2/Index.html?configBase=http://maps.assessor.lacounty.gov/Geocortex/Essentials/REST/sites/PAIS/viewers/PAIS_hv/virtualdirectory/Resources/Config/Default. Accessed October 15, 2020.

8 City of Santa Clarita, Zoning Map. November 2016. https://www.santa-clarita.com/home/showdocument?id=6970. Accessed October 15, 2020.

Government Code exempts the development of water and wastewater infrastructure projects initiated by water agencies from County and City building and zoning ordinances.[9]

3.2 APPLICABLE PLANNING DOCUMENTS

3.2.1 City of Santa Clarita General Plan

The City's *General Plan* provides procedures for future growth within the City, emphasizing the preservation of natural resources. The *General Plan* policies and goals serve as a basis for local decision making, and establishes a clear set of development guidelines for citizens, developers, neighboring jurisdictions and agencies, and provides the community with an opportunity to participate in the planning process. The *General Plan* and its various elements are required to function as an integrated, internally consistent, and compatible statement of policies regarding land use and development.

3.2.2 Final 2016 Air Quality Management Plan

The South Coast Air Quality Management District (SCAQMD) has the responsibility for the management of air quality in the South Coast Air Basin. The most recent adopted comprehensive plan is the *2016 Air Quality Management Plan* (AQMP). The 2016 AQMP represents a regional blueprint for achieving healthful air on behalf of the 16 million residents of the South Coast Air Basin. Their primary task is to bring the South Coast Air Basin into attainment with federal health-based standards for unhealthful fine particulate matter (PM2.5) by 2014; however, the SCAQMD has a reasonable expectation of meeting the 2023 ozone deadline. The 2016 AQMP proposed attainment of the federal 2006 24-hour PM2.5 standard by 2014 in the South Coast Air Basin through adoption of all feasible measures. While the 2016 AQMP focused on attainment of the 2006 24-hour PM2.5 standard, it has since been determined, primarily due to unexpected drought conditions, that it was impracticable to meet the standard by the original attainment year.[10] Since that time, the USEPA has approved a reclassification to "serious" nonattainment for the 24-hour PM2.5 standard, which requires a new attainment demonstration with a new attainment deadline.

The AQMP addresses several State and federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological air quality models. It builds upon the approaches taken in the 2012 AQMP for the South Coast Air Basin for attainment of federal PM and ozone standards, and highlights the significant amount of reductions needed and the urgent need to engage in interagency coordinated planning to identify

9 California Government Code. Section 53091(d) and €.

10 South Coast Air Quality Management District, *Final 2016 Air Quality Management Plan,* March 2017.

additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal Clean Air Act.[11]

3.2.3 Santa Clarita Water Division, 2013 Water Master Plan Update

The 2013 *Water Master Plan Update* (WMP). The WMP is intended to provide comprehensive analysis of the SCWD distribution system. Recommendations for capital improvements were made from the perspective of the historical data and the contemporary planning framework available and adopted at the time of the preparation of the document.[12]

3.2.4 2015 Urban Water Management Plan

An *Urban Water Management Plan* (UWMP) guides the actions of water management agencies within the CLWA service area. The 2015 UWMP for the CLWA service area includes four retail water purveyors. These retail water purveyors are the SCWD, Newhall County Water District, Valencia Water Company, and Los Angeles County Waterworks District 36. Together, CLWA and the purveyors are the Santa Clarita Valley's "water suppliers." The 2015 UWMP includes estimates of potential supply and demand for 2020 to 2050 in five-year increments. The projected water demand in 2050 for the CLWA service area is approximately 93,900 acre-feet per year with plumbing code savings and active conservation to 122,700 acre-feet per year without plumbing code savings or active conservation.

11 South Coast Air Quality Management District, *Final 2016 Air Quality Management Plan,* March 2017.

12 Santa Clarita Water Division (SCWD) *Water Master Plan Update (WMP)*, (2013).

4.0 ENVIRONMENTAL CHECKLIST

4.1 SUMMARY

Pursuant to the California Environmental Quality Act (CEQA) Guidelines,[13] an Initial Study is a preliminary environmental analysis that is used by the lead agency as a basis for determining whether an Environmental Impact Report (EIR), a Mitigated Negative Declaration, or a Negative Declaration is required for a project. The State CEQA Guidelines require that an Initial Study contain a project description; a location map; a description of the environmental setting; an identification of environmental effects by checklist or other similar form; an explanation of environmental effects; a discussion of mitigation for potentially significant environmental effects; an evaluation of the project's consistency with existing, applicable land use controls; and the names of persons who prepared the study. In addition, the Initial Study includes additional environmental requirements in compliance with federal environmental laws.

4.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

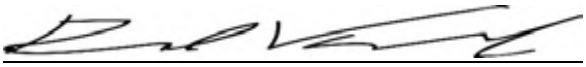
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture and Forestry	☐	Air Quality
☐	Biological Resources	☐	Cultural Resources	☐	Energy
☐	Geology/Soils	☐	Greenhouse Gas Emissions	☐	Hazards & Hazardous Materials
☐	Hydrology/Water Quality	☐	Land Use/Planning	☐	Mineral Resources
☐	Noise	☐	Population/Housing	☐	Public Services
☐	Recreation	☐	Transportation/Traffic	☐	Tribal Cultural Resources
☐	Utilities/Service Systems	☐	Wildfire	☐	Mandatory Findings of Significance

13 California Code of Regulations, tit. 14, sec. 15063.

On the basis of this initial evaluation:

☐	I find that the proposed Project COULD NOT have a significant effect on the environment, and is eligible for a Categorical Exemption.
☐	I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☒	I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.



Signature

January 4, 2021

Date

5.0 ENVIRONMENTAL ANALYSIS

This section provides an evaluation of the various topics considered for environmental review.

A brief explanation for the determination of significance is provided for all impact determinations except "No Impact" determinations that are adequately supported by the information sources the Lead Agency (Santa Clarita Water Division) cites in the parentheses following each question. A "No Impact" determination is adequately supported if the referenced information sources show that the impact simply does not apply to the Project (e.g., the project falls outside a fault rupture zone). A "No Impact" determination includes an explanation of its bases relative to project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

Explanations take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

Once the Lead Agency has determined that a particular physical impact may occur, then the checklist indicates whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant.

"Mitigated Negative Declaration: Less than Significant with Mitigation Incorporated" applies where the incorporation of Mitigation Measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the Mitigation Measures, and briefly explain how they reduce the effect to a less-than-significant level.

Earlier analyses may be used where, pursuant to the tiering of a program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by Mitigation Measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the Mitigation Measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

The explanation of each issue should identify:

a) The significance criteria or threshold, if any, used to evaluate each question; and

b) The mitigation measure identified, if any, to reduce the impact to less than significance.

5.1 AESTHETICS

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
AESTHETICS – Would the project:					
a.	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	☐	☒
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d.	Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

Discussion

a. Have a substantial adverse effect on a scenic vista?

Less than Significant Impact.

Scenic resources typically include natural open spaces, topographic formations, and landscapes that contribute to a high level of visual quality. They also can include parks, trails, nature preserves, sculpture gardens, and similar features.[14] Currently, the Project Site is located on a hilltop and is developed with two water storage tanks, associated infrastructure, and an access road. An existing berm currently separates the residential neighborhood from the Project Site and is located east of the proposed water storage tank location. The berm partially obstructs views of the existing water storage tanks. As shown in **Figure 5-1: Viewpoint Key Map**, **Figure 5-2: Viewpoint 1**, and **Figure 5-3: Viewpoint 2**, the Project Site is partially visible from the surrounding residential area to the south, west, and east and from the commercial area to the north.

The Project would involve construction of a new 1.70 MG water storage tank that would be 100 feet in diameter, approximately 32 feet in height, and painted a neutral earth tone color and non-reflective material consistent with the existing water storage tanks. Additionally, there is an existing berm between the existing water storage tanks and the neighboring residential area that would minimize adverse views of the hilltop, as shown in **Figure 5-1** through **Figure 5-3**. Retaining walls would be included to stabilize the

[14] *City of Santa Clarita General Plan.* Conservation and Open Space Element, June 2011, Accessed December 2020. https://www.codepublishing.com/CA/SantaClarita/html/SantaClaritaGP/6%20-%20Conservation%20and%20Open%20Space%20Element.pdf.

access driveway around the proposed tank, existing water storage tanks, and along the access driveway to preserve the existing ridge top along the driveway. Therefore, the addition of the new water storage tank would be of similar height, location, and color as the existing water storage tanks, would be designed to blend into the surrounding landscape, and would not obstruct existing scenic views across the Project Site. Additionally, the elevations of the surrounding mountains would remain to provide a scenic backdrop to the City residents without detriment from development of the proposed water tank.[15]

The Project would also involve utilities and pipelines within the existing access road to the tank site. The utilities, including electric lines and pipelines, would be located underground and would have no long-term visual impacts.

Construction of the optional access road would be located north of the Project Site and would connect the Project Site to the College of Canyons property to the north and downslope of the hilltop. Construction of the access road would be short term, constructed into the downslope of the hillside, and below the ridgeline. Thus, long-term views of scenic vistas from the north to the Project Site would not be obstructed and would not result in an adverse effect on a scenic vista. Construction equipment would be stored at the staging area overnight and would not block or obstruct views across the Project Site.

Therefore, impacts to scenic vistas would be less than significant.

Mitigation Measures: No mitigation measures are required.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

No Impact.

The nearest scenic highway or eligible scenic highway to the Project Site is Interstate 5 (I-5) which is classified as an "Eligible Scenic Highway-Not Officially Designated" located approximately 10 miles away from the Project Site. Construction and development of the proposed Project would not be visible from the I-5 and, as such, would not impact trees, rock outcroppings, or historic buildings within a State scenic highway.[16] Therefore, no impacts to scenic resources within a scenic highway would occur.

Mitigation Measures: No mitigation measures are required.

15 *Santa Clarita Valley Area Plan*, "Appendix II: Maps, Hillsides and Designated Ridgelines," Exhibit CO-1, (2012).

16 Department of Transportation (DOT), "California Scenic Highway Mapping System," http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed October 2020.

SOURCE: Google Earth - 2020

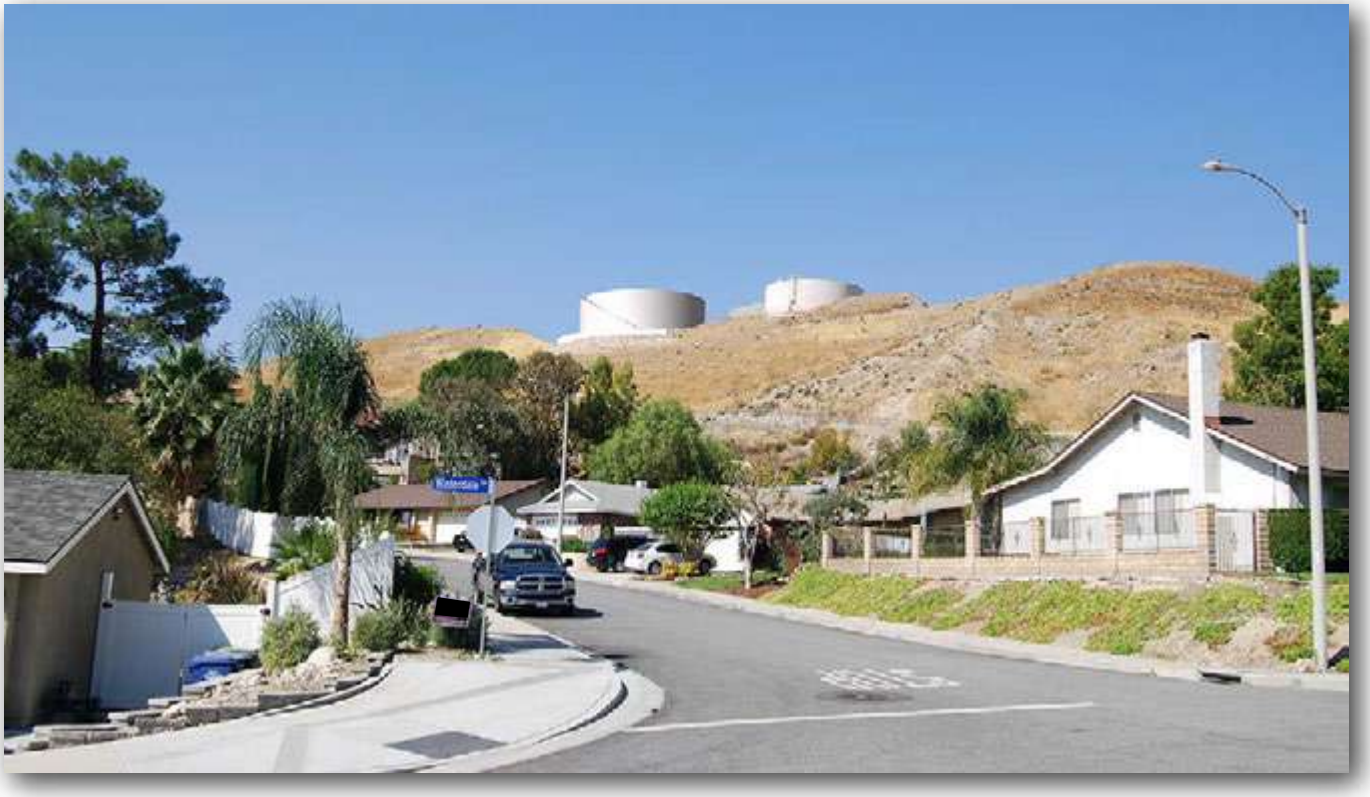
FIGURE **5-1**

Meridian Consultants

Viewpoint Key Map

299-002-20

Looking westerly from intersection of Winterdale Drive and Alder Peak



Conceptual Approximation of Proposed View

SOURCE: Meridian Consultants, LLC - 2020

FIGURE **5-2**

Meridian Consultants

Viewpoint 1

Looking easterly from intersection of Summit Hills Drive and Crystal Heights Court

Conceptual Approximation of Proposed View

SOURCE: Meridian Consultants, LLC - 2020

FIGURE **5-3**

c. Substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact.

As previously discussed, the Project Site is located on a hilltop with two existing water storage tanks, associated infrastructure, and access road. The proposed tank would be of similar height, color, materials, and dimension as the two existing water storage tanks, as shown in **Figure 5-1** and **Figure 5-2**. As previously mentioned, the existing berm located between the Project Site and neighboring area would minimize view across the hilltop where the water storage tanks are located.

Additionally, utilities including electrical, storm drainage and water piping would be located below ground, and connect to new piping on site. There would also be an access road located to the north of the Project Site that would provide a secondary emergency access to the tank Project site from the College of the Canyons Campus.

Construction activities would last approximately 12 months, and as such, would be temporary and short term in nature. Storage of construction equipment would be located adjacent to the existing water storage tanks. Consistent with existing operations, the Project Site would be gated and locked when not in use. The storage of equipment would not obstruct or block views of scenic resources including views of surrounding hillsides as the staging area is located in a less visible area east of the access road, near the back of the hill. Thus, implementation of the Project would not result in substantial degradation to the existing visual character and its surroundings.

Therefore, impacts to the existing visual characteristic and quality of the site and surroundings would be less than significant.

Mitigation Measures: No mitigation measures are required.

d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Less Than Significant Impact with Mitigation.

Glare is generated during the day from reflective surfaces. Light pollution occurs when nighttime views of the stars and sky are diminished by an over-abundance of light coming from the ground. Construction activities would take place during daylight hours, in accordance with the City's construction noise ordinance,[17] between 7:00 AM and 7:00 PM, Monday through Friday, and 8:00 AM and 6:00 PM on

17 City of Santa Clarita Municipal Code, Section 11.44.080.

Saturday within 300 feet of residentially zoned properties. Given the location of the Project Site, potential glare generated during construction activities would be negligible because location is on private property away from the street. The proposed tank would include non-reflective paint coating—consistent with the existing water storage tanks—that would minimize off-site glare. Utilities associated with the tank, such as electric and piping, would be located underground and would not be visible or capable of creating a new source of light or glare. Therefore, glare impacts would be less than significant.

Construction activities could potentially occur during nighttime hours. In the event of nighttime construction, the Project would have nighttime lighting for safety and security. Any temporary lighting must be installed and directed onto the worksite and avoid any spill-over light or glare onto adjacent properties as proposed in **Mitigation Measure (MM) AES-1**. Upon completion of the proposed Project, there would be on-site lighting with a timer to be used for emergency maintenance or site visits during night hours.

Permanent on-site operational lighting would be installed with a timer. Nighttime lighting design of the proposed steel water storage tank would be consistent with the existing water storage tanks and would be directed towards the Project Site for safety and security purposes. Therefore, impacts from operational lighting would be less than significant.

Mitigation Measures: The following mitigation measure shall be implemented.

MM AES-1: Any necessary security lighting during construction of planned facilities shall be designed to be consistent with City zoning codes and applicable design guidelines and to minimize light to adjacent areas. Construction activities shall be restricted to daytime hours on residential streets. If nighttime construction is required, temporary lighting must be directed onto the worksite and avoid any spill-over light or glare onto adjacent properties.

Therefore, nighttime lighting impacts would be less than significant with mitigation.

5.2 AGRICULTURE AND FORESTRY RESOURCES

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
AGRICULTURE AND FORESTRY RESOURCES – Would the project:					
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	☐	☐	☐	☒
b.	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d.	Result in the loss of forestland or conversion of forestland to non-forest use?	☐	☐	☐	☒
e.	Involve other changes in the existing environment which, due to their location or nature could result in conversion of Farmland, to nonagricultural use or conversion of forestland to non-forest use?	☐	☐	☐	☒

Discussion

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?

No Impact.

The Project Site consists of two water storage tanks, associated infrastructure, and an access road, and as such, is not currently used for agricultural operations. According to the California Department of Conservation "Los Angeles County Important Farmland" 2016 map, the Project Site is designated as "Urban and Built-Up Land" or "Other Land." [18] None of the Project Site is designated as Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. Accordingly, no impacts would occur.

18 Farmland Mapping and Monitoring Program. 2017. *Los Angeles County Important Farmland 2016*. Accessed October 2020. https://www.conservation.ca.gov/dlrp/fmmp/Pages/LosAngeles.aspx.

Mitigation Measures: No mitigation measures are required.

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact.

As discussed in **Section 3.0: Environmental Setting**, the Project Site is not currently used for agricultural operations and is zoned for Open Space (OS) and Urban Residential 1 (UR1). Additionally, the proposed Project is not subject to a Williamson Act contract.[19] Accordingly, no impacts would occur.

Mitigation Measures: No mitigation measures are required.

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact.

The Project area is not currently designated as, or located near land designated for, forest, timberland, or timberland zoned Timberland Production.[20] As described in **Section 3.0**, the existing zoning surrounding the Project Site is vacant land. The Project Site is zoned for Open Space (OS) and Urban Residential 1 (UR1) for residential developments under 2 dwelling units per acre.[21] The land use designation to the north is commercial/industrial, single-family residential, and vacant land. This area is zoned for OS, Corridor Plan Mixed Use (CP), and Community Commercial (CC). Therefore, the proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. Therefore, no impacts would occur.

Mitigation Measures: No mitigation measures are required.

19 California Department of Conservation (DOC), Division of Land Resource Protection, State of California Williamson Act Contract Land Statewide Map, (2012), ftp://ftp.consrv.ca.gov/pub/dlrp/wa/2012%20Statewide%20Map/WA_2012_11x17.pdf. Accessed November 2015.

20 *Santa Clarita Valley Area Plan*, "Appendix II: Maps, Generalized Land Use and Limited H5 Districts, Exhibit L-2," (2012).

21 City of Santa Clarita, "Zoning Map." November 2016. https://www.santa-clarita.com/home/showdocument?id=6970. Accessed October 15, 2020.

d. Result in the loss of forestland or conversion of forestland to non-forest use?

No Impact.

As previously discussed, the Project Site is not located within a forest area and does not contain any trees. The construction staging area and all construction activities would occur within the Project Site. Thus, none of the proposed construction activities would result in the loss of forestland or in the conversion of forestland to non-forest use.[22]

According to the National Forest Locator Map, the closest National Forest is the Angeles National Forest, but, no part of the proposed Project itself is located within any National Forests.[23] Accordingly, no impacts would occur.

Mitigation Measures: No mitigation measures are required.

e. Involve other changes in the existing environment which, due to their location or nature could result in conversion of Farmland, to nonagricultural use or conversion of forestland to non-forest use?

No Impact.

As previously noted, the Project Site is not designated as either farmland or forestland and does not involve farming or forestry operations. Furthermore, there are no agriculture or forestry operations in the vicinity of the Project Site. Therefore, no such land would be converted, and no impacts would occur.

Mitigation Measures: No mitigation measures are required.

22 *Santa Clarita Valley Area Plan,* "Appendix II: Maps, Generalized Land Use and Limited H5 Districts," Exhibit L-2, (2012).
23 US National Forest, "Locator Map," (2020), http://www.fs.fed.us/locatormap/. Accessed October 2020.

5.3 AIR QUALITY

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:					
a.	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?	☐	☐	☒	☐
c.	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d.	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Discussion

a. Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact.

The South Coast Air Quality Management District (SCAQMD) adopted an updated air quality management plan (AQMP) in March 2017.[24] The Final 2016 AQMP was prepared to comply with the federal and State Clean Air Acts and amendments; accommodate growth; reduce pollutants in the South Coast Air Basin, hereinafter referred to as Basin; meet federal and State air quality standards; and minimize the fiscal impact of pollution control measures on the local economy. It builds on approaches in the previous AQMP to achieve attainment of the federal ozone air quality standard. These planning efforts have substantially decreased exposure to unhealthy levels of pollutants, even while substantial population growth has occurred within the Basin. Projects that are considered to be consistent with the AQMP would not interfere with attainment because this growth is included in the projections utilized in the formulation of the AQMP. Therefore, projects, uses, and activities that are consistent with the applicable assumption used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended daily emissions thresholds.

24 South Coast Air Quality Management District, Final 2016 Air Quality Management Plan, March 2017.

Southern California Association of Governments (SCAG) has the responsibility for preparing and approving the portions of the AQMP relating to regional demographic projections and integrated regional land use, housing, employment, and transportation programs, measures, and strategies. With regard to air quality planning, SCAG has prepared and adopted the 2020 – 2045 RTP/SCS,[25] which includes a Sustainable Communities Strategy that addresses regional development and growth forecasts. Determining whether or not a project exceeds SCAG's growth forecasts involves the evaluation of the following: (1) consistency with applicable population, housing, and employment growth projections; (2) project Mitigation Measures; and (3) appropriate incorporation of AQMP land use planning strategies.

A project is consistent with the AQMP, in part, if it is consistent with the population, housing, and employment assumptions that were used in the development of the AQMP. The Project does not include any land uses that would increase population, employment, or housing projections. The Project would only supplement existing shortage in water supply. Thus, the Project would not induce an increase in population, employment, or housing, and the Project would not conflict with growth projections used in the development of the AQMP.

Additionally, the Basin is currently designated as nonattainment at the federal level for ozone and PM2.5; and at the State level for ozone, PM10, and PM2.5. SCAQMD developed regional emissions thresholds to determine whether a project would contribute to air pollutant violations. If a project exceeds the regional air pollutant thresholds, then it would significantly contribute to air quality violations in the Basin. As discussed further in **Table 5.3-1: Maximum Construction Emissions** below, temporary emissions associated with construction of the Project would fall below regional thresholds and impacts would be less than significant. Additionally, as discussed further in **Table 5.3-2: Maximum Operational Emissions** below, long-term emissions associated with Project operation would not exceed SCAQMD's emission thresholds. As such, the Project would not conflict with the growth assumptions in the regional air plan and would not contribute to air quality violations in the Air Basin. Impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

25 Southern California Association of Governments (SCAG), Connect SoCal: 2020-2045 Regional Transportation Plan/Sustainable Communities Strategies Draft, "Chapter 1," https://www.connectsocal.org/Pages/Connect-SoCal-Draft-Plan.aspx, Accessed November 2020.

b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?

Less Than Significant Impact.

A significant impact could occur if the Project would add a considerable cumulative contribution to Federal or State nonattainment pollutants. The Basin is currently in State nonattainment for ozone, PM10, and PM2.5.[26] In regard to determining the significance of the Project contribution, the SCAQMD neither recommends quantified analyses of construction and/or operational emissions from multiple related projects nor provides methodologies or thresholds of significance to be used to assess the cumulative emissions generated by multiple cumulative projects. Instead, the SCAQMD recommends that a project's potential contribution to cumulative impacts be assessed utilizing the same significance criteria as those for project-specific impacts. Furthermore, SCAQMD states that "projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."[27] Therefore, if a project generates less than significant construction or operational emissions, then the project would not generate a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment.

Construction

With respect to the Project's construction-period air quality emissions and cumulative Basin-wide conditions, the SCAQMD has developed strategies (e.g., SCAQMD Rule 403) to reduce criteria pollutant emissions outlined in the AQMP pursuant to National Ambient Air Quality Standards (NAAQS). As such, the Project would comply with SCAQMD Rule 403 requirements and implement all feasible Mitigation Measures to reduce potential impacts related to particulate matter and fugitive dust. In addition, the Project would comply with adopted AQMP emissions control measures as described below. Per SCAQMD rules and mandates as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., SCAQMD Rule 403 compliance, the implementation of all feasible Mitigation Measures, and compliance with adopted AQMP emissions control measures) would also be imposed on construction projects Basin-wide, where applicable.

According to the SCAQMD, individual construction projects that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment. Construction of the Project has the potential to

26 California Air Resources Board (CARB), "Area Designation Maps/State and National," http://www.arb.ca.gov/desig/adm/adm.htm.

27 South Coast Air Quality Management District (SCAQMD), White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution (2003), Appendix A.

create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers to and from the Project Site. In addition, fugitive dust emissions would result from demolition and construction activities. NOx emissions would result from the use of off-road construction equipment. Paving and the application of architectural coatings (e.g. paints) would potentially release VOCs.

Construction emissions were estimated according to the SCAQMD CEQA Air Quality Handbook and construction emission factors contained in the California Emissions Estimator Model (CalEEMod) (See **Appendix A**). The emission calculations assume the use of standard construction practices, such as compliance with SCAQMD Rule 403—Fugitive Dust, which requires all unpaved demolition and construction areas to be wetted at least three times a day during excavation and construction to minimize the generation of fugitive dust.

The results presented in **Table 5.3-1** are compared to the SCAQMD-established construction significance thresholds. It is important to note, emissions presented in **Table 5.3-1** include regulatory compliance measures such as construction equipment controls (Tier 3 emissions standards with Level 3 DPF) and control efficiency of PM10 (dust control measures). As shown in **Table 5.3-1**, the construction emissions would not exceed the regional VOC, NOx, CO, SOx, PM10, and PM2.5 concentration thresholds. As such, construction impacts would be less than significant.

Table 5.3-1
Maximum Construction Emissions

Source			VOC	NOx	CO	SOx	PM10	PM2.5
			pounds/day					
Maximum			7	33	25	<1	5	2
SCAQMD Threshold	Mass	Daily	75	100	550	150	150	55
Threshold exceeded?			**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod.
Notes:
CO = carbon monoxide; NOx = nitrogen oxides; PM10 = particulate matter less than 10 microns; PM2.5 = particulate matter less than 2.5 microns; SOx = sulfur oxides; VOC = volatile organic compounds.
*Refer to **Appendix A** for **CalEEMod Output Sheets.***

Operation

Operational activities associated with the Project would result in long-term emissions from area and mobile sources. As the Project only includes the operation of a water storage tank, it would not generate air quality emissions associated with energy (natural gas) consumption. Area-source emissions would

include architectural coating reapplications and are based on consumer product usage rates provided in CalEEMod. Mobile source emissions would include vehicle trips traveling to and from the Project Site for general inspection and maintenance activities. The results presented in **Table 5.3-2** are compared to the SCAQMD-established operational significance thresholds. As shown in **Table 5.3-2**, the operational emissions would not exceed the regional VOC, NOx, CO, SOx, PM10, and PM2.5 concentration thresholds. As such, operational impacts would be less than significant.

Table 5.3-2
Maximum Operational Emissions

Source	VOC	NOx	CO	SOx	PM10	PM 2.5
	pounds/day					
Area	<1	<1	<1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	<1	<1	2	<1	1	<1
Total	**<1**	**<1**	**2**	**<1**	**1**	**<1**
SCAQMD Mass Daily Threshold	55	55	550	150	150	55
Threshold exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod.
Notes: Totals in table may not appear to add exactly due to rounding in the computer model calculations.
CO = carbon monoxide; NOx = nitrogen oxides; PM10 = particulate matter less than 10 microns; PM2.5 = particulate matter less than 2.5 microns; SOx = sulfur oxides; VOC = volatile organic compounds.
*Refer to **Appendix A** for **CalEEMod Output Sheets.***

Mitigation Measures: No Mitigation Measures are required.

c. Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact.

The SCAQMD devised the Localized Significance Threshold (LST) methodology[28] to assess the potential air quality impacts that would result in the near vicinity of the Project.

Receptors sensitive to air pollution include, but are not limited to, residences, schools, hospitals, and convalescent facilities. The nearest sensitive receptors in the vicinity of the Project Site include residential uses to the west, east, and south, and the Mitchell Community Elementary School use to the south.

28 South Coast Air Quality Management District, Final Localized Threshold Methodology, July 2008. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2

The LST methodology considers emissions generated from on-site sources and excludes emissions from off-site vehicular traffic. The SCAQMD provides mass rate lookup tables as a screening tool to determine the likelihood of localized impacts from Project construction and operation. Ambient conditions for the Santa Clarita Valley, as recorded in SRA 13 by the SCAQMD, were used for ambient conditions in determining appropriate threshold levels. Thresholds for each criteria pollutant for construction activity and Project operation were assumed for a disturbance area of 3.73 acres. The LST mass rate look-up tables are applicable to NOx, CO, PM10, and PM2.5 emissions.

Construction

The results of the construction LST analysis is provided in **Table 5.3-3: Localized Construction Emissions**. It is important to note, construction would be required to comply with the SCAQMD's Rule 403 (Fugitive Dust), which requires watering of the Project Site during dust-generating construction activities, stabilizing disturbed areas with water or chemical stabilizers, and preventing track- out dust from construction vehicles, thus further reducing construction-related emissions. Additionally, these estimates assume the maximum area that would be disturbed during construction on any given day during Project buildout. As shown in **Table 5.3-3**, emissions would not exceed the localized significance thresholds for construction. As emissions would be below SCAQMD localized thresholds, impacts to the sensitive receptors identified above from localized emissions during construction would be less than significant.

Table 5.3-3
Localized Construction Emissions

	NOx	CO	PM10	PM2.5
Source	**On-Site Emissions (pounds/day)**			
Total maximum emissions	18	25	3	2
LST threshold	208	1,315	9	5
Threshold Exceeded?	**No**	**No**	**No**	**No**

Notes:
Totals in table may not appear to add exactly due to rounding in the computer model calculations.
CO = carbon monoxide; NOx = nitrogen oxide; PM10 = particulate matter less than 10 microns; PM2.5 = particulate matter less than 2.5 microns.
*Refer to **Appendix A** for **CalEEMod Output Sheets.***

Operation

Local emissions from Project operation would include area sources. As the Project only includes the operation of a water storage tank, it would not generate air quality emissions associated with energy (natural gas) consumption. Area-source emissions would include architectural coating reapplications and are based on consumer product usage rates provided in CalEEMod. The results of the operational LST analysis are provided in **Table 5.3-4: Localized Operational Emissions**. As shown in **Table 5.3-4**, emissions

would not exceed the localized significance thresholds for operation. Therefore, localized operational impacts to the sensitive receptors located around the Project Site would be less than significant.

Table 5.3-4
Localized Operational Emissions

	NOx	CO	PM10	PM2.5
Source	**On-Site Emissions (pounds/day)**			
Project area emissions	<1	<1	<1	<1
LST threshold	147	1,641	3	2
Threshold Exceeded?	**No**	**No**	**No**	**No**

Notes:
Totals in table may not appear to add exactly due to rounding in the computer model calculations.
CO = carbon monoxide; NOx = nitrogen oxide; PM10 = particulate matter less than 10 microns; PM2.5 = particulate matter less than 2.5 microns.
*Refer to **Appendix A** for **CalEEMod Output Sheets.***

Mitigation Measures: No Mitigation Measures are required.

d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact.

During construction, activities associated with the operation of construction equipment, the application of asphalt, and the application of architectural coatings and other interior and exterior finishes may produce discernible odors typical of most construction sites. Although these odors could be a source of nuisance to adjacent residences, they are temporary and intermittent in nature. As construction-related emissions dissipate, the odors associated with these emissions would also decrease, dilute and become unnoticeable. As such, construction impacts would be less than significant

According to the SCAQMD, "while almost any source may emit objectionable odors, some land uses would be more likely to produce odors…because of their operation."[29] Land uses that are more likely to produce objectionable odors include agriculture, chemical plants, composting operations, dairies, fiberglass molding, landfills, refineries, rendering plants, rail yards, and wastewater treatment plants. Operation of the Project includes a stationary water storage tank and would not contain any active manufacturing activities. Therefore, operational impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

29 South Coast Air Quality Management District, Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning, May 2005, 2-2.

5.4 BIOLOGICAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES – Would the project:					
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☒	☐
c.	Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

Discussion

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant Impact with Mitigation.

"Special Animals" or "special status species" is a broad term used to refer to all the animal taxa tracked by the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), regardless of their legal or protection status.[30] Special-status species include those listed as endangered or threatened under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA), species otherwise given certain designations by the California Department of Fish and Wildlife (CDFW), and plant species listed as rare by the California Native Plant Society (CNPS).

A biological assessment for the Project was completed to determine the presence or absence of any sensitive biological resource (see **Appendix B**).[31] Standard database searches were conducted prior to the survey of the Project area, including that of the California Natural Diversity Database (CNDDB). A reconnaissance survey was conducted in September 2020 as part of the biological assessment and covered the Deane Zone hilltop site, west of Winterdale Drive and south of Sierra Highway. The only special status wildlife species observed during the reconnaissance survey was of coastal whiptail (*Aspidoscelis tigris stejnegeri*). Coastal whiptail is a fairly common species in sage scrub habitats. This species is highly mobile with ample foraging habitat immediately adjacent to the Project Site in the surrounding undeveloped slopes, as it is expected to move into the adjacent undeveloped habitat. However, to ensure no coastal whiptail would be impacted during Project related construction activities, a pre-construction clearance survey shall be conducted prior to ground disturbing activities to ensure no coastal whiptail would be impacted, as identified in **Mitigation Measure MM BIO-1**.

No other special-status plants or animal species were observed during the survey of the Maximum Disturbance Area (See **Figure 2-2**). Therefore, all other special-status plant species known to occur in the area are presumed to be absent from the Project Site.[32] Further, it was determined that the Project Site does not provide suitable habitat for any of the other special-status wildlife species known to occur in the vicinity of the Project Site.

Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the Project Site has a moderate potential to provide suitable habitat for Cooper's hawk (*Accipiter cooperii*) and sharp-shinned hawk (*Accipiter striatus*), and a low potential to provide suitable habitat for California horned lark (*Eremophila alpestris actia*), and coastal California gnatcatcher (*Polioptila californica californica*).

30 California Department of Fish and Wildlife. Special Animals List, November 2020. Accessed November 2020. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline

31 ELMT Consultants, Habitat Assessment for the Santa Clarita Valley Water Agency's Proposed Deane Tank Site Expansion Project, November 2020.

32 ELMT Consultants, Habitat Assessment for the Santa Clarita Valley Water Agency's Proposed Deane Tank Site Expansion Project, November 2020.

With the exception of California gnatcatcher, a federally Threatened species, no other species are federally, or State-listed, as endangered or threatened. The coastal sage scrub plant community along the northern boundary of the Project Site provides marginally suitable foraging habitat for California gnatcatcher. However, due to damage from recent wildfires, this area supports mainly weedy/early successional plant species and perennials that are still recovering from being burned. As such, available vegetation is primarily low growing and nesting opportunities for California gnatcatcher are absent at the Project Site. Additionally, the coastal sage scrub plant community is isolated from occupied sage scrub habitats in the region by surrounding development, and the site is above the maximal elevational range for California gnatcatcher, further precluding California gnatcatcher from the Project Site. As a result, it was determined that California gnatcatcher has a low potential to occur on site and are presumed absent from the Project Site.

The Project Site provides suitable foraging habitat for a variety of bird species known to occur within the region.

Suitable bird nesting habitat is present along the Project Site. Nesting birds are protected under the Migratory Bird Treaty Act (MTBA) and the California Department of Fish and Game Code and could be impacted by Project activities when construction occurs near nesting areas during the nesting season (February through August). Due to the proximity of Project construction activities in relation to the identified species above, the Project would have a potentially significant impact on these identified species.

Further, implementation of **MM BIO-2**, a pre-construction nesting bird clearance survey shall be conducted prior to ground disturbance, which would ensure impacts to Cooper's hawk, sharp-shinned hawk, California horned lark, would be mitigated to less than significant. With implementation of the pre-construction nesting bird clearance survey, impacts to the aforementioned species would be less than significant.

Mitigation Measures: The following Mitigation Measures would reduce impacts to less than significant.

BIO-1 A pre-construction coastal whiptail survey shall be conducted by a qualified biologist within 3 days prior to initiating ground disturbance activities. The survey shall include full coverage of the proposed disturbance limits and a 500- foot buffer, and can be performed concurrently with the nesting bird survey if during February 1 through August 31. Any coastal whiptail observed during the pre-construction survey shall be relocated to a suitable area within the adjacent habitat and outside of the construction zone.

BIO-2 If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds shall be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey shall document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities shall stay outside of a no-disturbance buffer. The size of the no-disturbance buffer shall be determined by the wildlife biologist and shall depend on the level of noise and/or surrounding anthropogenic disturbances, line of sight between the nest and the construction activity, type and duration of construction activity, ambient noise, species habituation, and topographical barriers. These factors will be evaluated on a case-by-case basis when developing buffer distances. Limits of construction to avoid an active nest shall be established in the field with flagging, fencing, or other appropriate barriers; and construction personnel shall be instructed on the sensitivity of nest areas. A biological monitor shall be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur.

Since there is ample habitat for coastal whiptail immediately adjacent to the Project footprint, and with implementation of a pre-construction clearance survey as identified in **MM BIO-1**, impacts to this species would be less than significant with mitigation.

If construction activities occur outside of the breeding season (February through August), then potential impacts on sensitive bird species would be less than significant. If construction activities occur during the breeding season, implementation of **MM BIO-2** would reduce potentially significant impacts to less than significant.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Less than Significant Impact.

Riparian habitats line the banks of rivers, streams, creeks, and ponds and consist of a variety of vegetation types.[33] These habitats preserve water quality by filtering sediment and some pollutants from runoff before it enters the water body, protect stream banks from erosion, provide food and habitat for fish and wildlife, and preserve open space and aesthetic values.

The Project Site is separated from Santa Clara River, approximately 0.7 miles to the southeast, by existing development and roadways and there are no riparian corridors or creeks connecting the Project Site to this area.[34] Furthermore, no discernible drainage courses, inundated areas, or wetland features/obligate plant species that would be considered jurisdictional by the Corps, Regional Board, or CDFW were observed within the Project Site.

Four (4) special-status plant communities have been reported in the Mint Canyon USGS 7.5-minute quadrangle: Southern Coast Live Oak Riparian Forest, Southern Riparian Scrub, Southern Sycamore Alder Riparian Woodland, and Southern Willow Scrub; none of which were observed on-site. Therefore, no special-status plant communities will be impacted by project implementation.

Therefore, there would be no impact to riparian habitats or other sensitive natural community along the length of the Project Site and impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

c. Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact.

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates discharge of dredge or fill materials into "waters of the United States" pursuant to Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and

33 Santa Valley Clarita Area Plan, *Biological Resources*, 2012.

34 ELMT Consultants, Habitat Assessment for the Santa Clarita Valley Water Agency's Proposed Deane Tank Site Expansion Project, November 2020.

Harbors Act. Of the State agencies, the CDFW regulates alterations to streambed and bank under Fish and Wildlife Code Sections 1600 et seq., and the Regional Board regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

The USFWS NWI and the USGS National Hydrography Dataset were reviewed to determine if any blueline streams or riverine resources have been documented within or immediately surrounding the Project Site. Based on this review, no riverine resources were identified on the Project Site. Two (2) riverine resources were identified approximately 0.31 miles northwest and 0.6 mile east of the site, and the Santa Clara River was identified approximately 0.70 miles southeast of the Project Site.[35] However, the riverine resources identified do not show any seasonally wet areas, federally protected streams or wetlands or other water bodies on or adjacent to the Project location.[36] Within the Santa Clara River, the NWI has mapped riverine, freshwater emergent wetlands, and freshwater forested/shrub wetlands.

No discernible drainage courses, inundated areas, or wetland features/obligate plant species that would be considered jurisdictional by the Corps, Regional Board, or CDFW were observed within the Project Site.

Therefore, no impacts to wetlands would occur.

Mitigation Measures: No Mitigation Measures are required.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact.

Habitat linkages provide connections between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet still inadequate for others. Wildlife corridors are features that allow for the dispersal, seasonal migration, breeding, and foraging of a variety of wildlife species. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

35 ELMT Consultants, Habitat Assessment for the Santa Clarita Valley Water Agency's Proposed Deane Tank Site Expansion Project, November 2020.

36 US Fish and Wildlife Service (USFWS), *National Wetlands Mapper,* 2020, Accessed November 2020. http://www.fws.gov/wetlands/Data/Mapper.html.

According to the Los Angeles County Department of Regional Planning, the Project Site has not been identified as occurring within a wildlife corridor or linkage. However, Santa Clara River, which flows through Soledad Canyon, approximately 0.70 miles south of the site, is recognized wildlife migratory corridor and has been designated by Los Angeles County as a Significant Ecological Area.[37] The Project Site is separated from Santa Clara River by existing development and roadways and there are no riparian corridors or creeks connecting the Project Site to this area. Therefore, the Project Site does not function as a major wildlife movement corridor or linkage. As such, implementation of the Project is not expected to have a significant impact to wildlife movement opportunities or prevent local wildlife movement through the area.

Mitigation Measures: No Mitigation Measures are required.

e. Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?

No Impact.

Water storage tank construction and staging activities would not result in the removal of any trees. The Project Site is not located within a significant ecological area.[38] The Project would not interfere or conflict with any local policies or ordinances in protecting biological resources. Therefore, no impact would occur.

Mitigation Measures: No Mitigation Measures are required.

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

No Impact.

The Project Site does not lie within the boundaries of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. In addition, the Natural River Management Plan (NRMP) for the Santa Clara River was approved by the USACE to plan for the development and preservation of the natural resources and habitats along part of the main stem of the river to one-half mile east of the Los Angeles Department of Water and Power Aqueduct. The Project Site is located approximately 0.70 miles north of the Santa Clara River and is outside the NRMP area. No impacts would occur to the Project Site.

Mitigation Measures: No Mitigation Measures are required.

37 ELMT Consultants, Habitat Assessment for the Santa Clarita Valley Water Agency's Proposed Deane Tank Site Expansion Project, November 2020.

38 Santa Clarita Valley Area Plan, Conservation and Open Space Element*, 2012*, 146 and Figure CO-5.

5.5 CULTURAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
CULTURAL RESOURCES – Would the project:					
a.	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c.	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

Discussion

a. Cause a substantial adverse change in the significance of a historical resource as defined in section 15064.5?

Less than Significant Impact.

In October 2020, a *Cultural Resources Assessment of the Deane Tank Site Expansion Project located in the City of Santa Clarita, Los Angeles County, California* (Cultural Resources Assessment) was prepared for the proposed Project (see **Appendix C**). This investigation is part of the environmental review process required under CEQA for the proposed Project. The purpose of this study was to assess whether any cultural resources would be affected by the implementation of the proposed Project in accordance with CEQA.

A "historical resource" under CEQA, as defined by California Public Resources Code (PRC) Part 5020.1(j) is any object, building, site, area, place, record, or manuscript that is historically or archaeologically significant, or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. Guidelines for CEQA further define a "historical resource" as any resource listed in or determined eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the Lead Agency. Additionally, a resource would be automatically listed in the California Register if it is listed in the National Register of Historic Places or formally determined eligible by an agency for listing in the National Register. State CEQA Guidelines section 15064.5(a) defines a "historical resource" as a resource that meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register of Historical Resources (California Register)
- Listed in a local register of historical resources (as defined at Cal. Public Res. Code § 5020.1(k))

- Identified as significant in a historical resource survey meeting the requirements of § 5024.1(g) of the Cal. Public Res. Code
- Determined to be a historical resource by a project's lead agency (Cal. Code Regs. tit. 14(3), § 15064.5(a))

The eligibility criteria for the California Register are similar to those of the National Register of Historic Places (National Register), and a resource that meets one of more of the eligibility criteria of the National Register will be eligible for the California Register. Criteria for Designation:

- Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the U.S.
- Associated with the lives of persons important to local, California or national history.
- Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values.
- Has yielded or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

A records search at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton was conducted to identify historic and archeological resources within 1 mile of the proposed Project (refer to **Appendix C**). This search included a review was conducted of the National Register of Historic Places (National Register), the California Register of Historical Resources (California Register), and documents and inventories from the California Office of Historic Preservation including the lists of California Historical Landmarks, California Points of Historical Interest, Listing of National Register Properties, and the Built Environment Resource Directory (BERD). The search also located relevant reports of previous cultural resource investigations within the search area of the Project Site.

The records search resulted in the identification of five previously recorded cultural resource studies within 1 mile of the Project Site and resulted in the recording of two cultural resources (both isolated prehistoric artifacts) within one-half mile of the Project Site. One of the previous studies assessed a portion of the Project Site for cultural resources but did not identify any cultural resources within the proposed Project boundaries.

A field survey of the Project Site was performed on October 2020.[39] As such, the Project Site was examined for any evidence of prehistoric or historic (i.e. greater than 50 years) human activities. No previously recorded archaeological or historic resources, such as features or objects greater than 50 years of age, were observed within the Project Site during site reconnaissance. The records search data combined with

39 BCR Consulting LLC. *Cultural Resources Assessment: Deane Tank Site Expansion Project*. October 30, 2020.

the field survey results have indicated that there are no cultural resources (including prehistoric or historic-period archaeological sites or historic buildings) within or adjacent to the Project Site. Further, a prior study which assessed a portion of the Project Site did not identify any cultural resources and conditions would not indicate sensitivity for buried cultural resources. Therefore, no adverse impact to historic resources would occur and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5?

Less than Significant Impact with Mitigation.

A Cultural Resources Assessment (see **Appendix C**) for the Project Site was performed to determine the presence of archaeological resources that may be impacted as a result of proposed Project implementation. As part of the Cultural Resources Assessment, a records search and a pedestrian survey was performed of the Project Site. As discussed in **Section 3.0**, the Project Site has been subject to construction and grading activities related to the existing water storage tanks and site access to the water storage tanks. The Cultural Resources Assessment did not identify any archaeological resources within the proposed Project Site, given the disturbance of the Project Site and the presence of previously recorded archaeological sites within 1 mile of the APE. The majority of ground disturbance work is proposed to take place within area that has been previously disturbed by the existing tank construction activity, where the potential for encountering intact archaeological remains is low. However, in the unlikely event that previously unknown cultural resources are identified during earthmoving activities, impacts would be potentially significant.

Mitigation Measures: The following mitigation measures would reduce archaeological impacts to less than significant.

CUL-1: Prior to the start of ground disturbing activities, the Santa Clarita Valley Water Agency (SCVWA) project manager or their designee shall ensure that a qualified archaeologist or another mitigation program staff member has conducted cultural and tribal cultural resources sensitivity training for all construction workers involved in moving soil or working near soil disturbance or documentation can be provided that construction workers have been trained to identify cultural and tribal cultural resources.

CUL-2: Inadvertent Discoveries. During project-related construction and excavation activities, should subsurface archaeological resources, including tribal cultural resources, be

discovered, all activity in the vicinity of the find shall stop and a qualified archaeologist shall be contacted to assess the significance of the find according to CEQA Guidelines Section 15064.5. If any find is determined to be significant, the archaeologist shall determine, in consultation with SCVWA and any local Native American groups (e.g., Fernandeño Tataviam Band of Mission Indians) expressing interest for prehistoric resources, appropriate avoidance measures or other appropriate mitigation. Per CEQA Guidelines Section 15126.4(b)(3), preservation in place shall be the preferred means to avoid impacts to archaeological resources qualifying as historical resources. Methods of avoidance may include, but shall not be limited to, rerouting or redesign, cancellation, or identification of protection measures such as capping or fencing. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures, such as data recovery or other appropriate measures, in consultation with SCVWA and Fernandeño Tataviam Band of Mission Indians representatives expressing interest in prehistoric archaeological resources. If an archaeological site does not qualify as a historical resource but meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site shall be treated in accordance with the provisions of Section 21083.2.

With implementation of **MM CUL-1** and **CUL-2**, impacts would be less than significant.

c. Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant Impact.

The Project Site has experienced previous ground-disturbance activities from construction of the existing two water storage tanks and associated infrastructure within the Project Site. Moreover, any ground disturbance activities from the proposed Project would occur within close proximity of where construction has already occurred for the existing water storage tanks and, subsequently, has been disturbed by past construction activity. Therefore, the potential to encounter human remains would be low because this area has been disturbed by past tank construction.

If human remains are encountered during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98.[40] The County Coroner must be

40 California Health and Safety Code, Sections 7050.5 and 5097.98.

notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. Therefore, potential impacts to human remains would be less than significant.

Mitigation Measures: No mitigation measures are required.

5.6 ENERGY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant Impact.

The following analysis estimates the Project's electricity and transportation fuel usage and evaluates whether the Project would result in wasteful, inefficient, or unnecessary consumption of energy. As the Project includes the operation of a water tank, it would not result in the consumption of natural gas resources. In accordance with Appendix F of the CEQA Guidelines, the analysis includes relevant information to address the energy implications of the Project. The supporting energy calculations are included in **Appendix D** of this Initial Study.

The Project Site is within the Southern California Edison (SCE) service area. The SCE service area covers 50,000 square miles and includes 15 counties, which serve approximately 15 million people in central, coastal, and Southern California.[41] SCE generates electricity from a variety of sources including

41 Southern California Edison, *Southern California Edison's Service Area,* https://www.sce.com/about-us/who-we-are/leadership/our-service-territory, accessed November 2020.

hydropower, coal, nuclear sources, and renewable sources. The SCE planning area used approximately 105,162 gigawatthours (GWh) of electricity in 2019, the most recent year for which data is available.[42] The nearest transmission line to the Project Site includes a 66 KV line approximately 0.21 miles to the northwest along Sierra Highway.[43]

According to the California Energy Commission (CEC), transportation accounts for nearly 40 percent of California's total energy consumption. In 2018, the most recent year of publicly available data, California consumed approximately 681,272,000 barrels (28,613,424,000 gallons, or 42 gallons per barrel) of petroleum for transportation.[44] Incentive programs, such as the CEC's Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP), are helping the State to reduce its dependency on gasoline. Several regulations adopted by California to reduce greenhouse gas (GHG) emissions, such as Senate Bill (SB) 375, have the added benefit of reducing the State's demand on petroleum-based fuels by requiring reductions in vehicle miles traveled (VMT) and by reducing the carbon intensity of transportation fuels. The CEC predicts that the demand for gasoline would continue to decline over the upcoming years, and there would be an increase in the use of alternative fuels.[45]

Construction

During construction, energy would be consumed in the form of electricity associated with the conveyance of water used for dust control, and on a limited basis, powering lights, electronic equipment, or other construction activities necessitating electrical power. Construction activities typically do not involve the consumption of natural gas. Construction would also consume energy in the form of petroleum-based fuels associated with the use of off-road construction vehicles and equipment within the Project Site, construction worker travel, haul trips, and delivery trips.

As shown in **Table 5.6-1: Summary of Energy Use During Construction** and additionally discussed below, a total of approximately 1,939 kilowatt-hours (kWh) of electricity, 34,829 gallons of diesel fuel, and 966 gallons of gasoline is estimated to be consumed during construction.

42 California Energy Commission, *California Energy Consumption Database, Electricity Consumption by Planning Area,* http://ecdms.energy.ca.gov/elecbyplan.aspx, accessed November 2020.

43 California Energy Commission, *Electric Infrastructure Map*, https://cecgis-caenergy.opendata.arcgis.com/app/ad8323410d9b47c1b1a9f751d62fe495, accessed November 2020.

44 US Energy Information Administration*,* Independent Statistics & Analysis*, Table F16: Total Petroleum Consumption Estimates*, 2018, https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_use_pa.html&sid=US, accessed November 2020.

45 California Energy Commission, Final 2019 Integrated Energy Policy Report, https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report, accessed November 2020.

Table 5.6-1
Summary of Energy Use During Construction

Fuel Type	Quantity
Electricity	1,939 kWh
Diesel	
Off-Road Construction Equipment[a]	19,200 gallons
On-Road Construction Equipment[b]	15,629 gallons
Total	34,829 gallons
Gasoline	
Off-Road Construction Equipment[a]	0 gallons
On-Road Construction Equipment[b]	966 gallons
Total	966 gallons

*Source: Refer to **Appendix D** for detailed calculations.*

[a] *Off-road construction equipment encompasses construction equipment on the Project Site (e.g., excavators, cranes, forklifts, etc.).*

[b] *On-road construction equipment encompasses construction worker trips, haul trips, and delivery trips.*

Electricity

As shown in **Table 5.6-1**, a total of approximately 1,939 kWh of electricity is anticipated to be consumed during construction. The electricity demand at any given time would vary throughout the construction period based on the construction activities being performed and would cease upon completion of construction. Additionally, Title 24 requirements would apply to construction lighting if duration were to exceed 120 days, which includes limits on the wattage allowed per specified area for energy conservation. As such, the demand for electricity during construction would not cause wasteful, inefficient, or unnecessary use of electricity. Furthermore, the estimated construction electricity usage represents approximately 8.8 percent of the Project's estimated annual operational demand, which, as discussed below, would be within the service capabilities of SCE.

Transportation Energy

Project construction would consume energy in the form of petroleum-based fuels associated with use of off-road construction vehicles and equipment on the Project Site, construction worker travel to and from the Project Site, and delivery and haul truck trips (e.g., for deliveries of construction supplies and materials).

The petroleum-based fuel use summary provided in **Table 5.6-1** represents the amount of transportation energy that could potentially be consumed during construction based on a conservative set of

assumptions. As shown, on- and off-road vehicles would consume an estimated 35,795 gallons of petroleum (966 gallons of gasoline and 34,829 gallons of diesel fuel) throughout the Project's construction period. For purposes of comparison, the Energy Information Administration (EIA) forecasts a national oil supply of 20.3 million barrels (mb) per day in 2023, which is the first year of operation for the Project.[46] This equates to approximately 7,410 mb per year or 311,199 million gallons (mg) per year. The Project would account for a negligible portion of the projected annual oil supply in 2023.

Operation

During operation of the Project, energy would be consumed from water conveyance to and from the water tank. As shown in **Table 5.6-2: Summary of Annual Energy Use During Operation**, the Project's energy demand would be approximately 22,136 kWh of electricity per year. The Project would consume 1,126 gallons of diesel fuel per year and 6,579 gallons of gasoline per year.

Table 5.6-2
Summary of Annual Energy Use During Operation

Source	Units	Quantity
Electricity		
Water Conveyance	kWh/yr	22,136
Mobile		
Diesel	Gallons/yr	1,126
Gasoline	Gallons/yr	6,579
Fuel Total	Gallons/yr	7,705

Source: Refer to **Appendix D** for detailed calculations.
Notes: kWh/yr = kilowatt-hours per year.

Electricity

The SCE planning area used approximately 105,162 GWh of electricity in 2019, the most recent year for which data is available.[47] The proposed Project would account for a negligible portion of the projected annual consumption in SCE's planning area.

46 U.S. Energy Information Administration, Annual Energy Outlook 2020: Table 11. Petroleum and Other Liquids Supply and Disposition, https://www.eia.gov/outlooks/aeo/data/browser/#/?id=11-AEO2020&cases=ref2020&sourcekey=0, accessed November 2020.

47 California Energy Commission, *California Energy Consumption Database, Electricity Consumption by Planning Area,* http://ecdms.energy.ca.gov/elecbyplan.aspx, accessed November 2020.

Transportation Energy

During operation, traffic associated with the Project would result in the consumption of petroleum-based fuels due to vehicular travel to and from the Project Site. As shown in **Table 5.6-2** above, uses associated with the Project would consume 7,705 gallons of petroleum (1,126 gallons of diesel and 6,579 gallons of gasoline) per year for vehicular trips to and from the Project Site. For purposes of comparison, the Energy Information Administration (EIA) forecasts a national oil supply of 20.3 million barrels (mb) per day in 2023, which is the first year of operation for the Project.[48] The Project would account for negligible portion of the projected annual oil supply in 2023.

Based on the analysis presented above and the calculations provided in **Appendix D** of this Initial Study, the Project would not result in the wasteful, inefficient, or unnecessary consumption of energy and thus would not generate significant impacts with regard to energy use and consumption.

Mitigation Measures: No Mitigation Measures are required.

b. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Less Than Significant Impact.

The Project would comply with applicable regulatory requirements for the design of new water related infrastructure, including the provisions set forth in the CALGreen Code and California's Building Energy Efficiency Standards. Therefore, the Project would be consistent with adopted energy efficiency plans and impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

48 U.S. Energy Information Administration, Annual Energy Outlook 2020: Table 11. Petroleum and Other Liquids Supply and Disposition, https://www.eia.gov/outlooks/aeo/data/browser/#/?id=11-AEO2020&cases=ref2020&sourcekey=0, accessed November 2020.

5.7 GEOLOGY AND SOILS

	Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
GEOLOGY AND SOILS – Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site unique geologic feature?	☐	☒	☐	☐

Discussion

a. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No Impact.

The Santa Clarita Valley contains several known active and potentially active earthquake faults and fault zones. The San Andreas Fault Zone is located north of the Santa Clarita Valley and extends through Frazier Park, Palmdale, Wrightwood, and San Bernardino.[49] Other faults near the Santa Clarita Valley include the San Gabriel and Holser faults. Additionally, the geotechnical report identified that there are no known faults across the Project Site.[50] The Project Site is not located within an Alquist-Priolo Earthquake Fault Rupture Zone, as delineated by the California Geological Survey.[51] Further, the Project mostly involves activities near the surface or above ground which are not expected to exacerbate or increase the likelihood of rupture of existing faults. Because the Project Site is not located within a known earthquake fault or fault zone, nor does it involve activities which would induce rupture, no impacts from rupture of a fault would occur.

Mitigation Measures: No Mitigation Measures are required.

ii. Strong seismic ground shaking?

Less than Significant Impact.

The area is subject to ground shaking and potential damage in the event of earthquakes. As noted previously, the most likely source of strong ground shaking within the region would be a major earthquake along the San Andreas Fault Zone or from the San Gabriel or Holser faults. Because the Project Site is located in a seismically active area, occasional seismic ground shaking is likely to occur within the lifetime of the Project. However, this hazard is common in Southern California and the effects of ground shaking

49 County of Los Angeles, *Santa Clarita Valley Area Plan*, Safety Element, 195.

50 Byer Geotechnical, Inc., Geologic and Soils Engineering Exploration for Proposed Santa Clarita Valley Water Agency Deane Tank, August 2020.

51 U.S. Geological Survey, *Geologic Hazards Science Center, U.S. Seismic Design Maps,* Accessed November 2020, https://earthquake.usgs.gov/hazards/designmaps/usdesign.php.

can be lessened if the proposed structures are designed and constructed in conformance with current building codes and engineering practices.

Therefore, implementation of appropriate engineering design measures as required by the latest Standard Specifications for Public Works Construction "Greenbook"[52], California Building Code (CBC), and the recommendations in the Geotechnical Investigation would minimize potential structural failures caused by earthquakes or other geologic hazards. Compliance with the requirements of the latest Greenbook, CBC, and recommendations from the Geotechnical Investigation for structural safety during a seismic event would reduce hazards from fault rupture. As such, impacts associated with seismic ground shaking would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

iii. Seismic-related ground failure, including liquefaction?

Less than Significant Impact.

Liquefaction refers to loose, saturated sand or gravel deposits that lose their load-supporting capability when subjected to intense shaking. Liquefaction usually occurs during or shortly after a large earthquake. The movement of saturated soils during seismic events from ground shaking can result in soil instability and possible structural damage.[53] The Project Site is not located within a liquefaction zone.[54] The CGS has not mapped the site within an area where historic occurrence of liquefaction or geotechnical, geotechnical, and groundwater conditions indicate a potential for permanent ground displacement such that mitigation as defined in Public Resources Code Section 2693 (c) would be required. Additionally, the subject property is underlain by bedrock, which is not subject to liquefaction.

Overall, the Project would comply with the Uniform Building Code and the California Building Code, to avoid potential impacts related to seismic-related ground failure, including liquefaction. As a result, the Project would not exacerbate existing environmental conditions related to seismic related ground failure, including liquefaction or associated seismically induced settlement, which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury. Therefore, Project impacts associated with seismic-related ground failure including liquefaction would be less than significant during construction and operation of the Project.

Mitigation Measures: No Mitigation Measures are required.

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52 Public Works Standards, Inc. 2021. *Standard Specifications for Public Works Construction*. BNi Publications, Inc.

53 Santa Clarita Valley Area Plan, *Safety Element (2012)*.

54 Santa Clarita Valley Area Plan, *Appendix II: Maps,* Seismic Hazards*, Exhibit S-3, (2012).*

iv. Landslides?

Less than Significant Impact.

Landslides are the downslope movement of geologic materials that occur when the underlying geological support on a hillside can no longer maintain the load of material above it, causing a slope failure. The term landslide also commonly refers to a falling, sliding, or flowing mass of soil, rocks, water, and debris that may include mudslides and debris flows. The risks associated with landslides occur when buildings or structures are placed on slopes. The Project Site is located within an area susceptible to landslides.[55] The Project would incorporate design features relative to the County of Los Angeles Code Section 111, as supported by the Geotechnical Report (See **Appendix E: Geologic and Soils Report**), which contains provisions for soil preparation to minimize hazards from seismically induced landslides and would be designed and constructed to adhere to the latest CBC. Therefore, potential landslide impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact.

Erosion is the movement of rock fragments and soil from one place to another. Precipitation, running water, waves, and wind are all agents of erosion. Significant erosion typically occurs on steep slopes where storm water and high winds can carry topsoil down hillsides.

Construction of the Project Site would include removal of soils from Project area where the new water storage tank would be located, as well as related to the construction of the access road to the north. Since the Project Site has been previously disturbed by grading and excavation activities within the area where the new tank would go, loss of topsoil or soil erosion would not be significant. However, any removal of topsoil would be replaced during construction. Additionally, standard best management practices (BMPs) as required under the National Pollutant Discharge Elimination System (NPDES) permit would require covering of exposed material to minimize erosion impacts. Therefore, impacts would be less than significant.

55 Santa Clarita Valley Area Plan, *Appendix II: Maps,* Seismic Hazards, *Exhibit S-3, (2012).*

The proposed water storage tank would be located on a concrete pad with no exposed soil areas and not interfere with open space. As this would not occur within open space areas, there would be no loss of topsoil or soil erosion. Therefore, no impact would occur during operation of the Project.

Mitigation Measures: No Mitigation Measures are required.

c. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less than Significant Impact.

A significant impact may occur if a project is built in an unstable area without proper site preparation or design features to provide adequate foundations for the project buildings, thus posing a hazard to life and property. Construction activities associated with the Project must comply with the California Building Code, which is designed to assure safe construction, including building foundation requirements appropriate to site conditions.

The Project Site is located in an area susceptible to seismically-induced landslides. As previously discussed, grading and fill recommendations relative to the County of Los Angeles Code Section 111 presented in the Geotechnical Report completed for the Project, would reduce the potential effects of landslides. Lateral spreading results from earthquake-induced liquefaction, causing landslides associated with gentle slopes that flow laterally, like water.[56] As previously mentioned, the Project is not located within a liquefaction zone and the Project Site is not subject to expansive soils.

The geotechnical report concluded that neither soil nor geologic conditions were encountered during the investigation that would preclude the construction of the proposed development with incorporation of the recommendations in the study. The design and construction of the Project would conform to the latest California Building Code seismic standards, which would ensure impacts associated with unstable geologic unit or soils remain less than significant. As such, the Project would not have the potential to exacerbate current environmental conditions that would create a significant hazard with respect to landslides, lateral spreading, subsidence, liquefaction or collapse. With the implementation of California Building Code requirements and relevant geotechnical recommendations within the Geotechnical Investigation, the

56 U.S. Geological Survey (USGS), "About Liquefaction," https://geomaps.wr.usgs.gov/sfgeo/liquefaction/aboutliq.html, accessed October 2019.

Project would result in less than significant impacts with respect to risks associated with landslide, lateral spreading, subsidence, liquefaction, or collapse.

Mitigation Measures: No Mitigation Measures are required.

d. Would the project be located on expansive soil, as defined in Table 18 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less than Significant Impact.

Expansive soils contain significant amounts of clay particles that have the ability to give up water (shrink) or take on water (swell). When these soils swell, the change in volume can exert pressures that are placed on them, and structural distress and damage to buildings could occur. As previously mentioned, the Project is located on bedrock, which is not subject to liquefaction or expansion. The tank site would be constructed on engineered fill which would be protected from significant expansion. Additionally, the Project would be required to adhere to the California Building Code, which contains provisions for soil preparation to minimize hazards from soil expansion. Therefore, impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact.

Development of the proposed Project would not require the installation of a septic tank or alternative wastewater disposal system. Therefore, no impacts would occur.

Mitigation Measures: No Mitigation Measures are required.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant Impact with Mitigation.

According to CEQA Guidelines, projects subject to CEQA must determine whether the project would "directly or indirectly destroy a unique paleontological resource." The Cultural Resources Assessment included a Paleontological Overview. As discussed in **Appendix C**, the geologic unit underlying the Project area is mapped entirely as valley deposits associated with the Mint Canyon Formation dating to the Miocene epoch. The Western Science Center does not have localities within the Project area or within a

one-mile radius, but the Mint Canyon Formation is considered to be of high paleontological sensitivity and is known to preserve vertebrate fossil material.[57] Thus, any fossils recovered during excavation activity associated with development of the Project would be scientifically significant.

Given the history of the Mint Canyon Formation in the area, construction could have potential impacts on paleontological resources.

Mitigation Measures: The following Mitigation Measure would reduce paleontological impacts to less than significant.

GEO-1 A qualified paleontologist shall be retained by the Santa Clarita Valley Water Agency (SCVWA) prior to construction activities to develop and execute a paleontological monitoring plan (PMP) for the grading activities planned for the Project Site within the Miocene sedimentary units. The qualified paleontologist shall meet the qualifications established by the Society of Vertebrate Paleontology (SVP). The PMP shall include a construction monitoring schedule to be maintained when earthmoving occurs within Miocene sedimentary units and recommendations for initial identification of paleontological resources so that a paleontologist may identify and evaluate unknown fossil resources in the Project Site in the event of inadvertent discovery. The PMP shall be reviewed and approved by the SCVWA prior to the beginning of construction.

The qualified paleontologist shall present the elements of the approved PMP to SCVWA staff and construction supervisors in a pre-construction meeting. The PMP shall present the fossil sensitivity of the geologic formation, the nature of the resources that have been or may be encountered within the formation and steps to be undertaken to mitigate impacts to these resources to a level of less than significant.

If fossils are found during earthmoving activities, the paleontologist shall be authorized to halt the ground-disturbing activities within the prescribed distance in the PMP to allow evaluation of the find and determination of appropriate treatment in accordance with SVP guidelines for identification, evaluation, disclosure, avoidance or recovery, and curation, as appropriate. The paleontologist shall prepare a final report on the monitoring. If fossils are identified, then the report shall contain an appropriate description of the fossils, treatment, and curation. A copy of the report shall be filed with the SCVWA and the Natural History Museum of Los Angeles.

Implementation of **Mitigation Measure GEO-1** would reduce potentially significant impacts to less than significant.

57 BCR Consulting LLC. Cultural Resources Assessment: Deane Tank Site Expansion Project. October 30, 2020.

5.8 GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
GREENHOUSE GAS EMISSIONS – Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact.

The following analysis estimates the Project's GHG emissions from construction and operation. As the Project includes the operation of a water storage tank, it would not produce GHG emissions from area, natural gas, or solid waste sources. Construction and operation emissions were estimated using CalEEMod (refer to **Appendix A**).

Construction activity impacts are relatively short in duration, and they contribute a relatively small portion of the total lifetime GHG emissions of a project. In addition, GHG emissions-reduction measures for construction equipment are relatively limited.[58] Therefore, in its *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Thresholds*,[59] the SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime so that GHG reduction measures would address construction GHG emissions as part of the operational GHG reduction strategies. That method is used in this analysis.

The forecasting of construction-related GHG emissions requires assumptions regarding the timing of construction as the emission factors for some of the Project's construction-related GHG emission sources decline over time. As shown in **Table 5.8-1: Construction GHG Emissions**, total construction emissions would be 383 MTCO2e. One-time, short-term emissions are converted to average annual emissions by amortizing them over the service life of the Project. As shown in **Table 5.8-1**, when amortized over an

58 SCAQMD, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold,* October 2008.

59 SCAQMD, *Greenhouse Gases (GHG),* Accessed June 2020, http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds/page/2.

average 30-year Project lifetime, average annual construction emissions from the Project would be 13 MTCO2e per year.

Table 5.8-1
Construction GHG Emissions

Construction Phase	MTCO2e/Year
Total Construction	383
30-Year Annual Amortized Rate	13

*Source: Refer to **Appendix A.***
Notes: GHG = greenhouse gas; MTCO2e = metric tons of carbon dioxide equivalent.

Operation of the Project has the potential to generate GHG emissions from mobile and energy sources. Mobile source emissions would include vehicle trips traveling to and from the Project Site for general inspection and maintenance activities. Electricity emissions would include energy needed for water conveyance to and from the water tank. **Table 5.8-2: Operational Greenhouse Gas Emissions** shows the total operational GHG emissions during Project operation. As shown in **Table 5.8-2**, the Project would generate 133 MTCO2e per year.

Table 5.8-2
Operational GHG Emissions

Source	MTCO2e/Year
Construction (Amortized)	13
Energy	36
Mobile	74
Water Conveyance	10
Total	**133**

*Source: Refer to **Appendix A.***
Notes: GHG = greenhouse gas; MTCO2e = metric tons of carbon dioxide equivalent.

In the absence of any adopted, numeric threshold, the SCVWA evaluates the significance of a project by considering whether the project conflicts with applicable land use designations and regulations. As discussed **Section 5.11: Land Use and Planning**, the Project would serve existing, locally approved developments and would not conflict with local zoning, land use designations, plans, policies, or regulations. Moreover, as discussed in **Section 5.3: Air Quality** the Project does not include any land uses that would increase population, employment, or housing projections. As such, the Project would not

conflict with SCAG's 2020 – 2045 RTP/SCS. As such, impacts related to direct and indirect emissions of greenhouse gas emissions would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact.

As discussed above, the Project would not conflict with local zoning, land use designations, plans, policies, or regulations, and would not conflict with regional growth projections as it is a water infrastructure project planned to offset deficient water storage for surrounding development. As such, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

5.9 HAZARDS AND HAZARDOUS MATERIALS

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS – Would the project:					
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d.	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to *Government Code* Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f.	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h.	Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒	☐	☐

Discussion

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact.

Hazardous materials include any substance or combination of substances that may cause or significantly contribute to an increase in death or serious injury, or pose substantial hazards to humans and/or the environment.[60]

Construction

The Project would include grading, excavation, soil removal, infill and construction of a water storage tank. Construction of the Project would involve the routine handling of small quantities of hazardous or potentially hazardous materials, such as gasoline, diesel fuel, lubricants, and other petroleum-based products used to operate and maintain construction equipment and vehicles on the Project Site. This handling of hazardous materials would be a temporary activity and coincide with the short-term construction phase of the Project. The transport, use, and storage of hazardous materials during the construction and operation of the Project would be conducted in accordance with applicable State and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation and Recovery Act, the California Hazardous Material Management Act, and the California Code of Regulations, Title 22. Through compliance with these regulatory requirements, no significant hazards to the public or environment would result in connection with the construction of the Project. Thus, construction of the Project would not result in a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Impacts would be less than significant.

Operation

During operation, the proposed water storage tank would carry water that has been disinfected. However, the concentration of chloramines in the distribution lines would not be at a level considered hazardous and would be at a level safe for drinking; consequently, no aspect of the Project would involve the use of hazardous materials, and the Project would not create a hazard-related to exposure to hazardous materials. Therefore, compliance to the applicable regulatory requirements would ensure less than significant impacts.

Mitigation Measures: No Mitigation Measures are required.

60 *Santa Clarita Valley Area Plan,* Safety Element (2012).

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant Impact.

A project would normally have a significant impact from hazards and hazardous materials if: (a) the project involved a risk of accidental explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation); or (b) the project is involved in the creation of any health hazard or potential health hazard.

As discussed above, compliance with federal, State, and local laws and regulations relating to transport, storage, disposal, and sale of hazardous materials would minimize any potential for accidental release or upset of hazardous materials. The Project would involve grading and excavation activities as well as removal and infill of soil. The soil on site is not contaminated and would not pose the risk of releasing hazardous materials into the environment. Additionally, for both construction and operation, there is also the potential for a release of water from significantly damaged water storage tank resulting from a seismic event, concentrations of chloramine within the distribution system would not be high enough to be considered hazardous. Therefore, impacts related to hazardous materials being released into the environment from rupture would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than Significant Impact.

The Project Site has an optional access that would directly connect it to the College of the Canyons Campus. The construction phase of the proposed water storage tank could potentially expose the campus to short-term hazardous emissions from diesel machinery and individual employee passenger vehicles. There would also be a potential for the handling of hazardous materials, such as oils, grease or fuels, utilized during the construction of the Project. Compliance with all regulations for the handling of hazardous materials would reduce the potentiality of release. Additionally, as discussed in **Section** 5.3, Table 5.3-3 demonstrates that construction emissions would not exceed the localized significance thresholds for construction. As emissions would be below SCAQMD localized thresholds, impacts to the sensitive receptors identified above from localized emissions during construction would be less than significant.

No hazardous emissions or handling of hazardous materials would be conducted during the operational phase of the water storage tank. Therefore, impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less than Significant Impact.

A geographical search for hazardous materials sites, as defined in Government Code Section 65962.5, utilizing the online environmental database GeoTracker produced three locations of potential hazardous material near the Project Site. The closest location is approximately 5 miles northwest to the Project Site identified is Joe Scott Boys Camp (28700 Bouquet Canyon Road, Saugus CA 91350). This site is identified as a Historical – WDR (Water Discharge Report) site. The status history for this site lists "Historical – WDR" as of December 18, 1958, and a case date as September 21, 2006.[61] Additionally, two locations identified were classified as leaking underground storage tank (LUST) cleanup sites, all of which have been designated as case closed: Dixie Diesel Station (29471 The Old Road, Saugus CA 91350), and San Francisquito Power Plant #1 (3700 Clear Creek Canyon Road, Santa Clarita, CA 91350) that are approximately 13 and 15 miles from the Project Site respectively. The Project Site is not located in an area with current hazardous materials sites and therefore would not create a significant hazard to the public or environment. Therefore, impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact.

The closest airport to the Project Site is the Agua Dulce Airpark located approximately 11 miles northeast. Therefore, the Project would not be located within an airport land use plan or within 2 miles of a public

61 GEOTracker. State Water Resources Control Board. http://geotracker.waterboards.ca.gov/. Accessed November 2020.

airport or public use airport. No safety hazard impacts would occur to people residing or working in the area of the Project.

Although the proposed water storage tank would be aboveground; it would be constructed such that it would not obstruct any airport operations. Additionally, as mentioned, the Project Site already has two existing water storage tanks that do not obstruct airport operations or impacts airport safety hazards. Therefore, no safety hazards resulting from airport proximity are expected and no impact would occur.

Mitigation Measures: No Mitigation Measures are required.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact.

The nearest airport, public or private, is the Agua Dulce Airpark located approximately 11 miles northeast of the Project Site. The Project Site would not be located near a private airstrip; therefore, the Project would not create a safety hazard for those working within the Project Site. Therefore, no impact would occur.

Mitigation Measures: No Mitigation Measures are required.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact.

The Project Site is located in a State Responsibility Area of land that is classified as Very High Fire Hazard Severity Zone (VHFHSZ).[62,63] Soledad Canyon Road is a County designated secondary disaster route.[64] Additionally, the SR-14 is a County designated primary disaster route. SR-14 is located approximately a half a mile north of the Project Site. The Project may result in a temporary increase in traffic along SR-14 during construction. However, adequate access to evacuation routes and emergency access to the Project Site and to the surrounding area would continue to be provided. Two-way access would be maintained

62 California Fire, State Responsibility Area (SRA) Viewer, https://bof.fire.ca.gov/projects-and-programs/state-responsibility-area-viewer, accessed October 2020.

63 *Santa Clarita Valley Area Plan (2012)*. One Valley One Vision. 3.11: Hazards and Hazardous Materials. Figure 3.11-2: Wildfire Hazard Zone Within the OVOV Planning Area.

64 *Los Angeles Department of Water and Power.* Disaster Route Maps by City. City of Santa Clarita Map. 2010b. Accessed November 2020. http://dpw.lacounty.gov/dsg/disasterroutes/city.cfm.

throughout construction. As such, SR-14 would continue to function as a disaster route during project construction, in the event of an emergency evacuation.

During operation, the Project would not increase traffic along SR-14. Therefore, operation-related impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less than Significant Impact with Mitigation.

The Project Site is located in a Very High Fire Hazard Severity Zone (VHFHSZ).[65] Construction activities may consist of processes that would have the potential to create a fire or use ignitable materials within these areas which have the potential to increase fire danger. The use of flames/sparks in hillside brushy areas would likewise increase the risk of wildfire. As such, impacts would be potentially significant. Mitigation measure **MM HAZ-1** would require the firefighting devices, such as fire extinguishers, in order to minimize the spread of wildfire. Impacts would be less than significant with mitigation incorporated.

Operation of the Project would not exacerbate the potential for wildfires. There are no ignitable materials or processes that would have the potential to create a fire. Therefore, impacts related to exposing people or structures to adverse effects from wildfires would be less than significant.

Mitigation Measures: The following Mitigation Measure would reduce potentially significant impacts to less than significant.

HAZ-1 During construction activities, the construction contractor shall provide fire-fighting equipment, such as fire extinguishers, to the satisfaction of the Los Angeles County Fire Department (LAcoFD) and shall provide instruction on possible fire risk and the use of fire extinguishers as part of required construction-related safety training.

65 *Santa Clarita Valley Area Plan, Appendix II: Maps,* Very High Fire Hazard*,* Exhibit S-6, (2012).

5.10 HYDROLOGY AND WATER QUALITY

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
HYDROLOGY AND WATER QUALITY – Would the project:					
a.	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b.	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
	i. Result in substantial erosion or siltation on or off-site?	☐	☐	☒	☐
	ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
	iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
	iv. Impede or redirect flood flows?	☐	☐	☒	☐
d.	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e.	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Discussion

a. *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?*

Less than Significant Impact.

A project would have a potentially significant impact on surface water quality if discharges associated with the project would create pollution, contamination, or nuisance as defined in Section 13050 of the California Water Code (CWC) or that cause regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for the receiving body of water. A significant

impact may occur if a project would discharge water which does not meet the quality standards of agencies which regulate surface water quality and water discharge into stormwater drainage systems. Significant impacts would also occur if a project does not comply with all applicable regulations with regard to surface water quality as governed by the State Water Resources Control Board (SWRCB) through its nine Regional Boards. Stormwater runoff from construction sites is regulated by the General Construction Storm Water Permit (Water Quality Order 99-08-DWQ) issued by the SWQCB. This permit applies to traditional construction projects and linear underground projects.

Construction activities would be required to comply with the General Construction Storm Water Permit and would ensure that activities would not violate any water quality standards or waste discharge requirements. BMPs would be implemented prior to a storm event, including waste management (e.g., stockpile management, sanitary management, spill prevention and control) and temporary sediment controls (e.g., silt fencing), to prevent prohibited discharges and to restrict sediment laden runoff. Accordingly, construction impacts would be less than significant following these requirements.

Furthermore, operation of the Project would not result in discharges that would cause regulatory standards to be violated. Project characteristics include catch basins located within the proposed paved areas next to the proposed water tank. The catch basins would pick up stormwater runoff from the developed portion of the site. The Project would also be subject to the BMPs requirements of the Standard Urban Storm Water Mitigation Plan (SUSMP). The Project would implement applicable BMPS to retain, treat and/or filter stormwater runoff before it enters the public stormwater drain system. Adherence to the requirements of the MS4 Permit and County wide SUSMP would ensure that potential impacts associated with water quality would be less than significant. With appropriate project design and compliance with the applicable federal, State, local regulations, and permit provisions, impacts of the Project related to operational discharge runoff quality would be less than significant.

The installed BMPs systems would be designed with an internal bypass overflow system to prevent upstream flooding during major storm events. Implementation of LID BMPs would mitigate operational impacts on surface water quality. Therefore, the Project would not result in any violations to any water quality standards or waste discharge requirements and would not cause a substantial increase in concentrations of items listed as constituents of concern for nearby watersheds and impacts on surface water quality and groundwater quality would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede substantial groundwater management of the basin?

Less than Significant Impact.

The Project would include the construction of a new water storage tank within the Project Site and other infrastructure-related components that would serve the Deane Pressure Zone. As previously discussed in the **Section 2.0: Project Description**, the Deane Pressure Zone has a deficiency in storage of approximately 4.22 MG. There are two new, large developments within the existing Deane Pressure Zone that require additional storage over and above the existing storage deficiency. The new developments would increase the water storage deficiency to 5.74 MG. The Project would result in the construction of a new steel tank with a water storage capacity of 1.70 MG to address part of the deficit, as well as for additional fire protection, emergency, and operation needs within the Deane Pressure Zone.

The Project would increase impervious surface and would construct a concrete pad to support the water storage tank. The State Stormwater Standards specify a new impervious surface as significant if it is larger than one acre.[66] However, the construction of the new water storage tank and site improvements would not substantially interfere with groundwater recharge, because the portion of the Project Site that would be constructed is smaller than one acre. The Project would not involve pumping of groundwater and would not otherwise have an impact on the depletion of groundwater supplies or substantially interfere with groundwater recharge due to the negligible decrease in pervious surfaces. Therefore, the Project would have less than significant impacts on the groundwater basin and the Project would not impede groundwater management of the underlying basin.

Mitigation Measures: No Mitigation Measures are required.

66 Office of Wastewater Management. Summary of State Stormwater Standards. Accessed November 2020. https://www3.epa.gov/npdes/pubs/sw_state_summary_standards.pdf

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:

i. *result in substantial erosion or siltation on or off site;*

Less than Significant Impact.

Construction of the Project Site would include removal of soils from Project area where the new water storage tank would be located. Since the Project Site has been previously disturbed by grading and excavation activities within the area where the new tank would go, loss of topsoil or soil erosion would not be significant. Substantial erosion or siltation would not occur because the area of development would be less than one acre, and proper drainage would be provided to convey all runoff to storm drain system. However, any removal of topsoil would be replaced during construction.

The Project would incorporate all BMPs as necessary to prevent erosion and to control construction-related pollutants from discharging from the site for all permanent drainage and erosion control systems. Additionally, standard BMPs as required under the NPDES permit would require covering of exposed material to minimize erosion impacts. Therefore, impacts would be less than significant.

As previously discussed, construction activities would include BMPs including straw waddles and silt fencing to minimize erosion and surface water runoff from the site. Therefore, impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

ii. *substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;*

Less than Significant Impact.

Site drainage is conveyed to a catch basin and drain pipeline. Drainage at the site is currently conveyed through a 14-inch steel pipe that is aligned from the tank site down the slope on the north side of the site. There is a catch basin at the site that collects the on-site stormwater and any overflow or drain water from the tanks.

Construction of the Project would occur at the hilltop where the current water storage tanks are located. Construction activity would include as cut/fill slopes, potential retaining wall locations, utilities, 20 foot-wide access roadways around all tanks, drainage system around the tanks and down the access roadway,

and an extra fill pad to assist with balancing earthwork. Construction activities would be required to comply with the General Construction Storm Water Permit and would ensure that activities would not violate any water quality standards or waste discharge requirements. BMPs would be implemented prior to a storm event, including waste management (e.g., stockpile management, sanitary management, spill prevention and control) to prevent prohibited discharges and to minimize the amount of surface water runoff off site. Accordingly, construction impacts would be less than significant following these requirements.

Proposed drainage improvements at the tank site would include the removal of the existing catch basin and drain line. The existing drain line runs from the catch basin down the northerly slope to a point above an existing terrace drain. Most of the existing drain line is exposed along the slope. However, the existing drainage patterns of the slope would not be significantly altered by the removal of the drain line. Proposed drainage improvements would also include the construction of multiple catch basins and new drain lines. The tank site catch basins would be located within the proposed paved areas. The catch basins would pick up stormwater runoff from the developed portion of the site. Additionally, catch basins would also be constructed adjacent to the proposed and existing tanks to pick up potential tank overflows and flows from the tank drains.

Similarly, drainage areas outside the fenced reservoir site are to be captured and conveyed away from paved roadways via gutters, swales and slough walls to minimize site maintenance and debris removal. Runoff containing silt is to be managed on the slope prior to entering drainage systems. Therefore, impacts during construction phase would be less than significant.

Operation of the water storage tanks would not significantly alter the existing drainage pattern of the Project Site. The design of the Project would allow post-construction water runoff to continue in existing directions. As such, the Project would not alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site. Therefore, impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

iii. *create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;*

Less than Significant Impact.

Large areas of impervious surfaces would not be created as a result of the proposed Project. Construction activities such as earth moving, maintenance of construction equipment, handling of construction materials, and dewatering can contribute to pollutant loading in stormwater runoff. However, as previously discussed, the SCVWA would include BMPs to reduce runoff water off site, including but not be limited to: erosion control, sediment control, non-stormwater management, and materials management BMPs

Construction would be temporary and implementation of BMPs during a rain event would minimize the amount of runoff entering the existing public storm drain system. With the incorporation of BMPs into the Project, the Project would not be an additional source of polluted runoff.

As previously discussed, the Project includes on-site water conveyance and catch basins to ensure that post-construction water runoff during a storm event would be similar to existing conditions. Thus, water runoff entering the public storm drain system would not affect the existing capacity of the public storm drains. Accordingly, impacts during operation would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

iv. impede or redirect flood flows?

Less than Significant Impact.

The Project involves construction of an additional tank and is located on a hilltop. The Project would not involve the construction of any housing, or habitable structures. As such, it would not expose people or habitable structures to flooding. Moreover, the Project is outside of dam inundation area for a major dam/reservoir within the City of Santa Clarita and outside of any 100-year flood hazard areas.[67] The closest reservoir to the Project is the Bouquet Reservoir, which is approximately 20 miles north of the Project Site. Regarding flood flows, the Project would not impede or redirect any such flows because the Project Site is not located in an area designated as a flood hazard zone.[68] Thus, the Project would not impede or redirect floodwater flows and impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

67 Santa Clarita Valley Area Plan, Appendix II: Maps, Flood Plains, Exhibit S-4 (2012).
68 FEMA, National Flood Hazard Layer (NFHL), https://msc.fema.gov/, Accessed October 2019.

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Less than Significant Impact.

Tsunamis are large-scale sea waves produced from tectonic activities along the ocean floor. Seiches are freestanding or oscillatory waves associated with large enclosed or semi-enclosed bodies of water. Given that the Project Site is not located near the ocean or any large enclosed or semi-enclosed bodies of water, the Project would not be located within designated tsunami or seiche zones. Debris and mudflows are typically a hazard experienced in the floodplains of streams that drain very steep hillsides within the watershed. Because the Project Site is located outside of the 100-year flood zone, the Project Site would not place people or structures at risk of inundation by seiche, tsunami, or mudflow. Additionally, the Project would be designed in accordance with the latest CBC to ensure that the hillside meets current stabilization requirements. Therefore, impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less than Significant Impact.

Under the California Water Code, the State of California is divided into nine regional water quality control boards (RWQCBs), which govern the implementation and enforcement of the California Water Code and the Clean Water Act. As previously stated, the Project Site is located within LARWQCB's region. The LARWQCB Water Quality Control Plan: Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, September 11, 2014, (Basin Plan) is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan (i) designates beneficial uses for surface and ground waters, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's antidegradation policy, and (iii) describes implementation programs to protect all waters in the Region. In addition, the Basin Plan incorporates all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations.

Under the NPDES permit enforced by the LARWQCB, all existing and future municipal and industrial discharges to surface waters within the City are subject to applicable local, State and/or federal regulations. The Project would comply with all provisions of the NPDES program and other applicable waste discharge requirements (WDRs), as enforced by the LARWQCB.

The Project would comply with and not obstruct implementation of the LARWQCB's Basin Plan. As described earlier, the Project would comply with applicable NPDES requirements, which would include the use of BMPs during construction of the Project to minimize off-site erosion, flooding, and contamination. Additionally, the construction of the Project would not interfere with groundwater recharge. Therefore, Project construction would not conflict or obstruct implementation of a water quality control plan or sustainable groundwater management plan and impacts from construction and operation would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

5.11 LAND USE AND PLANNING

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
LAND USE AND PLANNING – Would the project:					
a.	Physically divide an established community?	☐	☐	☐	☒
b.	Conflict with applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Discussion

a. Physically divide an established community?

No Impact.

The Project Site is located within the existing reservoir area including two water storage tanks. The construction staging areas are located within the Project Site and would be short term and temporary in nature. The proposed water storage tank and associated facilities are consistent with the existing facilities within the Project Site. There are no facilities proposed by the project that could physically divide an established community. Therefore, no impact would occur.

Mitigation Measures: No mitigation measures are required.

b. Conflict with applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact.

Per Section 53091 of the California Government Code, State law does not apply specific local zoning, building, or permit requirements to this type of SCVWA project.[69] Development of the proposed Project would serve existing, locally approved developments and would not conflict with local zoning, land use designations, plans, policies, or regulations. Therefore, no impacts would occur.

Mitigation Measures: No mitigation measures are required.

69 California Government Code. Section 53091(d).

5.12 MINERAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
MINERAL RESOURCES – Would the project:					
a.	Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	☐	☐	☐	☒
b.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Discussion

a. Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?

No Impact.

The Project area is not located in an area where significant mineral deposits or oil or natural gas wells are present.[70] The Project Site, off-site road improvements and surrounding areas have no substantial records of mineral resources. Therefore, no impacts would occur.

Mitigation Measures: No mitigation measures are required.

b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact.

As previously discussed, the proposed Project is not located within important mineral resource or oil or gas production areas. Consequently, the Project would not result in the loss of availability of locally important mineral resource recover sites delineated on a local general plan or other land use plan. Therefore, no impacts would occur.

Mitigation Measures: No mitigation measures are required.

70 Santa Clarita Valley Area Plan, Appendix II: Maps, Mineral Resources, Exhibit CO-2, (2012).

5.13 NOISE

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
NOISE – Would the project:					
a.	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b.	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c.	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant with Mitigation.

Environmental Setting

Human response to noise varies widely depending on the type of noise, time of day, and sensitivity of the receptor. The effects of noise on humans can range from temporary or permanent hearing loss to mild stress and annoyance due to such things as speech interference and sleep deprivation. Prolonged stress, regardless of the cause, is known to contribute to a variety of health disorders. Noise, or the lack thereof, is a factor in the aesthetic perception of some settings, particularly those with religious or cultural significance. Certain land uses are particularly sensitive to noise, including schools, hospitals, rest homes, long-term medical and mental care facilities, and parks and recreation areas. Residential areas are also considered noise sensitive, especially during the nighttime hours. The site vicinity is predominantly composed of commercial and residential uses. The following receptors were identified as sensitive receptors in vicinity of the site and shown in **Figure 5.13-1: Sensitive Receptor Sites**.

- **Site 1**: Single family residential uses along Alder Peak/Nearview Drive and Winterdale Drive.
- **Site 2**: Single family residential uses along Winterdale Drive north of Shadyview Drive.
- **Site 3**: Single family residential uses along Crest Heights Drive.
- **Site 4**: Single family residential uses along Meadow Heights Court.
- **Site 5**: Single family residential uses along Summit Hills Drive.
- **Site 6**: Mitchell Community School and single family residential uses on the corner of Winterdale Drive and Goodvale Road.

To quantify existing ambient noise levels at the sensitive receptors identified above, short-term noise monitoring was conducted at six (6) locations over 15-minute intervals at each location on October 28, 2020. As shown in **Table 5.13-1: Ambient Noise Measurements**, ambient noise levels ranged from a low of 37.0 dBA west of Project Site along Meadow Heights Court (Site 4) to a high of 56.7 dBA at northeast corner of Winterdale Drive and Goodvale Road (Site 6).

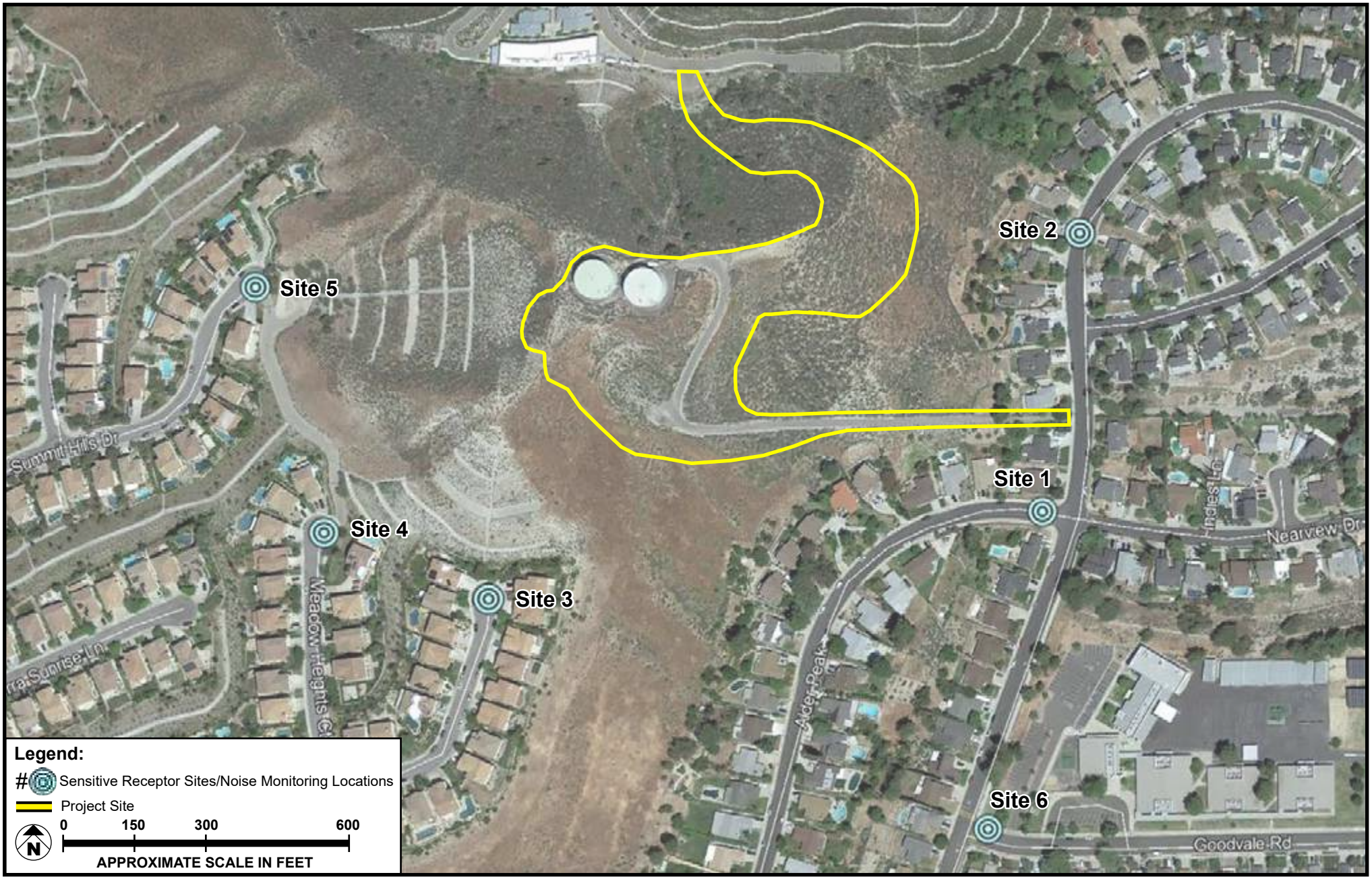
Table 5.13-1
Ambient Noise Measurements

	Location Number/Description	Nearest Use	Time Period	Noise Source	dBA Leq
1	Northwest corner of Winterdale Drive and Nearview Drive	Residential	1:08 PM–1:23 PM	Medium traffic activity along Golden Triangle Road.	49.7
2	East of Project Site along Winterdale Drive	Residential	1:26 PM–1:41 PM	Low traffic activity along Isabella Parkway.	42.4
3	South of Project Site along Crest Heights Drive	Residential	2:05 PM–2:20 PM	Medium traffic activity along Soledad Canyon Road.	55.1
4	West of Project Site along Meadow Heights Court	Residential	2:23 PM–2:38 PM	Medium traffic activity along Golden Triangle Road.	37.0
5	West of Project Site along Summit Hills Drive	Residential	2:43 PM–2:58 PM	Medium traffic activity along Soledad Canyon Road.	46.7
6	Northeast corner of Winterdale Drive and Goodvale Road	Residential/ School	1:45 PM–2:00 PM	Medium traffic activity along Golden Triangle Road.	56.7

*Source: Refer to **Appendix F** for noise monitoring data sheets.*
Notes: dBA = A-weighted decibels; Leq = average equivalent sound level.

Local Regulatory Setting

The City of Santa Clarita Municipal Code (SCMC) Noise Ordinance provides exterior noise standards within the City, which are applicable to the Project.



SOURCE: Google Earth - 2020

FIGURE **5.13-1**

Meridian Consultants

Sensitive Receptor Sites

299-002-20

Section 11.44.040(A) of the SCMC establishes exterior noise limits for the City which are outlined below in **Table 5.13-2: Santa Clarita Exterior Noise Limits**. At the boundary line between a residential property and a commercial and manufacturing property, the noise level of the quieter zone shall be used.

The numerical limits given in **Table 5.13-2** shall be adjusted by the corrections listed in **Table 5.13-3: Correction to Exterior Noise Limits**, where the following noise conditions exist:

Table 5.13-2
Santa Clarita Exterior Noise Limits

Region	Time	Noise Level Standard (dBA)
Residential Zone	7:00 AM – 9:00 PM	65
Residential Zone	9:00 PM – 7:00 AM	55
Commercial and manufacturing	7:00 AM – 9:00 PM	80
Commercial and manufacturing	9:00 PM – 7:00 AM	70

Source: Santa Clarita Municipal Code, sec. 8.20.

Table 5.13-3
Correction to Exterior Noise Limits

Noise Condition	Correction (in dBA)
(1) Repetitive impulsive noise	-5
(2) Steady whine, screech or hum	-5
The following corrections apply to day only	
(3) Noise occurring more than 5 but less than 15 minutes per hour	+5
(4) Noise occurring more than 1 but less than 5 minutes per hour	+10
(5) Noise occurring less than 1 minute per hour	+20

Section 11.44 of the Santa Clarita Municipal Code (SCMC) regulates noise from demolition and construction activities. More specifically, Section 11.44 prohibits construction work from occurring outside the hours of 7:00 AM to 7:00 PM, Monday through Friday, and 8:00 AM to 6:00 PM on Saturday. Moreover, no work shall be performed on the following public holidays: New Year's Day, Independence Day, Thanksgiving, Christmas, Memorial Day and Labor Day. Due to the absence of a quantitative threshold adopted by the City, a significant construction noise impact would occur if noise levels exceed 65 dBA for residential uses and 80 dBA for commercial and manufacturing uses during the daytime period of 7:00 AM – 9:00 PM.

Table 5.13-4: City of Santa Clarita Land Use Compatibility for Community Noise provides these guidelines which are set forth in the Noise Element in terms of the CNEL.

Table 5.13-4
City of Santa Clarita Land Use Compatibility for Community Noise

Land Use	Normally Acceptable[a]	Conditionally Acceptable[b]	Normally Unacceptable[c]	Clearly Unacceptable[d]
Residential—Low Density Single-Family, Duplex, Mobile Homes	50 - 60	60 - 70	70 - 75	above 75
Residential— Multifamily Homes	50 - 60	60 - 70	70 - 75	above 75
Transient Lodging— Motels, Hotels	50 - 60	60 - 70	70 - 80	above 80
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 60	60 - 70	70 - 80	above 80
Auditoriums, Concert Halls, Amphitheaters	—	50 - 65	—	above 65
Sports Arena, Outdoor Spectator Sports	—	50 - 75	—	above 75
Playgrounds, Neighborhood Parks	50 - 65	—	65 - 75	above 75
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 75	—	70 - 80	above 80
Office Buildings, Business and Professional Commercial	50 - 70	70-75	above 75	—
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	75 - 80	above 80	—

Source: City of Santa Clarita General Plan Noise Element, Exhibit N-8: Noise and Land Use Compatibility Guidelines (June 2010).
Notes:
[a] Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
[b] Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning would normally suffice.
[c] Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Sound walls, window upgrades, and site design modifications may be needed in order to achieve City standards.
[d] Clearly Unacceptable: New construction or development should generally not be undertaken.

Operational noise impacts are evaluated for Project-related off-site roadway traffic noise impacts and on-site stationary source noise from on-site activities and equipment. For purposes of this analysis an impact would occur if:

- The Project would cause any ambient noise levels to increase by 5 dBA CNEL or more and the resulting noise falls on a noise-sensitive land use within an area categorized as either

"normally acceptable" or "conditionally acceptable" (see **Table 5.13-4: City of Santa Clarita Land Use Compatibility for Community Noise** for description of these categories); or cause ambient noise levels to increase by 3 dBA CNEL or more and the resulting noise falls on a noise-sensitive land use within an area categorized as either "normally acceptable" or "clearly unacceptable."

- Project-related operational (i.e., nonroadway) noise sources such as outdoor activities, building mechanical/electrical equipment, etc., increase ambient noise level by 5 dBA, causing a violation of the City Noise Ordinance.

Construction

Construction activities that would occur during the construction phases would generate both steady-state and episodic noise that would be heard both on and off the Project Site. Each phase involves the use of different types of construction equipment and, therefore, has its own distinct noise characteristics. The Project would be constructed using typical construction techniques; no blasting or impact pile driving would be required.

The potential noise impact generated during construction depends on the phase of construction and the percentage of time the equipment operates over the workday. However, construction noise estimates used for the analysis are representative of worst-case conditions because it is unlikely that all the equipment contained on site would operate simultaneously. As would be the case for construction of most land use development projects, construction of the Project would require the use of heavy-duty equipment with the potential to generate audible noise above the ambient background noise level. The Project's construction noise levels at the nearest sensitive receptors to the Project Site are shown in **Table 5.13-5: Construction Maximum Noise Estimates**. As shown, construction noise levels would result in a maximum increase of 21.4 dBA at the single family residential uses along Alder Peak/Nearview Drive and Winterdale Drive, exceeding the daytime significance threshold of 65 dBA for residential uses.

As mentioned previously, adherence to Section 11.44.080 would prohibit construction to occur between the hours of 7:00 PM and 7:00 AM on weekdays, 6:00 PM and 8:00 AM on Saturday, and/or any time on Sunday or a federal holiday. Additionally, to reduce maximum construction noise levels to below 65 dBA, **Mitigation Measure MM N-1** would require optimal muffler systems for all equipment and the break in line of sight to a sensitive receptor would reduce construction noise levels by approximately 10 dB or more.[71] Additionally, limiting the number of noise-generating heavy-duty off-road construction equipment (e.g., backhoes, dozers, excavators, rollers, etc.) simultaneously used on the Project Site within 25 feet of off-site noise sensitive receptors surrounding the site to no more than one or two pieces of

71 FHWA, Special Report—Measurement, Prediction, and Mitigation, updated June 2017, https://www.fhwa.dot.gov/Environment/noise/construction_noise/special_report/hcn04.cfm, Accessed November 2020.

heavy-duty off-road equipment would further reduce construction noise levels by approximately 14 dBA. Limiting the number of noise-generating heavy-duty construction equipment to two (2) pieces operating simultaneously would reduce construction noise levels by approximately 5 dB. As such, in compliance with the City's Noise Ordinance, maximum construction noise levels resulting in an increase of 21.4 dB above the significance threshold would be reduced by a minimum of 29 dB to the extent feasible; thus construction noise levels would not be considered significant with mitigation.

Table 5.13-5
Construction Maximum Noise Estimates

Site	Nearest Off-Site Building Structures	Distance from Project Site (feet)	Max Leq	Significance Threshold (dBA)	Maximum Noise Increase over Significance Threshold without Regulatory Compliance Measures (dBA)
1	Single family residential uses along Alder Peak/Nearview Drive and Winterdale Drive	50	86.4	65.0	+21.4
2	Single family residential uses along Winterdale Drive north of Shadyview Drive	350	69.5	65.0	+4.5
3	Single family residential uses along Crest Heights Drive	415	68.1	65.0	+3.1
4	Single family residential uses along Meadow Heights Court	460	67.2	65.0	+2.2
5	Single family residential uses along Summit Hills Drive	485	66.7	65.0	+1.7
6	Mitchell Community School and single family residential uses on the corner of Winterdale Drive and Goodvale Road	460	67.2	65.0	+2.2

_____
Source: FHWA, RCNM, version. 1.1.
*Refer to **Appendix F** for construction noise worksheets*

Operation

The water supply for the new tank would be delivered from two existing pump stations located north of the site on Sierra Highway- the Linda Vista Pump Station and Honey House Pump Station and an existing 14' line that is located along the access road. The two pump stations and 14" water line currently supply water to the existing tanks at the Project Site and would be connected to the newly constructed water storage tank at project completion. Consequently, operation of the storage tanks would utilize submersible pumps and motors, which would significantly limit noise generation during operation. Storage tank operation is largely dependent on the level of water, dependent on demand in the City's system and weather. The storage tank would operate for several hours, up to several days per week. Operational related noise would be episodic in nature and generally not steady over long periods of time. As such, the proposed water storage tank would be stationary and would not generate significant ambient noise levels compared to the existing uses. Impacts would be less than significant.

Mitigation Measures: The following Mitigation Measure shall be implemented.

N-1: **Construction Noise**. SCVWA and its contractors shall implement the following measures during all Project-related construction activities:

- Noise-generating project construction activities, including haul truck deliveries, shall only occur between the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, 8:00 a.m. to 6:00 p.m. on Saturdays, and with no activity allowed on Sundays or federal holidays.
- During all project construction, construction contractor shall equip all construction equipment, fixed or mobile, to be equipped with properly operating and maintained optimal mufflers of 10 dB or more.
- Limit the number of noise-generating heavy-duty off-road construction equipment (e.g., backhoes, dozers, excavators, rollers, etc.) simultaneously used on the Project Site within 25 feet of off-site noise sensitive receptors surrounding the site.
- A sign, legible at a distance of 50 feet, shall be posted at the project construction site providing a contact name and a telephone number where residents can inquire about the construction process and register complaints. This sign would indicate the dates and duration of construction activities. In conjunction with this required posting, a noise disturbance coordinator would be identified to address construction noise concerns received. The contact name and the telephone number for the noise disturbance coordinator would be posted on the sign. The coordinator would be responsible for responding to any local complaints about construction noise.

Level of Significance Following Mitigation:

With the implementation of **MM N-1**, noise generated during project construction would result in a less than significant impact.

b. Generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact.

Construction

Construction machinery and operations can generate varying degrees of ground vibration, depending on the construction procedures and the construction equipment used. The operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of a construction site often varies depending on soil type, ground strata, and construction characteristics of the receptor buildings. The results from vibration impacts can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at its highest levels. Ground-borne vibration from construction activities rarely reaches the levels that damage structures. Potential building damage occurs when construction activities cause ground-borne vibration levels to exceed 0.2 inches-per second peak particle velocity (PPV) at the nearest off-site sensitive receptors.

Table 5.13-6: Construction Vibration Impacts—Building Damage present construction vibration impacts associated with on-site construction in terms of building damage. It is important to note pile driving would not be required during construction. As shown in **Table 5.13-6**, the forecasted vibration levels due to on-site construction activities would not exceed the building damage significance threshold at the nearby sensitive receptors for vibratory rollers, large bulldozers, caisson drilling, loaded trucks, jackhammers, and small bulldozers. As such, construction vibration impacts would be less than significant.

Table 5.13-6
Construction Vibration Impacts—Building Damage

Nearest Off-Site Building Structures	Estimated Vibration Velocity Levels at the Nearest Off-Site Structures from the Project Construction Equipment							Significance Threshold (PPV ips)
	Pile Driver (impact)[1]	Vibratory Roller	Large Bulldozer	Caisson Drilling	Loaded Trucks	Jack-hammer	Small bulldozer	
FTA Reference Vibration Levels at 25 feet								
	0.644	0.210	0.089	0.089	0.076	0.035	0.003	—
Residential uses to the east (50 feet)	0.228	0.074	0.031	0.031	0.027	0.012	0.001	0.2
Residential uses to the east (350 feet)	0.012	0.004	0.002	0.002	0.001	0.001	0.000	0.2
Residential uses to the south (415 feet)	0.010	0.003	0.001	0.001	0.001	0.001	0.000	0.2
Residential uses to the southwest (460 feet)	0.008	0.003	0.001	0.001	0.001	0.000	0.000	0.2
Residential uses to the west (485 feet)	0.008	0.002	0.001	0.001	0.001	0.000	0.000	0.2
Residential/School uses to the south (460 feet)	0.008	0.003	0.001	0.001	0.001	0.000	0.000	0.2

Source: US Department of Transportation, Federal Transportation Authority, Transit Noise and Vibration Impact Assessment
*Source: Refer to **Appendix F** for construction vibration worksheets.*
Note:
[1] Pile driving would not be required during construction.

Operation

The proposed water storage tank would be stationary and would not generate significant groundborne vibration or groundborne noise levels. Moreover, sensitive receptors would not be located within 400 feet of the proposed water storage tank. As such, the Project's operational vibration impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact.

The Project Site is not within the vicinity of a private airstrip or an airport land use plan. The closest airport to the Project Site is the Agua Dulce Airpark located approximately 8.0 miles northeast of the Project Site. Therefore, the Project is not within two miles of a public airport or public use airport that would expose people residing or working in the project area to excessive noise levels. Consequently, no impacts associated with noise would result from the Project.

Mitigation Measures: No Mitigation Measures are required.

5.14 POPULATION AND HOUSING

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
POPULATION AND HOUSING – Would the project:					
a.	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b.	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c.	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact.

The proposed Project would include the construction of a new water storage tank within the Project Site and other infrastructure-related components that would serve the Deane Pressure Zone. As previously discussed in **Section 2.0: Project Description**, the Deane Pressure Zone has a deficiency in storage of approximately 4.22 MG. There are two new, large developments within the existing Deane Pressure Zone that require additional storage over and above the existing storage deficiency. The new developments will increase the water storage deficiency to 5.74 MG. The Project would result in the construction of a new steel tank with a water storage capacity of 1.70 MG to address part of the deficit, as well as for additional fire protection, emergency, and operation needs within the Deane Pressure Zone. Implementation of the Project would offset some of the existing deficit to help sustain the existing population and community within the area and would not induce new population growth. The proposed Project would implement the SCWD Water Master Plan Update and the UWMP. As such, it would not induce substantial population into the area. Therefore, no impacts would occur.

Mitigation Measures: No mitigation measures are required.

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact.

Construction and operation of the proposed Project would occur within the Deane Tank Project Site and would utilize an adjacent area for construction staging. Additionally, there is no housing on the Project Site and displacement would occur requiring replacement housing elsewhere. Neither the Project Site nor the construction staging area contain existing housing or residential structures of any kind. Accordingly, the proposed Project would not displace any existing housing, necessitating the construction of replacement housing elsewhere. Therefore, no impacts would occur.

Mitigation Measures: No mitigation measures are required.

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact.

The Project Site includes two existing water storage tanks and related infrastructure, access roads around the water storage tanks, access road which connects to Winterdale Drive, and disturbed and undisturbed opens pace. Construction and operation of the proposed Project would occur within the existing water storage tank area, along the access road, and north to the commercial center. The Project Site does not contain existing housing or human inhabiting structures. Accordingly, the proposed Project would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. Therefore, no impacts would occur.

Mitigation Measures: No mitigation measures are required.

5.15 PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
PUBLIC SERVICES				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a. Fire protection?	☐	☐	☒	☐
b. Police protection?	☐	☐	☒	☐
c. Schools?	☐	☐	☐	☒
d. Parks?	☐	☐	☐	☒
e. Other public facilities?	☐	☐	☐	☒

Discussion

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a. Fire Protection?

Less than Significant Impact.

As previously discussed in **Section 2.0**, the purpose of the proposed Project is to build additional water storage capacity for fire protection, emergency and operational needs at the Deane Pressure Zone, which is deficient in storage by 4.22 MG, as of 2013. Thus, the proposed Project would support Los Angeles County Fire Department's ability to respond to emergencies. Additionally, the proposed Project would not result in adverse physical impacts associated with the provision of a new or physically alter an existing government building because no facilities exist on site. In addition, **MM HAZ-1** would require the firefighting devices, such as fire extinguishers, in order to minimize the spread of wildfire. Therefore, the proposed Project would not increase demand on the existing Los Angeles County Fire Department services and impacts would be less than significant.

Mitigation Measures: Implementation of MM HAZ-1 would reduce impacts to less than significant.

b. Police Protection?

Less than Significant Impact.

Construction sites, if not properly managed, have the potential to attract criminal activity (such as trespassing, theft, and vandalism) and can become a distraction for local law enforcement from more pressing matters that require their attention. Consistent with existing operations, the Project Site would be gated and locked when not in use during both construction and operation of the proposed Project. Thus, the proposed Project would not need permanent security or additional measures to minimize local law enforcement services to the Project Site. Therefore, no new facilities would be required. Thus, police protection to the project area would remain similar to existing operations and impacts on police protection would be less than significant.

Mitigation Measures: No mitigation measures are required.

c. Schools?

Less than Significant Impact.

The Project would involve construction of a water tank to offset storage deficiencies within the Deane Pressure Zone. As discussed in *Section 5.14: Population and Housing*, the proposed Project would not directly or indirectly induce population which would also directly or indirectly induce school enrollment. Therefore, impacts to school would remain less than significant.

Mitigation Measures: No mitigation measures are required.

d. Parks?

No Impact.

The Project Site does not include a park or any recreational facility such as a trail. Implementation of the Project would not impact parks within the vicinity of the Project, as construction and operation would occur within the Project Site. As such, no impacts would occur.

Mitigation Measures: No mitigation measures are required.

e. Other Public Facilities?

No Impact.

As previously discussed, the Project Site does not include sheriff, fire, school, parks, or other public facilities such as libraries. Thus, the proposed Project would not result in adverse physical impacts associated with the provision of a new or physically altered government building or library. As such, there would be no impact to other public facilities resulting from implementation of the proposed Project.

Mitigation Measures: No mitigation measures are required.

5.16 RECREATION

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
RECREATION – Would the project:					
a.	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b.	Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact.

Recreational resources in the SCVWA service area consist of State, county/regional, and local parks and designated regional and local recreational trails. The City provides local parks within the City boundaries. The Los Angeles County Department of Parks and Recreation also provides local parks and recreation facilities for northwestern Los Angeles County residents and provides regional parks for all residents of the county. Regional recreation areas under the control of the federal government include the Angeles National Forest, the Los Padres National Forest, and the Santa Monica Mountains National Recreation area.

The implementation of the proposed Project would not directly result in growth in the project area as discussed under **5.13: Population and Housing**, and thus would not directly increase the use of recreational facilities. Therefore, no impacts would occur.

Mitigation Measures: No mitigation measures are required.

b. Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

No Impact.

The implementation of the proposed Project would not directly or indirectly result in growth in the proposed Project area, and therefore would not require the construction or expansion of recreational facilities. Upon completion, the proposed Project would provide needed water storage capacity for fire protection, emergency, and operational needs to offset the existing deficit in Deane Pressure Zone as identified in the SCWD Water Master Plan Update and the UWMP.

Therefore, no growth-related impacts to recreational resources would occur.

Mitigation Measures: No mitigation measures are required.

5.17 TRANSPORTATION AND TRAFFIC

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
TRANSPORTATION/TRAFFIC – Would the project:					
a.	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☒	☐
b.	Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c.	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d.	Result in inadequate emergency access?	☐	☐	☒	☐

Discussion

a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less than Significant Impact.

Construction-related traffic would be generated during construction of the Project, including worker vehicles traveling to and from the work site. The Project is anticipated to generate 2 construction workers per piece of equipment. As previously discussed, the Project would utilize two off-highway trucks, a backhoe, two trenchers for trenching activities. This would equate to approximately 5 workers arriving prior to 7:00 AM and leaving either prior to or after afternoon peak-hour traffic (6:00 PM), thereby minimizing trips during peak hours. Short-term traffic impacts would be less than significant. Once construction activities are complete, traffic would revert to the current conditions. The Project does not anticipate any operation-related transportation impacts. Therefore, impacts would be less than significant.

The Project does not anticipate any change in ridership for buses or other forms of public transportation, because the Project Site is closed to the general public. Additionally, there are no bus lines that go directly to the Project Site. Therefore, there is no impact to existing bus service in the study area, and no transit-related Mitigation Measures are warranted.

The Project does not plan to construct any additional bike or pedestrian facilities. Likewise, the Project would not remove or obstruct any bicycle or pedestrian facilities. For construction circulation, residential streets would generally be avoided to not obstruct residential street traffic flow, which would reduce impact to pedestrians and bikers in nearby neighborhoods. Therefore, the Project would not conflict with the circulation system including bicycle and pedestrian facilities. Impacts would be less than significant, and no mitigation is required.

Mitigation Measures: No Mitigation Measures are required.

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivisions (b)?

Less than Significant Impact.

CEQA Guidelines Section 15064.3, subdivision (b), focuses on newly adopted criteria (VMT) adopted pursuant to SB 743 for determining the significance of transportation impacts. Pursuant to SB743, the focus of transportation analysis changes from vehicle delay to VMT. The proposed Project would generate an incremental increase in additional operation-related trips and vehicle miles traveled. Therefore, the project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).

Impacts would be less than significant, and no mitigation is required.

Mitigation Measures: No Mitigation Measures are required.

c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant Impact.

The Project does not include hazardous geometric design features. The roadways adjacent to the Project Site are part of the existing roadway network and contain no sharp curves or dangerous intersections. Additionally, no new driveways are proposed along Winterdale Drive.

Construction

While some temporary construction closures of pedestrian, bicycle, transit, or individual vehicular lanes may be required, the Project would not require major in-street construction and therefore would not have negative, long-term effects on existing pedestrian, bicycle, transit, or vehicle circulation. Additionally, Project access clearly separates vehicular driveways and pedestrian and bicycle circulation, resulting in

limited vehicle/pedestrian, vehicle/bicycle, and vehicle/vehicle conflicts. Therefore, no impact with respect to hazardous design features would occur, and no further analysis is required.

Operation

Operational activity would not impact transportation after construction, because, as previously mentioned, the Project would be set back from the residential street network via the existing access road to the Project Site. Off-site operational activity would include circulation of cars travelling to and from the Project Site for maintenance. However, very few cars are anticipated and would not occur during peak hours. Therefore, no impact with respect to hazardous design features would occur, and operation would not introduce any new hazards due to a geometric design feature. As such, impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

d. Result in inadequate emergency access?

Less than Significant Impact.

The construction of the Project could temporarily impact emergency access from construction activities within the roadway and could impact normal traffic flow and create roadway conditions that may delay emergency response times. SR-14 is a County-designated primary disaster route. Soledad Canyon Road is located approximately 0.25-miles north of the Project Site and SR-14 is located approximately 0.5 miles south of the Project Site. However, construction related traffic would result in a negligible increase along these roadways. Therefore, the Project would not substantially impair an emergency access and impacts would be less than significant.

The operation of the Project would not result in inadequate emergency access because the facilities would not alter existing roadway alignments nor does the operation take place in existing roadways. Therefore, operation-related impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

5.18 TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
Tribal Cultural Resources – Would the project:				
a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Discussion

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Less than Significant Impact.

As discussed in **Section 5.5: Cultural Resources**, a records search was performed at the SCCIC on October 2020, and did not identify any historic structures. Since there are no historic structures on the Project Site, Project impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less than Significant Impact with Mitigation.

A search of the Sacred Lands File was conducted by the Native American Heritage Commission (NAHC) on September 22, 2020 (see **Appendix C**); and on October 22, 2020, the NAHC indicated that there were no known cultural resources identified in the vicinity of the Project Site.

Assembly Bill 52 (AB 52) establishes a formal consultation process for California Native American tribes to identify potential significant impacts to tribal cultural resources, as defined in Public Resources Code Section 21074 as part of CEQA. Pursuant to AB 52, the SCVWA provided notification to the following two tribes on November 16, 2020—Fernandeno Tataviam Band of Mission Indians and Torres Martinez Desert Cahuilla Indians (See **Appendix G: AB 52 Consultation Letters)**. SCVWA received a response from the Fernandeno Tataviam Band of Mission Indians (Tribe) which requested consultation pursuant to AB 52. Communication between SCVWA representative and Jairo Avila, Tribal Historic and Cultural Preservation Officer for the Tribe occurred between November 16, 2020 and December 14, 2020 to discuss the proposed Project and to set up a consultation meeting. SCVWA sent a follow up email to Jairo Avila to confirm a virtual meeting on December 10, 2020. The *Cultural Resources Assessment* (see **Appendix C**) was provided to Jairo Avila prior to the meeting. The Tribe identified low sensitivity of cultural resources within and surrounding the Project area. Potential mitigation measures were discussed and a final set of mitigation measures were sent for review by the Tribe on December 11th, 2020. The Tribe concurred with the proposed mitigation measures on December 14th, 2020 and indicated the consultation has been concluded in agreement with no further questions or comments.

Prior to the commencement of grading, **MM TCR-1** would require the SCVWA to consult with the Tribe on the proper disposition and treatment of any TCRs uncovered during construction. With the

implementation of **MM CUL-1, CUL-2,** and **TCR-1,** potential impacts to tribal cultural resources would be less than significant.

***Mitigation Measures*:** Implementation the following mitigation measure would reduce potentially significant impacts to less than significant.

TCR-1 Prior to the commencement of grading, the Santa Clarita Valley Water Agency shall consult with the Fernandeño Tataviam Band of Mission Indians on the disposition and treatment of any Tribal Cultural Resource encountered during subsurface excavation activities on the Project site.

5.19 UTILITIES AND SERVICE SYSTEMS

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS – Would the project:					
a.	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water, drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b.	Have sufficient water supplies available to serve the project and reasonable foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c.	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d.	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e.	Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Discussion

a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water, drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less than Significant Impact.

A significant impact may occur if a project would increase water consumption or wastewater generation to such a degree that the capacity of facilities currently serving the Project Site would be exceeded. The Project would include the construction of a new water storage tank within the Project Site and other infrastructure-related components that would serve the Deane Pressure Zone. As previously discussed in **Section 2.0**, the Deane Pressure Zone has a deficiency in storage of approximately 4.22 MG. There are two new, large developments within the existing Deane Pressure Zone that require additional storage over and

above the existing storage deficiency. Implementation of the Project would offset some of the existing deficit to help sustain the existing water requirements within the area and would not result in significant environmental effects. The Project would implement the SCWD Water Master Plan Update and the UWMP. As discussed throughout the MND, the Project would not cause a significant environmental effect as a result of the construction of water facilities. No wastewater facilities would be constructed with the Project. Accordingly, impacts would be less than significant.

Storm drains

As discussed in response to **Section 5.10: Hydrology and Water Quality**, the drainage improvements at the tank site would include the removal of the existing catch basin and drain line. The existing drainage swale along the east side of the terrace drain would continue to collect stormwater runoff from the slope and drain to the access driveway. Proposed drainage improvements would include the construction of multiple catch basins, gutter, concrete ditch, and new drain lines. The tank site catch basins would be located within the proposed paved areas. The catch basins would pick up stormwater runoff from the developed portion of the site. Additionally, catch basins would also be constructed adjacent to the proposed and existing tanks to pick up potential tank overflows and flows from the tank drains. The construction of the drainage system would be implemented over a previously disturbed site with close proximity to existing infrastructure. With implementation of BMPs, impacts would be less than significant. Therefore, potential operational impacts to storm drain infrastructure would be less than significant.

Electricity

The Project would have minor electrical upgrades for additional power to meet water storage tank needs. Construction and operation of the Project would not necessitate the construction of off-site facilities or off-site infrastructure improvements that would have the potential to cause significant environmental impacts. It would also not require additional power from Southern California Edison. As such, Project impacts would be less than significant.

Natural Gas

Operation of the Project does not require natural gas and no natural gas facilities exist within the project footprint. Therefore, the Project would not modify or construct any gas lines. No impact would occur to natural gas.

Telecommunications

Construction and operation of the Project would not necessitate the construction of off-site telecommunication facilities that would have the potential to cause significant environmental impacts. As such, there would be no impacts to telecommunication facilities.

Mitigation Measures: No Mitigation Measures are required.

b. Have sufficient water supplies available to serve the project and reasonable foreseeable future development during normal, dry and multiple dry years?

Less than Significant Impact.

A significant impact may occur if a project were to increase water consumption to such a degree that new water sources would need to be identified, or that existing resources would be consumed at a pace greater than planned for by purveyors, distributors, and service providers. Water supply for the Santa Clarita Valley is provided by SCV Water, which was created on January 1, 2018, through the merger of the three water agencies in the Santa Clarita Valley. This merger included Castaic Lake Water Agency and its Santa Clarita Water Division, Newhall County Water District, and the Valencia Water Company. In total, SCV Water serves 273,000 customers through 70,000 retail water connections, in an area approximately 195 square miles in size.[72] SCV Water receives water from four sources: groundwater, recycled water, imported water, and banked water. According to Table 3-1 of the SCV Water 2015 UWMP, in 2015, SCV Water received approximately 23.5 percent of its water supply from groundwater, 0.3 percent from recycled water, 58.5 percent from imported water, and 17.1 percent from banked water. SCV Water groundwater supply in this region is pumped from the Santa Clara River Valley East Groundwater Basin.[73]

The SCV Water 2015 UWMP has planned growth within the Santa Clarita Valley service area over the next 30 years. SCV Water has made an allowance for future water demand estimates. Future demand services are based on historical growth rates in the service area. Based on these projections, it would appear that SCV Water has made an adequate allowance for water demand increases for both domestic and commercial water supply over the next 30 years. According to Table 2-2, Summary of Project Water Demands of the SCV Water 2015 UWMP, projected water demands for the SCV Water service area is expected to increase from 68,900 acre-feet in 2020 to 93,900 acre-feet in 2050, which would result in a net increase in water demand of 25,000 acre-feet. The SCVWA would be proposing the Project in order to address the water deficit in the Deane Pressure Zone.

As long-term water supply is a significant concern in California, SCV Water can increase supply to meet future demands by (1) increasing the use of groundwater banking programs to ensure reliable water supply from wet to dry years; (2) increasing imported water purchases if available and if there is sufficient storage capacity; and (3) by purchasing additional recycled water, if available. Collectively, these

72 SCV Water. 2019. "Your Water Agency." Accessed on December 10, 2019. https://yourscvwater.com/your-district/.

73 SCV Water (Santa Clarita Valley Water). *2018. Final 2015 Urban Water Management Plan for Santa Clarita Valley.* Accessed on December 6, 2019. https://scvgsa.org/wp-content/uploads/2018/11/2015-FINAL-UrbanWater-Management-Plan-for-Santa-Clarita-Valley.pdf.

additional measures would ensure a reliable source of water for SCV Water, presently and into the future. As such, impacts would be less than significant, and no mitigation is required.

Mitigation Measures: No Mitigation Measures are required.

c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact.

A significant impact may occur if a project would increase wastewater generation to such a degree that the capacity of facilities currently serving the Project Site would be exceeded. A wastewater treatment provider would not be serving the Project. The Project does not require wastewater service; therefore, no impacts to wastewater treatment would occur.

Mitigation Measures: No Mitigation Measures are required.

d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than Significant Impact.

Construction of the Project would result in the generation of solid waste such as soils and demolished pavement and roadway components from the existing access road. Per CALGreen, 65 percent of construction and demolition waste must be diverted from landfills. As such, at least 65 percent of all construction and demolition debris from the site would be diverted. Additionally, CalGreen requires 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing to be reused or recycled. Any hazardous wastes that are generated during demolition and construction activities would be managed and disposed of in compliance with all applicable federal, State, and local laws. The remaining 35 percent of construction and demolition materials that are not required to be recycled would either be disposed of or voluntarily recycled at a solid waste facility with available capacity. Construction waste is typically disposed of at inert landfills, which are facilities that accept materials such as soil, concrete, asphalt, and other construction and demolition debris. As of 2017, the Azusa Land Reclamation landfill, approximately located 50 miles to the southeast of the Project Site, is the only permitted inert landfill within Los Angeles County. This landfill has a maximum permitted daily capacity of 6,500 tons of waste and receives an average of 1,356 tons of inert waste per day. The landfill has a remaining capacity of 55,705,480 tons and is expected to remain open for approximately 28 years, as of

2017.[74] There are other facilities that process inert waste and other construction and demolition waste in the County. Collectively, these facilities have a maximum daily capacity of 32,496 tons per day and process an average of 8,535 tons per day. There are also numerous processing facilities for construction and demolition wastes, the nearest of which is the East Valley Diversion (formerly Looney Bins), located at 11616 Sheldon St, in Sun Valley. This facility is approximately 20 miles to the southwest of the Project Site and has a permitted capacity of 4,600 tons of waste per day. This facility has a mixed construction and demolition waste recycling rate of 75percent.[75] As such, any construction and demolition debris requiring disposal at an inert landfill would be sufficiently accommodated by existing landfills.

For reasons stated above, Project construction would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals (e.g., CALGreen standards). Operation of the Project would generate negligible amounts of solid waste. Impacts would be less than significant, and no mitigation is required.

Mitigation Measures: No Mitigation Measures are required.

e. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?

Less than Significant Impact.

A significant impact may occur if a project would generate solid waste that was not disposed of in accordance with applicable regulations. The Project would be consistent with the applicable regulations associated with solid waste. Specifically, the Project would comply with the State's construction and demolition requirements, which requires that projects recycle a minimum of 65percent of all inert materials and 65percent of all other materials.[76] The Project would also comply with AB 939, AB 341, AB 1826 waste diversion goals, as applicable, by providing clearly marked, source-sorted receptacles to facilitate recycling. Since the Project would comply with federal, State, and local statutes and regulations related to solid waste, impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

74 LADPW (Los Angeles Department of Public Works). 2019b. Countywide Integrated Waste Management Plan 2017 Annual Report. Accessed on December 10, 2019. https://dpw.lacounty.gov/epd/swims/ ShowDoc.aspx?id=6530&hp=yes&type=PDF.

75 LADPW (Los Angeles Department of Public Works). 2019b. Countywide Integrated Waste Management Plan 2017 Annual Report. Accessed on December 10, 2019. https://dpw.lacounty.gov/epd/swims/ ShowDoc.aspx?id=6530&hp=yes&type=PDF.

76 Green Santa Clarita. Construction and Demolition Recycling Ordinance. Accessed November 2020. http://greensantaclarita.com/builders/construction-and-demolition-recycling-ordinance/.

5.20 WILDFIRE

If located in or near State responsibility areas or lands classified as very high fire hazard zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildlife risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Discussion

a. Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact.

As discussed in *Section 5.9: Hazards and Hazardous Materials*, the Project site is located in a State Responsibility Area of land that is classified as Very High Fire Hazard Severity Zone (VHFHSZ).[77, 78] Soledad Canyon Road is a County designated secondary disaster route.[79] Additionally, the SR-14 is a County-designated primary disaster route. Soledad Canyon Road is located approximately 0.25-miles north of the Project site and SR-14 is located approximately 0.5 miles south of the Project Site. However, construction related traffic would result in a negligible increase along these roadways. Therefore, the Proposed Project would not substantially impair an emergency response plan or evacuation plan.

During operation, the Proposed project would not increase traffic along Soledad Canyon Road or SR-14. Therefore, operation-related impacts would be less than significant.

77 California Fire, State Responsibility Area (SRA) Viewer, https://bof.fire.ca.gov/projects-and-programs/state-responsibility-area-viewer, accessed October 2020.

78 Santa Clarita Valley Area Plan (2012). One Valley One Vision. 3.11: Hazards and Hazardous Materials. Figure 3.11-2: Wildfire Hazard Zone Within the OVOV Planning Area.

79 Los Angeles Department of Water and Power. Disaster Route Maps by City. City of Santa Clarita Map. 2010b. Accessed November 2020. http://dpw.lacounty.gov/dsg/disasterroutes/city.cfm.

Mitigation Measures: No mitigation measures required.

b. Due to slope, prevailing winds, and other factors, exacerbate wildlife risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than Significant Impact.

The Project Site is developed with two water storage tanks on a level pad and is surrounded by asphalt. As such, the project would not involve development on a sloped area such that wildfire risks would be exacerbated. The Project would involve construction of another tank on a relatively level infill site that is adjacent to residential development. As such, the proposed Project would not exacerbate wildfire risks such that project occupants would be exposed to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. As previously discussed in **Section 2.0**, the purpose of the proposed Project is to build additional water storage capacity for fire protection, emergency and operational needs at the Deane Pressure Zone. Thus, the proposed Project would assist in wildfire protection efforts for the surrounding area. Impacts would be less than significant, and no mitigation is required.

Mitigation Measures: No mitigation measures are required.

c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Less than Significant Impact.

The Project will not require the installation of infrastructure that may exacerbate fire risk. Maintenance of project-related infrastructure would be primarily conducted within the boundaries of the Project Site. The environmental impacts of the construction and maintenance of the infrastructure associated with the proposed Project are analyzed throughout this document, and no significant environmental impacts have been identified. Furthermore, because construction and maintenance of project-related infrastructure would take place within the Project Site or along its immediate frontages, the infrastructure improvements and utility connections required for the Project and their design configurations would comply with applicable fire code requirements for emergency evacuation. For these reasons, the infrastructure improvements associated with the proposed Project are not expected to exacerbate fire risk or to result in temporary or ongoing significant environmental impacts. Therefore, impacts would be less than significant, and no mitigation is required.

Mitigation Measures: No mitigation measures are required.

d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less than Significant Impact.

The Project is not located near a potential flooding that would result in potential drainage changes.[80] According to the Geotechnical Report prepared for the Project, the Project Site is not located within an area that has been identified by the State of California as being potentially susceptible to seismically induced landslides and would not be adversely affected by the potential for landsliding. Implementation of the proposed Project would not exacerbate the existing downslope or downstream flooding or landslides. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

[80] Santa Clarita Area Valley Plan. One Valley One Vision. Section 3.12: Hydrology and Water Quality. Figure 3.12-1: 100-Year Flood Zone of the OVOV Planning Area.

5.21 MANDATORY FINDINGS OF SIGNIFICANCE

		Potentially Significant Impact	Less Than Significant with Project Mitigation	Less Than Significant Impact	No Impact
MANDATORY FINDINGS OF SIGNIFICANCE – Does the project:					
a.	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b.	Does the project have impacts that are individually limited, but cumulatively considerable?("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c.	Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion

a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant Impact.

A significant impact may occur if the Project would have a potentially significant impact on fish or wildlife species, including habitat and population, on a plant or animal community, including elimination of such communities or reduction or restriction of the range of a rare or endangered plant or animal, or historical, archeological or paleontological resources.

As discussed in **Section 5.4**, **Biological Resources**, the Project is not located within a Habitat Conservation Plan, Natural Community Conservation Plan, or other approved habitat conservation plan that would apply to the Project. No wildlife corridors, native wildlife nursery sites, or bodies of water in which fish are present are located on the Project Site.

Coastal whiptail is a fairly common species in sage scrub habitats. This species is highly mobile with ample foraging habitat immediately adjacent to the Project Site in the surrounding undeveloped slopes, as it is expected to move into the adjacent undeveloped habitat. However, to ensure no coastal whiptail would be impacted during Project related construction activities, a pre-construction clearance survey shall be conducted prior to ground disturbing activities to ensure no coastal whiptail would be impacted, as identified in **Mitigation Measure MM BIO-1**.

However, the Project Site does include trees that could provide nesting sites for migratory birds. Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section 10.13). Sections 3503, 3503.5, and 3513 of the California Fish and Wildlife Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds. Therefore, the Project would comply with the MBTA and **MM BIO-2**. As such, impacts related to disturbance to nesting birds would be reduced to less than significant.

The Project would not eliminate important examples of the major periods of California history or prehistory. As discussed in **Section 5.5(a)**, **Cultural Resources**, there are no historical resources on the Project Site and no historical resources would be demolished, altered, or relocated as a result of the Project. As it relates to unknown archeological or tribal cultural resources, in the unlikely event that previously unknown cultural and tribal cultural resources are identified during earthmoving activities, impacts would be less than significant with the incorporation of **MM CUL-1**, **MM CUL-2**, and **MM TCR-1**.

However, as previously mentioned, since the Project is mapped entirely as valley deposits associated with the Mint Canyon Formation dating to the Miocene epoch and the Mint Canyon Formation is considered to be of high paleontological sensitivity and is known to preserve vertebrate fossil material.[81] Thus, any fossils recovered during excavation activity associated with development of the Project could be scientifically significant. Through the implementation of **MM GEO-1,** construction phase procedures would be implemented in the event any unknown paleontological resources are discovered during grading and excavation activities. Based on the preceding analysis in **Section 5.7: Geology and Soils**, impacts to paleontological resources would be less than significant with mitigation.

81 BCR Consulting LLC. Cultural Resources Assessment: Deane Tank Site Expansion Project. October 30, 2020.

The Project would not degrade the quality of the environment, reduce or threaten any fish or wildlife species (endangered or otherwise), or eliminate important examples of the major periods of California history or pre-history. Therefore, impacts from the Project would be less than significant.

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant Impact.

Development of the Project would not result in impacts that are individually limited but cumulatively considerable. The Project would be consistent with the SCWD Water Master Plan Update, the CLWA UWMP, and the Santa Clarita Valley Area Plan and help to supply water to existing residential and commercial water users along the pipeline route within the North Bouquet Canyon area. Additionally, the issues relevant to the Project are localized and confined to the immediate Project area. There are no unusual circumstances relating to the project, nor are there any successive projects of the same type in the same place that would render any impacts as significant or cumulatively considerable. No significant cumulatively considerable impacts are anticipated to result from the Project. Impacts would be less than significant.

Mitigation Measures: No Mitigation Measures are required.

c. Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant Impact.

The Project's potential impacts to air quality, greenhouse gas emissions, hazards and hazardous materials, noise, transportation, and other environmental issues have been reviewed. The analysis found that development and operation of the Project would result in less-than-significant adverse effects on human beings, either directly or indirectly for air quality, greenhouse gas emissions, noise, and traffic. Potentially significant impacts from wildlife and from temporary construction noise were identified and properly mitigated through the implementation of Mitigation Measures. The mitigation measures identified would reduce potentially significant impacts to a less than significant level. Therefore, the Project would have a less than significant impact, directly and indirectly, to the nearby population.

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APPENDIX A

Air Quality and Greenhouse Gas Modeling Results

Deane Tank Project

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	7.85	1000sqft	6.70	7,854.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site is 6.7 acres.

Construction Phase - Estimated schedule.

Off-road Equipment -

Off-road Equipment - A crane would be used for tank erection. Like

Off-road Equipment - Grading Equipment to include Dozer, Scraper and Dump Truck. Likely presence of hard bedrock which may require the use of jackhammering equipment to remove the bedrock.

Off-road Equipment -

Trips and VMT - Up to 15 vehicle trips per day during construction.

Grading - Estimated approximatley 30,000 cubic yards of earthwork to be generated for the construction of the road. Option of exporting 9,000 cubic yards of cut soil.
Conservatively, 39,000 cubic yard of soil export assumed.

Vehicle Trips - The Proposed Project is not anticipated to generate daily vehicle trips. Infrequent trips would be made due to maintenance as needed. Conservatively, default assumptions remain.

Energy Use - No natural gas or energy use expected for the storage tank. Conservatively, default assumptions are used.

Water And Wastewater - Construction of a new Steel water storage tank with approximately 1.7 MG of storage capacity. Conservatively, default assumption is used. No outdoor water use would be generated.

Solid Waste - No solid waste generation during operation.

Construction Off-road Equipment Mitigation - As recommended by SCAQMD, alternative applicable strategies include construction equipment with Tier 3 emissions standards.

Off-road Equipment -

Area Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	11.00
tblConstructionPhase	NumDays	230.00	174.00
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	20.00	22.00
tblGrading	MaterialExported	0.00	39,000.00
tblLandUse	LandUseSquareFeet	7,850.00	7,854.00
tblLandUse	LotAcreage	0.18	6.70
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Dumpers/Tenders
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	9.73	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					

2022	8.3317	39.8591	21.1515	0.0895	8.5528	1.2440	9.5704	3.8186	1.1565	4.7725	0.0000	9,310.8837	9,310.8837	1.2138	0.0000	9,341.2280
Maximum	**8.3317**	**39.8591**	**21.1515**	**0.0895**	**8.5528**	**1.2440**	**9.5704**	**3.8186**	**1.1565**	**4.7725**	**0.0000**	**9,310.8837**	**9,310.8837**	**1.2138**	**0.0000**	**9,341.2280**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	7.4424	32.8872	25.2313	0.0895	4.1916	0.8640	4.8966	1.7233	0.8639	2.4259	0.0000	9,310.8837	9,310.8837	1.2138	0.0000	9,341.2280
Maximum	**7.4424**	**32.8872**	**25.2313**	**0.0895**	**4.1916**	**0.8640**	**4.8966**	**1.7233**	**0.8639**	**2.4259**	**0.0000**	**9,310.8837**	**9,310.8837**	**1.2138**	**0.0000**	**9,341.2280**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**10.67**	**17.49**	**-19.29**	**0.00**	**50.99**	**30.54**	**48.84**	**54.87**	**25.30**	**49.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1755	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7200e-003	1.7200e-003	0.0000		1.8300e-003

Energy	4.2000e-003	0.0382	0.0321	2.3000e-004		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003		45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926
Mobile	0.1023	0.4332	1.5652	6.0500e-003	0.5152	4.3800e-003	0.5196	0.1379	4.0700e-003	0.1420		616.0076	616.0076	0.0288		616.7269
Total	**0.2820**	**0.4714**	**1.5980**	**6.2800e-003**	**0.5152**	**7.2800e-003**	**0.5225**	**0.1379**	**6.9700e-003**	**0.1449**		**661.8296**	**661.8296**	**0.0297**	**8.4000e-004**	**662.8213**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1755	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7200e-003	1.7200e-003	0.0000		1.8300e-003
Energy	4.2000e-003	0.0382	0.0321	2.3000e-004		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003		45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926
Mobile	0.1023	0.4332	1.5652	6.0500e-003	0.5152	4.3800e-003	0.5196	0.1379	4.0700e-003	0.1420		616.0076	616.0076	0.0288		616.7269
Total	**0.2820**	**0.4714**	**1.5980**	**6.2800e-003**	**0.5152**	**7.2800e-003**	**0.5225**	**0.1379**	**6.9700e-003**	**0.1449**		**661.8296**	**661.8296**	**0.0297**	**8.4000e-004**	**662.8213**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	5/2/2022	5	66	
3	Building Construction	Building Construction	5/3/2022	12/30/2022	5	174	
4	Paving	Paving	12/1/2022	12/30/2022	5	22	

5	Architectural Coating	Architectural Coating	12/16/2022	12/30/2022	5	11	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 66

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 11,781; Non-Residential Outdoor: 3,927; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Crushing/Proc. Equipment	1	8.00	85	0.78
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	1	8.00	367	0.48
Grading	Dumpers/Tenders	1	8.00	16	0.38
Building Construction	Cranes	1	7.00	231	0.29
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	4,875.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	1	3.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Architectural Coating	1	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT	

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**		**1.2427**	**1.2427**		**1.1553**	**1.1553**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		164.8069	164.8069	4.5500e-003		164.9206

Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9246	18.3130	24.6739	0.0388		0.8627	0.8627		0.8627	0.8627	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**0.9246**	**18.3130**	**24.6739**	**0.0388**		**0.8627**	**0.8627**		**0.8627**	**0.8627**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1494	0.0000	7.1494	3.4349	0.0000	3.4349			0.0000			0.0000
Off-Road	2.2092	21.4267	14.5398	0.0315		0.9639	0.9639		0.9026	0.9026		3,022.7997	3,022.7997	0.7928		3,042.6199
Total	**2.2092**	**21.4267**	**14.5398**	**0.0315**	**7.1494**	**0.9639**	**8.1134**	**3.4349**	**0.9026**	**4.3375**		**3,022.7997**	**3,022.7997**	**0.7928**		**3,042.6199**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5861	18.4058	4.5985	0.0569	1.2916	0.0528	1.3444	0.3541	0.0506	0.4046		6,178.2128	6,178.2128	0.4179		6,188.6611
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0402	0.0266	0.3716	1.1000e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		109.8712	109.8712	3.0300e-003		109.9470
Total	**0.6262**	**18.4324**	**4.9701**	**0.0580**	**1.4034**	**0.0537**	**1.4571**	**0.3837**	**0.0514**	**0.4351**		**6,288.0840**	**6,288.0840**	**0.4210**		**6,298.6081**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					2.7883	0.0000	2.7883	1.3396	0.0000	1.3396			0.0000			0.0000
Off-Road	0.7223	14.4547	16.9351	0.0315		0.6513	0.6513		0.6513	0.6513	0.0000	3,022.7997	3,022.7997	0.7928		3,042.6199
Total	**0.7223**	**14.4547**	**16.9351**	**0.0315**	**2.7883**	**0.6513**	**3.4395**	**1.3396**	**0.6513**	**1.9909**	**0.0000**	**3,022.7997**	**3,022.7997**	**0.7928**		**3,042.6199**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5861	18.4058	4.5985	0.0569	1.2916	0.0528	1.3444	0.3541	0.0506	0.4046		6,178.2128	6,178.2128	0.4179		6,188.6611
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0402	0.0266	0.3716	1.1000e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		109.8712	109.8712	3.0300e-003		109.9470
Total	**0.6262**	**18.4324**	**4.9701**	**0.0580**	**1.4034**	**0.0537**	**1.4571**	**0.3837**	**0.0514**	**0.4351**		**6,288.0840**	**6,288.0840**	**0.4210**		**6,298.6081**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3264	3.6612	1.6558	5.0500e-003		0.1520	0.1520		0.1399	0.1399		488.9766	488.9766	0.1581		492.9302
Total	**0.3264**	**3.6612**	**1.6558**	**5.0500e-003**		**0.1520**	**0.1520**		**0.1399**	**0.1399**		**488.9766**	**488.9766**	**0.1581**		**492.9302**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8500e-003	0.0923	0.0240	2.5000e-004	6.4000e-003	1.7000e-004	6.5800e-003	1.8400e-003	1.7000e-004	2.0100e-003		27.2486	27.2486	1.5600e-003		27.2877
Worker	0.0121	7.9800e-003	0.1115	3.3000e-004	0.0335	2.6000e-004	0.0338	8.8900e-003	2.4000e-004	9.1300e-003		32.9614	32.9614	9.1000e-004		32.9841
Total	**0.0149**	**0.1003**	**0.1355**	**5.8000e-004**	**0.0399**	**4.3000e-004**	**0.0404**	**0.0107**	**4.1000e-004**	**0.0111**		**60.2100**	**60.2100**	**2.4700e-003**		**60.2718**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1241	2.3985	2.6879	5.0500e-003		0.0910	0.0910		0.0910	0.0910	0.0000	488.9766	488.9766	0.1581		492.9302
Total	**0.1241**	**2.3985**	**2.6879**	**5.0500e-003**		**0.0910**	**0.0910**		**0.0910**	**0.0910**	**0.0000**	**488.9766**	**488.9766**	**0.1581**		**492.9302**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8500e-003	0.0923	0.0240	2.5000e-004	6.4000e-003	1.7000e-004	6.5800e-003	1.8400e-003	1.7000e-004	2.0100e-003		27.2486	27.2486	1.5600e-003		27.2877
Worker	0.0121	7.9800e-003	0.1115	3.3000e-004	0.0335	2.6000e-004	0.0338	8.8900e-003	2.4000e-004	9.1300e-003		32.9614	32.9614	9.1000e-004		32.9841
Total	**0.0149**	**0.1003**	**0.1355**	**5.8000e-004**	**0.0399**	**4.3000e-004**	**0.0404**	**0.0107**	**4.1000e-004**	**0.0111**		**60.2100**	**60.2100**	**2.4700e-003**		**60.2718**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5609	11.2952	17.2957	0.0228		0.6093	0.6093		0.6093	0.6093	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5609**	**11.2952**	**17.2957**	**0.0228**		**0.6093**	**0.6093**		**0.6093**	**0.6093**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.6188					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**6.8233**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.0200e-003	2.6600e-003	0.0372	1.1000e-004	0.0112	9.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.9871	10.9871	3.0000e-004		10.9947
Total	**4.0200e-003**	**2.6600e-003**	**0.0372**	**1.1000e-004**	**0.0112**	**9.0000e-005**	**0.0113**	**2.9600e-003**	**8.0000e-005**	**3.0400e-003**		**10.9871**	**10.9871**	**3.0000e-004**		**10.9947**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.6188					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**6.6782**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.0200e-003	2.6600e-003	0.0372	1.1000e-004	0.0112	9.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.9871	10.9871	3.0000e-004		10.9947
Total	**4.0200e-003**	**2.6600e-003**	**0.0372**	**1.1000e-004**	**0.0112**	**9.0000e-005**	**0.0113**	**2.9600e-003**	**8.0000e-005**	**3.0400e-003**		**10.9871**	**10.9871**	**3.0000e-004**		**10.9947**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1023	0.4332	1.5652	6.0500e-003	0.5152	4.3800e-003	0.5196	0.1379	4.0700e-003	0.1420		616.0076	616.0076	0.0288		616.7269
Unmitigated	0.1023	0.4332	1.5652	6.0500e-003	0.5152	4.3800e-003	0.5196	0.1379	4.0700e-003	0.1420		616.0076	616.0076	0.0288		616.7269

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	54.71	10.36	5.34	182,997	182,997
Total	54.71	10.36	5.34	182,997	182,997

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	4.2000e-003	0.0382	0.0321	2.3000e-004		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003		45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926
NaturalGas Unmitigated	4.2000e-003	0.0382	0.0321	2.3000e-004		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003		45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	389.472	4.2000e-003	0.0382	0.0321	2.3000e-004		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003		45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926
Total		**4.2000e-003**	**0.0382**	**0.0321**	**2.3000e-004**		**2.9000e-003**	**2.9000e-003**		**2.9000e-003**	**2.9000e-003**		**45.8203**	**45.8203**	**8.8000e-004**	**8.4000e-004**	**46.0926**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.389472	4.2000e-003	0.0382	0.0321	2.3000e-004		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003		45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926
Total		**4.2000e-003**	**0.0382**	**0.0321**	**2.3000e-004**		**2.9000e-003**	**2.9000e-003**		**2.9000e-003**	**2.9000e-003**		**45.8203**	**45.8203**	**8.8000e-004**	**8.4000e-004**	**46.0926**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1755	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7200e-003	1.7200e-003	0.0000		1.8300e-003
Unmitigated	0.1755	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7200e-003	1.7200e-003	0.0000		1.8300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0200					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Consumer Products	0.1555					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7200e-003	1.7200e-003	0.0000		1.8300e-003
Total	**0.1755**	**1.0000e-005**	**8.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.7200e-003**	**1.7200e-003**	**0.0000**		**1.8300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0200					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1555					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7200e-003	1.7200e-003	0.0000		1.8300e-003
Total	**0.1755**	**1.0000e-005**	**8.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.7200e-003**	**1.7200e-003**	**0.0000**		**1.8300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Deane Tank Project

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	7.85	1000sqft	6.70	7,854.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site is 6.7 acres.

Construction Phase - Estimated schedule.

Off-road Equipment -

Off-road Equipment - A crane would be used for tank erection. Like

Off-road Equipment - Grading Equipment to include Dozer, Scraper and Dump Truck. Likely presence of hard bedrock which may require the use of jackhammering equipment to remove the bedrock.

Off-road Equipment -

Trips and VMT - Up to 15 vehicle trips per day during construction.

Grading - Estimated approximatley 30,000 cubic yards of earthwork to be generated for the construction of the road. Option of exporting 9,000 cubic yards of cut soil.
Conservatively, 39,000 cubic yard of soil export assumed.

Vehicle Trips - The Proposed Project is not anticipated to generate daily vehicle trips. Infrequent trips would be made due to maintenance as needed. Conservatively, default assumptions remain.

Energy Use - No natural gas or energy use expected for the storage tank. Conservatively, default assumptions are used.

Water And Wastewater - Construction of a new Steel water storage tank with approximately 1.7 MG of storage capacity. Conservatively, default assumption is used. No outdoor water use would be generated.

Solid Waste - No solid waste generation during operation.

Construction Off-road Equipment Mitigation - As recommended by SCAQMD, alternative applicable strategies include construction equipment with Tier 3 emissions standards.

Off-road Equipment -

Area Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	11.00
tblConstructionPhase	NumDays	230.00	174.00
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	20.00	22.00
tblGrading	MaterialExported	0.00	39,000.00
tblLandUse	LandUseSquareFeet	7,850.00	7,854.00
tblLandUse	LotAcreage	0.18	6.70
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Dumpers/Tenders
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	9.73	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Year	lb/day										lb/day					
2022	8.3406	40.0722	21.1028	0.0884	8.5528	1.2440	9.5713	3.8186	1.1565	4.7733	0.0000	9,196.4939	9,196.4939	1.2279	0.0000	9,227.1900
Maximum	**8.3406**	**40.0722**	**21.1028**	**0.0884**	**8.5528**	**1.2440**	**9.5713**	**3.8186**	**1.1565**	**4.7733**	**0.0000**	**9,196.4939**	**9,196.4939**	**1.2279**	**0.0000**	**9,227.1900**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	7.4513	33.1002	25.1826	0.0884	4.1916	0.8640	4.8974	1.7233	0.8639	2.4267	0.0000	9,196.4939	9,196.4939	1.2279	0.0000	9,227.1900
Maximum	**7.4513**	**33.1002**	**25.1826**	**0.0884**	**4.1916**	**0.8640**	**4.8974**	**1.7233**	**0.8639**	**2.4267**	**0.0000**	**9,196.4939**	**9,196.4939**	**1.2279**	**0.0000**	**9,227.1900**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**10.66**	**17.40**	**-19.33**	**0.00**	**50.99**	**30.54**	**48.83**	**54.87**	**25.30**	**49.16**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Area	0.1755	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7200e-003	1.7200e-003	0.0000		1.8300e-003
Energy	4.2000e-003	0.0382	0.0321	2.3000e-004		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003		45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926
Mobile	0.0991	0.4466	1.4672	5.7600e-003	0.5152	4.3900e-003	0.5196	0.1379	4.0900e-003	0.1420		586.8934	586.8934	0.0285		587.6064
Total	**0.2789**	**0.4848**	**1.5001**	**5.9900e-003**	**0.5152**	**7.2900e-003**	**0.5225**	**0.1379**	**6.9900e-003**	**0.1449**		**632.7154**	**632.7154**	**0.0294**	**8.4000e-004**	**633.7007**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1755	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7200e-003	1.7200e-003	0.0000		1.8300e-003
Energy	4.2000e-003	0.0382	0.0321	2.3000e-004		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003		45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926
Mobile	0.0991	0.4466	1.4672	5.7600e-003	0.5152	4.3900e-003	0.5196	0.1379	4.0900e-003	0.1420		586.8934	586.8934	0.0285		587.6064
Total	**0.2789**	**0.4848**	**1.5001**	**5.9900e-003**	**0.5152**	**7.2900e-003**	**0.5225**	**0.1379**	**6.9900e-003**	**0.1449**		**632.7154**	**632.7154**	**0.0294**	**8.4000e-004**	**633.7007**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	5/2/2022	5	66	
3	Building Construction	Building Construction	5/3/2022	12/30/2022	5	174	

4	Paving	Paving	12/1/2022	12/30/2022	5	22	
5	Architectural Coating	Architectural Coating	12/16/2022	12/30/2022	5	11	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 66

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 11,781; Non-Residential Outdoor: 3,927; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Crushing/Proc. Equipment	1	8.00	85	0.78
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	1	8.00	367	0.48
Grading	Dumpers/Tenders	1	8.00	16	0.38
Building Construction	Cranes	1	7.00	231	0.29
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	4,875.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	1	3.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**		**1.2427**	**1.2427**		**1.1553**	**1.1553**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9246	18.3130	24.6739	0.0388		0.8627	0.8627		0.8627	0.8627	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**0.9246**	**18.3130**	**24.6739**	**0.0388**		**0.8627**	**0.8627**		**0.8627**	**0.8627**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1494	0.0000	7.1494	3.4349	0.0000	3.4349			0.0000			0.0000
Off-Road	2.2092	21.4267	14.5398	0.0315		0.9639	0.9639		0.9026	0.9026		3,022.7997	3,022.7997	0.7928		3,042.6199
Total	**2.2092**	**21.4267**	**14.5398**	**0.0315**	**7.1494**	**0.9639**	**8.1134**	**3.4349**	**0.9026**	**4.3375**		**3,022.7997**	**3,022.7997**	**0.7928**		**3,042.6199**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.6002	18.6160	4.8660	0.0559	1.2916	0.0537	1.3453	0.3541	0.0513	0.4054		6,070.2373	6,070.2373	0.4322		6,081.0419
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0448	0.0295	0.3392	1.0400e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		103.4570	103.4570	2.8500e-003		103.5282
Total	**0.6450**	**18.6455**	**5.2051**	**0.0569**	**1.4034**	**0.0545**	**1.4579**	**0.3837**	**0.0522**	**0.4358**		**6,173.6942**	**6,173.6942**	**0.4350**		**6,184.5701**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Fugitive Dust					2.7883	0.0000	2.7883	1.3396	0.0000	1.3396			0.0000			0.0000
Off-Road	0.7223	14.4547	16.9351	0.0315		0.6513	0.6513		0.6513	0.6513	0.0000	3,022.7997	3,022.7997	0.7928		3,042.6199
Total	**0.7223**	**14.4547**	**16.9351**	**0.0315**	**2.7883**	**0.6513**	**3.4395**	**1.3396**	**0.6513**	**1.9909**	**0.0000**	**3,022.7997**	**3,022.7997**	**0.7928**		**3,042.6199**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.6002	18.6160	4.8660	0.0559	1.2916	0.0537	1.3453	0.3541	0.0513	0.4054		6,070.2373	6,070.2373	0.4322		6,081.0419
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0448	0.0295	0.3392	1.0400e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		103.4570	103.4570	2.8500e-003		103.5282
Total	**0.6450**	**18.6455**	**5.2051**	**0.0569**	**1.4034**	**0.0545**	**1.4579**	**0.3837**	**0.0522**	**0.4358**		**6,173.6942**	**6,173.6942**	**0.4350**		**6,184.5701**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3264	3.6612	1.6558	5.0500e-003		0.1520	0.1520		0.1399	0.1399		488.9766	488.9766	0.1581		492.9302
Total	**0.3264**	**3.6612**	**1.6558**	**5.0500e-003**		**0.1520**	**0.1520**		**0.1399**	**0.1399**		**488.9766**	**488.9766**	**0.1581**		**492.9302**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0000e-003	0.0921	0.0266	2.5000e-004	6.4000e-003	1.8000e-004	6.5800e-003	1.8400e-003	1.7000e-004	2.0100e-003		26.4970	26.4970	1.6700e-003		26.5387
Worker	0.0134	8.8400e-003	0.1018	3.1000e-004	0.0335	2.6000e-004	0.0338	8.8900e-003	2.4000e-004	9.1300e-003		31.0371	31.0371	8.5000e-004		31.0585
Total	**0.0164**	**0.1009**	**0.1283**	**5.6000e-004**	**0.0399**	**4.4000e-004**	**0.0404**	**0.0107**	**4.1000e-004**	**0.0111**		**57.5341**	**57.5341**	**2.5200e-003**		**57.5971**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1241	2.3985	2.6879	5.0500e-003		0.0910	0.0910		0.0910	0.0910	0.0000	488.9766	488.9766	0.1581		492.9302
Total	**0.1241**	**2.3985**	**2.6879**	**5.0500e-003**		**0.0910**	**0.0910**		**0.0910**	**0.0910**	**0.0000**	**488.9766**	**488.9766**	**0.1581**		**492.9302**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0000e-003	0.0921	0.0266	2.5000e-004	6.4000e-003	1.8000e-004	6.5800e-003	1.8400e-003	1.7000e-004	2.0100e-003		26.4970	26.4970	1.6700e-003		26.5387
Worker	0.0134	8.8400e-003	0.1018	3.1000e-004	0.0335	2.6000e-004	0.0338	8.8900e-003	2.4000e-004	9.1300e-003		31.0371	31.0371	8.5000e-004		31.0585
Total	**0.0164**	**0.1009**	**0.1283**	**5.6000e-004**	**0.0399**	**4.4000e-004**	**0.0404**	**0.0107**	**4.1000e-004**	**0.0111**		**57.5341**	**57.5341**	**2.5200e-003**		**57.5971**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5609	11.2952	17.2957	0.0228		0.6093	0.6093		0.6093	0.6093	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5609**	**11.2952**	**17.2957**	**0.0228**		**0.6093**	**0.6093**		**0.6093**	**0.6093**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		155.1854	155.1854	4.2700e-003		155.2922

Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.6188					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**6.8233**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4800e-003	2.9500e-003	0.0339	1.0000e-004	0.0112	9.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.3457	10.3457	2.8000e-004		10.3528
Total	**4.4800e-003**	**2.9500e-003**	**0.0339**	**1.0000e-004**	**0.0112**	**9.0000e-005**	**0.0113**	**2.9600e-003**	**8.0000e-005**	**3.0400e-003**		**10.3457**	**10.3457**	**2.8000e-004**		**10.3528**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.6188					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**6.6782**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4800e-003	2.9500e-003	0.0339	1.0000e-004	0.0112	9.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.3457	10.3457	2.8000e-004		10.3528
Total	**4.4800e-003**	**2.9500e-003**	**0.0339**	**1.0000e-004**	**0.0112**	**9.0000e-005**	**0.0113**	**2.9600e-003**	**8.0000e-005**	**3.0400e-003**		**10.3457**	**10.3457**	**2.8000e-004**		**10.3528**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0991	0.4466	1.4672	5.7600e-003	0.5152	4.3900e-003	0.5196	0.1379	4.0900e-003	0.1420		586.8934	586.8934	0.0285		587.6064
Unmitigated	0.0991	0.4466	1.4672	5.7600e-003	0.5152	4.3900e-003	0.5196	0.1379	4.0900e-003	0.1420		586.8934	586.8934	0.0285		587.6064

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	54.71	10.36	5.34	182,997	182,997
Total	54.71	10.36	5.34	182,997	182,997

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	4.2000e-003	0.0382	0.0321	2.3000e-004		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003		45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926
NaturalGas Unmitigated	4.2000e-003	0.0382	0.0321	2.3000e-004		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003		45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	389.472	4.2000e-003	0.0382	0.0321	2.3000e-004		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003		45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926
Total		**4.2000e-003**	**0.0382**	**0.0321**	**2.3000e-004**		**2.9000e-003**	**2.9000e-003**		**2.9000e-003**	**2.9000e-003**		**45.8203**	**45.8203**	**8.8000e-004**	**8.4000e-004**	**46.0926**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.389472	4.2000e-003	0.0382	0.0321	2.3000e-004		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003		45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926
Total		**4.2000e-003**	**0.0382**	**0.0321**	**2.3000e-004**		**2.9000e-003**	**2.9000e-003**		**2.9000e-003**	**2.9000e-003**		**45.8203**	**45.8203**	**8.8000e-004**	**8.4000e-004**	**46.0926**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1755	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7200e-003	1.7200e-003	0.0000		1.8300e-003
Unmitigated	0.1755	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7200e-003	1.7200e-003	0.0000		1.8300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0200					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1555					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7200e-003	1.7200e-003	0.0000		1.8300e-003
Total	**0.1755**	**1.0000e-005**	**8.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.7200e-003**	**1.7200e-003**	**0.0000**		**1.8300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0200					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1555					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.7200e-003	1.7200e-003	0.0000		1.8300e-003
Total	**0.1755**	**1.0000e-005**	**8.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.7200e-003**	**1.7200e-003**	**0.0000**		**1.8300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Deane Tank Project

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	7.85	1000sqft	6.70	7,854.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site is 6.7 acres.

Construction Phase - Estimated schedule.

Off-road Equipment -

Off-road Equipment - A crane would be used for tank erection. Like

Off-road Equipment - Grading Equipment to include Dozer, Scraper and Dump Truck. Likely presence of hard bedrock which may require the use of jackhammering equipment to remove the bedrock.

Off-road Equipment -

Trips and VMT - Up to 15 vehicle trips per day during construction.

Grading - Estimated approximatley 30,000 cubic yards of earthwork to be generated for the construction of the road. Option of exporting 9,000 cubic yards of cut soil.
Conservatively, 39,000 cubic yard of soil export assumed.

Vehicle Trips - The Proposed Project is not anticipated to generate daily vehicle trips. Infrequent trips would be made due to maintenance as needed. Conservatively, default assumptions remain.

Energy Use - No natural gas or energy use expected for the storage tank. Conservatively, default assumptions are used.

Water And Wastewater - Construction of a new Steel water storage tank with approximately 1.7 MG of storage capacity. Conservatively, default assumption is used. No outdoor water use would be generated.

Solid Waste - No solid waste generation during operation.

Construction Off-road Equipment Mitigation - As recommended by SCAQMD, alternative applicable strategies include construction equipment with Tier 3 emissions standards.

Off-road Equipment -

Area Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	11.00
tblConstructionPhase	NumDays	230.00	174.00
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	20.00	22.00
tblGrading	MaterialExported	0.00	39,000.00
tblLandUse	LandUseSquareFeet	7,850.00	7,854.00
tblLandUse	LotAcreage	0.18	6.70
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Dumpers/Tenders
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	9.73	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					

2022	0.2008	2.0501	1.1897	4.1100e-003	0.2884	0.0660	0.3544	0.1277	0.0615	0.1891	0.0000	380.9341	380.9341	0.0660	0.0000	382.5852
Maximum	**0.2008**	**2.0501**	**1.1897**	**4.1100e-003**	**0.2884**	**0.0660**	**0.3544**	**0.1277**	**0.0615**	**0.1891**	**0.0000**	**380.9341**	**380.9341**	**0.0660**	**0.0000**	**382.5852**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1102	1.6377	1.4293	4.1100e-003	0.1444	0.0471	0.1916	0.0585	0.0470	0.1056	0.0000	380.9339	380.9339	0.0660	0.0000	382.5850
Maximum	**0.1102**	**1.6377**	**1.4293**	**4.1100e-003**	**0.1444**	**0.0471**	**0.1916**	**0.0585**	**0.0470**	**0.1056**	**0.0000**	**380.9339**	**380.9339**	**0.0660**	**0.0000**	**382.5850**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**45.11**	**20.12**	**-20.14**	**0.00**	**49.91**	**28.63**	**45.95**	**54.16**	**23.49**	**44.19**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2022	3-31-2022	1.2352	0.9567
2	4-1-2022	6-30-2022	0.5744	0.4468
3	7-1-2022	9-30-2022	0.1348	0.0867
		Highest	1.2352	0.9567

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0320	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.1000e-004
Energy	7.7000e-004	6.9700e-003	5.8500e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	35.3633	35.3633	1.2900e-003	3.8000e-004	35.5077
Mobile	0.0134	0.0625	0.2053	8.0000e-004	0.0695	6.0000e-004	0.0701	0.0186	5.6000e-004	0.0192	0.0000	74.1673	74.1673	3.5500e-003	0.0000	74.2561
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.5759	7.5313	8.1072	0.0595	1.4600e-003	10.0292
Total	**0.0462**	**0.0695**	**0.2112**	**8.4000e-004**	**0.0695**	**1.1300e-003**	**0.0706**	**0.0186**	**1.0900e-003**	**0.0197**	**0.5759**	**117.0621**	**117.6380**	**0.0643**	**1.8400e-003**	**119.7932**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0320	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.1000e-004
Energy	7.7000e-004	6.9700e-003	5.8500e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	35.3633	35.3633	1.2900e-003	3.8000e-004	35.5077
Mobile	0.0134	0.0625	0.2053	8.0000e-004	0.0695	6.0000e-004	0.0701	0.0186	5.6000e-004	0.0192	0.0000	74.1673	74.1673	3.5500e-003	0.0000	74.2561
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.4607	6.0251	6.4858	0.0476	1.1700e-003	8.0234
Total	**0.0462**	**0.0695**	**0.2112**	**8.4000e-004**	**0.0695**	**1.1300e-003**	**0.0706**	**0.0186**	**1.0900e-003**	**0.0197**	**0.4607**	**115.5558**	**116.0166**	**0.0524**	**1.5500e-003**	**117.7874**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**20.00**	**1.29**	**1.38**	**18.49**	**15.76**	**1.67**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	5/2/2022	5	66	
3	Building Construction	Building Construction	5/3/2022	12/30/2022	5	174	
4	Paving	Paving	12/1/2022	12/30/2022	5	22	
5	Architectural Coating	Architectural Coating	12/16/2022	12/30/2022	5	11	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 66

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 11,781; Non-Residential Outdoor: 3,927; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Crushing/Proc. Equipment	1	8.00	85	0.78
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	1	8.00	367	0.48
Grading	Dumpers/Tenders	1	8.00	16	0.38
Building Construction	Cranes	1	7.00	231	0.29
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36

Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	4,875.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	1	3.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**		**0.0124**	**0.0124**		**0.0116**	**0.0116**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.5000e-004	5.2300e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4312	1.4312	4.0000e-005	0.0000	1.4322
Total	**6.1000e-004**	**4.5000e-004**	**5.2300e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4312**	**1.4312**	**4.0000e-005**	**0.0000**	**1.4322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.2500e-003	0.1831	0.2467	3.9000e-004		8.6300e-003	8.6300e-003		8.6300e-003	8.6300e-003	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**9.2500e-003**	**0.1831**	**0.2467**	**3.9000e-004**		**8.6300e-003**	**8.6300e-003**		**8.6300e-003**	**8.6300e-003**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.5000e-004	5.2300e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4312	1.4312	4.0000e-005	0.0000	1.4322
Total	**6.1000e-004**	**4.5000e-004**	**5.2300e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4312**	**1.4312**	**4.0000e-005**	**0.0000**	**1.4322**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2359	0.0000	0.2359	0.1134	0.0000	0.1134	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0729	0.7071	0.4798	1.0400e-003		0.0318	0.0318		0.0298	0.0298	0.0000	90.4939	90.4939	0.0237	0.0000	91.0872
Total	**0.0729**	**0.7071**	**0.4798**	**1.0400e-003**	**0.2359**	**0.0318**	**0.2677**	**0.1134**	**0.0298**	**0.1431**	**0.0000**	**90.4939**	**90.4939**	**0.0237**	**0.0000**	**91.0872**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0195	0.6263	0.1556	1.8600e-003	0.0419	1.7600e-003	0.0437	0.0115	1.6800e-003	0.0132	0.0000	183.6001	183.6001	0.0127	0.0000	183.9175

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	1.0000e-003	0.0115	3.0000e-005	3.6200e-003	3.0000e-005	3.6500e-003	9.6000e-004	3.0000e-005	9.9000e-004	0.0000	3.1487	3.1487	9.0000e-005	0.0000	3.1509
Total	**0.0209**	**0.6273**	**0.1671**	**1.8900e-003**	**0.0455**	**1.7900e-003**	**0.0473**	**0.0125**	**1.7100e-003**	**0.0142**	**0.0000**	**186.7488**	**186.7488**	**0.0128**	**0.0000**	**187.0684**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0920	0.0000	0.0920	0.0442	0.0000	0.0442	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0238	0.4770	0.5589	1.0400e-003		0.0215	0.0215		0.0215	0.0215	0.0000	90.4937	90.4937	0.0237	0.0000	91.0871
Total	**0.0238**	**0.4770**	**0.5589**	**1.0400e-003**	**0.0920**	**0.0215**	**0.1135**	**0.0442**	**0.0215**	**0.0657**	**0.0000**	**90.4937**	**90.4937**	**0.0237**	**0.0000**	**91.0871**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0195	0.6263	0.1556	1.8600e-003	0.0419	1.7600e-003	0.0437	0.0115	1.6800e-003	0.0132	0.0000	183.6001	183.6001	0.0127	0.0000	183.9175
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	1.0000e-003	0.0115	3.0000e-005	3.6200e-003	3.0000e-005	3.6500e-003	9.6000e-004	3.0000e-005	9.9000e-004	0.0000	3.1487	3.1487	9.0000e-005	0.0000	3.1509
Total	**0.0209**	**0.6273**	**0.1671**	**1.8900e-003**	**0.0455**	**1.7900e-003**	**0.0473**	**0.0125**	**1.7100e-003**	**0.0142**	**0.0000**	**186.7488**	**186.7488**	**0.0128**	**0.0000**	**187.0684**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0284	0.3185	0.1441	4.4000e-004		0.0132	0.0132		0.0122	0.0122	0.0000	38.5925	38.5925	0.0125	0.0000	38.9046
Total	**0.0284**	**0.3185**	**0.1441**	**4.4000e-004**		**0.0132**	**0.0132**		**0.0122**	**0.0122**	**0.0000**	**38.5925**	**38.5925**	**0.0125**	**0.0000**	**38.9046**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	8.1600e-003	2.2000e-003	2.0000e-005	5.5000e-004	2.0000e-005	5.6000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	2.1257	2.1257	1.3000e-004	0.0000	2.1289
Worker	1.0500e-003	7.9000e-004	9.0900e-003	3.0000e-005	2.8600e-003	2.0000e-005	2.8800e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.4903	2.4903	7.0000e-005	0.0000	2.4921
Total	**1.3000e-003**	**8.9500e-003**	**0.0113**	**5.0000e-005**	**3.4100e-003**	**4.0000e-005**	**3.4400e-003**	**9.2000e-004**	**3.0000e-005**	**9.5000e-004**	**0.0000**	**4.6160**	**4.6160**	**2.0000e-004**	**0.0000**	**4.6209**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0108	0.2087	0.2339	4.4000e-004		7.9100e-003	7.9100e-003		7.9100e-003	7.9100e-003	0.0000	38.5925	38.5925	0.0125	0.0000	38.9045
Total	**0.0108**	**0.2087**	**0.2339**	**4.4000e-004**		**7.9100e-003**	**7.9100e-003**		**7.9100e-003**	**7.9100e-003**	**0.0000**	**38.5925**	**38.5925**	**0.0125**	**0.0000**	**38.9045**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	8.1600e-003	2.2000e-003	2.0000e-005	5.5000e-004	2.0000e-005	5.6000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	2.1257	2.1257	1.3000e-004	0.0000	2.1289
Worker	1.0500e-003	7.9000e-004	9.0900e-003	3.0000e-005	2.8600e-003	2.0000e-005	2.8800e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.4903	2.4903	7.0000e-005	0.0000	2.4921
Total	**1.3000e-003**	**8.9500e-003**	**0.0113**	**5.0000e-005**	**3.4100e-003**	**4.0000e-005**	**3.4400e-003**	**9.2000e-004**	**3.0000e-005**	**9.5000e-004**	**0.0000**	**4.6160**	**4.6160**	**2.0000e-004**	**0.0000**	**4.6209**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0121	0.1224	0.1604	2.5000e-004		6.2500e-003	6.2500e-003		5.7500e-003	5.7500e-003	0.0000	22.0303	22.0303	7.1300e-003	0.0000	22.2084

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0121**	**0.1224**	**0.1604**	**2.5000e-004**		**6.2500e-003**	**6.2500e-003**		**5.7500e-003**	**5.7500e-003**	**0.0000**	**22.0303**	**22.0303**	**7.1300e-003**	**0.0000**	**22.2084**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	5.0000e-004	5.7500e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5744	1.5744	4.0000e-005	0.0000	1.5754
Total	**6.7000e-004**	**5.0000e-004**	**5.7500e-003**	**2.0000e-005**	**1.8100e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.5744**	**1.5744**	**4.0000e-005**	**0.0000**	**1.5754**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.1700e-003	0.1243	0.1903	2.5000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	22.0303	22.0303	7.1300e-003	0.0000	22.2084
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.1700e-003**	**0.1243**	**0.1903**	**2.5000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**22.0303**	**22.0303**	**7.1300e-003**	**0.0000**	**22.2084**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	5.0000e-004	5.7500e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5744	1.5744	4.0000e-005	0.0000	1.5754
Total	**6.7000e-004**	**5.0000e-004**	**5.7500e-003**	**2.0000e-005**	**1.8100e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.5744**	**1.5744**	**4.0000e-005**	**0.0000**	**1.5754**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0364					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1200e-003	7.7500e-003	9.9700e-003	2.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	1.4043	1.4043	9.0000e-005	0.0000	1.4066
Total	**0.0375**	**7.7500e-003**	**9.9700e-003**	**2.0000e-005**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**1.4043**	**1.4043**	**9.0000e-005**	**0.0000**	**1.4066**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0525	0.0525	0.0000	0.0000	0.0525
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0525**	**0.0525**	**0.0000**	**0.0000**	**0.0525**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0364					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3000e-004	7.4600e-003	0.0101	2.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	1.4043	1.4043	9.0000e-005	0.0000	1.4066
Total	**0.0367**	**7.4600e-003**	**0.0101**	**2.0000e-005**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**1.4043**	**1.4043**	**9.0000e-005**	**0.0000**	**1.4066**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0525	0.0525	0.0000	0.0000	0.0525
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0525**	**0.0525**	**0.0000**	**0.0000**	**0.0525**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0134	0.0625	0.2053	8.0000e-004	0.0695	6.0000e-004	0.0701	0.0186	5.6000e-004	0.0192	0.0000	74.1673	74.1673	3.5500e-003	0.0000	74.2561
Unmitigated	0.0134	0.0625	0.2053	8.0000e-004	0.0695	6.0000e-004	0.0701	0.0186	5.6000e-004	0.0192	0.0000	74.1673	74.1673	3.5500e-003	0.0000	74.2561

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	54.71	10.36	5.34	182,997	182,997
Total	54.71	10.36	5.34	182,997	182,997

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	27.7772	27.7772	1.1500e-003	2.4000e-004	27.8766
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	27.7772	27.7772	1.1500e-003	2.4000e-004	27.8766
NaturalGas Mitigated	7.7000e-004	6.9700e-003	5.8500e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5861	7.5861	1.5000e-004	1.4000e-004	7.6311
NaturalGas Unmitigated	7.7000e-004	6.9700e-003	5.8500e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5861	7.5861	1.5000e-004	1.4000e-004	7.6311

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	142157	7.7000e-004	6.9700e-003	5.8500e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5861	7.5861	1.5000e-004	1.4000e-004	7.6311

Total		**7.7000e-004**	**6.9700e-003**	**5.8500e-003**	**4.0000e-005**		**5.3000e-004**	**5.3000e-004**		**5.3000e-004**	**5.3000e-004**	**0.0000**	**7.5861**	**7.5861**	**1.5000e-004**	**1.4000e-004**	**7.6311**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	142157	7.7000e-004	6.9700e-003	5.8500e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5861	7.5861	1.5000e-004	1.4000e-004	7.6311
Total		**7.7000e-004**	**6.9700e-003**	**5.8500e-003**	**4.0000e-005**		**5.3000e-004**	**5.3000e-004**		**5.3000e-004**	**5.3000e-004**	**0.0000**	**7.5861**	**7.5861**	**1.5000e-004**	**1.4000e-004**	**7.6311**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	87179.4	27.7772	1.1500e-003	2.4000e-004	27.8766
Total		**27.7772**	**1.1500e-003**	**2.4000e-004**	**27.8766**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	87179.4	27.7772	1.1500e-003	2.4000e-004	27.8766
Total		**27.7772**	**1.1500e-003**	**2.4000e-004**	**27.8766**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0320	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.1000e-004
Unmitigated	0.0320	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.1000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0284					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.1000e-004
Total	**0.0320**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.0000**	**2.1000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0284					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.1000e-004
Total	**0.0320**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.0000**	**2.1000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	6.4858	0.0476	1.1700e-003	8.0234
Unmitigated	8.1072	0.0595	1.4600e-003	10.0292

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	1.81531 / 0	8.1072	0.0595	1.4600e-003	10.0292
Total		**8.1072**	**0.0595**	**1.4600e-003**	**10.0292**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	1.45225 / 0	6.4858	0.0476	1.1700e-003	8.0234
Total		**6.4858**	**0.0476**	**1.1700e-003**	**8.0234**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

Biological Resource Survey Report

November 9, 2020

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SUBJECT: Habitat Assessment for the Santa Clarita Valley Water Agency's Proposed Deane Tank Site Expansion Project Located in the City of Santa Clarita, Los Angeles County, California

Introduction

This report contains the findings of ELMT Consulting's (ELMT) habitat assessment for Santa Clarita Water Agency's (SCVWA) proposed Deane Tank Site Expansion Project (project or project site) located in the City of Santa Clarita, Los Angeles County, California. The habitat assessment was conducted by biologist Jacob H. Lloyd Davies on September 22, 2020 to document baseline conditions and assess the potential for special-status[1] plant and wildlife species to occur within the project site that could pose a constraint to implementation of the proposed project. Special attention was given to the suitability of the project site to support special-status plant and wildlife species identified by the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), and other electronic databases as potentially occurring in the general vicinity of the project site.

Project Location

The project site is generally located north of State Route 14, east of Interstate 5, and south of Sierra Highway in the City of Santa Clarita, Los Angeles County, California. The site is depicted on the Mint Canyon quadrangle of the United States Geological Survey's (USGS) 7.5-minute map series within Section 15 of Township 4 North, Range 15 West. Specifically, the site is located on the Deane Zone hilltop site within Accessor Parcel Number (APN) 2839-002-902, which is west of Winterdale Drive and south of Sierra Highway. The rectangular APN parcel is approximately 6.7 acres in size, with access to the existing water tank site provided through a paved roadway located west of Winterdale Drive near the intersection of Nearview Drive. Refer to Exhibits 1-3 in Attachment A.

Project History

The SCVWA's is planning to design and build additional water storage capacity to address an existing deficiency in potable water storage in the Deane Pressure Zone within the SCVWA's Santa Clarita Water Division region (proposed Project). The SCVWA operates two existing one-million-gallon potable water

1 As used in this report, "special-status" refers to plant and wildlife species that are federally and State listed, proposed, or candidates; plant species that have been designated with a California Native Plant Society Rare Plant Rank; wildlife species that are designated by the CDFW as fully protected, species of special concern, or watch list species; and specially protected natural vegetation communities as designated by the CDFW.

tanks on the Deane Zone hilltop site located in the Canyon Country area of the City of Santa Clarita in Los Angeles County. The tanks were constructed around 1984 and provide water storage for wildfire, local operation, residential use, and emergency purposes that serve the areas within the Deane Pressure Zone.

A *Site Planning Summary Report* was prepared for the proposed Project which addresses the existing storage deficiency.[2] According to the *2013 Water Master Plan*, the Deane Pressure Zone has a deficiency in storage of approximately 4.22 million gallons (MG). There are two new large developments within the existing Deane Pressure Zone that require additional storage over and above the existing storage deficiency. The new developments will increase the water storage deficiency to 5.74MG.

Project Description

The purpose of the proposed Project is to build additional water storage capacity for fire protection, emergency and operational needs at the Deane Pressure Zone, which is deficient in storage by 4.22 MG, as of 2013. New developments within the Deane Pressure Zone will increase the existing deficiency to 5.74 MG. New developments within the Deane Pressure Zone include the Skyline Ranch development, which requires an additional 0.87 MG of water demand, and the Sand Canyon Plaza development, which requires 0.65 MG of water demand. The proposed Project includes the construction of a new Steel water storage tank with approximately 1.70 MG of storage capacity to address the recent developments.

The new tank proposed at the Project Site would be approximately 100 feet in diameter, constructed with 29 feet[3] operation water depth, with the capacity to store approximately 1.70 MG of potable water for the Deane Pressure Zone. The water supply for the new tank would be delivered from two existing pump stations located north of the site on Sierra Highway- the Linda Vista Pump Station and Honey House Pump Station and an existing 14' line that is located along the access road. The two pump stations and 14" water line currently supply water to the existing tanks at the Project Site and would be connected to the newly constructed water storage tank at project completion. The proposed tank is located south by southwest of the existing tanks.

As part of the proposed Project, other infrastructure-related components include: the installation of new underground water piping and electrical lines and the relocation of existing utilities; a 20 foot wide asphalt paved access road adjacent to each tank; a new drainage system around the proposed tank and along the access roadway; retaining walls; and an extra fill pad to assist with balancing earthwork on site. An optional access road may be constructed north of the Project Site that would connect the Project Site to the College of Canyons property to the north and downslope of the hilltop.

Existing on-site utilities would remain operational during construction to keep the existing tanks in service. The existing tanks, along with the new tank to be constructed, would be supported by the delivery of water through a 14-inch water pipeline from the pump stations and electrical conduit located below the access driveway. Proposed drainage improvements at the tank site would include the removal of an existing catch basin and drain line. The existing drain line runs from the catch basin down the north-facing slope to a point above an existing terrace drain. The existing drainage patterns of the slope would not be changed by the

2 Santa Clarita Valley Water Agency, *Site Planning Study: New 1.7 MG Reservoir at Existing Deane Tank Site*, September 2020.
3 The actual tank will be 32 feet to match the height of the existing tanks, and depth of water within tank would be 29 feet.

removal of the drain line. The existing supervisory control and data acquisition (SCADA) system would be modified to accept input from the new tank mixer, the seismic isolation valve, and limit switches that provide intrusion alarm notification on the tank hatches.

Upon completion of the construction phase, the existing access road to the tank site will be repaved. New easements may be required for additional access area along the proposed roadway improvements.

The optional access road would be approximately 20-feet wide within the maximum disturbance area. The access road, consisting of asphalt pavement over compacted base, will be constructed along the north facing slope commencing at the existing fire access road within the College of the Canyons campus and connecting to the existing access road, just east of the existing tanks. The north facing slope will be graded to provide a 20' wide pathway at a 20% maximum longitudinal gradient. Cut/fill slopes along with required benches and terrace drains will be constructed as necessary. It is estimated that approximately 30,000 cubic yards of earthwork will be generated for the construction of the road.

Methodology

A literature review and records search were conducted to determine which special-status biological resources have the potential to occur on or within the general vicinity of the project site. In addition to the literature review, a general habitat assessment or field investigation of the project site was conducted to document existing conditions and assess the potential for special-status biological resources to occur within the project site.

Literature Review

Prior to conducting the field investigation, a literature review and records search was conducted for special-status biological resources potentially occurring on or within the vicinity of the project site. Previously recorded occurrences of special-status plant and wildlife species and their proximity to the project site were determined through a query of the CDFW's QuickView Tool in the Biogeographic Information and Observation System (BIOS), CNDDB Rarefind 5, the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of special-status species published by CDFW, and the United States Fish and Wildlife Service (USFWS) species listings.

All available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the project site were reviewed to understand existing site conditions and note the extent of any disturbances that have occurred within the project site that would otherwise limit the distribution of special-status biological resources. Standard field guides and texts were reviewed for specific habitat requirements of special-status and non-special-status biological resources, as well as the following resources:

- Google Earth Pro historic aerial imagery (1994-2018);

- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Soil Survey[4];
- USFWS Critical Habitat designations for Threatened and Endangered Species; and
- USFWS Endangered Species Profiles.

The literature review provided a baseline from which to inventory the biological resources potentially occurring within the project site. The CNDDB database was used, in conjunction with ArcGIS software, to locate the nearest recorded occurrences of special-status species and determine the distance from the project site.

Habitat Assessment/Field Investigation

Following the literature review, biologist Jacob H. Lloyd Davies inventoried and evaluated the condition of the habitat within a 200-foot buffer around the project site, where applicable, on September 22, 2020. Plant communities and land cover types identified on aerial photographs during the literature review were verified by walking meandering transects throughout the project site. In addition, aerial photography was reviewed prior to the site investigation to locate potential natural corridors and linkages that may support the movement of wildlife through the area. These areas identified on aerial photography were then walked during the field investigation.

Soil Series Assessment

On-site and adjoining soils were researched prior to the field investigation using the USDA NRCS Soil Survey for San Bernardino County, California. In addition, a review of the local geological conditions and historical aerial photographs was conducted to assess the ecological changes that the project site has undergone.

Plant Communities

Plant communities were mapped using 7.5-minute USGS topographic base maps and aerial photography. The plant communities were classified in accordance with Sawyer, Keeler-Wolf and Evens (2009), delineated on an aerial photograph, and then digitized into GIS Arcview. The Arcview application was used to compute the area of each plant community and/or land cover type in acres.

Plants

Common plant species observed during the field investigation were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unusual and less-familiar plants were photographed in the field and identified in the laboratory using taxonomic guides. Taxonomic nomenclature used in this study follows the 2012 Jepson Manual (Hickman 2012). In this report, scientific names are provided immediately following common names of plant species (first reference only).

4 A soil series is defined as a group of soils with similar profiles developed from similar parent materials under comparable climatic and vegetation conditions. These profiles include major horizons with similar thickness, arrangement, and other important characteristics, which may promote favorable conditions for certain biological resources.

Wildlife

Wildlife species detected during the field investigation by sight, calls, tracks, scat, or other sign were recorded during surveys in a field notebook. Field guides used to assist with identification of wildlife species during the survey included The Sibley Field Guide to the Birds of Western North America (Sibley 2003), A Field Guide to Western Reptiles and Amphibians (Stebbins 2003), and A Field Guide to Mammals of North America (Reid 2006). Although common names of wildlife species are well standardized, scientific names are provided immediately following common names in this report (first reference only).

Jurisdictional Drainages and Wetlands

Aerial photography was reviewed prior to conducting a field investigation in order to locate and inspect any potential natural drainage features, ponded areas, or water bodies that may fall under the jurisdiction of the Corps, Regional Board, or CDFW. In general, surface drainage features indicated as blue-line streams on USGS maps that are observed or expected to exhibit evidence of flow are considered potential riparian/riverine habitat and are also subject to state and federal regulatory jurisdiction. In addition, ELMT reviewed jurisdictional waters information through examining historical aerial photographs to gain an understanding of the impact of land-use on natural drainage patterns in the area. The USFWS National Wetland Inventory (NWI) and Environmental Protection Agency (EPA) Water Program "My Waters" data layers were also reviewed to determine whether any hydrologic features and wetland areas have been documented on or within the vicinity of the project site.

The biologists carefully assessed the site for depressions, inundation, presence of hydrophytic vegetation, staining, cracked soil, ponding, and indicators of active surface flow and corresponding physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris. Suspected jurisdictional areas were checked for the presence of definable channels, soils, and hydrology.

Existing Site Conditions

The proposed project site is located in an area with a mixture of developed and undeveloped land and sits on top of a graded hill (Deane Zone Hilltop), that is completely surrounded by development. The area immediately surrounding the site supports steep cliff faces that are largely undeveloped. However, at the base of the steep hill, the area is surrounded by residential development to the east, south, and west, and institutional development to the north. The site itself supports both developed and undeveloped land. Developments occurring onsite consist of two existing SCVWA water tanks, access road, and associated structures.

Topography and Soils

Elevation ranges from approximately 1,895 to 1,980 feet above mean sea level. The site occurs at the top of a hill and slopes downward from the center. Based on the NRCS USDA Web Soil Survey, the project site is historically underlain by Ojai loam (30 to 50 percent slopes) and Saugus loam (30 to 50 percent slopes, eroded). Refer to Exhibit 4, *Soils*, in Attachment A. Soils within the existing developed areas are heavily compacted and disturbed, while the soils outside of the existing developed areas are undisturbed.

Vegetation

The site itself supports developed and undeveloped land, the latter of which was recently impacted by a recent fire, as evidenced by remnant burned perennial vegetation and scarring. The periphery of the site primarily supports undeveloped land with the exception of an existing access road. Refer to Attachment B, *Site Photographs*, for representative site photographs. The survey area supports two (2) vegetation communities: coastal sage scrub and non-native grassland. In addition, the site supports two land cover types that would be described as disturbed and developed (refer to Exhibit 5, *Vegetation*, in Attachment A).

Coastal Sage Scrub

The northern boundary of the project site, on the north facing slope supports a coastal sage scrub plant community. This plant community is dominated by California sagebrush (*Artemisia californica*) and supports recovering stands of chamise (*Adenostoma fasciculatum*) and elderberry (*Sambucus nigra*). Other common plant species observed in the coastal sage scrub vegetation community include cryptantha (*Cryptantha* sp.), deerweed (*Acmispon glaber*), rod wirelettuce (*Stephanomeria virgata*), wirelettuce (*Stephanomeria pauciflora*), California buckwheat (*Eriogonum fasciculatum*), chia (*Salvia columbariae*), Tucker oak (*Quercus john-tuckeri*), mulefat (*Baccharis salicifolia*), purple sage (*Salvia leucophylla*), chaparral yucca (*Hesperoyucca whipplei*), common sandaster (*Corethrogyne filaginifolia*), bush groundsel (*Senecio flaccidus* var. *douglasii*), desert wishbone bush (*Mirabilis laevis*), golden currant (*Ribes aureum*), California bush sunflower (*Encelia californica*), flax-leaved horseweed (*Erigeron bonariensis*), tropical horseweed (*Erigeron sumatrensis*), rattlesnake sandmat (*Euphorbia albomarginata*), shismus (*Schismus* sp.), and western ragweed (*Ambrosia psilostachya*).

Non-Native Grassland

The southern and eastern boundaries of the site support a non-native grassland plant community. This plant community is dominated by non-native grasses including wild oat (*Avena fatua*) and red brome (*Bromus madritensis* ssp. *rubens*) and supports mainly weedy/early successional species. Portions of this plant community support groups of fire-damaged native perennial species that would normally denote a coastal sage scrub community; however, native annuals are almost entirely absent from these areas. This indicates that the fire damage triggered a type-conversion fairly recently from coastal sage scrub to non-native grassland in much of the undeveloped areas within these portions of the site. Other common plant species that were observed in the non-native grassland vegetation community include Mediterranean mustard (*Hirschfeldia incana*), tocalote (*Centaurea melitensis*), prickly lettuce (*Lactuca serriola*), telegraph weed (*Heterotheca grandiflora*), tree tobacco (*Nicotiana glauca*), elderberry, chamise, wire lettuce species, cryptantha, schismus, and chaparral yucca.

Disturbed

Disturbed areas onsite include those areas impacted by routine vehicular and foot traffic, and areas that have not recovered from recent fire damage but have also not undergone a type conversion from coastal sage scrub to non-native grassland. Additionally, scattered burn scars are present throughout the disturbed portions of the site, and these scars primarily support recovering perennials and weedy/early successional plant species that are adapted to post-fire conditions. Common plant species observed in the disturbed areas of the site include chaparral yucca, chamise, California bush sunflower, deer weed, Mediterranean mustard, wire lettuce species, horseweed species, brome species, schismus, and cryptantha.

Developed

Developed areas onsite include the existing water storage tanks, associated structures, and the paved access road. These areas are either devoid of vegetation or minimally vegetated with weedy/early successional species adapted to growing in highly disturbed conditions. Plant species observed in the developed portions of the site include deerweed, Mediterranean mustard, and non-native grasses.

Wildlife

Plant communities provide foraging habitat, nesting/denning sites, and shelter from adverse weather or predation. This section provides a discussion of those wildlife species that were observed or are expected to occur within the project site. The discussion is to be used a general reference and is limited by the season, time of day, and weather conditions in which the field investigation was conducted. Wildlife detections were based on calls, songs, scat, tracks, burrows, and direct observation. The project site provides limited habitat for wildlife species except those adapted to a high degree of anthropogenic disturbances and development.

Fish

No fish or hydrogeomorphic features (e.g., perennial creeks, ponds, lakes, reservoirs) that would provide suitable habitat for fish were observed on or within the vicinity of the project site. Therefore, no fish are expected to occur and are presumed absent from the project site.

Amphibians

No amphibians or hydrogeomorphic features (e.g., perennial creeks, ponds, lakes, reservoirs) that would provide suitable habitat for amphibian species were observed on or within the vicinity of the project site. Therefore, no amphibians are expected to occur on the project site and are presumed absent.

Reptiles

The project site provides suitable habitat for a variety of reptile species known to occur within the region. Reptile species observed during the field investigation included coastal whiptail (*Aspidoscelis tigris stejnegeri*), Great Basin fence lizard (*Sceloporus occidentalis longipes*), and western side-blotched lizard (*Uta stansburiana elegans*). Additional common reptile species that could potentially occur on-site include San Diego gopher snake (*Pituophis catenifer annesctens*), and red racer (*Coluber flagellum piceus*).

Birds

The project site provides suitable foraging habitat for a variety of bird species known to occur within the region. Bird species detected during the field investigation include mourning dove (*Zenaida macroura*), California towhee (*Melozone crissalis*), Anna's hummingbird (*Calypte anna*), Bewick's wren (*Thryomanes bewickii*), western bluebird (*Sialia mexicana*), black phoebe (*Sayornis nigricans*), phainopepla (*Phainopepla nitens*), bushtit (*Psaltriparus minimus*), lesser goldfinch (*Spinus psaltria*), turkey vulture (*Cathartes aura*), American crow (*Corvus brachyrhinchos*), red-tailed hawk (*Buteo jamaicensis*), Allen's hummingbird (*Selasphorus sasin*), hooded oriole (*Icterus cucullatus*), blue-gray gnatcatcher (*Polioptila caerulea*), and California quail (*Callipepla californica*).

Mammals

The survey area provides suitable foraging and cover habitat for a variety of mammalian species known to occur within the region. The only mammalian species detected during the field investigation was coyote (*Canis lastrans*). Common mammalian species that could potentially occur on-site include cottontail (*Sylvilagus audubonii*).

Nesting Birds

No active nests or birds displaying nesting behavior were observed during the field survey. The onsite plant communites provide suitable foraging and nesting habitat for year-round and seasonal avian residents, as well as migrating songbirds. If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds should be conducted within three (3) days prior to ground disturbance to ensure no nesting birds will be impacted from proejct implementaiton.

Migratory Corridors and Linkages

Habitat linkages provide connections between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet still inadequate for others. Wildlife corridors are features that allow for the dispersal, seasonal migration, breeding, and foraging of a variety of wildlife species. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

According to the Los Angeles County Department of Regional Planning, the project site has not been identified as occurring within a wildlife corridor or linkage. However, Santa Clara River, which flows through Soledad Canyon, approximately 0.70 miles south of the site, is recognized wildlife migratory corridor and has been designated by Los Angeles County as a Significant Ecological Area. The project site is separated from Santa Clara River by existing development and roadways and there are no riparian corridors or creeks connecting the project site to this area. Therefore, the project site does not function as a major wildlife movement corridor or linkage. As such, implementation of the proposed project is not expected to have a significant impact to wildlife movement opportunities or prevent local wildlife movement through the area.

Jurisdictional Areas

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates discharge of dredge or fill materials into "waters of the United States" pursuant to Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFW regulates alterations to streambed and bank under Fish and Wildlife Code Sections 1600 et seq., and the Regional Board regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

The USFWS NWI and the USGS National Hydrography Dataset were reviewed to determine if any blueline streams or riverine resources have been documented within or immediately surrounding the project site. Based on this review, no riverine resources were identified on the project site. Two (2) riverine resources

were identified approximately 0.31 mile northwest and 0.6 mile east of the site, and the Santa Clara River was identified approximately 0.70 miles southeast of the project site. Within the Santa Clara River, the NWI has mapped riverine, freshwater emergent wetlands, and freshwater forested/shrub wetlands.

No discernible drainage courses, inundated areas, or wetland features/obligate plant species that would be considered jurisdictional by the Corps, Regional Board, or CDFW were observed within the proposed project site. It should be noted that the site is bordered to the west and southwest by series of concrete lined v-ditches that were constructed in the uplands to limit erosion and are not considered to be jurisdictional. Further, the proposed project is not expected to impact these areas. Based on the proposed site plan, project activities will not result in impacts to Corps, Regional Board, or CDFW jurisdictional areas and regulatory approvals will not be required.

Special-Status Biological Resources

The CNDDB Rarefind 5 and the CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California were queried for reported locations of special-status plant and wildlife species as well as special-status natural plant communities in the Mint Canyon USGS 7.5-minute quadrangle. The habitat assessment evaluated the conditions of the habitat(s) within the boundaries of the project site to determine if the existing plant communities, at the time of the survey, have the potential to provide suitable habitat(s) for special-status plant and wildlife species.

The literature search identified fifteen (15) special-status plant species, thirty-seven (37) special-status wildlife species, and four (4) special-status plant communities as having potential to occur within the Mint Canyon USGS 7.5-minute quadrangle. Special-status plant and wildlife species were evaluated for their potential to occur within the project site based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity of the project site is presented in Attachment D*: Potentially Occurring Special-Status Biological Resources*.

Special-Status Plants

According to the CNDDB and CNPS, thirty-eight (38) special-status plant species have been recorded in the Mint Canyon quadrangles (refer to Attachment D). No special-status plant species were observed on-site during the habitat assessment. The project site has been subject to damage from a recent fire and anthropogenic disturbances from existing on-site and surrounding development. These disturbances have reduced the suitability of the habitat to support special-status plant species known to occur in the general vicinity of the project site. Based on habitat requirements for specific special-status plant species and the availability and quality of habitats needed by each species, it was determined that the project site does not provide suitable habitat for any of the special-status plant species known to occur in the area and all are presumed to be absent from the project site. No focused surveys are recommended.

Special-Status Wildlife

According to the CNDDB, sixty-one (61) special-status wildlife species have been reported in the Mint Canyon quadrangles (refer to Attachment D). One special-status wildlife species was observed during the field investigation: coastal whiptail (*Aspidoscelis tigris stejnegeri*), a California Species of Special Concern. Based on habitat requirements for specific species and the availability and quality of onsite habitats, it was

determined that the proposed project site has a moderate potential to provide suitable habitat for Cooper's hawk (*Accipiter cooperii*) and sharp-shinned hawk (*Accipiter striatus*), and a low potential to provide suitable habitat for California horned lark (*Eremophila alpestris actia*), and coastal California gnatcatcher (*Polioptila californica californica*). Further, it was determined that the project site does not provide suitable habitat for any of the other special-status wildlife species known to occur in the vicinity of the project site.

With the exception of California gnatcatcher, a federally Threatened species, none of the other aforementioned species are federally or state listed as endangered or threatened. In order to ensure impacts to Cooper's hawk, sharp-shinned hawk, California horned lark, and coastal California gnatcatcher do not occur from implementation of the proposed project, a pre-construction nesting bird clearance survey shall be conducted prior to ground disturbance. With implementation of the pre-construction nesting bird clearance survey, impacts to the aforementioned species will be less than significant and no mitigation will be required.

Coastal whiptail is a fairly common species in sage scrub habitats. This species is highly mobile with ample foraging habitat immediately adjacent to the project site in the surrounding undeveloped slopes, as it is expected to move into the adjacent undeveloped habitat. However, to ensure no coastal whiptail will be impacted from project implementation, a pre-construction clearance survey is recommended to be conducted prior to ground disturbing activities to ensure no coastal whiptail will be impacted from project implementation. Since there is ample habitat for this species immediately adjacent to the proposed project footprint, and with implementation of a pre-construction clearance survey, impacts to this species will be less than significant and no mitigation will be required.

Based on regional significance, the potential occurrence of coastal California gnatcatcher within the project site is described in further detail below.

Coastal California Gnatcatcher

California gnatcatcher is a federally threatened species with restricted habitat requirements, being an obligate resident of sage scrub habitats that are dominated by California sagebrush. This species generally occurs below 750 feet elevation in coastal regions and below 1,500 feet inland. According to J. Atwood and J. Bolsinger (1992), 99% of all California gnatcatcher observations are in areas with elevations below 950 feet. There are reported occurrences of California gnatcatcher at 1,600 feet elevation (500 meters) (Davis and McKernan, 1998).

California gnatcatcher ranges from Ventura County south to San Diego County and northern Baja California and is less common in sage scrub with a high percentage of tall shrubs. It prefers habitat with more low-growing vegetation. California gnatcatchers breed between mid-February and the end of August, with peak activity from mid-March to mid-May. Population estimates indicate that there are approximately 1,600 to 2,290 pairs of coastal California gnatcatcher remaining. Declines are attributed to loss of sage scrub habitat due to development, as well as cowbird nest parasitism.

California gnatcatcher are ground and shrub-foraging insectivores. They feed on small insects and other arthropods. A California gnatcatcher's territory is highly variable in size and seems to be correlated with distance from the coast, ranging from less than 1 ha to over 9 ha (Mock, 2004). In a 1998 study, biologist Patrick Mock concluded that California gnatcatcher in the inland region require a larger territory than those

on the coast in order to meet the nutritional requirements needed for survival and breeding.

The Primary Constituent Elements (PCEs)[5] essential to support the biological needs of foraging, reproducing, rearing of young, intra-specific communication, dispersal, genetic exchange, or sheltering for California gnatcatcher that were surveyed for include:

1. Dynamic and Successional sage scrub Habitats and Associated Vegetation (Riversidean Alluvial Fan Sage Scrub, Coastal Sage-Chaparral Scrub, etc.) that provide space for individual and population growth, normal behavior, breeding, reproduction, nesting, dispersal and foraging; and
2. Non-sage scrub habitats such as chaparral, grassland, and riparian areas, in proximity to sage scrub habitats that provide linkages to help with dispersal, foraging and nesting. Non-sage scrub habitats such as chaparral, grassland, and riparian areas, in proximity to sage scrub habitats have the potential to provide linkages to help with dispersal, foraging and nesting.

The coastal sage scrub plant community along the northern boundary of the project site provides marginally suitable foraging habitat for California gnatcatcher. Due to damage from recent wildfires, this area supports mainly weedy/early successional plant species and perennials that are still recovering from being burned. As such, available vegetation is primarily low growing and nesting opportunities for California gnatcatcher are absent from the project site. Additionally, the Coastal Sage scrub plant community is isolated from occupied sage scrub habitats in the region by surrounding development, and the site is above the maximal elevational range for California gnatcatcher, further precluding California gnatcatcher from the project site. As a result, it was determined that California gnatcatcher has a low potential to occur onsite, are presumed absent from the project site. No further actions or focused surveys are recommended.

Special-Status Plant Communities

According to the CNDDB, four (4) special-status plant communities have been reported in the Mint Canyon USGS 7.5-minute quadrangle: Southern Coast Live Oak Riparian Forest, Southern Riparian Scrub, Southern Sycamore Alder Riparian Woodland, and Southern Willow Scrub; none of which were observed onsite. Therefore, no special-status plant communities will be impacted by project implementation.

Critical Habitats

Under the federal Endangered Species Act, "Critical Habitat" is designated at the time of listing of a species or within one year of listing. Critical Habitat refers to specific areas within the geographical range of a species at the time it is listed that include the physical or biological features that are essential to the survival and eventual recovery of that species. Maintenance of these physical and biological features requires special management considerations or protection, regardless of whether individuals or the species are present or not. All federal agencies are required to consult with the USFWS regarding activities they authorize, fund, or permit which may affect a federally listed species or its designated Critical Habitat. The purpose of the consultation is to ensure that projects will not jeopardize the continued existence of the listed species or adversely modify or destroy its designated Critical Habitat. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing is on federal lands, uses federal funds, or

5 Specific elements of physical and biological features that provide for a species' life-history process and are essential to the conservation of the species.

requires federal authorization or permits (e.g., funding from the Federal Highways Administration or a Clean Water Act Permit from the United States Army Corps of Engineers). If a there is a federal nexus, then the federal agency that is responsible for providing the funding or permit would consult with the USFWS.

The project site is not located within federally designated Critical Habitat. Further, the closest Critical Habitat designations are located approximately 1.62 miles northwest for spreading navarretia (*Navarretia fossalis*), 2.1 miles south for coastal California gnatcatcher (*Polioptila californica californica*), 3.34 miles east of the site for arroyo toad (*Anaxyrus californicus* (Exhibit 6, *Critical Habitat*, in Attachment A). Therefore, no impacts to federally designated Critical Habitat will occur from implementation of the proposed project.

Recommendations

Pre-Construction Nesting Bird Clearance Survey (Migratory Bird Treaty Act and Fish and Game Code)

Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.5, 3511, and 3513 prohibit the take, possession, or destruction of birds, their nests or eggs). In order to protect migratory bird species, a nesting bird clearance survey should be conducted prior to any ground disturbance or vegetation removal activities that may disrupt the birds during the nesting season.

If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds should be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a no-disturbance buffer. The size of the no-disturbance buffer will be determined by the wildlife biologist and will depend on the level of noise and/or surrounding anthropogenic disturbances, line of sight between the nest and the construction activity, type and duration of construction activity, ambient noise, species habituation, and topographical barriers. These factors will be evaluated on a case-by-case basis when developing buffer distances. Limits of construction to avoid an active nest will be established in the field with flagging, fencing, or other appropriate barriers; and construction personnel will be instructed on the sensitivity of nest areas. A biological monitor should be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur.

Pre-Construction Clearance Survey

A pre-construction special-status species survey will be conducted by a qualified biologist prior to initiating ground disturbance activities. The survey will consist of full coverage of the proposed disturbance limits and a 500- foot buffer, and can be performed concurrently with the nesting bird survey. If coastal whiptail or any special-status species are found during pre-construction surveys, a biological monitor may be needed during construction. If determined necessary, biological compliance monitoring will be conducted by a

qualified biologist during construction.

Conclusion

Based on the proposed project footprint and existing site conditions discussed in this report, none of the special-status plant or wildlife species known to occur in the general vicinity of the project site are expected to be directly or indirectly impacted from implementation of the proposed project. With completion of the recommendations provided above, no impacts to year-round, seasonal, or special-status avian residents or special-status species will occur from implementation of the proposed project. Implementation of the project will have "no effect" on federally or State listed species known to occur in the general vicinity of the project site, and will not impact jurisdictional waters. Additionally, the development of the project will not impact designated Critical Habitats or regional wildlife movement corridors/linkages.

Please do not hesitate to contact Tom McGill at (951) 285-6014 or tmcgill@elmtconsulting.com or Travis McGill at (909) 816-1646 or travismcgill@elmtconsulting.com should you have any questions this report.

Sincerely,

Thomas J. McGill, Ph.D.
Managing Director

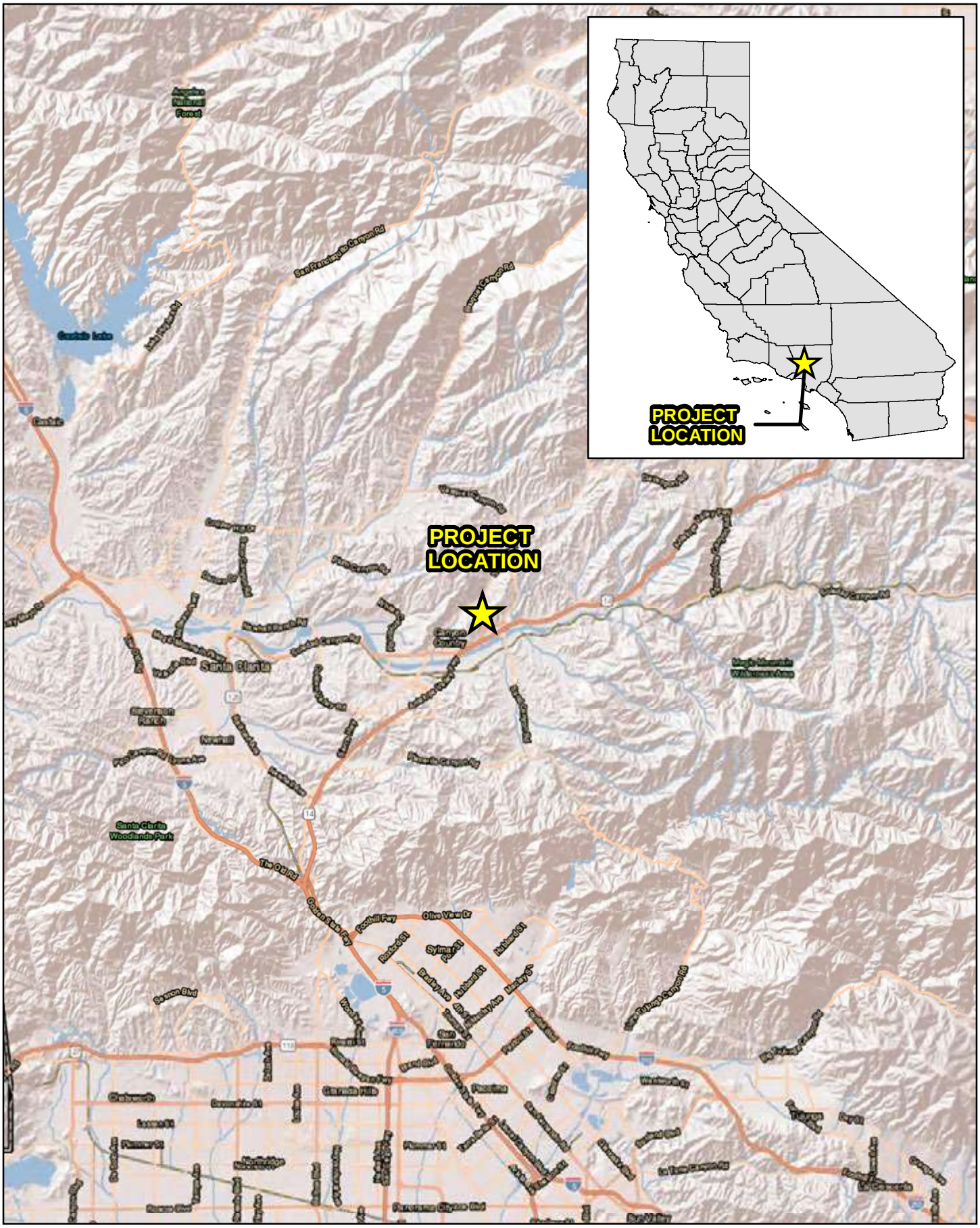
Travis J. McGill
Director

Attachments:

A. *Project Exhibits*
B. *Project Site Plans*
C. *Site Photographs*
D. *Potentially Occurring Special-Status Biological Resources*
E. *Regulations*

Attachment A

Project Exhibits



DEANE TANK SITE EXPANSION PROJECT
HABITAT ASSESSMENT

Regional Vicinity

Exhibit 1

DEANE TANK EXPANSION PROJECT
HABITAT ASSESSMENT

Site Vicinity

ELMT CONSULTING

0 0.25 0.5 1 Miles

Source: USA Topographic Map, Los Angeles County

Exhibit 2

DEANE TANK EXPANSION PROJECT
HABITAT ASSESSMENT

Project Site

ELMT CONSULTING

0 125 250 500 Feet

Source: Google Earth Imagery, Los Angeles County

Exhibit 3

DEANE TANK EXPANSION PROJECT
HABITAT ASSESSMENT

Soils

ELMT CONSULTING

0 125 250 500 Feet

Source: Google Earth Imagery, Soil Survey Geographic Database, Los Angeles County

Exhibit 4

DEANE TANK EXPANSION PROJECT
HABITAT ASSESSMENT

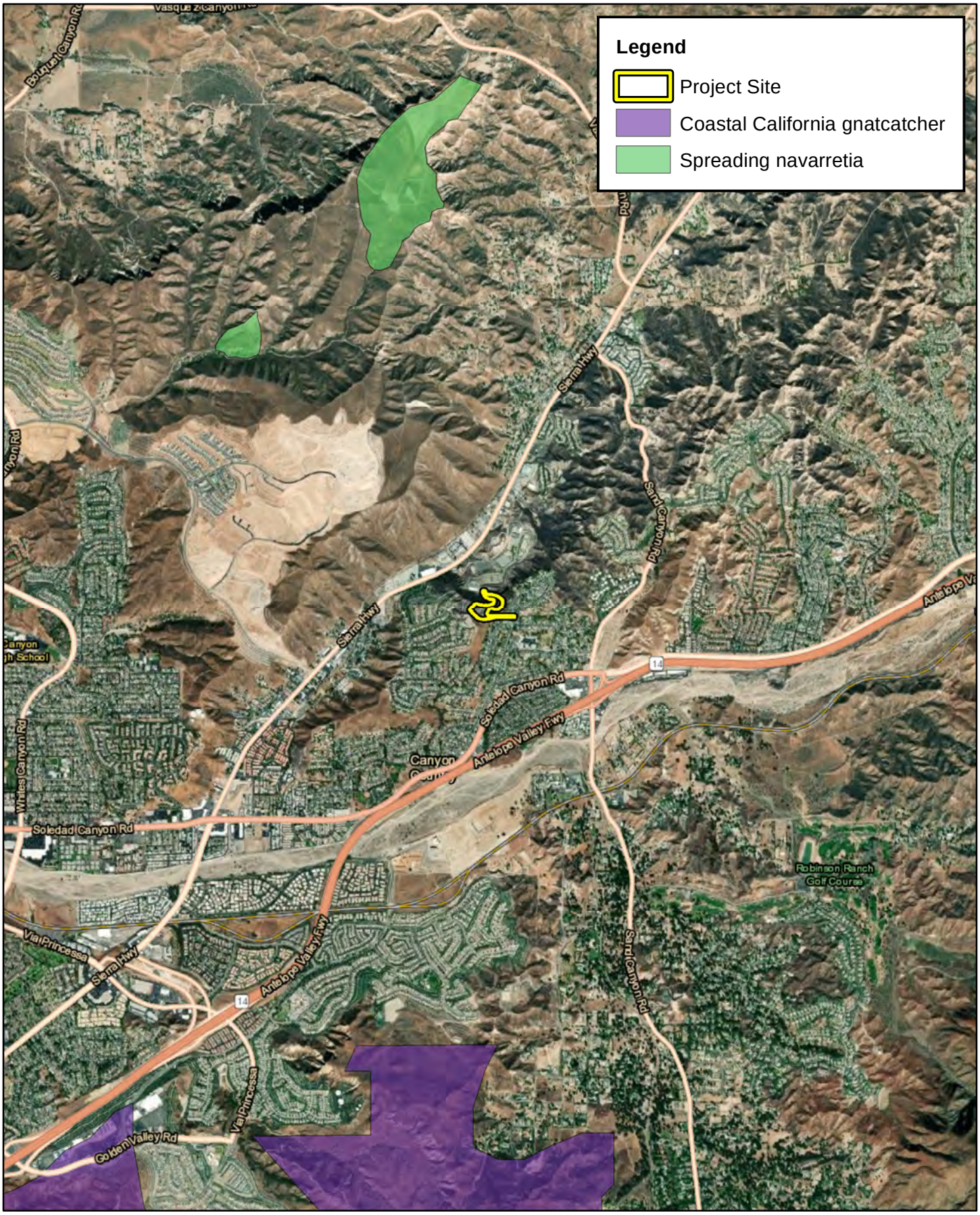
Vegetation

ELMT CONSULTING

0 125 250 500 Feet

Source: Google Earth Imagery, Los Angeles County

Exhibit 5



DEANE TANK EXPANSION PROJECT
HABITAT ASSESSMENT

Critical Habitat

ELMT CONSULTING

0 0.25 0.5 1 Miles

Source: ESRI Aerial Imagery, USFWS Critical Habitat, Los Angeles County

Exhibit 6

Attachment B

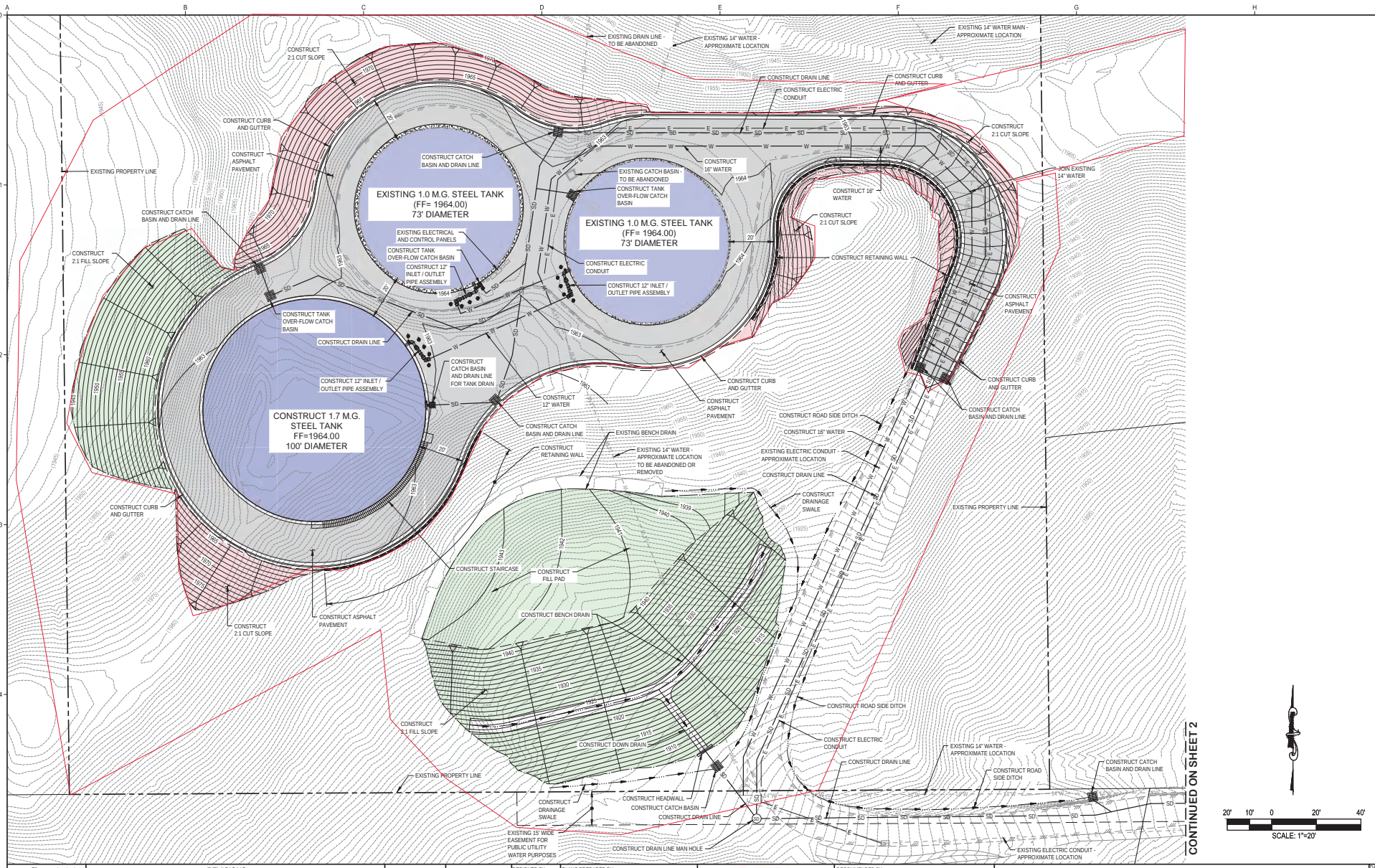
Site Plans

SOURCE: Google Earth - 2020

FIGURE **2-2**

Meridian Consultants

Project Site Plan



DIAL TOLL FREE 811 AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT (USA) OF SOUTHERN CALIFORNIA

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SCALES

IF THIS BAR IS NOT DIMENSIONED AS SHOWN, ADJUST SCALES ACCORDINGLY

DESIGNED BY:	MM
DRAWN BY:	MM
CHECKED BY:	WDB

PLANS PREPARED BY:
CIVILTEC engineering inc.
Civil, Water, Wastewater, Drainage, and Transportation Engineering
Construction Management • Surveying
California • Arizona
118 West Lime Avenue
Monrovia, CA 91016
Phone: 626.357.0588
Fax: 626.303.7957
Web: www.civiltec.com

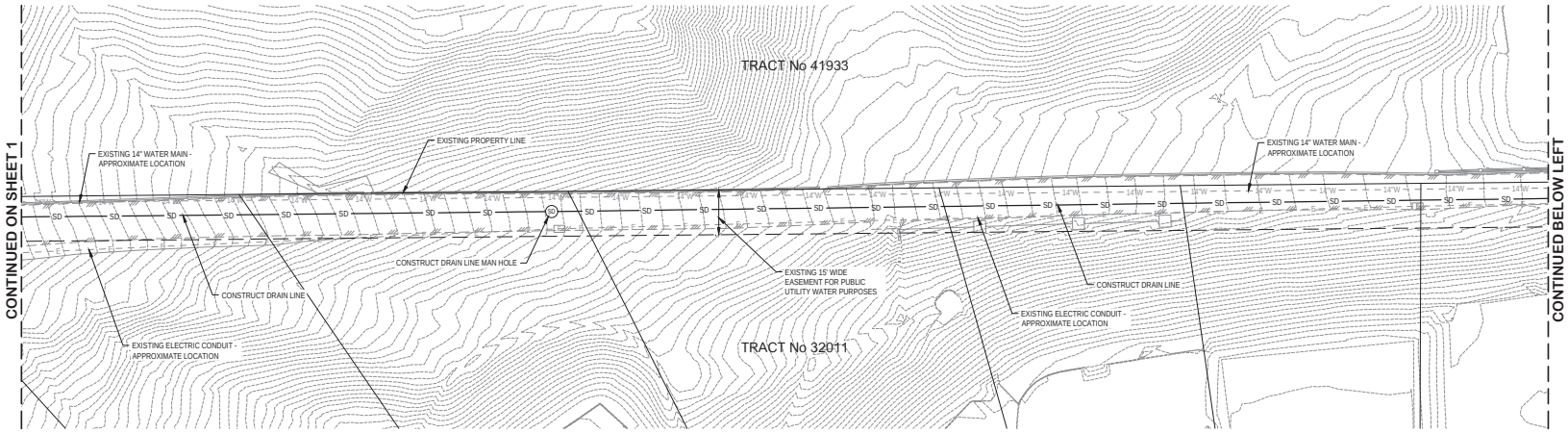
SCV WATER
SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION
26521 SUMMIT CIRCLE
SANTA CLARITA, CA. 91350
(661) 259-2737

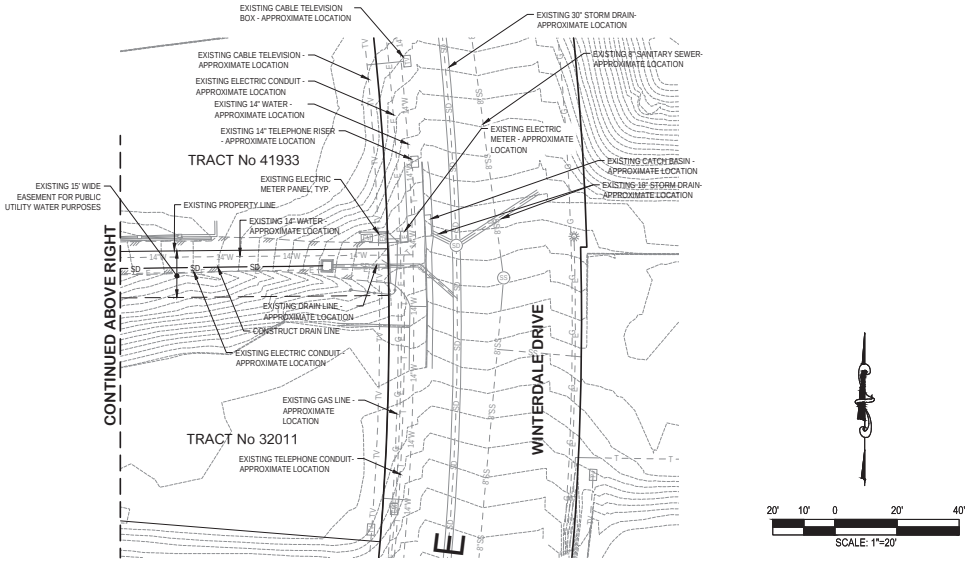
RECOMMENDED BY:	
JASON YIM, PRINCIPAL ENGINEER	DATE
RECOMMENDED BY:	
KEITH ABERCROMBIE, CHIEF OPERATING OFFICER	DATE
APPROVED BY: SANTA CLARITA VALLEY WATER AGENCY	
COURTNEY MAEL, CHIEF ENGINEER	DATE

SANTA CLARITA VALLEY WATER AGENCY
NEW DEANE TANK SITE

PRELIMINARY SITE PLAN

DATE:	JULY 2020
PROJECT NO.	2020123,00
DRAWING NO.:	
SHEET NO.:	1 OF 2





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UNDERGROUND SERVICE ALERT (USA) OF SOUTHERN CALIFORNIA

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SCALES

IF THIS BAR IS NOT DIMENSIONED AS SHOWN, ADJUST SCALES ACCORDINGLY

DESIGNED BY: MM
DRAWN BY: MM
CHECKED BY: WDB

PLANS PREPARED BY:
CIVILTEC engineering inc.
Civil, Water, Wastewater, Drainage, and Transportation Engineering Construction Management • Surveying
California • Arizona
118 West Lime Avenue
Monrovia, CA 91016
Phone: 626.357.0588
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SCV WATER
SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION
26521 SUMMIT CIRCLE
SANTA CLARITA, CA. 91350
(661) 259-2737

RECOMMENDED BY:
JASON YIM, PRINCIPAL ENGINEER DATE
RECOMMENDED BY:
KEITH ABERCROMBIE, CHIEF OPERATING OFFICER DATE
APPROVED BY: SANTA CLARITA VALLEY WATER AGENCY
COURTNEY MAEL, CHIEF ENGINEER DATE

SANTA CLARITA VALLEY WATER AGENCY
NEW DEANE TANK SITE
PRELIMINARY SITE PLAN

DATE: JULY 2020
PROJECT NO. 2020123,00
DRAWING NO.:
SHEET NO.: 2 OF 2

Attachment C

Site Photographs

Photograph 1: From the northwest corner of the project site looking east along the northern boundary.

Photograph 2: From the northwest corner of the project site looking south along the western boundary.

Photograph 3: From the southwest corner of the project site looking north along the western boundary.

Photograph 4: From the southwest corner of the project site looking east along the southern boundary.

Photograph 5: From the southern boundary of the project site looking north.

Photograph 6: From the southeast corner of the project site looking northwest.

Photograph 7: From the eastern boundary of the project site looking west.

Photograph 8: From the northeast corner of the project site looking west along the northern boundary.

Photograph 9: From the middle of the project site looking northeast at the area for the optional access road.

Photograph 10: Looking north at the north facing slope where the optional access road is proposed.

Attachment D

Potentially Occurring Special-Status Plant Species

Table D-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
SPECIAL-STATUS WILDLIFE SPECIES				
Accipiter cooperii Cooper's hawk	Fed: None CA: WL	Generally found in forested areas up to 3,000 feet in elevation, especially near edges and rivers. Prefers hardwood stands and mature forests, but can be found in urban and suburban areas where there are tall trees for nesting. Common in open areas during nesting season.	No	**Moderate**. There is low quality foraging habitat on-site. No suitable nesting opportunities occur on-site. Adapted to urban environments and occurs commonly.
Accipiter striatus sharp-shinned hawk	Fed: None CA: WL	Found in pine, fir and aspen forests. They can be found hunting in forest interior and edges from sea level to near alpine areas. Can also be found in rural, suburban and agricultural areas, where they often hunt at bird feeders. Typically found in southern California in the winter months.	No	**Moderate**. There is low quality foraging habitat on-site. No suitable nesting opportunities occur on-site. Adapted to urban environments and occurs commonly.
Aimophila ruficeps canescens southern California rufous-crowned sparrow	Fed: None CA: WL	Typically found between 3,000 and 6,000 feet in elevation. Breed in sparsely vegetated shrublands on hillsides and canyons. Prefers coastal sage scrub dominated by California sagebrush (*Artemisia californica*), but can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.	No	**Presumed absent.** No suitable habitat is present on-site.
Anniella pulchra Northern California legless lizard	Fed: None CA: SSC	Occurs primarily in areas with sandy or loose loamy soils under sparse vegetation of beaches, chaparral, or pine-oak woodland; or near sycamores, oaks, or cottonwoods that grow on stream terraces. Often found under or in the close vicinity of logs, rocks, old boards, and the compacted debris of woodrat nests.	No	**Presumed absent.** No suitable habitat is present on-site.
Anniella stebbinsi Southern California legless lizard	Fed: None CA: SSC	Occurs primarily in areas with sandy or loose loamy soils under sparse vegetation of beaches, chaparral, or pine-oak woodland; or near sycamores, oaks, or cottonwoods that grow on stream terraces. Often found under or in the close vicinity of logs, rocks, old boards, and the compacted debris of woodrat nests.	No	**Presumed absent.** No suitable habitat is present on-site.
Arizona elegans occidentalis California glossy snake	Fed: None CA: SSC	Occurs in a wide variety of habitat types including open desert, grasslands, shrublands, chaparral, and woodlands. Prefers areas where the soil is loose and sandy which allows for burrowing.	No	**Presumed absent.** No suitable habitat is present on-site.
Artemisiospiza belli belli Bell's sage sparrow	Fed: None CA: WL	Occurs in chaparral dominated by fairly dense stands of chamise. Also found in coastal sage scrub in south of range.	No	**Presumed absent**. No suitable habitat is present.
Asio flammeus short-eared owl	Fed: None CA: SSC	Suitable habitats include salt- and freshwater marshes, irrigated alfalfa or grain fields, and ungrazed grasslands and old pastures. Tule marsh or tall grasslands with cover 30 to 50 cm in height can support nesting pairs.	No	**Presumed absent**. No suitable habitat is present.
Aspidoscelis tigris stejnegeri coastal whiptail	Fed: None CA: SSC	Found in a variety of ecosystems, primarily hot and dry open areas with sparse foliage such as chaparral, woodland, and riparian areas.	Yes	**Present.** This species was observed onsite during the field investigation.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Athene cunicularia burrowing owl	Fed: None CA: SSC	Prefers habitat with short, sparse vegetation with few shrubs and well-drained soils in grassland, shrub steppe, and desert habitats. Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	**Presumed Absent.** There is no suitable habitat within or adjacent to the project site.
Baeolophus inornatus oak titmouse	Fed: None CA: None	Lives mostly in warm, open, dry oak or oak-pine woodlands. Restricted to southwest Oregon to northwest Baja California with another population in the Cape District of south Baja California.	No	**Presumed absent.** No suitable habitat is present on-site.
Batrachoseps gabrieli San Gabriel slender salamander	Fed: None CA: None	Known from select localities in the San Gabriel Mountains and the Mt. Baldy area of Los Angeles County and the western end of the San Bernardino Mountains in San Bernardino Co., with an elevation range of 1,200- 5,085 feet. Occurs on talus slopes surrounded by a variety of conifer and montane hardwood species, including bigcone spruce, pine, white fir, incense cedar, canyon live oak, black oak, and California laurel.	No	**Presumed absent.** No suitable habitat is present on-site.
Bombus crotchii Crotch bumble bee	Fed: None CA: CE	Exclusive to coastal California east towards the Sierra-Cascade Crest; less common in western Nevada.	No	**Presumed absent.** No suitable habitat is present on-site.
Branchinecta lynchi vernal pool fairy shrimp	Fed: **THR** CA: None	Associated with vernal pools. Can be found in association with other ephemeral habits including alkali pools, seasonal drainages, stock ponds, vernal swales, and rock outcrops.	No	**Presumed absent.** No suitable habitat is present on-site.
Buteo swainsoni Swainson's hawk	Fed: None CA: **THR**	Typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.	No	**Presumed absent.** No suitable habitat is present on-site.
Calypte costae Costa's hummingbird	Fed: None CA: None	Desert and semi-desert, arid brushy foothills and chaparral. A desert hummingbird that breeds in the Sonoran and Mojave Deserts. Departs desert heat moving into chaparral, scrub, and woodland habitats.	No	**Presumed absent.** No suitable habitat is present on-site.
Catostomus santaanae Santa Ana sucker	Fed: **THR** CA: SSC	Occur in the watersheds draining the San Gabriel and San Bernardino Mountains of southern California. Steams that Santa Ana Sucker inhabit are generally perennial streams with water ranging in depth from a few inches to several feet and with currents ranging from slight to swift.	No	**Presumed absent.** No suitable habitat is present on-site.
Chaetura vauxi Vaux's swift	Fed: None CA: SSC	Prefers redwood and Douglas-fir habitats with nest-sites in large hallow trees and snags, especially tall, burned-out snags. Fairly common migrant throughout most of the state in April and May, and August and September.	No	**Presumed absent.** No suitable habitat is present on-site.
Contopus cooperi olive-sided flycatcher	Fed: None CA: SSC	Uncommon to common, summer resident in a wide variety of forest and woodland habitats below 9,000 ft. throughout California exclusive of the deserts, the Central Valley, and other lowland valleys and basins. Preferred nesting habitats include mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine.	No	**Presumed absent.** No suitable habitat is present on-site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Corynorhinus townsendii Townsend's big-eared bat	Fed: None CA: SSC	Now considered uncommon in California. Details of its distribution are not well known. This species is found in all but subalpine and alpine habitats, and may be found at any season throughout its range. Most abundant in mesic habitats.	No	**Presumed absent.** No suitable habitat is present on-site.
Eremophila alpestris actia California horned lark	Fed: None CA: WL	Generally found in shortgrass prairies, grasslands, disturbed fields, or similar habitat types. Flocks in groups.	No	**Low.** There is marginal foraging habitat present on-site. No suitable nesting habitat is present on-site; surrounding habitats provide suitable nesting opportunities.
Euphydryas editha quino quino checkerspot butterfly	Fed: **END** CA: None	Range is now limited to a few populations in Riverside and San Diego counties. Common in meadows and upland sage scrub/chapparal habitat.	No	**Presumed absent.** No suitable habitat is present on-site.
Gasterosteus aculeatus williamsoni unarmored threespine stickleback	Fed: **END** CA: **END**; FP	Occurs in weedy, permanent pools or backwaters and in slow-moving water along the margins of a stream. It primarily occurs in cool and clear water with mud or sand substrates. This species is known to occur only in the upper Santa Clara River system and in San Antonio Creek in northern Santa Barbara County.	No	**Presumed absent.** No suitable habitat is present on-site.
Lanius ludovicianus loggerhead shrike	Fed: None CA: SSC	Often found in broken woodlands, shrublands, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	No	**Presumed Absent.** There is no suitable habitat within or adjacent to the project site.
Lepus californicus bennettii San Diego black-tailed jackrabbit	Fed: None CA: SSC	Occurs in diverse habitats, but primarily is found in arid regions supporting shortgrass habitats. Openness of open scrub habitat is preferred over dense chaparral.	No	**Presumed absent.** No suitable habitat is present on-site.
***Oncorhynchus mykiss irideus* pop. 10** steelhead – southern california DPS	Fed: **END** CA: None	Found in permanent coastal streams from San Diego to the Smith River.	No	**Presumed absent.** No suitable habitat is present on-site.
Onychomys torridus ramona southern grasshopper mouse	Fed: None CA: SSC	Inhabits alkali desert scrub and other desert scrub habitats, and to a lesser extent succulent shrubs, desert washes, desert riparian, coastal scrub, mixed chaparral, and sagebrush habitats. Generally rare in valley foothill and montane riparian habitats. Prefers low to moderate shrub cover and requires friable soils.	No	**Presumed absent**. No suitable habitat is present.
Phrynosoma blainvillii coast horned lizard	Fed: None CA: SSC	Found in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	**Presumed Absent.** There is no suitable habitat within or adjacent to the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Polioptila californica californica coastal California gnatcatcher	Fed: **THR** CA: SSC	Obligate resident of sage scrub habitats that are dominated by California sagebrush (*Artemisia californica*). This species generally occurs below 750 feet elevation in coastal regions and below 1,500 feet inland. Ranges from the Ventura County, south to San Diego County and northern Baja California and it is less common in sage scrub with a high percentage of tall shrubs. Prefers habitat with more low-growing vegetation.	No	**Low.** There is marginal foraging habitat present on-site. No suitable nesting habitat is present on-site; surrounding habitats provide suitable nesting opportunities. The project site occurs above the typical elevation range for this species.
Rana draytonii California red-legged frog	Fed: **THR** CA: SSC	Inhabits quiet pools of streams, marshes, and occasionally ponds. Occurs along the coast ranges from Mendocino County south and in portions of the Sierra Nevada and Cascades ranges.	No	**Presumed absent.** No suitable habitat is present on-site.
Salvadora hexalepis virgultea coast patch-nosed snake	Fed: None CA: SSC	Found in brushy or shrubby vegetation along the coast and requires small mammal burrows for refuge and overwintering.	No	**Presumed absent.** No suitable habitat is present on-site.
Setophaga petechia yellow warbler	Fed: None CA: SSC	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes and the eastern side of the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral. May also use oaks, conifers, and urban areas near stream courses.	No	**Presumed absent.** No suitable habitat is present on-site.
Spea hammondii western spadefoot	Fed: None CA: SSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washed, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rainpools which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	No	**Presumed absent.** No suitable habitat is present on-site.
Spinus lawrencei Lawrence's goldfinch	Fed: None CA: None	Open woodlands, chaparral, and weedy fields. Closely associated with oaks. Nests in open oak or other arid woodland and chaparral near water.	No	**Presumed absent.** No suitable habitat is present on-site.
Taxidea taxus American badger	Fed: None CA: SSC	Primarily occupy grasslands, parklands, farms, tallgrass and shortgrass prairies, meadows, shrub-steppe communities and other treeless areas with sandy loam soils where it can dig more easily for its prey. Occasionally found in open chaparral (with less than 50% plant cover) and riparian zones.	No	**Presumed absent.** No suitable habitat is present on-site.
Thamnophis hammondii two-striped garter snake	Fed: None CA: SSC	Occurs in or near permanent fresh water, often along streams with rocky beds and riparian growth up to 7,000 feet in elevation.	No	**Presumed absent.** No suitable habitat is present on-site.
Vireo vicinior gray vireo	Fed: None CA: SSC	A common factor to the habitat type is shrub cover that forms a continuous zone of twig growth from one to five feet above the ground. Shrubbery may either be closed as in chaparral, or partly open, as in the understory of pinyon-juniper woodland.	No	**Presumed absent.** No suitable habitat is present on-site.
SPECIAL-STATUS PLANT SPECIES				
Berberis nevinii Nevin's barberry	Fed: **END** CA: **END** CNPS: 1B.1	Grows in chaparral, cismontane woodland, coastal scrub, and riparian scrub. Usually found on steep, north facing slopes or in low grade sandy washes. Found at elevations ranging from 197 to 3,904 feet. Blooming period ranges from March to June.	No	**Presumed Absent.** There is no suitable habitat within the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Calochortus clavatus* var. *clavatus club-haired mariposa-lily	Fed: None CA: None CNPS: 4.3	Grows in serpentine, clay, and rocky soils in chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands. Found at elevations ranging from 246 to 4,265 feet. Blooming period can begin as early as March, but is typically from May to June.	No	**Presumed absent.** No suitable habitat is present on-site.
Calochortus clavatus* var. *gracilis slender mariposa-lily	Fed: None CA: None CNPS: 1B.2	Grows in chaparral, coastal scrub, and valley and foothill woodlands. Found at elevations ranging from 1,050 to 3,280 feet. Blooming period is typically from March to June, but can extend through November.	No	**Presumed absent.** No suitable habitat is present on-site.
Calochortus palmeri* var. *palmeri Palmer's mariposa-lily	Fed: None CA: None CNPS: 1B.2	Occurs in meadows and seeps, chaparral, and lower montane coniferous forest in vernally moist places. Found at elevations ranging from 3,281 to 7,841 feet. Blooming period is from April to July.	No	**Presumed Absent.** No suitable habitat is present on-site. The project site is outside of the elevation range for this species.
Calochortus plummerae Plummer's mariposa-lily	Fed: None CA: None CNPS: 4.2	Prefers openings in chaparral, foothill woodland, coastal sage scrub, valley and foothill grasslands, cismontane woodland, lower montane coniferous forest and yellow pine forest. Often found on dry, rocky slopes and soils and brushy areas. Can be very common after a fire. From 328 to 5,577 feet in elevation. Blooming period is from May to July.	No	**Presumed absent.** No suitable habitat is present on-site.
Calystegia peirsonii Peirson's morning-glory	Fed: None CA: None CNPS: 4.2	Grows in chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grasslands. Found at elevations ranging from 98 to 4,921 feet. Blooming period is from April to June.	No	**Presumed absent.** No suitable habitat is present on-site.
Delphinium parryi* ssp. *purpureum Mt. Pinos larkspur	Fed: None CA: None CNPS: 4.3	Grows in chaparral, Mojavean desert scrub, and pinyon and juniper woodlands. Found at elevations ranging from 3,280 to 8,530 feet. Blooming period is from May to June.	No	**Presumed Absent.** No suitable habitat is present on-site. The project site is outside of the elevation range for this species.
Dodecahema leptoceras slender-horned spineflower	Fed: **END** CA: **END** CNPS: 1B.1	Chaparral, coastal scrub (alluvial fan sage scrub). Flood deposited terraces and washes. Found at elevations ranging from 1,181 to 2,690 feet. Blooming period is from April to June.	No	**Presumed absent.** No suitable habitat is present on-site.
Harpagonella palmeri Palmer's grapplinghook	Fed: None CA: None CNPS: 4.2	Occurs on clay soils in chaparral, coastal scrub, and valley and foothill grasslands. Found at elevations ranging from 66 to 3,133 feet. Blooming period is from March to May.	No	**Presumed absent.** No suitable habitat is present on-site.
Hulsea vestita* ssp. *parryi Parry's hulsea	Fed: None CA: None CNPS: 4.3	Occurs in granitic and gravelly soils within alpine boulder and rock field, and subalpine coniferous forest. Found at elevations ranging from 9,301 to 12,795 feet. Blooming period is from June to October.	No	**Presumed Absent.** No suitable habitat is present on-site. The project site is outside of the elevation range for this species.
Juglans californica southern California black walnut	Fed: None CA: None CNPS: 4.2	Found in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Found at elevations ranging from 164 to 2,953 feet. Blooming period is from March to August.	No	**Presumed absent.** No suitable habitat is present on-site.
Navarretia fossalis spreading navarretia	Fed: **THR** CA: None CNPS: 1B.1	Grows in chenopod scrub, assorted shallow freshwater marshes and swamps, playas, and vernal pools. Found at elevations ranging from 98 to 2,149 feet. Blooming period is from April to June.	No	**Presumed absent**. No suitable habitat is present.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Navarretia setiloba Piute Mountains navarretia	Fed: None CA: None CNPS: 1B.1	Grows in clay or gravelly loam soils in cismontante woodland, pinyon and juniper woodland, and valley and foothill grassland habitats. Found at elevations ranging from 935 to 6,890 feet. Blooming period is from April to July.	No	**Presumed absent**. No suitable habitat is present.
Opuntia basilaris* var. *brachyclada short-joint beavertail	Fed: None CA: None CNPS: 1B.2	Occurs in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodlands. Found at elevations ranging from 1,394 to 5,905 feet. Blooming period typically ranges from April to June, occasionally extending through August.	No	**Presumed Absent.** There is no suitable habitat within the project site.
Orcuttia californica California Orcutt grass	Fed: **END** CA: **END** CNPS: 1B.1	Primarily restricted to the southern basaltic claypan vernal pools at the Santa Rosa Plateau, and alkali vernal pools at Skunk Hollow, and at Salt Creek. Grows in elevations ranging from 45 to 2,165 feet above msl. Blooming period is from April to August.	No	**Presumed absent**. No suitable habitat is present on-site.
SPECIAL-STATUS PLANT COMMUNITIES				
Southern Coast Live Oak Riparian Forest	CDFW Sensitive Habitat	Open to locally dense evergreen riparian woodlands dominated by *Quercus agrifolia*. This type appears to be richer in herbs and poorer in understory shrubs than other riparian communities. Bottomlands and outer floodplains along larger streams, on fine-grained, rich alluvium. Canyons and valleys of coastal southern California.	No	**Absent**
Southern Riparian Scrub	CDFW Sensitive Habitat	Riparian zones dominated by small trees or shrubs, lacking taller riparian trees.	No	**Absent**
Southern Sycamore Alder Riparian Woodland	CDFW Sensitive Habitat	Below 2,000 meters in elevation, sycamore and alder often occur along seasonally-flooded banks; cottonwoods and willows also are often present. Poison-oak, mugwort, elderberry and wild raspberry may be present in the understory.	No	**Absent**
Southern Willow Scrub	CDFW Sensitive Habitat	Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat and scattered emergent cottonwood and western sycamores. This vegetation community occurs on loose, sandy or fine, gravelly alluvium deposited near stream channels during flood flows. Frequent flooding maintains this early seral community, preventing succession to a riparian woodland or forest. In the absence of periodic flooding, this early seral type would be succeeded by southern cottonwood or western sycamore riparian forest.	No	**Absent**

U.S. Fish and Wildlife Service (USFWS) - Federal
END - Federally Endangered
THR - Federally Threatened

California Department of Fish and Wildlife (CDFW) - California
END - State Endangered
CEND - State Candidate Endangered
SSC - Species of Special Concern
WL - Watch List

California Native Plant Society (CNPS)
California Rare Plant Rank
1A Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
1B Plants Rare, Threatened, or Endangered in California and Elsewhere

Threat Ranks
0.1 - Seriously threatened in California
0.2 - Moderately threatened in California
0.3 - Not very threatened in California

FP - Fully Protected

2B Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere

4 Plants of Limited Distribution – A Watch List

Attachment E

Regulations

Special status species are native species that have been afforded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to continued existence and existing knowledge of population levels.

Federal Regulations

Endangered Species Act of 1973

Federally listed threatened and endangered species and their habitats are protected under provisions of the Federal Endangered Species Act (ESA). Section 9 of the ESA prohibits "take" of threatened or endangered species. "Take" under the ESA is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The presence of any federally threatened or endangered species that are in a project area generally imposes severe constraints on development, particularly if development would result in "take" of the species or its habitat. Under the regulations of the ESA, the United States Fish and Wildlife Service (USFWS) may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act.

Critical Habitat is designated for the survival and recovery of species listed as threatened or endangered under the ESA. Critical Habitat includes those areas occupied by the species, in which are found physical and biological features that are essential to the conservation of an ESA listed species and which may require special management considerations or protection. Critical Habitat may also include unoccupied habitat if it is determined that the unoccupied habitat is essential for the conservation of the species.

Whenever federal agencies authorize, fund, or carry out actions that may adversely modify or destroy Critical Habitat, they must consult with USFWS under Section 7 of the ESA. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing uses federal funds, or requires federal authorization or permits (e.g., funding from the Federal Highway Administration or a permit from the U.S. Army Corps of Engineers (Corps)).

If USFWS determines that Critical Habitat will be adversely modified or destroyed from a proposed action, the USFWS will develop reasonable and prudent alternatives in cooperation with the federal institution to ensure the purpose of the proposed action can be achieved without loss of Critical Habitat. If the action is not likely to adversely modify or destroy Critical Habitat, USFWS will include a statement in its biological opinion concerning any incidental take that may be authorized and specify terms and conditions to ensure the agency is in compliance with the opinion.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S. Government Code [USC] 703) makes it unlawful to pursue, capture, kill, possess, or attempt to do the same to any migratory bird or part, nest, or egg of any such bird listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and the countries of the former Soviet Union, and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703; 50 CFR 10, 21).

The MBTA covers the taking of any nests or eggs of migratory birds, except as allowed by permit pursuant to 50 CFR, Part 21. Disturbances causing nest abandonment and/or loss of reproductive effort (i.e., killing or abandonment of eggs or young) may also be considered "take." This regulation seeks to protect migratory birds and active nests.

In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). Six families of raptors occurring in North America were included in the amendment: Accipitridae (kites, hawks, and eagles); Cathartidae (New World vultures); Falconidae (falcons and caracaras); Pandionidae (ospreys); Strigidae (typical owls); and Tytonidae (barn owls). The provisions of the 1972 amendment to the MBTA protects all species and subspecies of the families listed above. The MBTA protects over 800 species including geese, ducks, shorebirds, raptors, songbirds and many relatively common species.

State Regulations

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) provides for the protection of the environment within the State of California by establishing State policy to prevent significant, avoidable damage to the environment through the use of alternatives or mitigation measures for projects. It applies to actions directly undertaken, financed, or permitted by State lead agencies. If a project is determined to be subject to CEQA, the lead agency will be required to conduct an Initial Study (IS); if the IS determines that the project may have significant impacts on the environment, the lead agency will subsequently be required to write an Environmental Impact Report (EIR). A finding of non-significant effects will require either a Negative Declaration or a Mitigated Negative Declaration instead of an EIR. Section 15380 of the CEQA Guidelines independently defines "endangered" and "rare" species separately from the definitions of the California Endangered Species Act (CESA). Under CEQA, "endangered" species of plants or animals are defined as those whose survival and reproduction in the wild are in immediate jeopardy, while "rare" species are defined as those who are in such low numbers that they could become endangered if their environment worsens.

California Endangered Species Act (CESA)

In addition to federal laws, the state of California implements the CESA which is enforced by CDFW. The CESA program maintains a separate listing of species beyond the FESA, although the provisions of each act are similar.

State-listed threatened and endangered species are protected under provisions of the CESA. Activities that may result in "take" of individuals (defined in CESA as; "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") are regulated by CDFW. Habitat degradation or modification is not included in the definition of "take" under CESA. Nonetheless, CDFW has interpreted "take" to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the

absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are fully protected against take, as defined above.

The CDFW has also produced a species of special concern list to serve as a species watch list. Species on this list are either of limited distribution or their habitats have been reduced substantially, such that a threat to their populations may be imminent. Species of special concern may receive special attention during environmental review, but they do not have formal statutory protection. At the federal level, USFWS also uses the label species of concern, as an informal term that refers to species which might be in need of concentrated conservation actions. As the Species of Concern designated by USFWS do not receive formal legal protection, the use of the term does not necessarily ensure that the species will be proposed for listing as a threatened or endangered species.

Fish and Game Code

Fish and Game Code Sections 3503, 3503.5, 3511, and 3513 are applicable to natural resource management. For example, Section 3503 of the Code makes it unlawful to destroy any birds' nest or any birds' eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks, eagles, and owls) are protected under Section 3503.5 of the Fish and Game Code which makes it unlawful to take, possess, or destroy their nest or eggs. A consultation with CDFW may be required prior to the removal of any bird of prey nest that may occur on a project site. Section 3511 of the Fish and Game Code lists fully protected bird species, where the CDFW is unable to authorize the issuance of permits or licenses to take these species. Pertinent species that are State fully protected by the State include golden eagle (*Aquila chrysaetos*) and white-tailed kite (*Elanus leucurus*). Section 3513 of the Fish and Game Code makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

Native Plant Protection Act

Sections 1900–1913 of the Fish and Game Code were developed to preserve, protect, and enhance Rare and Endangered plants in the state of California. The act requires all state agencies to use their authority to carry out programs to conserve Endangered and Rare native plants. Provisions of the Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification of the CDFW at least ten days in advance of any change in land use which would adversely impact listed plants. This allows the CDFW to salvage listed plant species that would otherwise be destroyed.

California Native Plant Society Rare and Endangered Plant Species

Vascular plants listed as rare or endangered by the CNPS, but which have no designated status under FESA or CESA are defined as follows:

California Rare Plant Rank

1A- Plants Presumed Extirpated in California and either Rare or Extinct Elsewhere

1B- Plants Rare, Threatened, or Endangered in California and Elsewhere

2A- Plants Presumed Extirpated in California, But More Common Elsewhere

2B- Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

3- Plants about Which More Information is Needed - A Review List

4- Plants of Limited Distribution - A Watch List

Threat Ranks

.1- Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2- Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3- Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFG regulates activities under the Fish and Game Code Section 1600-1616, and the Regional Board regulates activities pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

Federal Regulations

Section 404 of the Clean Water Act

Since 1972, the Corps and EPA have jointly regulated the filling of waters of the United States, including wetlands, pursuant to Section 404 of the CWA. The Corps has regulatory authority over the discharge of dredged or fill material into the waters of the United States under Section 404 of the CWA. The Corps and EPA define "fill material" to include any "material placed in waters of the United States where the material has the effect of: (i) replacing any portion of a water of the United States with dry land; or (ii) changing the bottom elevation of any portion of the waters of the United States." Examples include, but are not limited to, the placement of sand, rock, clay, construction debris, wood chips, and "materials used to create any structure or infrastructure in the waters of the United States."

In April of 2020, the Corps and the EPA provided a new definition for *waters of the United States* [Federal Register, Vol. 85, No. 77 (April 21, 2020)] which encompass:

- The territorial seas and traditional navigable waters;
- Perennial and intermittent tributaries that contribute surface water flow to such waters;
- Certain lakes, ponds, and impoundments of jurisdictional waters; and
- Wetlands adjacent to other jurisdictional waters.

Additionally, the new definition identifies 12 categories of those waters and features that are excluded from the definition of ''waters of the United State, such as features that only contain water in direct response to rainfall (e.g., ephemeral features), groundwater, many ditches, prior converted cropland, and waste treatment systems. The final rule excludes from the definition of ''waters of the United States'' all waters or features not mentioned above. In addition to this general exclusion, the final rule specifically clarifies that waters of the United States do not include the following:

- Groundwater, including groundwater drained through subsurface drainage systems;
- Ephemeral features that flow only indirect response to precipitation, including ephemeral streams, swales, gullies, rills, and pools;
- Diffuse stormwater runoff and directional sheet flow over upland;
- Ditches that are not traditional navigable waters, tributaries, or that are not constructed in adjacent wetlands, subject to certain limitations;
- Prior converted cropland;
- Artificially irrigated areas that would revert to upland if artificial irrigation ceases;
- Artificial lakes and ponds that are not jurisdictional impoundments and that are constructed or excavated in upland or non-jurisdictional waters;

- Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non jurisdictional waters for the purpose of obtaining fill, sand, or gravel;
- Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater runoff;
- Groundwater recharge, water reuse, and wastewater recycling structures constructed or excavated in upland or in non-jurisdictional waters; and
- Waste treatment systems.

Section 401 of the Clean Water Act

Pursuant to Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity which may result in any discharge to waters of the United States must provide certification from the State or Indian tribe in which the discharge originates. This certification provides for the protection of the physical, chemical, and biological integrity of waters, addresses impacts to water quality that may result from issuance of federal permits, and helps insure that federal actions will not violate water quality standards of the State or Indian tribe. In California, there are nine Regional Water Quality Control Boards (Regional Board) that issue or deny certification for discharges to waters of the United States and waters of the State, including wetlands, within their geographical jurisdiction. The State Water Resources Control Board assumed this responsibility when a project has the potential to result in the discharge to waters within multiple Regional Boards.

State Regulations

Fish and Game Code

Fish and Game Code Sections 1600 et. seq. establishes a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely impact fish and wildlife resources, or, when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Fish and Game Code Section 1602 requires any person, state, or local governmental agency or public utility to notify the CDFW before beginning any activity that will do one or more of the following:

(1) substantially obstruct or divert the natural flow of a river, stream, or lake;
(2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or
(3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State. CDFW's regulatory authority extends to include riparian habitat (including wetlands) supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFW takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks

that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. A Section 1602 Streambed Alteration Agreement would be required if impacts to identified CDFW jurisdictional areas occur.

Porter Cologne Act

The California *Porter-Cologne Water Quality Control Act* gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool in the post SWANCC and Rapanos regulatory environment, with respect to the state's authority over isolated and insignificant waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a Report of Waste Discharge in the event that there is no Section 404/401 nexus. Although "waste" is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

APPENDIX C

Cultural Resource Report

CULTURAL RESOURCES ASSESSMENT

Deane Tank Site Expansion Project

Santa Clarita, Los Angeles County, California

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Project No. MER2002

National Archaeological Data Base Information:
Type of Study: Reconnaissance Cultural Resources Assessment
Resources Recorded: None
Keywords: Santa Clarita
USGS Quadrangle: 7.5-minute *Mint Canyon, California* (1995)

BCRCONSULTING LLC

October 30, 2020

MANAGEMENT SUMMARY

BCR Consulting LLC (BCR Consulting) is under contract to Meridian Consultants to conduct a Cultural Resources Assessment of the Deane Tank Site Expansion Project (the project) located in The City of Santa Clarita (City), Los Angeles County, California. Tasks completed for the scope of work include a cultural resources records search, pedestrian cultural resources survey, Sacred Lands File search with the Native American Heritage Commission, and paleontological overview. These tasks were performed in partial fulfillment of California Environmental Quality Act (CEQA) requirements. The South Central Coastal Information Center (SCCIC) at California State University, Fullerton completed the archaeological records search. This research has revealed that five cultural resource studies have taken place resulting in the recording of two cultural resources (both isolated prehistoric artifacts) within one-half mile of the project site. One of the previous studies assessed a portion of the project site for cultural resources but did not identify any cultural resources within the project boundaries. The project site contains two water reservoir tanks and has been subjected to building construction and road grading related to the tanks.

During the field survey, BCR Consulting archaeologists did not identify any cultural resources within the project boundaries. Due to a lack of cultural resources located within the project site, BCR Consulting recommends that no additional cultural resources work or monitoring is necessary for any proposed project activities. However, if previously undocumented cultural resources are identified during earthmoving activities, a qualified archaeologist should be contacted to assess the nature and significance of the find, diverting construction excavation if necessary.

Findings were negative during the Sacred Lands File search with the NAHC. The Santa Clarita Valley Water Agency (SCVWA) initiated Assembly Bill (AB) 52 Native American Consultation for the project, although BCR Consulting mailed notifications to tribes on behalf of SCVWA. Since SCVWA will carry out the required Native American Consultation, the results of the consultation are not provided in this document. However, this report may be used during the consultation process, and BCR Consulting staff is available to answer questions and address concerns as necessary.

According to CEQA Guidelines, projects subject to CEQA must determine whether the project would “directly or indirectly destroy a unique paleontological resource”. The appended Paleontological Overview provided in Appendix B has recommended that:

> The geologic unit underlying the project area is mapped entirely as valley deposits associated with the Mint Canyon Formation dating to the Miocene epoch (Dibblee, 1996). The Western Science Center does not have localities within the project area or within a one mile radius, but the Mint Canyon Formation is considered to be of high paleontological sensitivity and is known to preserve vertebrate fossil material.
>
> Any fossils recovered from the Deane Tank Site Expansion Project area would be scientifically significant. Excavation activity associated with development of the area has the potential to impact the paleontologically sensitive Miocene sedimentary units and it is the recommendation of the Western Science Center that

a paleontological resource mitigation plan be put in place to monitor, salvage, and curate any recovered fossils associated with the current study area.

If human remains are encountered during the undertaking, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC.

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INTRODUCTION

BCR Consulting LLC (BCR Consulting) is under contract to Meridian Consults to conduct a Cultural Resources Assessment of the Deane Tank Project (the project) located in the City of Santa Clarita (City), Los Angeles County, California. A reconnaissance-level pedestrian cultural resources survey of the project site was completed in partial fulfillment of California Environmental Quality Act (CEQA) requirements. The Santa Clarita Valley Water Agency (SCVWA) is lead agency for the project. The project site is located in sections 14 and 15 of Township 4 North, Range 15 West, San Bernardino Baseline and Meridian, as depicted on the United States Geological Survey (USGS) *Mint Canyon, California* (1995) 7.5-minute topographic quadrangle (Figure 1).

Project Description

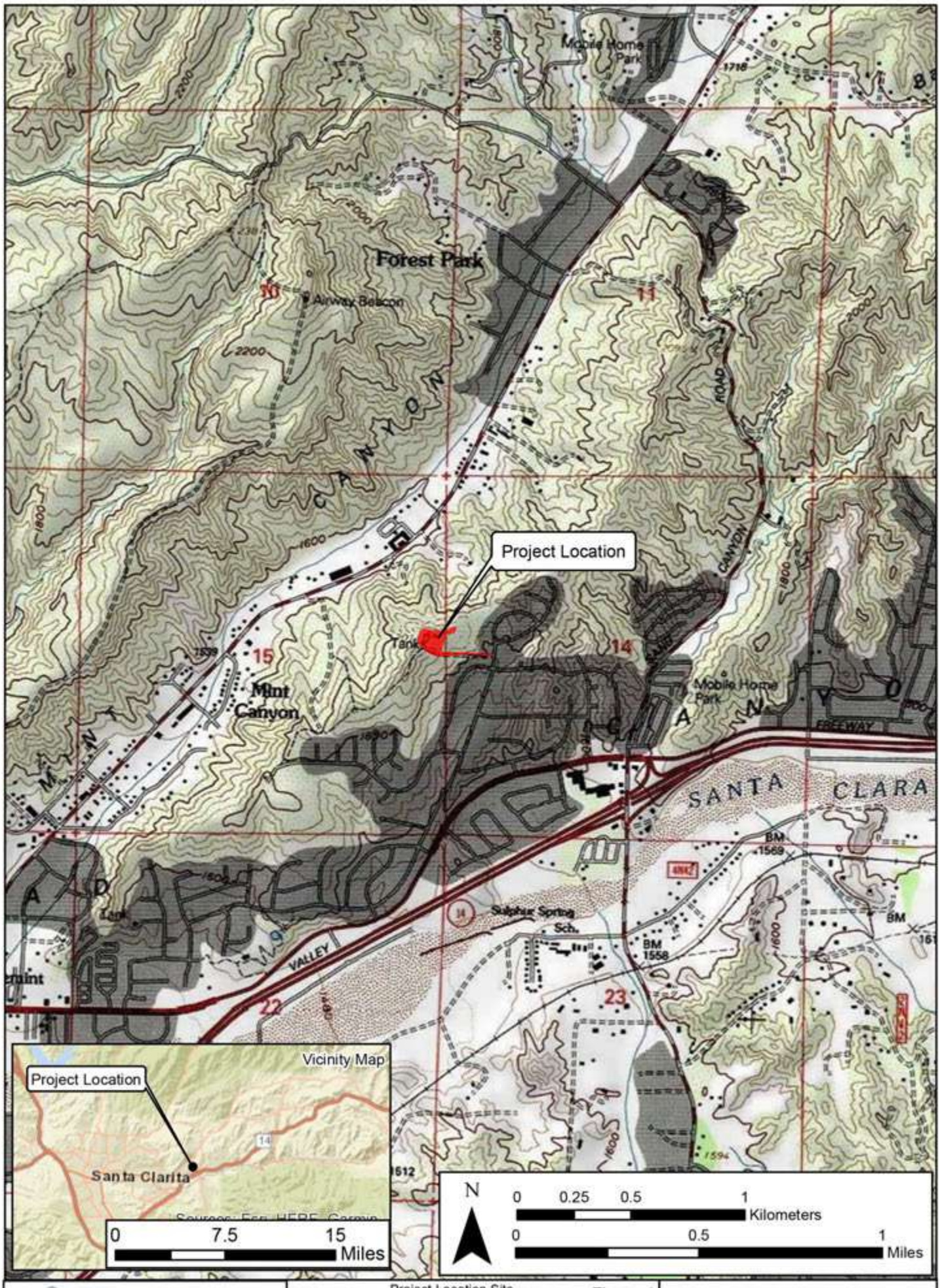
SCVWA is planning to design and build additional storage capacity in the Deane Pressure Zone, located on parcel APN 2839-002-902 westerly of Winterdale Drive and Southernly of Sierra Highway in the City of Santa Clarita, California. The rectangular project parcel is approximately 6.7 acres in size on top of a hill with access to the site provided through a paved roadway located within an easement off Winterdale Drive near the intersection of Nearview Drive. The purpose of the proposed Project is to supplement existing water service at the Deane Pressure Zone which is deficient in storage by 4.22 million-gallon (MG) per the 2013 Water Master Plan and new development within the Deane Pressure Zone has increased the deficiency. For reference, the portion of the Skyline Ranch development within the Deane Pressure Zone equates to an additional 0.87 MG of storage needed, while the Sand Canyon Plaza development adds another 0.65 MG of storage needed. Together, the total additional storage volume required is 5.66MG.

SCVWA has proposed an additional tank for the Deane Tank site to supplement the storage shortage at the Deane Pressure Zone. A single 100-foot diameter reservoir will be constructed with 29 feet operation water depth, providing an additional 1.70 MG capacity. The water supply for the new tank will be delivered from the existing two pump stations located north of the site on Sierra Highway- the Linda Vista Pump Station and Honey House Pump Station. These two pump stations currently supply water to the existing tanks at the project parcel and pipes from these stations will eventually be tied to the new piping on the site. The discharge pipeline from these pump stations is aligned along the north facing slope at the site.

To stay consistent with the existing floor elevation onsite, the ground elevation for the new tank will be cut and graded to match the elevation of the existing tanks. Existing utilities onsite will remain operational during the construction of the new tank. Related project components include utilities, a 20 feet wide asphalt paved access roadway around all tanks, drainage system around the tank site and the access roadway, potential retaining walls, and an extra fill pad to assist with balancing earthwork.

Regulatory Setting

The California Environmental Quality Act. CEQA applies to all discretionary projects undertaken or subject to approval by the state's public agencies (California Code of Regulations 14(3), § 15002(i)). Under CEQA, "A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may



BCR CONSULTING LLC

Project Location Site
Deane Tank Project

Figure 1

Reference: ESRI; USGS Quad: Mint Canyon (1995), California

Meridian Consultants

have a significant effect on the environment" (Cal. Code Regs. tit. 14(3), § 15064.5(b)). State CEQA Guidelines section 15064.5(a) defines a "historical resource" as a resource that meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register of Historical Resources (California Register)
- Listed in a local register of historical resources (as defined at Cal. Public Res. Code § 5020.1(k))
- Identified as significant in a historical resource survey meeting the requirements of § 5024.1(g) of the Cal. Public Res. Code
- Determined to be a historical resource by a project's lead agency (Cal. Code Regs. tit. 14(3), § 15064.5(a))

A historical resource consists of "Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California…Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing in the California Register of Historical Resources" (Cal. Code Regs. tit. 14(3), § 15064.5(a)(3)).

The significance of a historical resource is impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for the California Register. If an impact on a historical or archaeological resource is significant, CEQA requires feasible measures to minimize the impact (State CEQA Guidelines § 15126.4 (a)(1)). Mitigation of significant impacts must lessen or eliminate the physical impact that the project will have on the resource.

Section 5024.1 of the Cal. Public Res. Code established the California Register. Generally, a resource is considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the California Register (Cal. Code Regs. tit. 14(3), § 15064.5(a)(3)). The eligibility criteria for the California Register are similar to those of the National Register of Historic Places (National Register), and a resource that meets one of more of the eligibility criteria of the National Register will be eligible for the California Register.

The California Register program encourages public recognition and protection of resources of architectural, historical, archaeological, and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding and affords certain protections under CEQA. Criteria for Designation:

1. Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the U.S.
2. Associated with the lives of persons important to local, California or national history.

3. Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values.
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

In addition to meeting one or more of the above criteria, the California Register requires that sufficient time has passed since a resource's period of significance to "obtain a scholarly perspective on the events or individuals associated with the resources." (CCR 4852 [d][2]). Fifty years is normally considered sufficient time for a potential historical resource, and in order that the evaluation remain valid for a minimum of five years after the date of this report, all resources older than 45 years (i.e. resources from the "historic-period") will be evaluated for California Register listing eligibility, or CEQA significance. The California Register also requires that a resource possess integrity. This is defined as the ability for the resource to convey its significance through seven aspects: location, setting, design, materials, workmanship, feeling, and association.

Assembly Bill 52. California Assembly Bill 52 was approved on September 25, 2014. As stated in Section 11 of AB 52, the act applies only to projects that have a notice of preparation or a notice of negative declaration or mitigated negative declaration filed on or after July 1, 2015. AB 52 establishes "tribal cultural resources" (TCRs) as a new category of resources under CEQA. As defined under Public Resources Code Section 21074, TCRs are "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are either: (1) included or determined to be eligible for inclusion in the CRHR; included in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or (2) determined by the lead agency to be significant pursuant to the criteria for inclusion in the CRHR set forth in Public Resources Code Section 5024.1(c), if supported by substantial evidence and taking into account the significance of the resource to a California Native American tribe. A "historical resource" as defined in Public Resources Code Section 21084.1, a "unique archaeological resource" as defined in Public Resources Code Section 21083.2(g), or a "nonunique archaeological resource" as defined in Public Resources Code Section 21083.2(h) may also be TCRs. AB 52 further establishes a new consultation process with California Native American tribes for proposed projects in geographic areas that are traditionally and culturally affiliated with that tribe. Per Public Resources Code Section 21073, "California Native American tribe" includes federally and non-federally recognized tribes on the NAHC contact list. Subject to certain prerequisites, AB 52 requires, among other things, that a lead agency consult with the geographically affiliated tribe before the release of an environmental review document for a proposed project regarding project alternatives, recommended mitigation measures, or potential significant effects, if the tribe so requests in writing. If the tribe and the lead agency agree upon mitigation measures during their consultation, these mitigation measures must be recommended for inclusion in the environmental document (Public Resources Code Sections 21080.3.1, 21080.3.2, 21082.3, 21084.2, and 21084.3). Since the SCVWA will initiate and carry out the required AB52 Native American Consultation, the results of the consultation are not provided in this report. However, this report may be used during the consultation process, and BCR Consulting staff are available to answer questions and address comments as necessary.

Paleontological Resources. CEQA provides guidance relative to significant impacts on paleontological resources, indicating that a project would have a significant impact on paleontological resources if it disturbs or destroys a unique paleontological resource or site or unique geologic feature. Section 5097.5 of the California Public Resources Code specifies that any unauthorized removal of paleontological remains is a misdemeanor. Further, California Penal Code Section 622.5 sets the penalties for damage or removal of paleontological resources. CEQA documentation prepared for projects would be required to analyze paleontological resources as a condition of the CEQA process to disclose potential impacts. Please note that as of January 2018 paleontological resources are considered in the geological rather than cultural category. Therefore, paleontological resources are not summarized in the body of this report. A paleontological overview completed by professional paleontologists from the Western Science Center is provided as Appendix B.

NATURAL SETTING

The elevation of the project site is approximately 1995 feet above mean sea level (AMSL). A series of east-west (transverse) oriented mountain ranges characterize the region, and local topography consists of steep hillsides with incised canyons formed by drainages. Formations include stream channel alluvium and marine shales, mudstones, siltstones, and fine sandstones of the upper Miocene Castaic Formation, which have been deposited by sediments derived from the Soledad Basin -an eastern extension of the Ventura Basin (Stanton 1960). The deposits observed during the field survey have been consistent with the described sediments, and have not exhibited material utilized for the production of prehistoric stone tools. Plant communities present included mixed chaparral and coastal sage scrub communities (see Williams et al. 2008). Species observed include buckbrush (Ceanothus cuneatus), black sage (Salvia mellifera), chamise (Adenostoma fasculatum), and various non-native grasses. Elements of southern oak woodland plant community have been observed in the vicinity, but not within the APE. Plants within the noted communities have been commonly exploited during prehistory by local natives (see Lightfoot and Parrish 2009:259, 266, 350, 352).

CULTURAL SETTING

Prehistoric Context

The project is encompassed by traditional Tataviam territory. The Tataviam were probably Takic speakers, although by the historic era their language had diverged considerably from their Takic speaking Gabrielino and Kitanemuk neighbors (King and Blackburn 1978). Like other Native American groups in southern California, the Tataviam were semi-nomadic hunter-gatherers who subsisted by exploitation of seasonably available plant and animal resources. The Tataviam probably first encountered Europeans when Spanish explorers reached California's interior during the 16th century (King and Blackburn 1978). Little is known ethnographically regarding this group, although archaeological data has indicated that their material cultural and spatial organization of cemeteries and villages resembled that of their neighbors, such as the Kitanemuk, Serrano, Chumash and Gabrielino (ibid.).

History

Historic-era California is generally divided into three periods: the Spanish or Mission Period (1769 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present).

Spanish Period. The first European to pass through the area is thought to be a Spaniard called Father Francisco Garces. Having become familiar with the area, Garces acted as a guide to Juan Bautista de Anza, who had been commissioned to lead a group across the desert from a Spanish outpost in Arizona to set up quarters at the Mission San Gabriel in 1771 near what today is Pasadena (Beck and Haase 1974). Garces was followed by Alta California Governor Pedro Fages, who briefly explored the region in 1772. Searching for San Diego Presidio deserters, Fages had traveled through Riverside to San Bernardino, crossed over the mountains into the Mojave Desert, and then journeyed westward to the San Joaquin Valley (Beck and Haase 1974).

Mexican Period. In 1821, Mexico overthrew Spanish rule and the missions began to decline. By 1833, the Mexican government passed the Secularization Act, and the missions, reorganized as parish churches, lost their vast land holdings, and released their neophytes (Beattie and Beattie 1974).

American Period. The American Period, 1848–Present, began with the Treaty of Guadalupe Hidalgo. In 1850, California was accepted into the Union of the United States primarily due to the population increase created by the Gold Rush of 1849. The cattle industry reached its greatest prosperity during the first years of the American Period. Mexican Period land grants had created large pastoral estates in California, and demand for beef during the Gold Rush led to a cattle boom that lasted from 1849–1855. However, beginning about 1855, the demand for beef began to decline due to imports of sheep from New Mexico and cattle from the Mississippi and Missouri Valleys. When the beef market collapsed, many California ranchers lost their ranches through foreclosure. A series of disastrous floods in 1861–1862, followed by a significant drought further diminished the economic impact of local ranching. This decline combined with agricultural and real estate developments of the late 19th century, set the stage for diversified economic pursuits that have continued to proliferate to this day (Beattie and Beattie 1974; Cleland 1941).

PERSONNEL

David Brunzell, M.A., RPA acted as the Project Manager and Principal Investigator for the current study and compiled the technical report with contributions from BCR Consulting Archaeological Crew Chief, Joseph Orozco, M.A., RPA. The South Central Coastal Information Center (SCCIC) at California State University, Fullerton completed the archaeological records search. Staff Archaeologist Nick Shepetuk, B.A. completed the pedestrian field survey.

METHODS

Records Search

Prior to fieldwork, BCR Consulting requested an archaeological records search from the SCCIC. The records search completed a review of all recorded historic and prehistoric cultural resources, as well as a review of known cultural resources, and survey and excavation reports generated from projects completed within one mile of the project site. In addition, a review was conducted of the National Register of Historic Places (National

Register), the California Register of Historical Resources (California Register), and documents and inventories from the California Office of Historic Preservation including the lists of California Historical Landmarks, California Points of Historical Interest, Listing of National Register Properties, and the Built Environment Resource Directory (BERD).

Field Survey

An archaeological pedestrian field survey of the project site was conducted on September 22 and October 22, 2020. The survey was conducted by walking parallel transects approximately 15 meters apart across 100 percent of the project site. Soil exposures, including natural and artificial clearings, were carefully inspected for evidence of cultural resources.

RESULTS

Records Search

The SCCIC at California State University, Fullerton completed the archaeological records search. This research has revealed that five cultural resource studies have taken place resulting in the recording of two cultural resources (both isolated prehistoric artifacts) within one-half mile of the project site. One of the previous studies assessed a portion of the project site for cultural resources but did not identify any cultural resources within the project boundaries. Results are summarized in Table A and a complete records search bibliography is provided in Appendix D.

Table A. Cultural Resources and Reports Within 1/2 Mile of the Project Site

USGS 7.5 Min. Quad.	Cultural Resources Within 1/2 Mile of Project Site	Cultural Resource Studies Within 1/2 Mile of Project Site
Mint Canyon, California (1995)	P-19-100335: Prehistoric Isolate (1/4 Mile SW) P-19-100336: Prehistoric Isolate (1/4 Mile S)	LA-00500, 00502, 01084*, 04008, 13158

*Assessed a portion of the project area

Field Survey

During the field survey, BCR Consulting staff carefully inspected the project site, and identified no cultural resources within the proposed impact areas. Surface visibility was approximately 80 percent within the project site. Sediments consisted of sandy silt with poorly sorted gravels. The property has been subject to severe disturbances related to existing water tank construction and grading for access to the tanks.

RECOMMENDATIONS

BCR Consulting conducted a Cultural Resources Assessment of the Deane Tank Site Expansion Project located in the City of Santa Clarita, Los Angeles County, California. The records search data combined with the field survey results have indicated that there are no cultural resources (including prehistoric or historic-period archaeological sites or historic buildings) within or adjacent to the project site, and conditions have failed to indicate sensitivity for buried cultural resources. Therefore BCR Consulting recommends that no additional cultural resource work or monitoring is necessary for any earthmoving proposed within the project site. However, if previously undocumented cultural resources are identified during earthmoving activities, a qualified archaeologist should be contacted to assess the nature and significance of the find, diverting construction excavation if necessary.

Findings were negative during the Sacred Lands File search with the NAHC. The SCVWA initiated Assembly Bill (AB) 52 Native American Consultation for the project, although BCR Consulting mailed notifications to tribes on behalf of SCVWA. Since SCVWA will carry out the required Native American Consultation, the results of the consultation are not provided in this document. However, this report may be used during the consultation process, and BCR Consulting staff is available to answer questions and address concerns as necessary.

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APPENDIX A

NAHC SACRED LANDS FILE SEARCH

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

September 17, 2020

Nicholas Shepetuk
BCR Consulting

Via Email to: nickshepetuk@gmail.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Deane Tank Site Expansion Project, Los Angeles County

Dear Mr. Shepetuk:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;

- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

  All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
Los Angeles County
9/17/2020

Barbareno/Ventureno Band of Mission Indians
Julie Tumamait-Stenslie, Chairperson
365 North Poli Ave
Ojai, CA, 93023
Phone: (805) 646 - 6214
jtumamait@hotmail.com
Chumash

Chumash Council of Bakersfield
Julio Quair, Chairperson
729 Texas Street
Bakersfield, CA, 93307
Phone: (661) 322 - 0121
chumashtribe@sbcglobal.net
Chumash

Coastal Band of the Chumash Nation
Mariza Sullivan, Chairperson
P. O. Box 4464
Santa Barbara, CA, 93140
Phone: (805) 665 - 0486
cbcntribalchair@gmail.com
Chumash

Fernandeno Tataviam Band of Mission Indians
Jairo Avila, Tribal Historic and Cultural Preservation Officer
1019 Second Street, Suite 1
San Fernando, CA, 91340
Phone: (818) 837 - 0794
Fax: (818) 837-0796
jairo.avila@tataviam-nsn.us
Tataviam

Fernandeno Tataviam Band of Mission Indians
Rudy Ortega, Tribal President
1019 Second Street, Suite 1
San Fernando, CA, 91340
Phone: (818) 837 - 0794
Fax: (818) 837-0796
rortega@tataviam-nsn.us
Tataviam

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org
Gabrieleno

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com
Gabrieleno

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com
Gabrielino

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com
Gabrielino

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com
Gabrielino

Northern Chumash Tribal Council
Fred Collins, Spokesperson
P.O. Box 6533
Los Osos, CA, 93412
Phone: (805) 801 - 0347
fcollins@northernchumash.org
Chumash

San Fernando Band of Mission Indians
Donna Yocum, Chairperson
P.O. Box 221838
Newhall, CA, 91322
Phone: (503) 539 - 0933
Fax: (503) 574-3308
ddyocum@comcast.net
Kitanemuk
Vanyume
Tataviam

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Deane Tank Site Expansion Project, Los Angeles County.

San Luis Obispo County Chumash Council
Mark Vigil, Chief
1030 Ritchie Road
Grover Beach, CA, 93433
Phone: (805) 481 - 2461
Fax: (805) 474-4729

Chumash

Santa Ynez Band of Chumash Indians
Kenneth Kahn, Chairperson
P.O. Box 517
Santa Ynez, CA, 93460
Phone: (805) 688 - 7997
Fax: (805) 686-9578
kkahn@santaynezchumash.org

Chumash

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Deane Tank Site Expansion Project, Los Angeles County.

APPENDIX B

PALEONTOLOGICAL RESOURCES OVERVIEW

WESTERN SCIENCE CENTER

BCR Consulting LLC
Nicholas Shepetuk
505 West 8th Street
Claremont, CA 91711

September 24, 2020

Dear Mr. Shepetuk,

This letter presents the results of a record search conducted for the Deane Tank Site Expansion Project in the city of Santa Clarita, Los Angeles County, California. The project site is located west of Winterdale Drive, east of Summit Hills Drive, and south of Sierra Highway in Section 15 of Township 4 North and Range 15 West on the Mint Canyon CA USGS 7.5 minute topographic quadrangle.

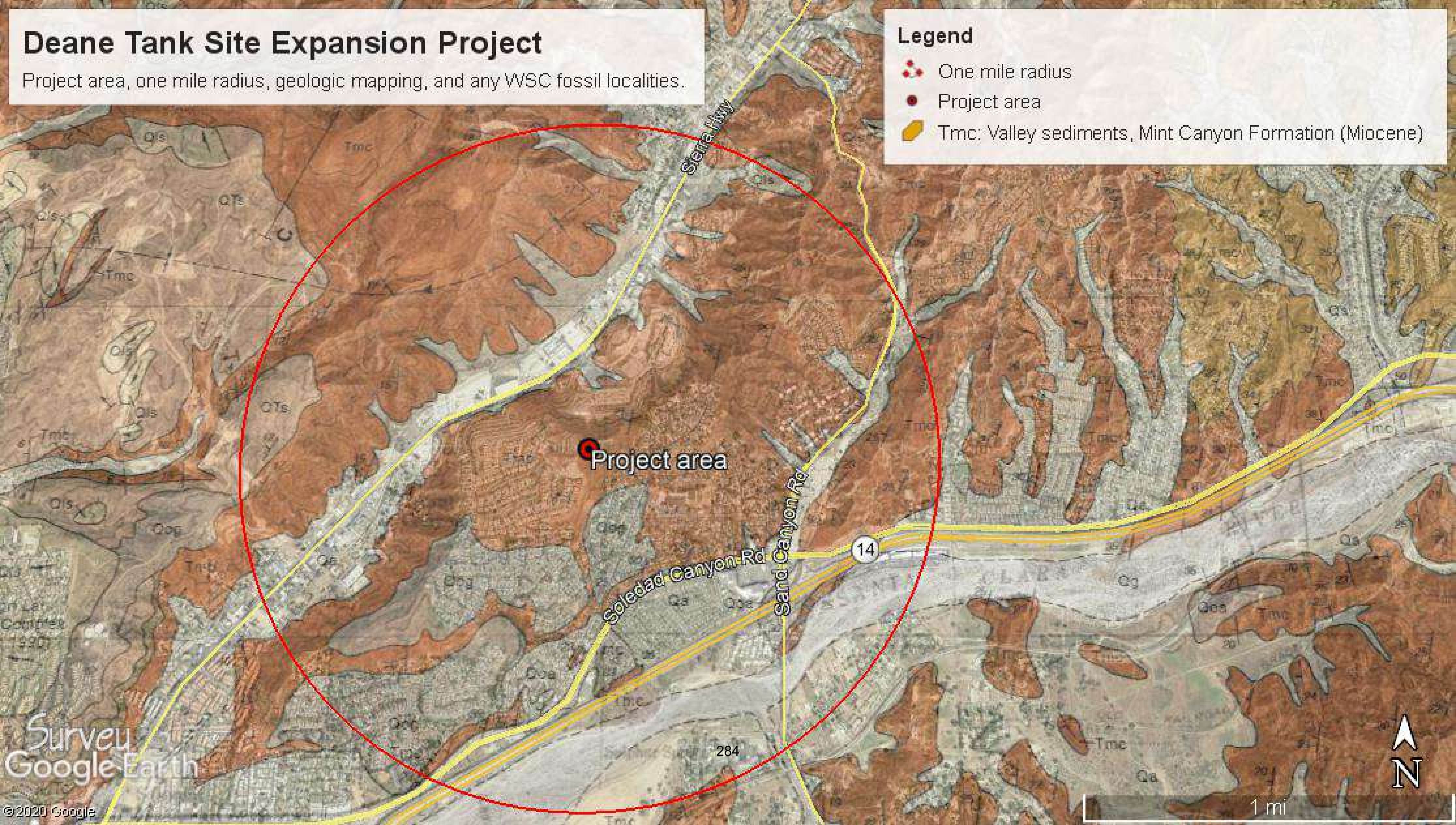
The geologic unit underlying the project area is mapped entirely as valley deposits associated with the Mint Canyon Formation dating to the Miocene epoch (Dibblee, 1996). The Western Science Center does not have localities within the project area or within a one mile radius, but the Mint Canyon Formation is considered to be of high paleontological sensitivity and is known to preserve vertebrate fossil material.

Any fossils recovered from the Deane Tank Site Expansion Project area would be scientifically significant. Excavation activity associated with development of the area has the potential to impact the paleontologically sensitive Miocene sedimentary units and it is the recommendation of the Western Science Center that a paleontological resource mitigation plan be put in place to monitor, salvage, and curate any recovered fossils associated with the current study area.

If you have any questions, or would like further information, please feel free to contact me at dradford@westerncentermuseum.org

Sincerely,

Darla Radford
Collections Manager



Deane Tank Site Expansion Project
Project area, one mile radius, geologic mapping, and any WSC fossil localities.
Legend
One mile radius
Project area
Tmc: Valley sediments, Mint Canyon Formation (Miocene)
Project area
Sierra Hwy
Soledad Canyon Rd
Sand Canyon Rd
14
284
1 mi
N
© 2020 Google
Google Earth

APPENDIX C

PROJECT PHOTOGRAPHS

Photo 1: Existing Tanks to Remain (View SE)

Photo 2: Project Area Overview (View W)


Photo 3: Project Site Overview (View NE)


Photo 4: Project Site Overview (View NE)

APPENDIX D

CONFIDENTIAL RECORDS SEARCH BIBLIOGRAPHY

Confidential Records Redacted per federal and State regulations

APPENDIX D

Energy Calculations

Table 1. Summary of Energy Use During Construction

Fuel Type	Quantity
Diesel	
On-Site Construction Equipment	19,200 Gallons
Off-Site Motor Vehicles	15,629 Gallons
Total	34,829 Gallons
Gasoline	
On-Site Construction Equipment	0 Gallons
Off-Site Motor Vehicles	966 Gallons
Total	966 Gallons
Electricity	1,939 kWh

Table 2. Summary of Annual Energy Use During Operation

Source	Units	Buildout	Existing
Electricity	kWh/yr		
Water Conveyence	kWh/yr	22,136	
Total Electricty	kWh/yr	22,136	
Transportation/On-Site Sources			
Diesel	gallons	1,126	
Gasoline	gallons	6,579	
Total	gallons	7,705	

Table 3. Water by Land Use "Regulatory Compliance"

		Project		
Land Use	**Units**	**Indoor/Outdoor Us**	**Indoor Use**	**Outdoor Use**
Buildout	Mgal	1.7/0	1.7	0

Water and Wastewater Electricity Intensity (kWh/gallon)

Supply Water	0.009727
Treat Water	0.000111
Distribute Water	0.001272
Wastewater Treatment	0.001911

Source: CalEEMod User's Guide, Appendix D, Table 9.2 Los Angeles County - Los Angeles-South Coast

Indoor Water Factor	0.013021	kWh/gallon (supply, treat, distribute, wastewater treatment)
Outdoor Water Factor	0.01111	kWh/gallon (supply, treat, and distribute)

Table 4. Off-Road Equipment Fuel Usage During Construction

Phase Name	Off-road Equipment Type	Amount	Hours per Day	Horsepower	Load Factor	Number of Days	Diesel Fuel Usage (Gallons per Project)
Project Site							
Demolition	Concrete/Industrial Saws	1	8	81	0.73	20	473
Demolition	Excavators	3	8	158	0.38	20	1,441
Demolition	Rubber Tired Dozers	2	8	247	0.4	20	1,581
Grading	Crushing/Proc. Equipment	1	8	85	0.78	66	1,750
Grading	Dumpers/Tenders	1	8	16	0.38	66	161
Grading	Rubber Tired Dozers	1	8	247	0.4	66	2,608
Grading	Scrapers	1	8	367	0.48	66	4,651
Building Construction	Cranes	1	7	231	0.29	174	4,080
Paving	Pavers	2	8	130	0.42	22	961
Paving	Paving Equipment	2	8	132	0.36	22	836
Paving	Rollers	2	8	80	0.38	22	535
Architectural Coating	Air Compressors	1	6	78	0.48	11	124
Sub-Total							*19,200*

Notes:

Equipment assumptions from CalEEMod.

Fuel usage estimate of 0.05 gallons per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3 E.

Table 5. On-Road Vehicle Fuel Usage During Construction

		Daily Trips		Total			Trip Length (Miles)			Total Length (Miles)			Fuel Consumption (Gallons)	
Long Beach River Park	**Days**	**Worker**	**Vendor**	**Worker Trips**	**Vendor Trips**	**Haul Trips**	**Worker**	**Vendor**	**Hauling**	**Worker**	**Vendor**	**Hauling**	**Gasoline**	**Diesel**
Demolition	20	15	0	300	0	0	14.7	6.9	20	4,410	0	0	159	117
Grading	66	10	0	660	0	4,875	14.7	6.9	20	9,702	0	97,500	350	14,995
Building Construction	174	3	1	522	174	0	14.7	6.9	20	7,673	1,201	0	277	384
Paving	22	15	0	330	0	0	14.7	6.9	20	4,851	0	0	175	128
Architectural Coating	11	1	0	11	0	0	14.7	6.9	20	162	0	0	6	4
Total	**293**	**44**	**1**	**1,823**	**174**	**4,875**	**n/a**	**n/a**	**n/a**	**26,798**	**1,201**	**97,500**	**966**	**15,629**

Fuel Efficiency	Gas	DSL
Workers	27.75	37.81
Vendor/Haul Trucks	0	6.62

Total	966	15,629

Notes:

Fuel efficiency calculated in ***Table 7: EMFAC2017 Results - Construction.***

Table 6. Water Usage for Control of Fugitive Dust During Construction

Phase Name	Total Acres Graded	Gallons for Project	Electricity (kWh)
Project	66	**199,320**	**1,938.8**

Notes:

Total disturbed acreage for demolition Project Site area. Total disturbed acreage for site preparation through architectural coating per CalEEMod for proposed Project.

Water Usage

3,020 gallons per acre

Source: Air & Waste Management Association, Air Pollution Engineering Manual, 1992 Edition

Supply Water Electricity Intensity

0.009727 kWh/gallons (CalEEMod default for South Coast Air Basin)

Table 7. EMFAC2017 Results - Construction

Vehicle Class	Fuel	VMT (miles per day)	Fuel (1,000 gal per day)	Fuel Efficiency (miles per gallon)	Fuel	VMT (miles per day)	Fuel (1,000 gal per day)	Fuel Efficiency (miles per gallon)
LDA	GAS	154,312,636	5,096.55	30.28	DSL	1,405,949	29.72	47.31
LDT1	GAS	17,402,686	666.55	26.11	DSL	6,756	0.31	21.82
LDT2	GAS	52,851,239	2,173.39	24.32	DSL	384,253	11.04	34.80
			Average (LDA, LDT1, LDT2)	**27.75**				**37.81**
T7 Tractor Construction	DSL	250,084	37.80	6.62				

Construction Worker Fleet Mix

LDA	50%
LDT1	25%
LDT2	25%

Vendor and Delivery/Haul Truck Fleet Mix

HHDT	100%

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: Los Angeles
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
LOS ANGELES	2022	LDA	Aggregated	Aggregated	GAS	4040504.833	154312636.5	19063483.35	5096.55014
LOS ANGELES	2022	LDA	Aggregated	Aggregated	DSL	35580.70761	1405948.594	168445.7609	29.71915281
LOS ANGELES	2022	LDA	Aggregated	Aggregated	ELEC	79346.01523	3237232.352	396260.3789	0
LOS ANGELES	2022	LDT1	Aggregated	Aggregated	GAS	466456.294	17402686.02	2155709.822	666.5509097
LOS ANGELES	2022	LDT1	Aggregated	Aggregated	DSL	276.3592923	6755.981354	979.1709586	0.309652997
LOS ANGELES	2022	LDT1	Aggregated	Aggregated	ELEC	3550.873409	146697.1661	17760.7296	0
LOS ANGELES	2022	LDT2	Aggregated	Aggregated	GAS	1395327.914	52851239.49	6550846.129	2173.392058
LOS ANGELES	2022	LDT2	Aggregated	Aggregated	DSL	9029.025545	384253.17	44544.01587	11.04279173
LOS ANGELES	2022	LDT2	Aggregated	Aggregated	ELEC	14572.87567	476540.0157	73737.31066	0
LOS ANGELES	2022	T7 tractor constr	Aggregated	Aggregated	DSL	3625.325785	250084.1249	16389.95692	37.80397958
									8015.368685
									8015368.685
		Gas	7936.493108	7936493.108	2896819984			2,925,609,569.94	
		Diesel	78.87557712	78875.57712	28789585.65				
		Electricity	0	0	0				

Table 8. On road Vehicles - Operational

Scenario	Annual VMT	Fuel Consumption (gal)		
		Gasoline	Diesel	Total
Operation	182,997	6,579	1,126	7,705

Table 9. Fuel Consumption Summary

Fuel	Fuel Efficiency (MPG)	%Fleet	%Existing
Gasoline	26.0	93.5%	0.0%
Diesel	10.2	6.3%	0.0%
Natural Gas	3.4	0.2%	0.0%

Notes:

Percent fleet based on VMT from EMFAC2017 as shown in ***Table 10: EMFAC2017 Emissions Inventory-Operations***

Based on CalEEMod output sheets.

Fuel efficiency based on calculations in ***Table 10: EMFAC2017 Emissions Inventory-Operations,*** *from EMFAC2017.*

Table 10. EMFAC2017 Emissions Inventory - Operations

Fuel	VMT (miles/day)	Fuel Consumption (1,000 gal/day)	Fuel Efficiency (miles per gallon)	Fuel Percentage
GAS	268,859,805	10,338	26.0	93.5
DSL	18,239,802	1,782	10.2	6.3
Natural Gas	549,623	160	3.4	0.2

Note: Fuel percentage based on VMT.
Fuel efficiency calculated using fuel consumption and VMT from EMFAC2017.

Buildout

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: Los Angeles
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
LOS ANGELES	2022	All Other Buses	Aggregated	Aggregated	DSL	2426.598446	146501.7328	20383.427	14.3421019
LOS ANGELES	2022	LDA	Aggregated	Aggregated	DSL	35580.70761	1405948.594	168445.76	29.7191528
LOS ANGELES	2022	LDT1	Aggregated	Aggregated	DSL	276.3592923	6755.981354	979.17096	0.309653
LOS ANGELES	2022	LDT2	Aggregated	Aggregated	DSL	9029.025545	384253.17	44544.016	11.0427917
LOS ANGELES	2022	LHD1	Aggregated	Aggregated	DSL	66438.77298	2829556.448	835716.18	130.175266
LOS ANGELES	2022	LHD2	Aggregated	Aggregated	DSL	26821.57306	1100164.26	337381.65	56.1858244
LOS ANGELES	2022	MDV	Aggregated	Aggregated	DSL	19913.35499	791156.8054	97958.745	29.4302125
LOS ANGELES	2022	MH	Aggregated	Aggregated	DSL	6142.766028	64185.85871	614.2766	6.09420068
LOS ANGELES	2022	Motor Coach	Aggregated	Aggregated	DSL	690.4147844	93044.15999	10080.056	14.2840955
LOS ANGELES	2022	PTO	Aggregated	Aggregated	DSL	0	79209.0386	0	16.0541121
LOS ANGELES	2022	SBUS	Aggregated	Aggregated	DSL	3866.897734	122197.4183	44623.464	16.0638421
LOS ANGELES	2022	T6 Ag	Aggregated	Aggregated	DSL	12.10479957	101.9666453	53.261118	0.01218157
LOS ANGELES	2022	T6 CAIRP heavy	Aggregated	Aggregated	DSL	339.4332582	67083.52265	4955.7256	5.8078138
LOS ANGELES	2022	T6 CAIRP small	Aggregated	Aggregated	DSL	181.7202948	9464.327402	2653.1163	0.87587781
LOS ANGELES	2022	T6 instate construct	Aggregated	Aggregated	DSL	2542.224734	170126.8415	11493.299	16.7121855
LOS ANGELES	2022	T6 instate construct	Aggregated	Aggregated	DSL	8462.077315	450145.7555	38256.723	43.9584365
LOS ANGELES	2022	T6 instate heavy	Aggregated	Aggregated	DSL	10547.07409	1455514.974	121711.77	131.868535
LOS ANGELES	2022	T6 instate small	Aggregated	Aggregated	DSL	38737.1496	1972425.144	447021.34	190.794054
LOS ANGELES	2022	T6 OOS heavy	Aggregated	Aggregated	DSL	195.638099	38838.81209	2856.3162	3.3588366

LOS ANGELES	2022	T6 OOS small	Aggregated	Aggregated	DSL	104.3823473	5388.107709	1523.9823	0.49952956
LOS ANGELES	2022	T6 Public	Aggregated	Aggregated	DSL	4527.375726	70713.41714	13733.04	8.66083027
LOS ANGELES	2022	T6 utility	Aggregated	Aggregated	DSL	1014.343198	17105.5263	11664.947	1.76607585
LOS ANGELES	2022	T7 Ag	Aggregated	Aggregated	DSL	5.193051548	102.8930892	22.849427	0.01852168
LOS ANGELES	2022	T7 CAIRP	Aggregated	Aggregated	DSL	6382.019495	1134600.882	93177.485	164.652398
LOS ANGELES	2022	T7 CAIRP constructi	Aggregated	Aggregated	DSL	677.6914819	122203.5881	3063.8168	16.7040882
LOS ANGELES	2022	T7 NNOOS	Aggregated	Aggregated	DSL	6908.616933	1383134.925	100865.81	190.163757
LOS ANGELES	2022	T7 NOOS	Aggregated	Aggregated	DSL	2520.514105	445789.868	36799.506	66.3383045
LOS ANGELES	2022	T7 POLA	Aggregated	Aggregated	DSL	8290.297935	1076131.599	63006.264	189.442814
LOS ANGELES	2022	T7 Public	Aggregated	Aggregated	DSL	5501.543454	111458.0695	16688.015	19.1802686
LOS ANGELES	2022	T7 Single	Aggregated	Aggregated	DSL	6004.21985	398912.551	69287.865	60.9272672
LOS ANGELES	2022	T7 single constructi	Aggregated	Aggregated	DSL	4339.818685	303164.6252	19620.152	44.8680139
LOS ANGELES	2022	T7 SWCV	Aggregated	Aggregated	DSL	1392.501649	56894.30171	5430.7564	28.0461909
LOS ANGELES	2022	T7 tractor	Aggregated	Aggregated	DSL	12303.60189	1664070.759	156255.74	233.28579
LOS ANGELES	2022	T7 tractor construct	Aggregated	Aggregated	DSL	3625.325785	250084.1249	16389.957	37.8039796
LOS ANGELES	2022	T7 utility	Aggregated	Aggregated	DSL	407.1754051	8267.098357	4682.5172	1.3123269
LOS ANGELES	2022	UBUS	Aggregated	Aggregated	DSL	37.1389	5105.145298	148.5556	0.80713293
LOS ANGELES	2022	LDA	Aggregated	Aggregated	GAS	4040504.833	154312636.5	19063483	5096.55014
LOS ANGELES	2022	LDT1	Aggregated	Aggregated	GAS	466456.294	17402686.02	2155709.8	666.55091
LOS ANGELES	2022	LDT2	Aggregated	Aggregated	GAS	1395327.914	52851239.49	6550846.1	2173.39206
LOS ANGELES	2022	LHD1	Aggregated	Aggregated	GAS	107665.0189	3912114.95	1604048.4	374.458459
LOS ANGELES	2022	LHD2	Aggregated	Aggregated	GAS	18107.10123	636816.2065	269768.83	69.9544021
LOS ANGELES	2022	MCY	Aggregated	Aggregated	GAS	181916.5067	1290803.93	363833.01	36.0849732
LOS ANGELES	2022	MDV	Aggregated	Aggregated	GAS	941584.3061	33063464.21	4363838.4	1672.52569
LOS ANGELES	2022	MH	Aggregated	Aggregated	GAS	19672.43712	198291.6854	1968.0306	38.6350509
LOS ANGELES	2022	OBUS	Aggregated	Aggregated	GAS	4028.136326	167752.5949	80594.952	33.5574804
LOS ANGELES	2022	SBUS	Aggregated	Aggregated	GAS	1393.897962	56948.09952	5575.5918	6.1896841
LOS ANGELES	2022	T6TS	Aggregated	Aggregated	GAS	14669.99802	811414.7327	293517.32	160.705439
LOS ANGELES	2022	T7IS	Aggregated	Aggregated	GAS	55.46637507	5860.691124	1109.7712	1.42694799
LOS ANGELES	2022	UBUS	Aggregated	Aggregated	GAS	463.7251984	33581.36145	1854.9008	7.9442888
LOS ANGELES	2022	LDA	Aggregated	Aggregated	ELEC	79346.01523	3237232.352	396260.38	0
LOS ANGELES	2022	LDT1	Aggregated	Aggregated	ELEC	3550.873409	146697.1661	17760.73	0
LOS ANGELES	2022	LDT2	Aggregated	Aggregated	ELEC	14572.87567	476540.0157	73737.311	0
LOS ANGELES	2022	MDV	Aggregated	Aggregated	ELEC	7529.633431	254507.8273	38504.203	0
LOS ANGELES	2022	UBUS	Aggregated	Aggregated	ELEC	14	1217.553685	56	0
LOS ANGELES	2022	T7 SWCV	Aggregated	Aggregated	NG	2627.443069	106986.7103	10247.028	47.8510215
LOS ANGELES	2022	UBUS	Aggregated	Aggregated	NG	4177.418205	442636.1645	16709.673	112.547171

	VMT Sum	Fuel Sum	Fuel Sum/Year
Diesel	18239802.29	1781.566463	**650,271,759**
Gas	268859805.4	10337.97552	**3,773,361,064**
Natural Gas	549622.8748	160.3981923	**58,545,340**
			4,482,178,164

APPENDIX E

Geologic and Soils Report

BYER GEOTECHNICAL, INC.

August 25, 2020
BG 23237

Civiltec Engineering, Inc.
118 West Lime Avenue
Monrovia, California 91016

Attention: W. David Byrum

Subject

Transmittal of Geologic and Soils Engineering Exploration
Proposed Santa Clarita Valley Water Agency Deane Tank,
Retaining Walls, and Grading
Assessor's ID No. 2839-002-902
Between 28613 and 28625 Winterdale Drive
Santa Clarita, California

Dear Mr Byrum:

Byer Geotechnical has completed our report dated August 25, 2020, which describes the geologic and soils engineering conditions with respect to construction of the proposed project. Four copies of the report and the CD are enclosed.

It is our understanding that your office will file the report and CD with the reviewing governmental agency's. Please review the report carefully prior to submittal to the governmental agency. Questions concerning the report should be directed to the undersigned. Byer Geotechnical appreciates the opportunity to offer our consultation and advice on this project.

Very truly yours,
BYER GEOTECHNICAL, INC.

James E. Tucker
Project Geologist

1461 East Chevy Chase Drive, Suite 200 • Glendale, California 91206 • tel 818.549.9959 • fax 818.543.3747 • www.byergeo.com

BYER GEOTECHNICAL, INC.

GEOLOGIC AND SOILS ENGINEERING EXPLORATION
PROPOSED SANTA CLARITA VALLEY WATER AGENCY DEANE TANK, RETAINING WALLS, AND GRADING
ASSESSOR'S ID NO. 2839-002-902
BETWEEN 28613 AND 28625 WINTERDALE DRIVE
SANTA CLARITA, CALIFORNIA
FOR CIVILTEC ENGINEERING, INC.
BYER GEOTECHNICAL, INC., PROJECT NUMBER BG 23237
AUGUST 25, 2020

1461 East Chevy Chase Drive, Suite 200 • Glendale, California 91206 • tel 818.549.9959 • fax 818.543.3747 • www.byergeo.com

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INTRODUCTION

This report has been prepared per our signed Agreement and summarizes findings of Byer Geotechnical, Inc., geologic and soils engineering exploration performed on a portion of the site. The purpose of this study is to evaluate the nature, distribution, engineering properties, relative stability, and geologic structure of the earth materials underlying the site with respect to construction of the proposed water tank. This report is intended to assist in the design and completion of the proposed project and to reduce geotechnical risks that may affect the project. The professional opinions and advice presented in this report are based upon commonly accepted exploration standards and are subject to the AGREEMENT with TERMS AND CONDITIONS, and the GENERAL CONDITIONS AND NOTICE section of this report. No warranty is expressed or implied by the issuing of this report.

PROPOSED PROJECT

The scope of the proposed project was determined from the preliminary plans prepared by Civiltec Engineering, Inc. The project consists of grading a level pad to accommodate the proposed 1.7 million gallon, 100 foot diameter water tank. Grading will consist of cut and fill operations to create the level pad. Access will be provided by connecting to an existing paved road which ascends from Winterdale Drive to the existing two water tanks. The pad is to be enlarged to create access around the tank by placing retaining walls up to 11 feet high over the descending slope to support the backfill to the southeast and placing a fill slope to the west.

EXPLORATION

The scope of the field exploration was determined from our initial site visit and consultation with W. David Byrum of Civiltect Engineering, Inc. The preliminary plans prepared by Civiltec Engineering Inc., dated July 2020, were a guide to our work on this project. Exploration was conducted using techniques normally applied to this type of project in this setting. This report is limited to the area of the exploration and the proposed project as shown on the Geologic Map and cross sections. The scope of this exploration did not include an assessment of general site environmental conditions for the presence of contaminants in the earth materials and groundwater. Conditions affecting portions of the property outside the area explored are beyond the scope of this report.

Exploration was conducted on June 30, 2020 with the aid of a track-mounted backhoe. It included excavating six test pits to depths of 4 to 8½ feet. Samples of the earth materials were obtained and delivered to our soils engineering laboratory for testing and analysis. The test pits were visually logged by the project consultant. The test pits were backfilled and tamped, but should not be considered compacted.

Office tasks included laboratory testing of selected soil samples, review of published maps and photos for the area, review of our files, review of agency files, preparation of cross sections, preparation of the Geologic Map, slope stability calculations, engineering analysis, and preparation of this report. Earth materials exposed in the test pits are described on the enclosed Log of Test Pits. Appendix I contains a discussion of the laboratory testing procedures and results.

The proposed project, surface geologic conditions, and the locations of the test pits, are shown on the Geologic Map. Subsurface distribution of the earth materials, projected geologic structure, and the proposed project are shown on Sections A, B, and C. Sections A and B forms the basis for the slope stability calculations.

PRIOR WORK

Several reports for the Tract 45416, located to the west of the subject property, were prepared in the 1990's and early 2000's. GeoConcepts prepared the report *Limited Geologic and Soils Engineering Investigation, Grading Plan Review, Tract 45416* dated February 2, 1998. This report contains laboratory test results performed on samples obtained during exploration for the bedrock (conglomerate of the Mint Canyon Formation) which is also present on the subject property. The J. Byer Group prepared the report *Geologic and Soils Engineering Update, Grading Plan for Tract 45416, Sierra Highway, Santa Clarita, California* dated March 9, 2001, assuming geotechnical responsibility for the project. The J. Byer Group performed observations and testing of the compaction of fill during grading of the Tract 45416. The compacted fill was certified by The J. Byer Group in their report *Final Compaction Report, Proposed Residential Lots, Lots 35-66, 85-87, and 105-113, Tract 45416, Linda Vista Street and Sierra Highway, Santa Clarita, California* dated August 13, 2003. A portion of the compacted fill extends onto the westernmost portion of the subject property as shown on the enclosed Geologic Map.

SITE DESCRIPTION

The subject property consists of a partially-graded hillside parcel in the hills to the north of Soledad Canyon, in the city of Santa Clarita, of the County of Los Angeles, California (34.4316° N Latitude, 118.4338° W Longitude). It is located approximately ½ mile north of the Antelope Valley (14) Freeway and ½ mile west of Sand Canyon Road. The site is developed with two water tanks on a level pad surrounded by asphalt. The pad is accessed via a 1,120 foot long, paved road from Winterdale Drive. The pad is at an elevation approximately 190 feet higher than the point where the access road intersects Winterdale Drive. The paved access road runs west from Winterdale Drive approximately 800 feet then turns north for an additional 320 feet to the pad. The pad is located on the top of a southwest trending ridge. A secondary ridge trends to the northwest, west and south of the main ridge. The slope to the north of the pad descends approximately 200 feet at approximately a 1½:1 gradient to a level pad occupied by buildings, roads, and parking areas for the College of the Canyons School. A narrow (less than 8 feet wide) unpaved access road descends from the level pad along the slope face to lower College of the Canyons pad. A deeply incised (approximately 12 feet deep) erosion gully descends from the upper portion of the unpaved access road perpendicular to the contours of the slope contours to the College of the Canyons pad. The cut slope to the west of the level tank pad and ridge top descends approximately 20 feet at gradients ranging from 1½:1 to 1:1 to a level pad area. This pad area was created during grading for Tract 45416. This level pad area is approximately 120 feet wide with a descending compacted fill slope farther to the west. This compacted fill slope descends approximately 150 feet at a 2:1 gradient. There are several 8 to 10 foot wide and one 25 foot wide concrete terrace drains on the slope which collect slope drainage and direct it to a descending concrete drainage swale in the middle of the slope. The drainage swale empties into a debris basin at the base of the slope. A 45 foot high 1.2:1 cut slope descends to the southeast of the pad to a gently sloping pad area west of the paved access road. Slopes to the south and east of the access road descend approximately 100 at approximately a 2:1 gradient to building pads. These building pads are developed with single family residences.

Vegetation on the site consists of a moderately thick assemblage of native chaparral on the slopes. Surface drainage for the slopes is by sheetflow runoff down the contours of the land to the north, west, and southeast. Pad drainage runs down the paved access road to an inlet structure south of the road.

GROUNDWATER

Groundwater was not encountered in the test pits to a maximum depth of 8½ feet. Previous exploration (by others) performed as part of development of Tract 45416 in the area of the proposed property did not encounter groundwater. Seasonal fluctuations in groundwater levels occur due to variations in climate, irrigation, development, and other factors not evident at the time of the exploration. Groundwater levels may also differ across the site. Groundwater can saturate earth materials causing subsidence or instability of slopes.

EARTH MATERIALS

Fill

Minor fill, associated with previous site grading, underlies the pad area of the site to a maximum observed depth of one foot in Test Pit 2. Greater depths of fill may occur. The fill consists of gravelly sand which is light gray brown, dry, medium dense to dense with rock fragments up to six inches.

Compacted Fill

Compacted fill associated with the grading and development of Tract 45416 underlies the west portion of the site. The compacted fill consists of sandy gravel and gravelly sand which is light gray, light gray brown, gray brown dry to moist, dense to very dense with rock fragments up to 18 inches.

Bedrock

Bedrock underlying the site and encountered in the test pits consists of conglomerate mapped as part of the Mint Canyon Formation (Dibblee, Jr., 1996). The bedrock is brown, light brown, light gray to gray, hard to very hard, subrounded to subangular clasts up to 12 inches in a fine to coarse grained matrix.

GEOLOGIC STRUCTURE

The bedrock described above is common to this area of Santa Clarita and the geologic structure is consistent with regional trends. The bedrock observed in the test pits is generally massive and lacks significant structural planes. The regional structure as shown on the enclosed Regional Geologic Map consists of bedding which strikes approximately north south and dips between 21 and 25 degrees to the west.

The massive nature of the bedrock is favorable for the gross stability of the site and proposed project.

GENERAL SEISMIC CONSIDERATIONS

The subject property is located in an active seismic region. Moderate to strong earthquakes can occur on numerous local faults. The United States Geological Survey, California Geological Survey (CGS), private consultants, and universities have been studying earthquakes in southern California for several decades. Early studies were directed toward earthquake prediction and estimation of the effects of strong ground shaking. Studies indicate that earthquake prediction is not practical and not sufficiently accurate to benefit the general public. Governmental agencies now require earthquake-resistant structures. The purpose of the code seismic-design parameters is to prevent collapse during strong ground shaking. Cosmetic damage should be expected.

Southern California faults are classified as "active" or "potentially active." Faults from past geologic periods of mountain building that do not display evidence of recent offset are considered "potentially active." Faults that have historically produced earthquakes or show evidence of movement within the past 11,000 years are known as "active faults." No known active faults cross the subject property, and the property is not located within a currently-designated Alquist-Priolo Earthquake Fault Zone (CGS, 2000).

The following table lists the applicable seismic coefficients for the project based on the California Building Code:

SEISMIC COEFFICIENTS (2019 California Building Code - Based on ASCE Standard 7-16)		
Latitude = 34.4316° N Longitude = 118.4338° W	Short Period (0.2s)	One-Second Period
Earth Materials and Site Class from Table 20.3-1, ASCE Standard 7-10	Bedrock - C	
Mapped Spectral Accelerations from Figures 1613.3.1 (1) and 1613.3.1 (2) and USGS	S_s = 2.074 (g)	S_1 = 0.762 (g)
Site Coefficients from Tables 1613.3.3 (1) and 1613.3.3 (2) and USGS	F_A = 1.2	F_V = 1.4
Maximum Considered Spectral Response Accelerations from Equations 16-37 and 16-38, 2013 CBC	S_{MS} = 2.489 (g)	S_{M1} = 1.067 (g)
Design Spectral Response Accelerations from Equations 16-39 and 16-40, 2013 CBC	S_{DS} = 1.659 (g)	S_{D1} = 0.711 (g)
Maximum Considered Earthquake Geometric Mean (MCE_G) Peak Ground Acceleration, adjusted for Site Class effects	PGA_M = 1.051 (g)	

Reference: U.S. Geological Survey, **Geologic Hazards Science Center, U. S. Seismic Design Maps,** http://earthquake.usgs.gov/designmaps/us/application.php

The principal seismic hazard to the proposed project is strong ground shaking from earthquakes produced by local faults. It is likely that the subject property will be shaken by future earthquakes produced in southern California.

Ground Motion

To determine the ground motion for the project site, a probabilistic seismic deaggregation analysis was performed, using the USGS 2008 Interactive Deaggregation application available online (http://earthquake.usgs.gov/hazards/interactive/) for a 10-percent probability of exceedance in 50 years (475-year return period) and using a shear-wave velocity estimate of 537 meters-per-second. The results are shown on the enclosed Seismic Hazard Deaggregation Chart The analysis indicates a peak ground acceleration (PGA) of 0.54g, a modal earthquake magnitude (M_w) of 7.9, and a modal fault distance of 10.7 kilometers.

Liquefaction

The CGS has not mapped the site within an area where historic occurrence of liquefaction or geological, geotechnical, and groundwater conditions indicate a potential for permanent ground displacement such that mitigation as defined in Public Resources Code Section 2693 (c) would be required. The subject property is underlain by bedrock, which is not subject to liquefaction.

SLOPE STABILITY

Gross Stability

The CGS has designated the property within a state zone requiring seismic landslide investigation per Public Resources Code, Section 2693 (c).

Slopes analyzed for stability are based on the enclosed Sections A and B. The gross stability of the slopes was analyzed using a computerized version of Simplified Bishop's Method *(Slide 7.0*, Rocscience, Inc., 2016).

The analysis shows that the existing and proposed slopes are grossly stable with a factor of safety in excess of 1.5 under static conditions and 1.1 under pseudo-static (seismic) conditions. The calculations use the shear tests of samples believed to be representative of the strength of the earth materials underlying the site. The cross sections and geologic structure used are the most critical for the slopes analyzed.

CONCLUSIONS AND RECOMMENDATIONS

General Findings

The conclusions and recommendations of this exploration are based upon review of the preliminary plans, review of published maps, six test pits, field geologic mapping, research of available records, laboratory testing, engineering analysis, and years of experience performing similar studies on similar sites. It is the finding of Byer Geotechnical, Inc., that development of the proposed project is feasible from a geologic and soils engineering standpoint, provided the advice and recommendations contained in this report are included in the plans and are implemented during construction.

The recommended bearing material is the bedrock. Conventional spread footings may be utilized for the tank and retaining wall east of the existing water tank. A deepened foundation system consisting of friction piles and grade beams may be utilized to support the proposed retaining wall southeast of the proposed water tank. Soils to be exposed at finished grade will be in the non-expansive range.

Code Sections 111

Relative to the County of Los Angeles Code Section 111, it is the finding of Byer Geotechnical that following the implementation of the recommendations contained in this report, the completed grading will be free of potential geologic hazards such as future landsliding, slippage, and fault

rupture, and that potential geologic hazards such as seismic-induced settlement are adequately mitigated. The completed grading will not adversely affect the site or adjoining properties.

SITE PREPARATION

The following general grading specifications may be used in preparation of the grading plan and job specifications. It should be noted that excavation of the onsite material will generate a large proportion of material greater than six inches in size, which should not be placed in the compacted fill. Byer Geotechnical would appreciate the opportunity of reviewing the plans to ensure that these recommendations are included. The grading contractor should be provided with a copy of this report.

A. The area to receive compacted fill should be prepared by removing all vegetation, debris, and existing uncertified fill. The exposed excavated area should be observed by the geologist prior to placing compacted fill. The exposed grade should be scarified to a depth of six inches, moistened to optimum moisture content, and recompacted to 90 percent of the maximum dry density.

B. Fill, consisting of soil approved by the soils engineer, shall be placed in horizontal lifts, moistened as required, benched into bedrock, and compacted in six-inch layers with suitable compaction equipment. The excavated onsite materials are considered satisfactory for reuse in the controlled fills, however excavation of the onsite material will generate a large proportion of material greater than 6 inches in size. Any imported fill shall be observed by the soils engineer prior to use in fill areas. Rocks larger than six inches in diameter shall not be used in the fill.

C. The moisture content of the fill should be near the optimum moisture content. When the moisture content of the fill is too wet or dry, the fill shall be moisture conditioned and mixed until the proper moisture is attained.

D. The fill shall be compacted to at least 90 percent of the maximum laboratory dry density for the material used. The maximum dry density shall be determined by ASTM D 1557-12 or equivalent.

E. Field observation and testing shall be performed by the soils engineer during grading to assist the contractor in obtaining the required degree of compaction and the proper moisture content. Where compaction is less than required, additional compactive effort shall be made with adjustment of the moisture content, as necessary, until 90 percent relative compaction is obtained. A minimum of one compaction test is required for each 500 cubic yards or two vertical feet of fill placed.

Fill Slopes

Fill slopes may be constructed at a 2:1 gradient. Compacted fill should be keyed and benched into either the existing compacted fill or bedrock. Keyways should be a minimum of 15 feet wide and three feet into bedrock of compacted fill as measured on the downhill side. The base of all fills require subdrains. Fill slopes shall be overbuilt about two feet and trimmed to expose the compacted inner core. Trackwalking of slopes is not acceptable to Byer Geotechnical. Spoils from drain excavations should be removed from the site and not cast over the finished slope.

Cut Slopes

The proposed cut slopes up to 16 feet high in the bedrock may be excavated at a 2:1 gradient.

Excavation Characteristics

The bedrock was penetrated by the test pits to 8½ feet. Hard bedrock was found in Test Pit 2. Excavation difficulty is a function of the degree of weathering and amount of fracturing within the bedrock. The bedrock generally becomes harder and more difficult to excavate with increasing depth. Hard, cemented layers are also known to occur at random locations and depths and may be encountered during foundation excavation. Should a hard, cemented layer be encountered, coring or the use of jackhammers may be necessary. In addition, excavations will generate large amounts of oversized material. Clasts observed during exploration within the conglomerate were in excess of 12 inches in diameter.

FOUNDATION DESIGN

Spread Footings

Continuous footings may be used to support the proposed tank and retaining wall east of the existing tanks provided they are founded in bedrock. Continuous footings should be a minimum of 12 inches in width. Pad footings should be a minimum of 24-inches square. The following chart contains the recommended design parameters.

Bearing Material	Minimum Embedment Depth of Footing (Inches)	Vertical Bearing (psf)	Coefficient of Friction	Passive Earth Pressure (pcf)	Maximum Earth Pressure (psf)
Bedrock	12	4,000	0.5	400	8,000

Increases in the bearing value are allowable at a rate of 800 pounds-per-square-foot for each additional foot of footing width or depth to a maximum of 8,000 pounds-per-square-foot. For bearing calculations, the weight of the concrete in the footing may be neglected.

The bearing value shown above is for the total of dead and frequently applied live loads and may be increased by one-third for short duration loading, which includes the effects of wind or seismic forces. When combining passive and friction for lateral resistance, the passive component should be reduced by one-third.

Footings adjacent to retaining walls should be deepened below a 1:1 plane from the bottom of the lower retaining wall.

All continuous footings should be reinforced with a minimum of four #4 steel bars: two placed near the top and two near the bottom of the footings. Footings should be cleaned of all loose soil, moistened, free of shrinkage cracks, and approved by the geologist prior to placing forms, steel, or concrete.

Modulus of Subgrade Reaction

The allowable modulus of subgrade reaction, k_1, is 250 kips-per-cubic-foot for a 12-inch by 12-inch footing. The modulus should be reduced for larger footings. For rectangular footings of dimensions B x L, the following formula may be used (Bowles, 1996):

$$k_s = k_1 * (m + 0.5) / (1.5 * m)$$

where k_s = Modulus of subgrade reaction for a full-size mat foundation,

$$m = L / B.$$

Deepened Foundations - Friction Piles

Cast-in-place, concrete friction piles are recommended to support the proposed retaining wall to be constructed over the descending slope to the southeast of the proposed water tank. Piles should be a minimum of 24 inches in diameter and a minimum of eight feet into bedrock. The structural engineer may design piles that are deeper or larger in diameter depending on final loads. Piles may be assumed fixed at three feet into bedrock. The piles may be designed for a skin friction of 500 pounds-per-square-foot for that portion of pile in contact with the bedrock. Piles for retaining walls need only be tied in one horizontal direction with grade beams. The bottom of the grade beam should be a minimum of five horizontal feet to the descending slope face.

Lateral Design

The friction value is for the total of dead and frequently applied live loads and may be increased by one-third for short duration loading, which includes the effects of wind or seismic forces. Resistance to lateral loading may be provided by passive earth pressure within the bedrock.

Passive earth pressure may be computed as an equivalent fluid having a density of 400 pounds-per-cubic-foot. The maximum allowable earth pressure is 8,000 pounds-per-square-foot. For design of isolated piles, the allowable passive and maximum earth pressures may be increased by 100 percent. Piles spaced more than 3-pile diameters on center may be considered isolated.

Foundation Settlement

Settlement of the foundation systems is expected to occur on initial application of loading. A total settlement of one-fourth to one-half of an inch may be anticipated. Differential settlement should not exceed one-fourth of an inch.

Foundation Setback

The California Building Code requires that foundations be a sufficient depth to provide a horizontal setback from a descending slope steeper than 3:1. The required setback is one-third the height of the slope, with a maximum of 40 feet, measured horizontally, from the base of the foundation to the slope face. On the subject property, the slope descends below the building area up to 180 feet. The code-required clearance is 40 feet.

Geologic conditions on the site are favorable for stability. It is the opinion of Byer Geotechnical that the required setback can be reduced to 20 feet from the slope face. The recommended setback is an "alternate setback" per the 2016 California Building Code, Section 1808.7.5, based upon this site-specific geologic and geotechnical study.

RETAINING WALLS

General Design

Retaining walls up to 11 feet high with a level backslope and up to eight feet high with a 2:1 backslope may be designed for an equivalent fluid pressure of 43 pounds-per-cubic-foot per the enclosed calculations. Retaining walls should be provided with a subdrain or weepholes covered with a minimum of 12 inches of ¾-inch crushed gravel.

For design of walls in hillside areas, the temporary backcut should be considered in the wall height. Backfilling a 1:1 temporary cut at 2:1, when the original slope is steeper than 2:1, results in a higher wall. The topographic survey data should be checked to avoid the need for a costly redesign during construction.

Seismic Loading

It is unclear what guidelines should be utilized for seismic loading on the proposed retaining walls. The seismic loading on the proposed retaining walls was calculated using a horizontal pseudo-static seismic coefficient (k_h) equal to ⅓ $PGA_M = 0.35g$ based on the enclosed he calculations (Calculation Sheet #2). It is the opinion of Byer Geotechnical, Inc., that the static design pressures are sufficient to support seismic loading.

Should the County of Los Angeles guidelines be utilized the seismic loading should be based on Section S004.0 of the Administrative Manual, which was recently updated on January 6, 2020. The following equations (based on Section S004.0) were used to determine the seismic loading (ΔP_{ae}) on cantilevered retaining walls over six feet high, with a level backfill and a sloping backfill (2:1):

level backfill $\Delta P_{ae} - \frac{1}{2} \gamma H^2 (0.42\ PGA / g)$

sloping backfill $\Delta P_{ae} = \frac{1}{2} \gamma H^2 (0.70\ PGA / g)$

Where: γ = Unit Weight of Soil = 135 pcf

H = Retained Height = 11 feet level, 8 feet sloping

$PGA = S_{DS} / 2.5 = 1.659 / 2.5 = 0.66g$

The results indicate that the seismic load for a retained height up to 11 feet with a level backfill is 2,276 pounds, which is to be added to the active pressure. The seismic load for a retained height up to 8 feet with a sloping backfill (2:1) is 2,007 pounds, which is to be added to the active pressure The seismic load should be applied at 0.4H measured from the bottom of the wall.

Backfill

Retaining wall backfill should be compacted to a minimum of 90 percent of the maximum density as determined by ASTM D 1557-12, or equivalent. Where access between the retaining wall and the temporary excavation prevents the use of compaction equipment, retaining walls should be backfilled with ¾-inch crushed gravel to within two feet of the ground surface. Where the area between the wall and the excavation exceeds 18 inches, the gravel must be vibrated or wheel-rolled, and tested for compaction. The upper two feet of backfill above the gravel should consist of a compacted-fill blanket to the surface.

Foundation Design

Retaining wall footings may be sized per the "Deepened Foundations" and "Spread Footings" sections of this report.

Freeboard

Retaining walls surcharged by a sloping condition should be provided with a minimum of 12 inches of freeboard for slough protection. An open "V" drain should be placed behind the wall so that all upslope flows are directed to an approved location.

Temporary Excavations

Temporary excavations will be required during grading to construct the proposed retaining walls. The excavations will be up to eight feet in height and will expose soil over bedrock. The bedrock is capable of maintaining vertical excavations up to eight feet per the enclosed calculations. Where vertical excavations in the bedrock exceed eight feet in height, the upper portion should be trimmed to 1:1 (45 degrees).

The geologist should be present during grading to see temporary slopes. All excavations should be stabilized within 30 days of initial excavation. Water should not be allowed to pond on top of the excavations nor to flow toward them. No vehicular surcharge should be allowed within three feet of the top of the cut.

DRAINAGE

Control of site drainage is important for the performance of the proposed project. Pad drainage should be collected and transferred to an approved location in non-erosive drainage devices. Drainage should not be allowed to pond on the pad or against any foundation or retaining wall. Drainage should not be allowed to flow uncontrolled over any descending slope. Planters located within retaining wall backfill should be sealed to prevent moisture intrusion into the backfill. Drainage control devices require periodic cleaning, testing, and maintenance to remain effective.

WATERPROOFING

Retaining walls are subject to moisture intrusion, seepage, and leakage, and should be waterproofed. Waterproofing paints, compounds, or sheeting can be effective if properly installed. Equally important is the use of a subdrain that daylights to the atmosphere. The subdrain should be covered with ¾-inch crushed gravel to help the collection of water. Landscape areas above the wall should be sealed or properly drained to prevent moisture contact with the wall or saturation of wall backfill.

PLAN REVIEW

Formal plans ready for submittal to the building department should be reviewed by Byer Geotechnical. Any change in scope of the project may require additional work.

SITE OBSERVATIONS DURING CONSTRUCTION

The building department requires that the geotechnical engineer provide site observations during grading and construction. Foundation excavations should be observed and approved by the geotechnical engineer or geologist prior to placing steel, forms, or concrete. The geologist should observe bottoms for fill, compaction of fill, pool excavations, temporary slopes, permanent cut slopes, and subdrains. All fill that is placed should be approved by the geotechnical engineer and the building department prior to use for support of structural footings and floor slabs.

Please advise Byer Geotechnical, Inc., at least 24 hours prior to any required site visit. The building department stamped plans, the permits, and the geotechnical reports should be at the job site and available to our representative. The project consultant will perform the observation and post a notice at the job site with the findings. This notice should be given to the agency inspector.

FINAL REPORTS

The geotechnical engineer will prepare interim and final compaction reports upon request. The geologist will prepare reports summarizing pile excavations.

CONSTRUCTION SITE MAINTENANCE

It is the responsibility of the contractor to maintain a safe construction site. The area should be fenced and warning signs posted. All excavations must be covered and secured. Soil generated by foundation excavations should be either removed from the site or placed as compacted fill. Soil should not be spilled over any descending slope. Workers should not be allowed to enter any unshored trench excavations over five feet deep. Water shall not be allowed to saturate open footing trenches.

GENERAL CONDITIONS AND NOTICE

This report and the exploration are subject to the following conditions. Please read this section carefully; it limits our liability.

In the event of any changes in the design or location of any structure, as outlined in this report, the conclusions and recommendations contained herein may not be considered valid unless the changes are reviewed by Byer Geotechnical, Inc., and the conclusions and recommendations are modified or reaffirmed after such review.

The subsurface conditions, excavation characteristics, and geologic structure described herein have been projected from test excavations on the site and may not reflect any variations that occur between these test excavations or that may result from changes in subsurface conditions.

Fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, irrigation, and other factors not evident at the time of the measurements reported herein. Fluctuations also may occur across the site. High groundwater levels can be extremely hazardous. Saturation of earth materials can cause subsidence or slippage of the site.

If conditions encountered during construction appear to differ from those disclosed herein, notify us immediately so we may consider the need for modifications. Compliance with the design concepts, specifications, and recommendations requires the review of the engineering geologist and geotechnical engineer during the course of construction.

THE EXPLORATION WAS PERFORMED ONLY ON A PORTION OF THE SITE, AND CANNOT BE CONSIDERED AS INDICATIVE OF THE PORTIONS OF THE SITE NOT EXPLORED.

This report, issued and made for the sole use and benefit of the client, is not transferable. Any liability in connection herewith shall not exceed the Phase I fee for the exploration and report or a negotiated fee per the Agreement. No warranty is expressed, implied, or intended in connection with the exploration performed or by the furnishing of this report.

THIS REPORT WAS PREPARED ON THE BASIS OF THE PRELIMINARY DEVELOPMENT PLAN FURNISHED. FINAL PLANS SHOULD BE REVIEWED BY THIS OFFICE AS ADDITIONAL GEOTECHNICAL WORK MAY BE REQUIRED.

Byer Geotechnical appreciates the opportunity to provide our service on this project. Any questions concerning the data or interpretation of this report should be directed to the undersigned.

Respectfully submitted,
BYER GEOTECHNICAL, INC.

James E. Tucker
Project Geologist

ENGINEERING GEOLOGIST
ROBERT I. ZWEIGLER
E. G. 1210
Exp. 11/30/22
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
ROBERT I. ZWEIGLER
No. 2120
Exp. 06-30-22
GEOTECHNICAL
STATE OF CALIFORNIA

Robert I. Zweigler
E. G. 1210/G. E. 2120

JET:RIZ:cj
S:\FINAL\BG\23237_Civiltec_Engineering\23237_Civiltec_SCVWA_Geologic and Soils Engineering Exploratin_8.24.20.wpd

Enc: List of References
Appendix I - Shear Test Diagrams by GeoConcepts , Inc., and The J. Byer Group, Inc. (JB 18474) (2 Pages)
Appendix II - Laboratory Testing
Summary of Corrosion Test Results
Log of Test Pits 1 - 6 (2 Pages)
Appendix III - Calculations and Figures
Calculation Sheets (30 Pages)
Seismic Hazard Deaggregation Chart
Aerial Vicinity Map
Regional Geologic Map
Regional Topographic Map
Regional Fault Map
Seismic Hazard Zones Map

In Pocket: Geologic Map
Sections A, B, and C (1 Sheet)

xc: (4) Addressee (E-mail and Mail)

REFERENCES

California Building Standards Commission (2019), **2019 California Building Code,** Based on the 2018 International Building Code (IBC), Title 24, Part 2, Vol. 1 and 2.

California Department of Conservation (1999), **State of California, Seismic Hazard Zones, Mint Canyon Quadrangle**, Official Map, Division of Mines and Geology.

California Department of Conservation (2008), **Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California.**

California Geological Survey (Formerly California Division of Mines and Geology), 2000, **Digital Images of Official Maps of Alquist-Priolo Earthquake Fault Zones, Southern Region,** DMG CD 2000-003.

Dibblee, T. W. (1996), **Geologic Map of the Mint Canyon Quadrangle, Los Angeles County, California**, 1:24,000 scale, Dibblee Foundation, Santa Barbara, California, Map DF-57.

Jennings, C. W., and Bryant, W. A. (2010), **Fault Activity Map of California**, California Geological Survey, 150th Anniversary, Map No. 6.

U.S. Geological Survey, **Geologic Hazards Science Center, U. S. Seismic Design Maps,** http://earthquake.usgs.gov/designmaps/us/application.php.

Software

Slide 7.0, Rocscience, Inc., 2016.

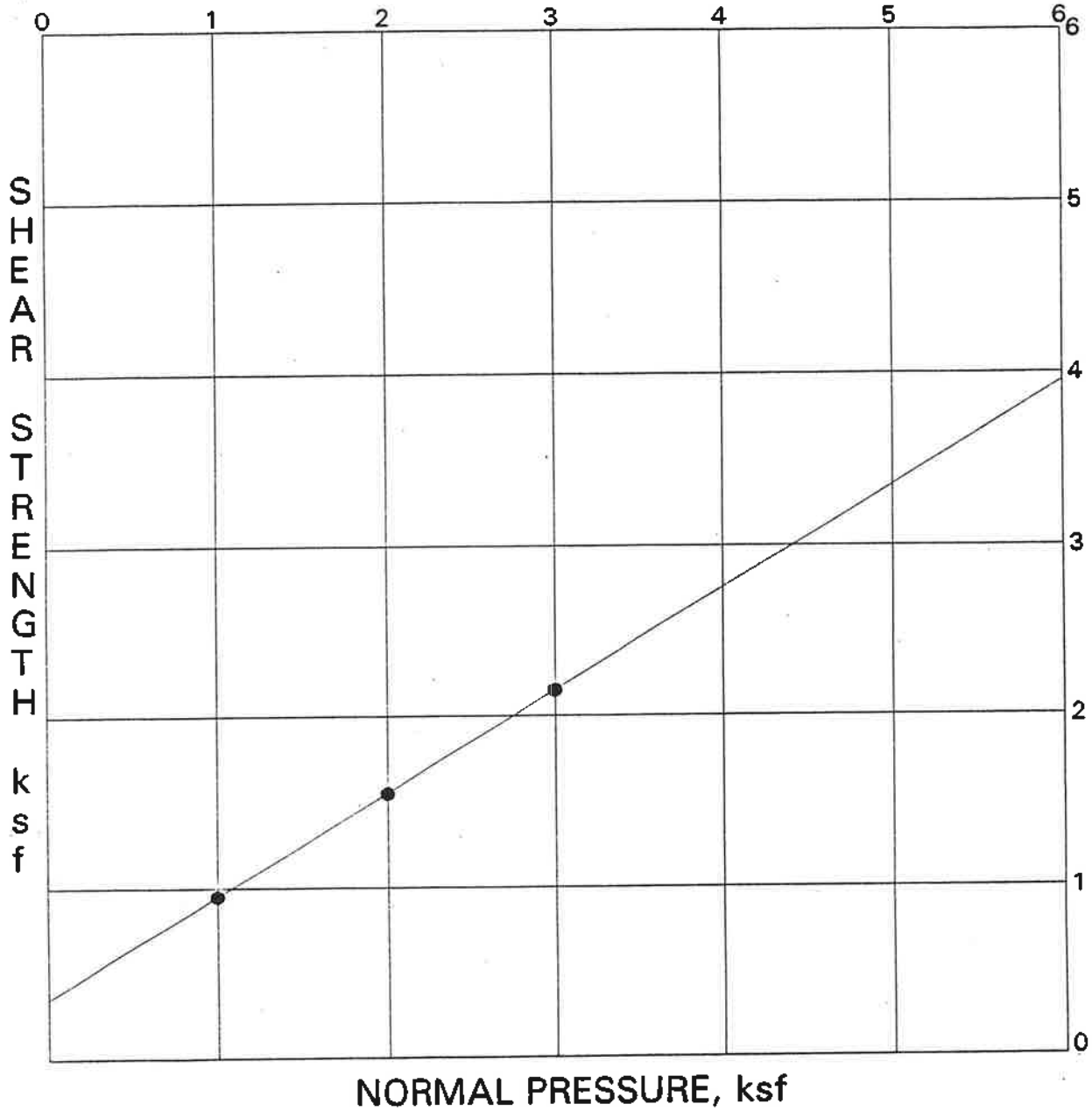
August 25, 2020
BG 23237

APPENDIX I

Shear Test Diagrams by GenConcepts Inc., and The J. Byer Group, Inc.

PROJECT: 1169
PROJECT LOCATION: Tract 45416, Santa Clarita

SAMPLE LOCATION: BULK @ 0.00
DESCRIPTION: Remolded to 90%



Test Results

Moisture Content (%)	Density (pcf)	Ultimate Strength
Insitu: 12.0 Saturated: 28.0	Dry Density: 124.6	Phi (deg): 30.0 Cohesion (psf): 0.350

SHEAR TEST DIAGRAM

GeoConcepts, Inc.

14424 Friar Street, Van Nuys

Figure S.11

THE J. BYER GROUP, INC.
A GEOTECHNICAL CONSULTING FIRM
1461 E. CHEVY CHASE DRIVE, GLENDALE, CA 91206
(818) 549-9959 FAX: (818) 543-3747

SHEAR DIAGRAM

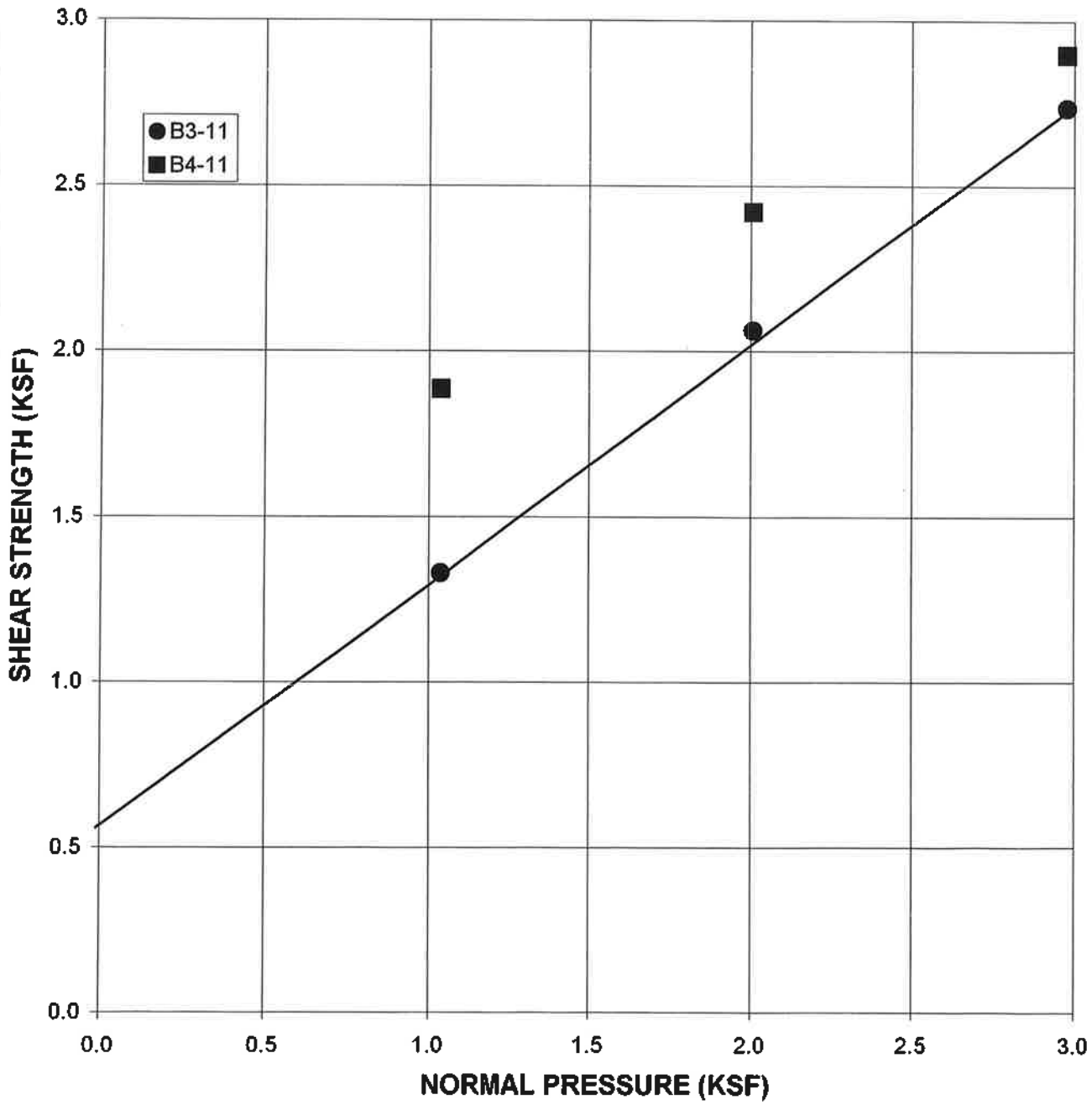
JB: 18474-B CONSULTANT JAI
CLIENT: PARDEE CONSTRUCTION

EARTH MATERIAL: BEDROCK

NOTE: 2½ INCH RING SAMPLES

Phi Angle =	**36 degrees**	**Average Moisture Content**	**14.1%**
Cohesion =	**575 psf**	**Average Dry Density (pcf)**	**119.5**
		Percent Saturation	**97.4%**

DIRECT SHEAR TEST - ASTM D-3080 (ULTIMATE VALUES)



APPENDIX II

Laboratory Testing and Test Pits

APPENDIX II

LABORATORY TESTING

A bulk samples of the bedrock was obtained from Test Pit 2 and transported to an outside laboratory for testing and analysis.

Maximum Density

The maximum dry density and optimum moisture content of the future compacted fill were determined using the procedures outlined in ASTM D 1557-12, a five-layer standard.

Test Pit	Depth (Feet)	USCS + Color Soil Type	Maximum Density (pcf)	Optimum Moisture %	Expansion Index
2	2	light gray brown Gravelly Sand	130.0	10.0	Nil

Corrosion

A sample of the fill was transported to Environmental Geotechnology Laboratory for chemical testing. The testing was performed in accordance with Caltrans Standards 643 (pH), 422 (Chloride Content), 417 (Sulfate Content), and 532 (Resistivity). The results of the testing are reported in the following table:

CHEMICAL TEST RESULTS TABLE

Sample	pH	Chloride (PPM)	Sulfate (%)	Resistivity (Ohm-cm)
TP 2 - 2'	7.52	145	0.007	2,500

The chloride and sulfate contents of the soil are negligible and not a factor in corrosion. The pH is near neutral and not a factor. The resistivity indicates that the soil is in the moderately corrosive range to ferrous metals.

SUMMARY OF CORROSION TEST RESULTS

PROJECT NAME: Civil Tec Water Tank

EGLAB JOB NO.: 20-249-031

PROJECT NO.: BG #23237

CLIENT: Byer Geotechnical, Inc.

DATE: 8/18/2020

Summarized By: JT

BORING NO.	SAMPLE NO.	DEPTH (ft)	pH CalTrans 643	Chloride Content CalTrans 422 (ppm)	Sulfate Content CalTrans 417 (% by weight)	Minimum Resistivity CalTrans 643 (ohm-cm)
N/A	A	N/A	7.52	145	0.007	2,500

BYER GEOTECHNICAL INC.
1461 E. CHEVY CHASE DRIVE, SUITE 200, GLENDALE, CA 91206
tel 818.549.9959 fax 818.543.3747

LOG OF TEST PITS

CLIENT: CIVILTEC ENGINEERING, INC.

GEOLOGIST: JET BG: 23237

REPORT DATE: 8/25/20 DATE LOGGED: 6/30/20

SAMPLE DEPTH (feet)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DEPTH INTERVAL (feet)	EARTH MATERIAL	LITHOLOGIC DESCRIPTION
TEST PIT #1			Surface Conditions: Top of Ridge		
			0 - 4	**BEDROCK:**	Mint Canyon Formation: Conglomerate, brown to light brown, gray, hard rounded clasts up to 12 inches in a medium to coarse grained matrix
			4 - 8½		Mint Canyon Formation: Sandstone and Conglomerate, light gray, subrounded to subangular clasts up to 6 inches in a fine to coarse grained matrix, hard
			End at 8½ Feet; No Water; No Caving; No Fill.		
TEST PIT #2			Surface Conditions: Angle Point of West Fence; Elevation 1971		
			0 - 1	**FILL:**	Gravelly Sand, light gray, brown, dry, medium dense to dense
			1 - 2	**BEDROCK:**	Conglomerate, gray, brown, light gray, subrounded clasts up to 6 inches in a fine to coarse grained matrix
			2 - 3½		Sandstone, light gray, medium to coarse grained, moderately hard, friable
			3½ - 5		Conglomerate, light gray, gray, dark to light gray, moderately hard, subangular clasts up to 12 inches in a coarse grained matrix
			5 - 6½		Sandstone, greenish-gray to grayish-brown, very hard, fine grained
			End at 6½ Feet; No Water; No Caving; Fill to 1 Foot.		
TEST PIT #3			Surface Conditions: Level Area Southwest of Existing Tank		
			0 - 1	**FILL:**	Sandy Gravel, gray, brown, dry, medium dense, rock to six inches
			1 - 2	**BEDROCK:**	Mint Canyon Formation: Conglomerate, light gray, gray, subrounded clasts up to 14 inches in a coarse matrix, friable, moderately hard
			2 - 4		less friable, hard to very hard, clasts up to 24 inches
			End at 4 Feet; No Water; No Caving; Fill to 1 Foot. Unable to Continue Due to Hard Rock and Clasts		

NOTE: The stratification depths shown on the Log of Test Pits are approximate and are based upon visual classification of samples and cuttings. The actual depths may vary. Variations between test pits may also occur.

BYER GEOTECHNICAL INC.
1461 E. CHEVY CHASE DRIVE, SUITE 200, GLENDALE, CA 91206
tel 818.549.9959 fax 818.543.3747

LOG OF TEST PITS

CLIENT: CIVILTEC ENGINEERING, INC.

GEOLOGIST: JET BG: 23237

REPORT DATE: 8/25/20 DATE LOGGED: 6/30/20

SAMPLE DEPTH (feet)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DEPTH INTERVAL (feet)	EARTH MATERIAL	LITHOLOGIC DESCRIPTION
TEST PIT #4			Surface Conditions: Fill Pad North Side; Elevation: 1946		
			0 - 1½	**COMPACTED FILL:**	Gravelly Sand/Sandy Gravel, light gray to grayish-brown, dry to slightly moist, medium dense to dense, roots up to eight inches, rock fragments up to eight inches
			1½ - 7½		gray brown, moist, dense to very dense, rock fragments up to eight inches
			End at 7½ Feet; No Water; No Caving; Compacted Fill to Total Depth.		
TEST PIT #5			Surface Conditions: Toe of Cut South of Fill Pad		
			0 - ½	**FILL:**	Gravelly Sand, gray brown, dry, slightly loose to slightly dense, roots up to ¼ inch
			½ - 5	**BEDROCK:**	Mint Canyon Formation: Conglomerate, light gray, gray brown, moderately hard, subrounded to subangular, clasts up to 18 inches in a medium to coarse grained matrix
			5 - 6		Pebbly Sandstone, light gray, moderately hard to hard, coarse grained
			6 - 8		Conglomerate, light gray, brown, hard, subrounded clasts up to 12 inches in a medium to coarse grained matrix
			End at 8 Feet; No Water; No Caving; Fill to ½ Foot.		
TEST PIT #6			Surface Conditions: Fill Pad South Side; Elevation 1946		
			0 - 1½	**COMPACTED FILL:**	Sandy Gravel, light grayish-brown, dry, medium dense, to dense, roots to ¼ inch, rock fragments to eight inches
			1½ - 3		gray brown, moist, dense, rock fragments to 12 inches
			3 - 7½		rock fragments up to 18 inches, dense to very dense
			End at 7½ Feet; No Water; No Caving; Compacted Fill to Total Depth.		

NOTE: The stratification depths shown on the Log of Test Pits are approximate and are based upon visual classification of samples and cuttings. The actual depths may vary. Variations between test pits may also occur.

APPENDIX III

Calculation and Figures

BYER GEOTECHNICAL, INC.
1461 E. CHEVY CHASE DR., SUITE 200
GLENDALE, CA 91206
818.549.9959 TEL
818.543.3747 FAX

RETAINING WALL

BG: **23237** ENGINEER: **JET**
CLIENT: **CIVILTEC SCVWA TANK**
CALCULATION SHEET # **1**

CALCULATE THE DESIGN ACTIVE EQUIVALENT FLUID PRESSURE (EFP) FOR THE PROPOSED RETAINING WALL. ASSUME BACKFILL IS SATURATED AND THERE IS NO HYDROSTATIC PRESSURE THE RETAINED HEIGHT AND BACKSLOPE AND SURCHARGE CONDITIONS ARE LISTED BELOW. USE THE MONONOBE-OKABE METHOD FOR SEISMIC FORCES.

CALCULATION PARAMETERS

EARTH MATERIAL:	COMPACTED FILL	WALL HEIGHT	11 feet
SHEAR DIAGRAM:	GEOCONCEPTS	BACKSLOPE ANGLE:	0 degrees
COHESION:	350 psf	SURCHARGE:	300 pounds
PHI ANGLE:	30 degrees	SURCHARGE TYPE:	U Uniform
DENSITY	135 pcf	INITIAL FAILURE ANGLE:	20 degrees
SAFETY FACTOR:	1.5	FINAL FAILURE ANGLE:	70 degrees
WALL FRICTION	0 degrees	INITIAL TENSION CRACK:	1 feet
CD (C/FS):	233.3 psf	FINAL TENSION CRACK:	20 feet

PHID = ATAN(TAN(PHI)/FS) = 21.1 degrees

HORIZONTAL PSEUDO STATIC SEISMIC COEFFICIENT (k_h) 0 g

VERTICAL PSEUDO STATIC SEISMIC COEFFICIENT (k_v) 0 g

CALCULATED RESULTS

CRITICAL FAILURE ANGLE	54 degrees
AREA OF TRIAL FAILURE WEDGE	41.2 square feet
TOTAL EXTERNAL SURCHARGE	1500.0 pounds
WEIGHT OF TRIAL FAILURE WEDGE	7065.4 pounds
NUMBER OF TRIAL WEDGES ANALYZED	1020 trials
LENGTH OF FAILURE PLANE	10.2 feet
DEPTH OF TENSION CRACK	2.7 feet
HORIZONTAL DISTANCE TO UPSLOPE TENSION CRACK	6.0 feet
CALCULATED HORIZONTAL THRUST ON WALL	**1930.4 pounds**
CALCULATED EQUIVALENT FLUID PRESSURE	**31.9 pcf**
DESIGN EQUIVALENT FLUID PRESSURE	**43.0 pcf**

CONCLUSION:

THE CALCULATION INDICATES THAT CANTILEVER RETAINING WALLS UP TO 11 FEET HIGH, WITH LEVEL BACKSLOPE, MAY BE DESIGNED FOR AN ACTIVE EQUIVALENT FLUID PRESSURE OF 43 POUNDS-PER-CUBIC-FOOT.

BYER GEOTECHNICAL, INC.
1461 E. CHEVY CHASE DR., SUITE 200
GLENDALE, CA 91206
818.549.9959 TEL.
818.543.3747 FAX

RETAINING WALL

BG: **23237** ENGINEER: **JET**
CLIENT: **CIVILTEC SCVWA TANK**

CALCULATION SHEET # **2**

CALCULATE THE DESIGN SEISMIC FORCE FOR THE PROPOSED RETAINING WALL. ASSUME BACKFILL IS SATURATED AND THERE IS NO HYDROSTATIC PRESSURE THE RETAINED HEIGHT AND BACKSLOPE AND SURCHARGE CONDITIONS ARE LISTED BELOW. USE THE MONONOBE-OKABE METHOD FOR SEISMIC FORCES.

CALCULATION PARAMETERS

EARTH MATERIAL:	COMPACTED FILL	WALL HEIGHT	11 feet
SHEAR DIAGRAM:	GEOCONCEPTS	BACKSLOPE ANGLE:	0 degrees
COHESION:	350 psf	SURCHARGE:	300 pounds
PHI ANGLE:	30 degrees	SURCHARGE TYPE:	U Uniform
DENSITY	135 pcf	INITIAL FAILURE ANGLE:	20 degrees
SAFETY FACTOR:	1	FINAL FAILURE ANGLE:	70 degrees
WALL FRICTION	0 degrees	INITIAL TENSION CRACK:	6.8 feet
CD (C/FS):	350.0 psf	FINAL TENSION CRACK:	20 feet

PHID = ATAN(TAN(PHI)/FS) = 30.0 degrees

HORIZONTAL PSEUDO STATIC SEISMIC COEFFICIENT (k_h) 0.35 g

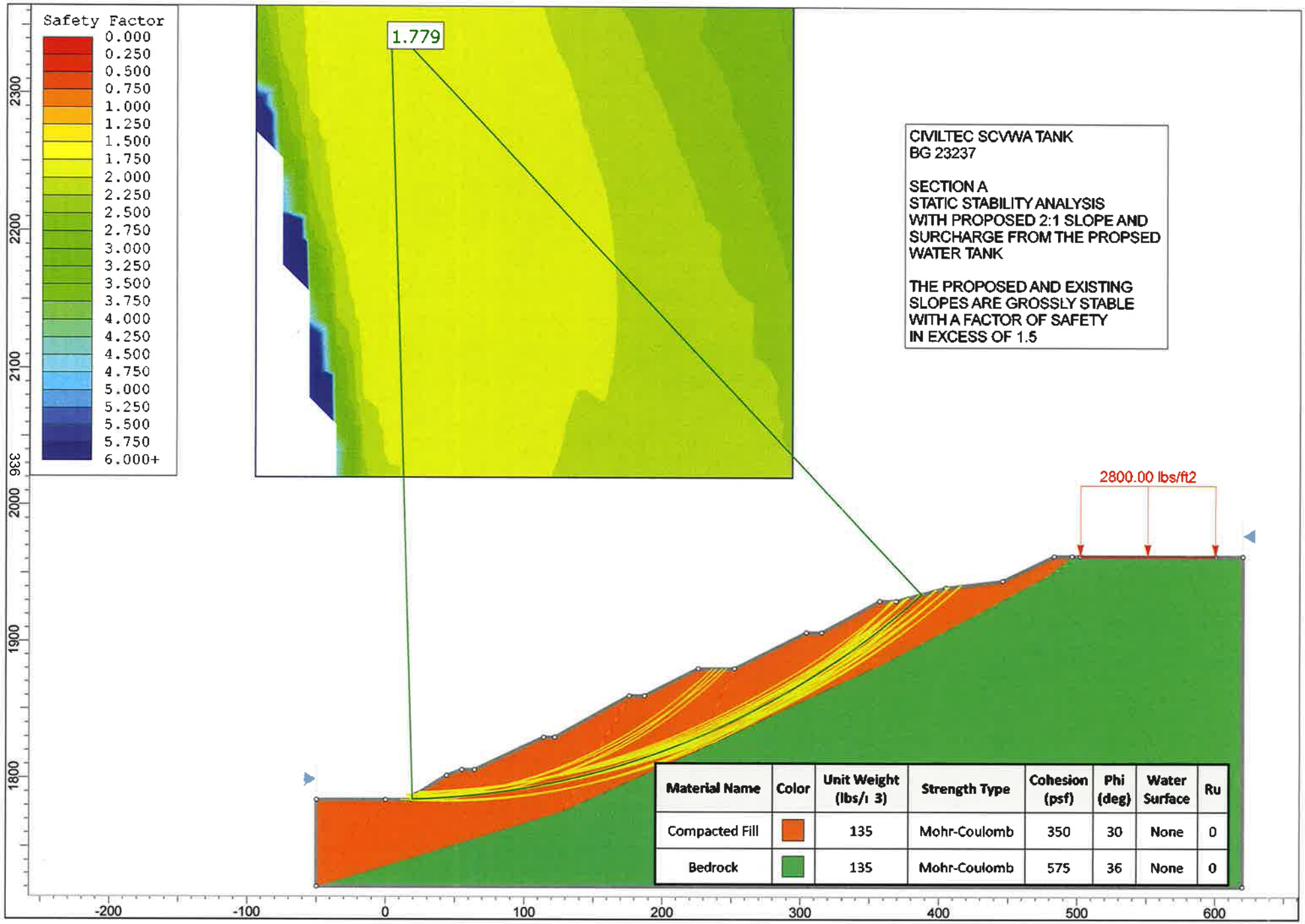
VERTICAL PSEUDO STATIC SEISMIC COEFFICIENT (k_v) 0 g

CALCULATED RESULTS

CRITICAL FAILURE ANGLE	42 degrees
AREA OF TRIAL FAILURE WEDGE	61.9 square feet
TOTAL EXTERNAL SURCHARGE	600.0 pounds
WEIGHT OF TRIAL FAILURE WEDGE	8961.4 pounds
NUMBER OF TRIAL WEDGES ANALYZED	714 trials
LENGTH OF FAILURE PLANE	11.8 feet
DEPTH OF TENSION CRACK	3.1 feet
HORIZONTAL DISTANCE TO UPSLOPE TENSION CRACK	8.8 feet
CALCULATED HORIZONTAL THRUST ON WALL	**1371.8 pounds**

CONCLUSIONS:

THE CALCULATION INDICATES THAT NO ADDITIONAL SEISMIC LOADING IS REQUIRED FOR CANTILEVER RETAINING WALLS UP TO 11 FEET HIGH (CALCULATED SEISMIC THRUST IS LESS THAN THE DESIGN ACTIVE THRUST OF 2601.5 POUNDS).



Material Name	Color	Unit Weight (lbs/ı 3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Compacted Fill		135	Mohr-Coulomb	350	30	None	0
Bedrock		135	Mohr-Coulomb	575	36	None	0

Slide Analysis Information

SLIDE - An Interactive Slope Stability Program

Project Summary

File Name:	23237 Section A Static
Slide Modeler Version:	7.038
Project Title:	SLIDE - An Interactive Slope Stability Program
Date Created:	8/19/2020, 7:24:56 AM

General Settings

Units of Measurement:	Imperial Units
Time Units:	days
Permeability Units:	feet/second
Failure Direction:	Right to Left
Data Output:	Standard
Maximum Material Properties:	20
Maximum Support Properties:	20

Analysis Options

Slices Type:	Vertical
Analysis Methods Used	
	Bishop simplified
Number of slices:	50
Tolerance:	0.005
Maximum number of iterations:	75
Check malpha < 0.2:	Yes
Create Interslice boundaries at intersections with water tables and piezos:	Yes
Initial trial value of FS:	1
Steffensen Iteration:	Yes

Groundwater Analysis

Groundwater Method:	Water Surfaces
Pore Fluid Unit Weight [lbs/ft3]:	62.4
Use negative pore pressure cutoff:	Yes
Maximum negative pore pressure [psf]:	0
Advanced Groundwater Method:	None

Random Numbers

Pseudo-random Seed:	10116
Random Number Generation Method:	Park and Miller v.3

Surface Options

Surface Type:	Circular
Search Method:	Grid Search
Radius Increment:	10
Composite Surfaces:	Disabled
Reverse Curvature:	Invalid Surfaces
Minimum Elevation:	Not Defined
Minimum Depth:	Not Defined
Minimum Area:	Not Defined
Minimum Weight:	Not Defined

Seismic

Advanced seismic analysis:	No
Staged pseudostatic analysis:	No

Loading

1 Distributed Load present

Distributed Load 1

Distribution:	Constant
Magnitude [psf]:	2800
Orientation:	Normal to boundary

Material Properties

Property	Compacted Fill	Bedrock
Color		
Strength Type	Mohr-Coulomb	Mohr-Coulomb
Unit Weight [lbs/ft3]	135	135
Cohesion [psf]	350	575
Friction Angle [deg]	30	36
Water Surface	None	None
Ru Value	0	0

Global Minimums

Method: bishop simplified

FS	**1.778580**
Center:	2.478, 2349.866
Radius:	565.864
Left Slip Surface Endpoint:	19.187, 1784.249
Right Slip Surface Endpoint:	387.429, 1935.119
Resisting Moment:	5.68449e+008 lb-ft
Driving Moment:	3.19608e+008 lb-ft
Total Slice Area:	11675.8 ft2
Surface Horizontal Width:	368.243 ft
Surface Average Height:	31.7067 ft

Valid / Invalid Surfaces

Method: bishop simplified

Number of Valid Surfaces: 4515
Number of Invalid Surfaces: 336

Error Codes:

Error Code -103 reported for 68 surfaces
Error Code -106 reported for 4 surfaces
Error Code -1000 reported for 264 surfaces

Error Codes

The following errors were encountered during the computation:

-103 = Two surface / slope intersections, but one or more surface / nonslope external polygon intersections lie between them. This usually occurs when the slip surface extends past the bottom of the soil region, but may also occur on a benched slope model with two sets of Slope Limits.
-106 = Average slice width is less than 0.0001 * (maximum horizontal extent of soil region). This limitation is imposed to avoid numerical errors which may result from too many slices, or too small a slip region.
-1000 = No valid slip surfaces are generated at a grid center. Unable to draw a surface.

Slice Data

Global Minimum Query (bishop simplified) - Safety Factor: 1.77858

Slice Number	Width [ft]	Weight [lbs]	Angle of Slice Base [degrees]	Base Material	Base Cohesion [psf]	Base Friction Angle [degrees]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]	Base Vertical Stress [psf]	Effective Vertical Stress [psf]
1	7.36486	3775.14	2.06511	Compacted Fill	350	30	358.98	638.475	499.654	0	499.654	512.598	512.598
2	7.36486	8495.52	2.81152	Compacted Fill	350	30	562.277	1000.05	1125.93	0	1125.93	1153.54	1153.54
3	7.36486	12747.8	3.55842	Compacted Fill	350	30	743.658	1322.66	1684.69	0	1684.69	1730.94	1730.94
4	7.36486	16506.9	4.30592	Compacted Fill	350	30	902.31	1604.83	2173.43	0	2173.43	2241.37	2241.37
5	7.36486	18681.2	5.05415	Compacted Fill	350	30	991.729	1763.87	2448.89	0	2448.89	2536.6	2536.6
6	7.36486	18976.3	5.80325	Compacted Fill	350	30	1000.21	1778.95	2475.02	0	2475.02	2576.68	2576.68
7	7.36486	19655.7	6.55335	Compacted Fill	350	30	1024.94	1822.93	2551.19	0	2551.19	2668.93	2668.93
8	7.36486	22267.9	7.30457	Compacted Fill	350	30	1131.23	2011.98	2878.65	0	2878.65	3023.65	3023.65
9	7.36486	24795.2	8.05707	Compacted Fill	350	30	1233.04	2193.06	3192.27	0	3192.27	3366.81	3366.81
10	7.36486	27224.2	8.81096	Compacted Fill	350	30	1329.85	2365.25	3490.52	0	3490.52	3696.66	3696.66
11	7.36486	29554.5	9.56639	Compacted Fill	350	30	1421.71	2528.62	3773.47	0	3773.47	4013.08	4013.08
12	7.36486	31785.3	10.3235	Compacted Fill	350	30	1508.61	2683.19	4041.21	0	4041.21	4316.01	4316.01
13	7.36486	33888.1	11.0825	Compacted Fill	350	30	1589.45	2826.96	4290.22	0	4290.22	4601.55	4601.55
14	7.36486	33748.1	11.8434	Compacted Fill	350	30	1577	2804.82	4251.87	0	4251.87	4582.56	4582.56
15	7.36486	34355	12.6064	Compacted Fill	350	30	1595.29	2837.35	4308.21	0	4308.21	4664.99	4664.99
16	7.36486	36734	13.3717	Compacted Fill	350	30	1685.88	2998.47	4587.28	0	4587.28	4988.04	4988.04
17	7.36486	39009.4	14.1395	Compacted Fill	350	30	1771.41	3150.6	4850.77	0	4850.77	5297.02	5297.02
18	7.36486	41180.3	14.9099	Compacted Fill	350	30	1851.9	3293.75	5098.72	0	5098.72	5591.81	5591.81
19	7.36486	43245.5	15.683	Compacted Fill	350	30	1927.34	3427.93	5331.14	0	5331.14	5872.27	5872.27
20	7.36486	45204	16.4591	Compacted	350	30	1997.75	3553.15	5548.02	0	5548.02	6138.23	6138.23

				Fill									
21	7.36486	47054.3	17.2383	Compacted Fill	350	30	2063.11	3669.4	5749.36	0	5749.36	6389.51	6389.51
22	7.36486	47776.1	18.0208	Compacted Fill	350	30	2082.77	3704.38	5809.96	0	5809.96	6487.53	6487.53
23	7.36486	45597.9	18.8068	Compacted Fill	350	30	1987.05	3534.13	5515.08	0	5515.08	6191.79	6191.79
24	7.36486	45643.6	19.5964	Compacted Fill	350	30	1979.93	3521.46	5493.13	0	5493.13	6198.01	6198.01
25	7.36486	46734.4	20.39	Compacted Fill	350	30	2013.84	3581.78	5597.61	0	5597.61	6346.16	6346.16
26	7.36486	47709.5	21.1877	Compacted Fill	350	30	2042.78	3633.24	5686.74	0	5686.74	6478.58	6478.58
27	7.36486	48566.9	21.9897	Compacted Fill	350	30	2066.7	3675.8	5760.46	0	5760.46	6595.03	6595.03
28	7.36486	49304.8	22.7963	Compacted Fill	350	30	2085.61	3709.43	5818.71	0	5818.71	6695.26	6695.26
29	7.36486	48335.7	23.6076	Compacted Fill	350	30	2038.27	3625.23	5672.85	0	5672.85	6563.68	6563.68
30	7.36486	45085.3	24.4241	Compacted Fill	350	30	1903.55	3385.62	5257.85	0	5257.85	6122.31	6122.31
31	7.36486	41696.1	25.2458	Compacted Fill	350	30	1764.67	3138.6	4830	0	4830	5662.11	5662.11
32	7.36486	38465.3	26.0732	Compacted Fill	350	30	1632.99	2904.4	4424.36	0	4424.36	5223.4	5223.4
33	7.36486	37907.2	26.9064	Compacted Fill	350	30	1603.61	2852.15	4333.85	0	4333.85	5147.64	5147.64
34	7.36486	37925.4	27.7458	Compacted Fill	350	30	1596.05	2838.7	4310.55	0	4310.55	5150.13	5150.13
35	7.36486	37806	28.5918	Compacted Fill	350	30	1583.22	2815.88	4271.04	0	4271.04	5133.94	5133.94
36	7.36486	37545.8	29.4446	Compacted Fill	350	30	1565.07	2783.61	4215.14	0	4215.14	5098.62	5098.62
37	7.36486	37141.3	30.3046	Compacted Fill	350	30	1541.57	2741.8	4142.72	0	4142.72	5043.7	5043.7
38	7.36486	36588.6	31.1723	Compacted Fill	350	30	1512.63	2690.34	4053.59	0	4053.59	4968.67	4968.67
39	7.36486	35679.1	32.048	Compacted Fill	350	30	1470.72	2615.79	3924.46	0	3924.46	4845.18	4845.18
40	7.36486	31873.8	32.9321	Compacted Fill	350	30	1323.57	2354.07	3471.15	0	3471.15	4328.46	4328.46
41	7.36486	28445.1	33.8252	Compacted Fill	350	30	1191.55	2119.26	3064.44	0	3064.44	3862.87	3862.87
42	7.36486	27409	34.7277	Compacted Fill	350	30	1146.98	2039.99	2927.16	0	2927.16	3722.18	3722.18
43	7.36486	26256.1	35.6402	Compacted Fill	350	30	1098.56	1953.87	2777.98	0	2777.98	3565.64	3565.64
44	7.36486	24925.5	36.5632	Compacted Fill	350	30	1044.19	1857.18	2610.51	0	2610.51	3384.96	3384.96
45	7.36486	23410.9	37.4974	Compacted Fill	350	30	983.796	1749.76	2424.46	0	2424.46	3179.29	3179.29
46	7.36486	21670.5	38.4434	Compacted Fill	350	30	916.057	1629.28	2215.77	0	2215.77	2942.96	2942.96
47	7.36486	17268.1	39.402	Compacted Fill	350	30	756.353	1345.23	1723.79	0	1723.79	2345.11	2345.11
48	7.36486	11404	40.374	Compacted Fill	350	30	548.222	975.057	1082.63	0	1082.63	1548.77	1548.77
49	7.36486	6849.69	41.3602	Compacted Fill	350	30	387.915	689.937	588.788	0	588.788	930.303	930.303
50	7.36486	2321.69	42.3616	Compacted Fill	350	30	230.837	410.561	104.895	0	104.895	315.394	315.394

Interslice Data

Global Minimum Query (bishop simplified) - Safety Factor: 1.77858

Slice Number	X coordinate [ft]	Y coordinate - Bottom [ft]	Interslice Normal Force [lbs]	Interslice Shear Force [lbs]	Interslice Force Angle [degrees]
1	19.1865	1784.25	0	0	0
2	26.5514	1784.51	2509.19	0	0
3	33.9162	1784.88	6239.99	0	0
4	41.2811	1785.33	10941.3	0	0
5	48.646	1785.89	16376.5	0	0
6	56.0108	1786.54	22080	0	0
7	63.3757	1787.29	27588.3	0	0
8	70.7405	1788.13	32972.8	0	0
9	78.1054	1789.08	38580.4	0	0
10	85.4703	1790.12	44326.7	0	0
11	92.8351	1791.26	50128.9	0	0
12	100.2	1792.5	55908.1	0	0
13	107.565	1793.85	61589.2	0	0
14	114.93	1795.29	67097.6	0	0
15	122.295	1796.83	72136.7	0	0
16	129.659	1798.48	76781	0	0
17	137.024	1800.23	81157	0	0
18	144.389	1802.09	85193.8	0	0
19	151.754	1804.05	88824.1	0	0
20	159.119	1806.11	91984.4	0	0
21	166.484	1808.29	94615	0	0
22	173.849	1810.58	96659.8	0	0
23	181.213	1812.97	98067.5	0	0
24	188.578	1815.48	98858.2	0	0
25	195.943	1818.1	99026.4	0	0
26	203.308	1820.84	98523.6	0	0
27	210.673	1823.69	97322.6	0	0
28	218.038	1826.67	95400.5	0	0
29	225.403	1829.76	92738.5	0	0
30	232.767	1832.98	89479.2	0	0
31	240.132	1836.33	85902.9	0	0
32	247.497	1839.8	82116	0	0
33	254.862	1843.4	78189.7	0	0
34	262.227	1847.14	73793.8	0	0
35	269.592	1851.01	68840.1	0	0
36	276.957	1855.03	63347.4	0	0
37	284.321	1859.19	57341.2	0	0
38	291.686	1863.49	50854	0	0
39	299.051	1867.95	43925.5	0	0
40	306.416	1872.56	36654.8	0	0
41	313.781	1877.33	29836.7	0	0
42	321.146	1882.26	23482.6	0	0
43	328.511	1887.37	16980.8	0	0
44	335.875	1892.65	10396.3	0	0
45	343.24	1898.11	3821.54	0	0
46	350.605	1903.76	-2638.25	0	0
47	357.97	1909.61	-8850.93	0	0
48	365.335	1915.66	-13713.6	0	0
49	372.7	1921.92	-16458.7	0	0
50	380.065	1928.4	-17421.5	0	0
51	387.429	1935.12	0	0	0

List Of Coordinates

Distributed Load

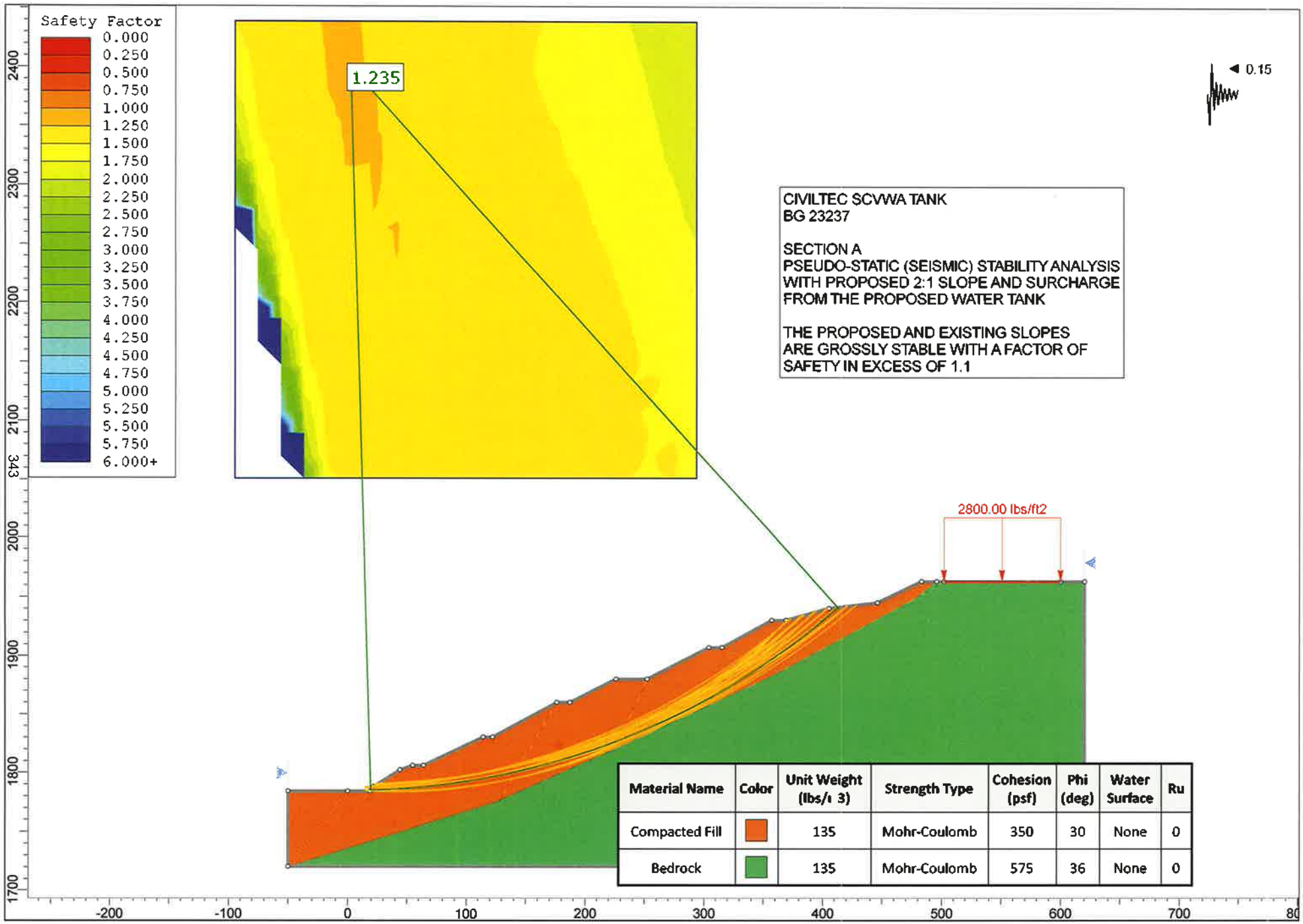
X	Y
600	1963
502	1963

External Boundary

X	Y
-50	1720
620	1720
620	1963
600	1963
502	1963
496	1963
483	1963
446	1945
405	1940
369	1930
357	1930
315	1907
304	1907
252	1880
226	1880
187	1860
176	1860
122	1830
114	1830
64	1806
55	1806
44	1802
22	1788
19	1784
0	1784
-50	1784

Material Boundary

X	Y
-50	1720
128	1776
225	1820
360	1884
479	1949
496	1963


Safety Factor
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0.250
0.500
0.750
1.000
1.250
1.500
1.750
2.000
2.250
2.500
2.750
3.000
3.250
3.500
3.750
4.000
4.250
4.500
4.750
5.000
5.250
5.500
5.750
6.000+
1.235
0.15
CIVILTEC SCVWA TANK
BG 23237
SECTION A
PSEUDO-STATIC (SEISMIC) STABILITY ANALYSIS
WITH PROPOSED 2:1 SLOPE AND SURCHARGE
FROM THE PROPOSED WATER TANK
THE PROPOSED AND EXISTING SLOPES
ARE GROSSLY STABLE WITH A FACTOR OF
SAFETY IN EXCESS OF 1.1
2800.00 lbs/ft2
2400
2300
2200
2100
2000
1900
1800
1700
343
-200
-100
0
100
200
300
400
500
600
700
Material Name
Color
Unit Weight (lbs/ft 3)
Strength Type
Cohesion (psf)
Phi (deg)
Water Surface
Ru
Compacted Fill
135
Mohr-Coulomb
350
30
None
0
Bedrock
135
Mohr-Coulomb
575
36
None
0

Slide Analysis Information

SLIDE - An Interactive Slope Stability Program

Project Summary

File Name:	23237 Section A Seismic
Slide Modeler Version:	7.038
Project Title:	SLIDE - An Interactive Slope Stability Program
Date Created:	8/19/2020, 7:24:56 AM

General Settings

Units of Measurement:	Imperial Units
Time Units:	days
Permeability Units:	feet/second
Failure Direction:	Right to Left
Data Output:	Standard
Maximum Material Properties:	20
Maximum Support Properties:	20

Analysis Options

Slices Type:	Vertical
Analysis Methods Used	
	Bishop simplified
Number of slices:	50
Tolerance:	0.005
Maximum number of iterations:	75
Check malpha < 0.2:	Yes
Create interslice boundaries at intersections with water tables and piezos:	Yes
Initial trial value of FS:	1
Steffensen Iteration:	Yes

Groundwater Analysis

Groundwater Method:	Water Surfaces
Pore Fluid Unit Weight [lbs/ft3]:	62.4
Use negative pore pressure cutoff:	Yes
Maximum negative pore pressure [psf]:	0
Advanced Groundwater Method:	None

Random Numbers

Pseudo-random Seed:	10116
Random Number Generation Method:	Park and Miller v.3

Surface Options

Surface Type:	Circular
Search Method:	Grid Search
Radius Increment:	10
Composite Surfaces:	Disabled
Reverse Curvature:	Invalid Surfaces
Minimum Elevation:	Not Defined
Minimum Depth:	Not Defined
Minimum Area:	Not Defined
Minimum Weight:	Not Defined

Seismic

Advanced seismic analysis:	No
Staged pseudostatic analysis:	No

Loading

Seismic Load Coefficient (Horizontal): 0.15

1 Distributed Load present

Distributed Load 1

Distribution:	Constant
Magnitude [psf]:	2800
Orientation:	Normal to boundary

Material Properties

Property	Compacted Fill	Bedrock
Color		
Strength Type	Mohr-Coulomb	Mohr-Coulomb
Unit Weight [lbs/ft3]	135	135
Cohesion [psf]	350	575
Friction Angle [deg]	30	36
Water Surface	None	None
Ru Value	0	0

Global Minimums

Method: bishop simplified

FS	**1.235280**
Center:	2.478, 2399.927
Radius:	615.548
Left Slip Surface Endpoint:	19.460, 1784.614
Right Slip Surface Endpoint:	412.625, 1940.930
Resisting Moment:	6.72861e+008 lb-ft
Driving Moment:	5.44701e+008 lb-ft
Total Slice Area:	13458.2 ft2
Surface Horizontal Width:	393.165 ft
Surface Average Height:	34.2305 ft

Valid / Invalid Surfaces

Method: bishop simplified

Number of Valid Surfaces: 4604
Number of Invalid Surfaces: 247

Error Codes:

Error Code -103 reported for 37 surfaces
Error Code -106 reported for 12 surfaces
Error Code -1000 reported for 198 surfaces

Error Codes

The following errors were encountered during the computation:

-103 = Two surface / slope intersections, but one or more surface / nonslope external polygon intersections lie between them. This usually occurs when the slip surface extends past the bottom of the soil region, but may also occur on a benched slope model with two sets of Slope Limits.
-106 = Average slice width is less than 0.0001 * (maximum horizontal extent of soil region). This limitation is imposed to avoid numerical errors which may result from too many slices, or too small a slip region.
-1000 = No valid slip surfaces are generated at a grid center. Unable to draw a surface.

Slice Data

Global Minimum Query (bishop simplified) - Safety Factor: 1.23528

Slice Number	Width [ft]	Weight [lbs]	Angle of Slice Base [degrees]	Base Material	Base Cohesion [psf]	Base Friction Angle [degrees]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]	Base Vertical Stress [psf]	Effective Vertical Stress [psf]
1	7.8633	4089.65	1.94707	Compacted Fill	350	30	518.195	640.116	502.495	0	502.495	520.111	520.111
2	7.8633	9367.77	2.67961	Compacted Fill	350	30	822.178	1015.62	1152.89	0	1152.89	1191.37	1191.37
3	7.8633	14235.4	3.41259	Compacted Fill	350	30	1098.88	1357.42	1744.91	0	1744.91	1810.43	1810.43
4	7.8633	18116	4.14613	Compacted Fill	350	30	1315.6	1625.13	2208.59	0	2208.59	2303.96	2303.96
5	7.8633	20159	4.88035	Compacted Fill	350	30	1424.75	1759.97	2442.14	0	2442.14	2563.8	2563.8
6	7.8633	20028	5.61537	Compacted Fill	350	30	1409.08	1740.61	2408.62	0	2408.62	2547.16	2547.16
7	7.8633	22275.8	6.35133	Compacted Fill	350	30	1527.97	1887.47	2662.98	0	2662.98	2833.05	2833.05
8	7.8633	25298.9	7.08833	Compacted Fill	350	30	1689.01	2086.4	3007.52	0	3007.52	3217.55	3217.55
9	7.8633	28212.9	7.82652	Compacted Fill	350	30	1842.05	2275.45	3334.99	0	3334.99	3588.19	3588.19
10	7.8633	31017.3	8.56602	Compacted Fill	350	30	1987.2	2454.75	3645.53	0	3645.53	3944.86	3944.86
11	7.8633	33711.3	9.30696	Compacted Fill	350	30	2124.53	2624.39	3939.35	0	3939.35	4287.52	4287.52
12	7.8633	36294.4	10.0495	Compacted Fill	350	30	2254.11	2784.46	4216.61	0	4216.61	4616.08	4616.08
13	7.8633	36853.1	10.7937	Compacted Fill	350	30	2271.63	2806.1	4254.08	0	4254.08	4687.16	4687.16
14	7.8633	37341.9	11.5398	Compacted Fill	350	30	2285.05	2822.68	4282.81	0	4282.81	4749.36	4749.36
15	7.8633	40214.3	12.2878	Compacted Fill	350	30	2426.82	2997.8	4586.12	0	4586.12	5114.72	5114.72
16	7.8633	42976.1	13.038	Compacted Fill	350	30	2560.89	3163.42	4872.98	0	4872.98	5466	5466
17	7.8633	45622.6	13.7905	Compacted Fill	350	30	2687.13	3319.36	5143.08	0	5143.08	5802.63	5802.63
18	7.8633	48152.7	14.5454	Compacted Fill	350	30	2805.58	3465.68	5396.51	0	5396.51	6124.46	6124.46

19	7.8633	50565.1	15.3029	Compacted Fill	350	30	2916.29	3602.43	5633.37	0	5633.37	6431.33	6431.33
20	7.8633	52839	16.0632	Compacted Fill	350	30	3018.24	3728.37	5851.51	0	5851.51	6720.57	6720.57
21	7.8633	52285.1	16.8263	Compacted Fill	350	30	2971.51	3670.65	5751.53	0	5751.53	6650.17	6650.17
22	7.8633	50728.9	17.5926	Compacted Fill	350	30	2873.23	3549.24	5541.24	0	5541.24	6452.27	6452.27
23	7.8633	52099.7	18.3621	Compacted Fill	350	30	2926.53	3615.08	5655.29	0	5655.29	6626.67	6626.67
24	7.8633	53547	19.1351	Compacted Fill	350	30	2982.86	3684.67	5775.83	0	5775.83	6810.78	6810.78
25	7.8633	54867.7	19.9117	Compacted Fill	350	30	3031.84	3745.17	5880.6	0	5880.6	6978.8	6978.8
26	7.8633	56060.1	20.6921	Compacted Fill	350	30	3073.45	3796.57	5969.64	0	5969.64	7130.51	7130.51
27	7.8633	55970.1	21.4766	Compacted Fill	350	30	3049.86	3767.43	5919.17	0	5919.17	7119.1	7119.1
28	7.8633	52771	22.2653	Compacted Fill	350	30	2871.12	3546.64	5536.73	0	5536.73	6712.24	6712.24
29	7.8633	49285.6	23.0585	Compacted Fill	350	30	2680.12	3310.7	5128.08	0	5128.08	6268.95	6268.95
30	7.8633	46058.8	23.8564	Compacted Fill	350	30	2503.98	3093.12	4751.23	0	4751.23	5858.56	5858.56
31	7.8633	45920.2	24.6592	Compacted Fill	350	30	2480.97	3064.69	4701.99	0	4701.99	5840.97	5840.97
32	7.8633	46350.5	25.4672	Compacted Fill	350	30	2485.61	3070.42	4711.9	0	4711.9	5895.73	5895.73
33	7.8633	46635.9	26.2808	Compacted Fill	350	30	2482.85	3067.02	4706.01	0	4706.01	5932.07	5932.07
34	7.8633	46773.3	27.1	Compacted Fill	350	30	2472.68	3054.45	4684.25	0	4684.25	5949.59	5949.59
35	7.8633	46759.5	27.9253	Compacted Fill	350	30	2455.08	3032.71	4646.59	0	4646.59	5947.88	5947.88
36	7.8633	46591.1	28.7569	Compacted Fill	350	30	2430.01	3001.74	4592.95	0	4592.95	5926.48	5926.48
37	7.8633	44827.7	29.5953	Compacted Fill	350	30	2329.95	2878.14	4378.87	0	4378.87	5702.21	5702.21
38	7.8633	40473.6	30.4406	Compacted Fill	350	30	2110.07	2606.53	3908.43	0	3908.43	5148.41	5148.41
39	7.8633	39273.8	31.2934	Compacted Fill	350	30	2039.02	2518.76	3756.4	0	3756.4	4995.82	4995.82
40	7.8633	38684.4	32.1539	Compacted Fill	350	30	1996.66	2466.43	3665.76	0	3665.76	4920.88	4920.88
41	7.8633	37919.2	33.0226	Compacted Fill	350	30	1946.49	2404.46	3558.42	0	3558.42	4823.58	4823.58
42	7.8633	36973	33.9	Compacted Fill	350	30	1888.45	2332.77	3434.27	0	3434.27	4703.26	4703.26
43	7.8633	35827.7	34.7866	Compacted Fill	350	30	1821.94	2250.61	3291.95	0	3291.95	4557.6	4557.6
44	7.8633	31890.9	35.6827	Compacted Fill	350	30	1631.77	2015.69	2885.05	0	2885.05	4056.85	4056.85
45	7.8633	26143.5	36.589	Compacted Fill	350	30	1364.35	1685.36	2312.92	0	2312.92	3325.78	3325.78
46	7.8633	21923.6	37.5062	Compacted Fill	350	30	1167.92	1442.71	1892.63	0	1892.63	2789.01	2789.01
47	7.8633	17727	38.4347	Compacted Fill	350	30	975.54	1205.07	1481.01	0	1481.01	2255.18	2255.18
48	7.8633	13308.3	39.3753	Compacted Fill	350	30	776.732	959.482	1055.65	0	1055.65	1693.11	1693.11
49	7.8633	8658.66	40.3288	Compacted Fill	350	30	571.478	705.935	616.498	0	616.498	1101.64	1101.64
50	7.8633	3156.53	41.296	Compacted Fill	350	30	333.98	412.559	108.355	0	108.355	401.723	401.723

Interslice Data

Global Minimum Query (bishop simplified) - **Safety Factor**: 1.23528

Slice Number	X coordinate [ft]	Y coordinate - Bottom [ft]	Interslice Normal Force [lbs]	Interslice Shear Force [lbs]	Interslice Force Angle [degrees]
1	19.4603	1784.61	0	0	0
2	27.3236	1784.88	3322.81	0	0
3	35.1869	1785.25	7951.83	0	0
4	43.0502	1785.72	13630.3	0	0
5	50.9135	1786.29	19988.5	0	0
6	58.7768	1786.96	26516.9	0	0
7	66.6401	1787.73	32719.3	0	0
8	74.5034	1788.61	39049.9	0	0
9	82.3667	1789.59	45582	0	0
10	90.23	1790.67	52215.3	0	0
11	98.0933	1791.85	58854.9	0	0
12	105.957	1793.14	65410.6	0	0
13	113.82	1794.53	71797.3	0	0
14	121.683	1796.03	77736.4	0	0
15	129.547	1797.64	83208.9	0	0
16	137.41	1799.35	88385.4	0	0
17	145.273	1801.17	93182.5	0	0
18	153.136	1803.1	97521.1	0	0
19	161	1805.14	101327	0	0
20	168.863	1807.29	104530	0	0
21	176.726	1809.56	107064	0	0
22	184.59	1811.94	108886	0	0
23	192.453	1814.43	110031	0	0
24	200.316	1817.04	110445	0	0
25	208.18	1819.77	110086	0	0
26	216.043	1822.62	108922	0	0
27	223.906	1825.59	106926	0	0
28	231.769	1828.68	104176	0	0
29	239.633	1831.9	100989	0	0
30	247.496	1835.25	97484.3	0	0
31	255.359	1838.72	93723.3	0	0
32	263.223	1842.33	89350.2	0	0
33	271.086	1846.08	84276.4	0	0
34	278.949	1849.96	78511.1	0	0
35	286.813	1853.98	72070.1	0	0
36	294.676	1858.15	64975.3	0	0
37	302.539	1862.47	57255.6	0	0
38	310.402	1866.93	49277.4	0	0
39	318.266	1871.55	41721.4	0	0
40	326.129	1876.33	33892.9	0	0
41	333.992	1881.28	25654.9	0	0
42	341.856	1886.39	17070.5	0	0
43	349.719	1891.67	8212.6	0	0
44	357.582	1897.13	-831.593	0	0
45	365.446	1902.78	-9088.39	0	0
46	373.309	1908.62	-15794	0	0
47	381.172	1914.65	-21330.3	0	0
48	389.036	1920.89	-25567.9	0	0
49	396.899	1927.35	-28275.2	0	0
50	404.762	1934.02	-29200.2	0	0
51	412.625	1940.93	0	0	0

List Of Coordinates

Distributed Load

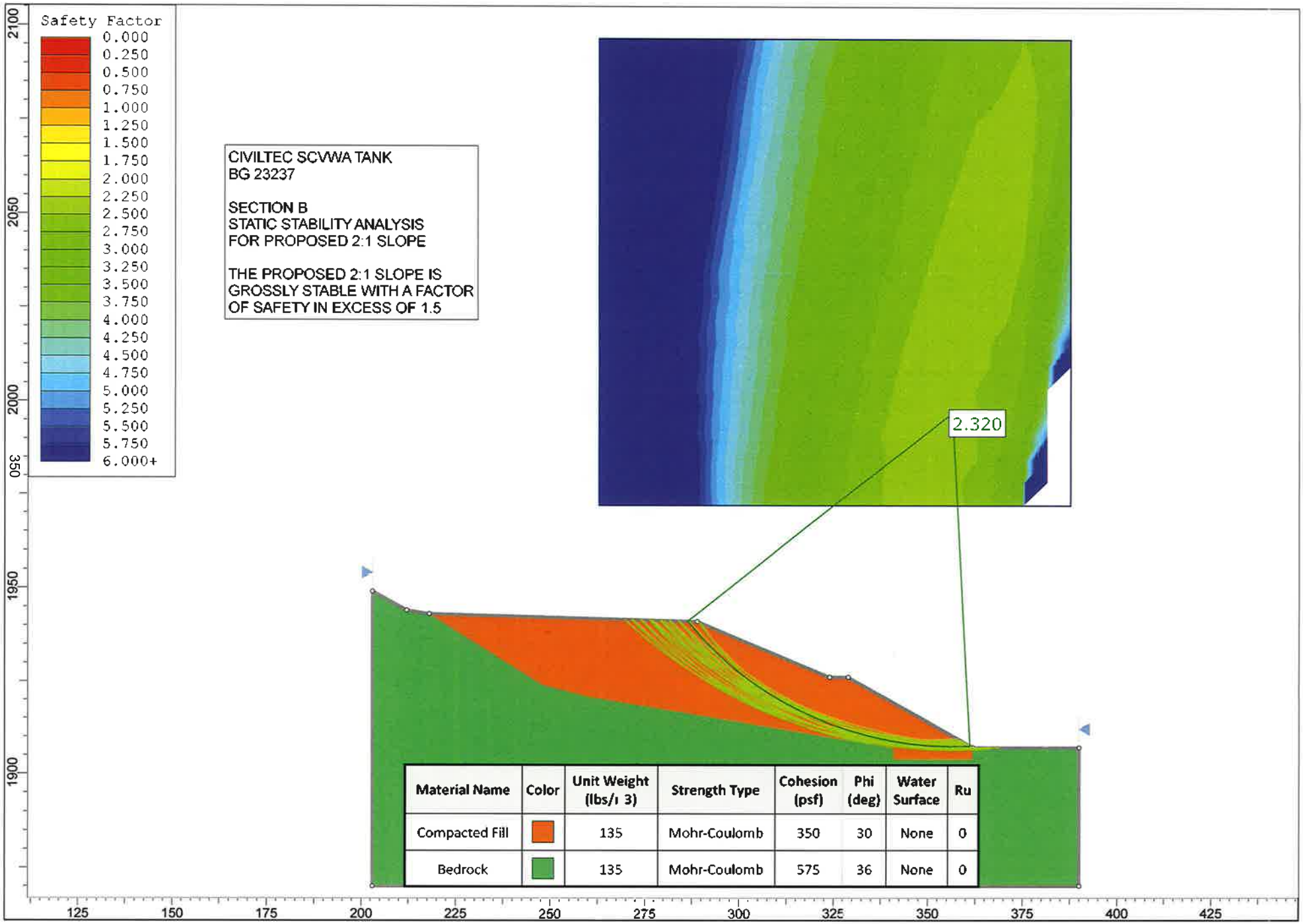
X	Y
600	1963
502	1963

External Boundary

X	Y
-50	1720
620	1720
620	1963
600	1963
502	1963
496	1963
483	1963
446	1945
405	1940
369	1930
357	1930
315	1907
304	1907
252	1880
226	1880
187	1860
176	1860
122	1830
114	1830
64	1806
55	1806
44	1802
22	1788
19	1784
0	1784
-50	1784

Material Boundary

X	Y
-50	1720
128	1776
225	1820
360	1884
479	1949
496	1963



Material Name	Color	Unit Weight (lbs/ı 3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Compacted Fill		135	Mohr-Coulomb	350	30	None	0
Bedrock		135	Mohr-Coulomb	575	36	None	0

Slide Analysis Information

SLIDE - An Interactive Slope Stability Program

Project Summary

File Name:	23237 Section B Static
Slide Modeler Version:	7.038
Project Title:	SLIDE - An Interactive Slope Stability Program
Date Created:	8/19/2020, 11:42:05 AM

General Settings

Units of Measurement:	Imperial Units
Time Units:	days
Permeability Units:	feet/second
Failure Direction:	Left to Right
Data Output:	Standard
Maximum Material Properties:	20
Maximum Support Properties:	20

Analysis Options

Slices Type:	Vertical
Analysis Methods Used	
	Bishop simplified
Number of slices:	50
Tolerance:	0.005
Maximum number of iterations:	75
Check malpha < 0.2:	Yes
Create Interslice boundaries at Intersections with water tables and piezos:	Yes
Initial trial value of FS:	1
Steffensen Iteration:	Yes

Groundwater Analysis

Groundwater Method:	Water Surfaces
Pore Fluid Unit Weight [lbs/ft3]:	62.4
Use negative pore pressure cutoff:	Yes
Maximum negative pore pressure [psf]:	0
Advanced Groundwater Method:	None

Random Numbers

Pseudo-random Seed:	10116
Random Number Generation Method:	Park and Miller v.3

Surface Options

Surface Type:	Circular
Search Method:	Grid Search
Radius Increment:	10
Composite Surfaces:	Disabled
Reverse Curvature:	Invalid Surfaces
Minimum Elevation:	Not Defined
Minimum Depth:	Not Defined
Minimum Area:	Not Defined
Minimum Weight:	Not Defined

Seismic

Advanced seismic analysis:	No
Staged pseudostatic analysis:	No

Material Properties

Property	Compacted Fill	Bedrock
Color		
Strength Type	Mohr-Coulomb	Mohr-Coulomb
Unit Weight [lbs/ft3]	135	135
Cohesion [psf]	350	575
Friction Angle [deg]	30	36
Water Surface	None	None
Ru Value	0	0

Global Minimums

Method: bishop simplified

FS	2.320140
Center:	356.513, 1996.819
Radius:	89.496
Left Slip Surface Endpoint:	286.502, 1941.070
Right Slip Surface Endpoint:	361.223, 1907.447
Resisting Moment:	7.15554e+006 lb-ft
Driving Moment:	3.0841e+006 lb-ft
Total Slice Area:	679.635 ft2
Surface Horizontal Width:	74.7213 ft
Surface Average Height:	9.0956 ft

Valid / Invalid Surfaces

Method: bishop simplified

Number of Valid Surfaces:	4767
Number of Invalid Surfaces:	84

Error Codes:

Error Code -103 reported for 1 surface
Error Code -108 reported for 83 surfaces

Error Codes

The following errors were encountered during the computation:

-103 = Two surface / slope intersections, but one or more surface / nonslope external polygon intersections lie between them. This usually occurs when the slip surface extends past the bottom of the soil region, but may also occur on a benched slope model with two sets of Slope Limits.
-108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremelyhigh safety factors if the driving force is very small (0.1 is an arbitrary number).

Slice Data

Global Minimum Query (bishop simplified) - Safety Factor: 2.32014

Slice Number	Width [ft]	Weight [lbs]	Angle of Slice Base [degrees]	Base Material	Base Cohesion [psf]	Base Friction Angle [degrees]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]	Base Vertical Stress [psf]	Effective Vertical Stress [psf]
1	1.49443	180.03	-50.715	Compacted Fill	350	30	138.696	321.794	-48.8544	0	-48.8544	120.689	120.689
2	1.49443	524.11	-49.2269	Compacted Fill	350	30	184.853	428.885	136.632	0	136.632	350.99	350.99
3	1.49443	763.074	-47.7825	Compacted Fill	350	30	218.16	506.161	270.479	0	270.479	510.927	510.927
4	1.49443	958.186	-46.3771	Compacted Fill	350	30	246.204	571.228	383.177	0	383.177	641.511	641.511
5	1.49443	1137.93	-45.0071	Compacted Fill	350	30	272.578	632.418	489.161	0	489.161	761.806	761.806
6	1.49443	1303.41	-43.6691	Compacted Fill	350	30	297.348	689.889	588.705	0	588.705	872.55	872.55
7	1.49443	1455.56	-42.3604	Compacted Fill	350	30	320.577	743.784	682.052	0	682.052	974.372	974.372
8	1.49443	1595.22	-41.0783	Compacted Fill	350	30	342.321	794.233	769.435	0	769.435	1067.83	1067.83
9	1.49443	1723.1	-39.8209	Compacted Fill	350	30	362.632	841.357	851.054	0	851.054	1153.41	1153.41
10	1.49443	1839.86	-38.586	Compacted Fill	350	30	381.556	885.264	927.106	0	927.106	1231.55	1231.55
11	1.49443	1946.07	-37.3721	Compacted Fill	350	30	399.138	926.056	997.758	0	997.758	1302.61	1302.61
12	1.49443	2042.23	-36.1775	Compacted Fill	350	30	415.417	963.825	1063.18	0	1063.18	1366.96	1366.96
13	1.49443	2128.82	-35.0008	Compacted Fill	350	30	430.428	998.654	1123.5	0	1123.5	1424.9	1424.9
14	1.49443	2206.24	-33.8409	Compacted Fill	350	30	444.206	1030.62	1178.87	0	1178.87	1476.7	1476.7
15	1.49443	2274.86	-32.6965	Compacted Fill	350	30	456.782	1059.8	1229.41	0	1229.41	1522.62	1522.62
16	1.49443	2335.04	-31.5666	Compacted Fill	350	30	468.183	1086.25	1275.22	0	1275.22	1562.87	1562.87
17	1.49443	2387.07	-30.4502	Compacted Fill	350	30	478.434	1110.03	1316.42	0	1316.42	1597.68	1597.68
18	1.49443	2431.23	-29.3465	Compacted Fill	350	30	487.561	1131.21	1353.1	0	1353.1	1627.22	1627.22
19	1.49443	2467.79	-28.2546	Compacted Fill	350	30	495.584	1149.83	1385.34	0	1385.34	1651.68	1651.68
20	1.49443	2496.98	-27.1738	Compacted Fill	350	30	502.524	1165.93	1413.23	0	1413.23	1671.2	1671.2
21	1.49443	2519.01	-26.1033	Compacted Fill	350	30	508.399	1179.56	1436.83	0	1436.83	1685.93	1685.93
22	1.49443	2534.1	-25.0426	Compacted Fill	350	30	513.224	1190.75	1456.23	0	1456.23	1696.01	1696.01
23	1.49443	2542.4	-23.991	Compacted Fill	350	30	517.016	1199.55	1471.46	0	1471.46	1701.56	1701.56
24	1.49443	2544.11	-22.9479	Compacted Fill	350	30	519.788	1205.98	1482.61	0	1482.61	1702.68	1702.68
25	1.49443	2539.36	-21.9127	Compacted Fill	350	30	521.553	1210.08	1489.69	0	1489.69	1699.49	1699.49
26	1.49443	2581.59	-20.8851	Compacted Fill	350	30	530.425	1230.66	1525.35	0	1525.35	1727.74	1727.74
27	1.49443	2693.03	-19.8644	Compacted	350	30	549.905	1275.86	1603.63	0	1603.63	1802.31	1802.31

				Fill									
28	1.49443	2798.96	-18.8503	Compacted Fill	350	30	568.669	1319.39	1679.04	0	1679.04	1873.18	1873.18
29	1.49443	2871.5	-17.8423	Compacted Fill	350	30	582.409	1351.27	1734.25	0	1734.25	1921.72	1921.72
30	1.49443	2808.68	-16.8399	Compacted Fill	350	30	575.266	1334.7	1705.55	0	1705.55	1879.67	1879.67
31	1.49443	2723.5	-15.8428	Compacted Fill	350	30	564.54	1309.81	1662.45	0	1662.45	1822.65	1822.65
32	1.49443	2632.66	-14.8506	Compacted Fill	350	30	552.801	1282.58	1615.26	0	1615.26	1761.84	1761.84
33	1.49443	2536.25	-13.863	Compacted Fill	350	30	540.051	1252.99	1564.03	0	1564.03	1697.31	1697.31
34	1.49443	2434.33	-12.8796	Compacted Fill	350	30	526.297	1221.08	1508.76	0	1508.76	1629.1	1629.1
35	1.49443	2326.98	-11.8999	Compacted Fill	350	30	511.538	1186.84	1449.45	0	1449.45	1557.25	1557.25
36	1.49443	2214.25	-10.9239	Compacted Fill	350	30	495.777	1150.27	1386.11	0	1386.11	1481.8	1481.8
37	1.49443	2096.21	-9.95097	Compacted Fill	350	30	479.015	1111.38	1318.75	0	1318.75	1402.79	1402.79
38	1.49443	1972.89	-8.98097	Compacted Fill	350	30	461.251	1070.17	1247.36	0	1247.36	1320.26	1320.26
39	1.49443	1844.35	-8.01356	Compacted Fill	350	30	442.482	1026.62	1171.94	0	1171.94	1234.23	1234.23
40	1.49443	1710.62	-7.04845	Compacted Fill	350	30	422.707	980.739	1092.47	0	1092.47	1144.74	1144.74
41	1.49443	1571.74	-6.08534	Compacted Fill	350	30	401.921	932.514	1008.95	0	1008.95	1051.8	1051.8
42	1.49443	1427.74	-5.12396	Compacted Fill	350	30	380.121	881.935	921.341	0	921.341	955.426	955.426
43	1.49443	1278.65	-4.16402	Compacted Fill	350	30	357.301	828.988	829.628	0	829.628	855.641	855.641
44	1.49443	1124.48	-3.20525	Compacted Fill	350	30	333.453	773.658	733.795	0	733.795	752.468	752.468
45	1.49443	965.244	-2.24738	Compacted Fill	350	30	308.57	715.926	633.802	0	633.802	645.912	645.912
46	1.49443	800.966	-1.29013	Compacted Fill	350	30	282.643	655.771	529.611	0	529.611	535.977	535.977
47	1.49443	631.649	-0.333252	Compacted Fill	350	30	255.662	593.171	421.185	0	421.185	422.672	422.672
48	1.49443	457.296	0.623538	Compacted Fill	350	30	227.615	528.098	308.475	0	308.475	305.998	305.998
49	1.49443	277.907	1.5805	Compacted Fill	350	30	198.489	460.523	191.431	0	191.431	185.955	185.955
50	1.49443	93.4763	2.53791	Compacted Fill	350	30	168.272	390.414	69.999	0	69.999	62.5405	62.5405

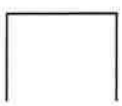
Interslice Data

Global Minimum Query (bishop simplified) - Safety Factor: 2.32014

Slice Number	X coordinate [ft]	Y coordinate - Bottom [ft]	Interslice Normal Force [lbs]	Interslice Shear Force [lbs]	Interslice Force Angle [degrees]
1	286.502	1941.07	0	0	0
2	287.996	1939.24	-296.248	0	0
3	289.491	1937.51	-335.36	0	0
4	290.985	1935.86	-215.451	0	0
5	292.48	1934.3	17.9359	0	0
6	293.974	1932.8	342.318	0	0
7	295.469	1931.37	738.36	0	0
8	296.963	1930.01	1189.34	0	0
9	298.457	1928.71	1680.76	0	0
10	299.952	1927.46	2199.98	0	0
11	301.446	1926.27	2735.99	0	0
12	302.941	1925.13	3279.15	0	0
13	304.435	1924.04	3821.04	0	0
14	305.93	1922.99	4354.31	0	0
15	307.424	1921.99	4872.54	0	0
16	308.918	1921.03	5370.15	0	0
17	310.413	1920.11	5842.27	0	0
18	311.907	1919.23	6284.74	0	0
19	313.402	1918.39	6693.97	0	0
20	314.896	1917.59	7066.94	0	0
21	316.391	1916.82	7401.11	0	0
22	317.885	1916.09	7694.42	0	0
23	319.379	1915.39	7945.2	0	0
24	320.874	1914.73	8152.2	0	0
25	322.368	1914.09	8314.54	0	0
26	323.863	1913.49	8431.65	0	0
27	325.357	1912.92	8509.79	0	0
28	326.852	1912.38	8554.91	0	0
29	328.346	1911.87	8562.84	0	0
30	329.84	1911.39	8527.82	0	0
31	331.335	1910.94	8440.72	0	0
32	332.829	1910.51	8303.18	0	0
33	334.324	1910.12	8118.2	0	0
34	335.818	1909.75	7889.01	0	0
35	337.313	1909.41	7619.08	0	0
36	338.807	1909.09	7312.09	0	0
37	340.301	1908.8	6971.94	0	0
38	341.796	1908.54	6602.79	0	0
39	343.29	1908.31	6208.99	0	0
40	344.785	1908.09	5795.16	0	0
41	346.279	1907.91	5366.14	0	0
42	347.774	1907.75	4927.03	0	0
43	349.268	1907.62	4483.17	0	0
44	350.762	1907.51	4040.17	0	0
45	352.257	1907.42	3603.91	0	0
46	353.751	1907.37	3180.54	0	0
47	355.246	1907.33	2776.53	0	0
48	356.74	1907.32	2398.62	0	0
49	358.235	1907.34	2053.89	0	0
50	359.729	1907.38	1749.76	0	0
51	361.223	1907.45	0	0	0

List Of Coordinates

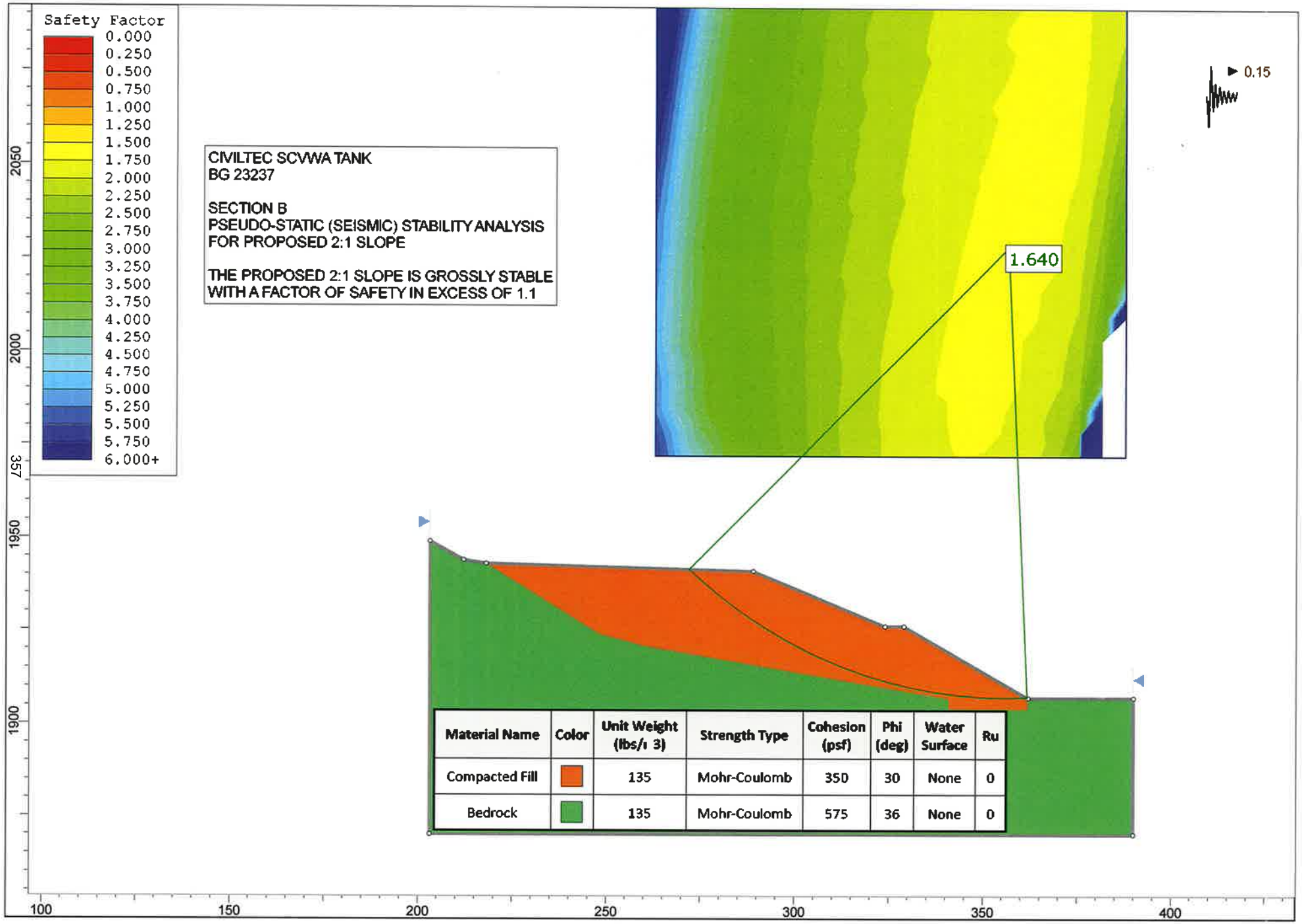
External Boundary



X	Y
203	1870
390	1870
390	1907
362	1907
329	1926
324	1926
289	1941
218	1943
212	1944
203	1949

Material Boundary

X	Y
218	1943
248	1924
259	1921
341	1907
341	1904
362	1904
362	1907



Material Name	Color	Unit Weight (lbs/ı 3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Compacted Fill		135	Mohr-Coulomb	350	30	None	0
Bedrock		135	Mohr-Coulomb	575	36	None	0

Slide Analysis Information

SLIDE - An Interactive Slope Stability Program

Project Summary

File Name:	23237 Section B Seismic
Slide Modeler Version:	7.038
Project Title:	SLIDE - An Interactive Slope Stability Program
Date Created:	8/19/2020, 11:42:05 AM

General Settings

Units of Measurement:	Imperial Units
Time Units:	days
Permeability Units:	feet/second
Failure Direction:	Left to Right
Data Output:	Standard
Maximum Material Properties:	20
Maximum Support Properties:	20

Analysis Options

Slices Type:	Vertical
Analysis Methods Used	
	Bishop simplified
Number of slices:	50
Tolerance:	0.005
Maximum number of iterations:	75
Check malpha < 0.2:	Yes
Create interslice boundaries at intersections with water tables and piezos:	Yes
Initial trial value of FS:	1
Steffensen Iteration:	Yes

Groundwater Analysis

Groundwater Method:	Water Surfaces
Pore Fluid Unit Weight [lbs/ft3]:	62.4
Use negative pore pressure cutoff:	Yes
Maximum negative pore pressure [psf]:	0
Advanced Groundwater Method:	None

Random Numbers

Pseudo-random Seed:	10116
Random Number Generation Method:	Park and Miller v.3

Surface Options

Surface Type:	Circular
Search Method:	Grid Search
Radius Increment:	10
Composite Surfaces:	Disabled
Reverse Curvature:	Invalid Surfaces
Minimum Elevation:	Not Defined
Minimum Depth:	Not Defined
Minimum Area:	Not Defined
Minimum Weight:	Not Defined

Seismic

Advanced seismic analysis:	No
Staged pseudostatic analysis:	No

Loading

Seismic Load Coefficient (Horizontal): 0.15

Material Properties

Property	Compacted Fill	Bedrock
Color		
Strength Type	Mohr-Coulomb	Mohr-Coulomb
Unit Weight [lbs/ft3]	135	135
Cohesion [psf]	350	575
Friction Angle [deg]	30	36
Water Surface	None	None
Ru Value	0	0

Global Minimums

Method: bishop simplified

FS	1.639880
Center:	356.513, 2028.051
Radius:	121.020
Left Slip Surface Endpoint:	271.948, 1941.480
Right Slip Surface Endpoint:	361.749, 1907.145
Resisting Moment:	1.28196e+007 lb-ft
Driving Moment:	7.81744e+006 lb-ft
Total Slice Area:	1008.51 ft2
Surface Horizontal Width:	89.8011 ft
Surface Average Height:	11.2305 ft

Valid / Invalid Surfaces

Method: bishop simplified

Number of Valid Surfaces:	4781
Number of Invalid Surfaces:	70

Error Codes:

Error Code -103 reported for 1 surface

Error Code -108 reported for 69 surfaces

Error Codes

The following errors were encountered during the computation:

-103 = Two surface / slope intersections, but one or more surface / nonslope external polygon intersections lie between them. This usually occurs when the slip surface extends past the bottom of the soil region, but may also occur on a benched slope model with two sets of Slope Limits.
-108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremely high safety factors if the driving force is very small (0.1 is an arbitrary number).

Slice Data

Global Minimum Query (bishop simplified) - Safety Factor: 1.63988

Slice Number	Width [ft]	Weight [lbs]	Angle of Slice Base [degrees]	Base Material	Base Cohesion [psf]	Base Friction Angle [degrees]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]	Base Vertical Stress [psf]	Effective Vertical Stress [psf]
1	1.79602	202.23	-43.7401	Compacted Fill	350	30	189.32	310.463	-68.4806	0	-68.4806	112.692	112.692
2	1.79602	598.364	-42.5743	Compacted Fill	350	30	249.927	409.851	103.665	0	103.665	333.278	333.278
3	1.79602	978.294	-41.4299	Compacted Fill	350	30	309.183	507.023	271.972	0	271.972	544.84	544.84
4	1.79602	1342.88	-40.3053	Compacted Fill	350	30	367.099	601.998	436.473	0	436.473	747.854	747.854
5	1.79602	1692.87	-39.1992	Compacted Fill	350	30	423.686	694.795	597.203	0	597.203	942.743	942.743
6	1.79602	2028.97	-38.1102	Compacted Fill	350	30	478.961	785.438	754.199	0	754.199	1129.89	1129.89
7	1.79602	2351.78	-37.0372	Compacted Fill	350	30	532.935	873.95	907.507	0	907.507	1309.65	1309.65
8	1.79602	2661.89	-35.9792	Compacted Fill	350	30	585.624	960.353	1057.16	0	1057.16	1482.32	1482.32
9	1.79602	2959.79	-34.9352	Compacted Fill	350	30	637.041	1044.67	1203.21	0	1203.21	1648.19	1648.19
10	1.79602	3223.66	-33.9043	Compacted Fill	350	30	683.668	1121.13	1335.64	0	1335.64	1795.12	1795.12
11	1.79602	3345.46	-32.8858	Compacted Fill	350	30	708.117	1161.23	1405.09	0	1405.09	1862.94	1862.94
12	1.79602	3435.03	-31.8788	Compacted Fill	350	30	727.561	1193.11	1460.31	0	1460.31	1912.81	1912.81
13	1.79602	3514.04	-30.8828	Compacted Fill	350	30	745.401	1222.37	1510.99	0	1510.99	1956.8	1956.8
14	1.79602	3582.82	-29.8969	Compacted Fill	350	30	761.66	1249.03	1557.17	0	1557.17	1995.08	1995.08
15	1.79602	3641.68	-28.9208	Compacted Fill	350	30	776.357	1273.13	1598.91	0	1598.91	2027.85	2027.85
16	1.79602	3690.89	-27.9537	Compacted Fill	350	30	789.512	1294.7	1636.28	0	1636.28	2055.25	2055.25
17	1.79602	3730.73	-26.9953	Compacted Fill	350	30	801.14	1313.77	1669.31	0	1669.31	2077.43	2077.43
18	1.79602	3761.42	-26.0449	Compacted Fill	350	30	811.259	1330.37	1698.04	0	1698.04	2094.51	2094.51
19	1.79602	3783.2	-25.1022	Compacted Fill	350	30	819.88	1344.51	1722.54	0	1722.54	2106.63	2106.63
20	1.79602	3796.28	-24.1667	Compacted Fill	350	30	827.018	1356.21	1742.81	0	1742.81	2113.9	2113.9
21	1.79602	3800.84	-23.238	Compacted Fill	350	30	832.683	1365.5	1758.9	0	1758.9	2116.44	2116.44
22	1.79602	3797.08	-22.3157	Compacted Fill	350	30	836.884	1372.39	1770.83	0	1770.83	2114.33	2114.33
23	1.79602	3785.14	-21.3995	Compacted Fill	350	30	839.635	1376.9	1778.64	0	1778.64	2107.68	2107.68
24	1.79602	3765.2	-20.489	Compacted	350	30	840.94	1379.04	1782.34	0	1782.34	2096.57	2096.57

				Fill									
25	1.79602	3737.39	-19.5838	Compacted Fill	350	30	840.799	1378.81	1781.95	0	1781.95	2081.08	2081.08
26	1.79602	3701.86	-18.6838	Compacted Fill	350	30	839.226	1376.23	1777.49	0	1777.49	2061.29	2061.29
27	1.79602	3658.72	-17.7885	Compacted Fill	350	30	836.226	1371.31	1768.96	0	1768.96	2037.26	2037.26
28	1.79602	3608.09	-16.8976	Compacted Fill	350	30	831.799	1364.05	1756.38	0	1756.38	2009.06	2009.06
29	1.79602	3550.11	-16.0109	Compacted Fill	350	30	825.945	1354.45	1739.77	0	1739.77	1976.77	1976.77
30	1.79602	3581.48	-15.1282	Compacted Fill	350	30	835.97	1370.89	1768.23	0	1768.23	1994.24	1994.24
31	1.79602	3695.64	-14.2491	Compacted Fill	350	30	860.941	1411.84	1839.16	0	1839.16	2057.8	2057.8
32	1.79602	3795.83	-13.3735	Compacted Fill	350	30	883.595	1448.99	1903.5	0	1903.5	2113.57	2113.57
33	1.79602	3718.67	-12.501	Compacted Fill	350	30	874.186	1433.56	1876.78	0	1876.78	2070.6	2070.6
34	1.79602	3561.04	-11.6314	Compacted Fill	350	30	849.928	1393.78	1807.88	0	1807.88	1982.83	1982.83
35	1.79602	3396.53	-10.7646	Compacted Fill	350	30	824.109	1351.44	1734.54	0	1734.54	1891.22	1891.22
36	1.79602	3225.2	-9.90022	Compacted Fill	350	30	796.725	1306.53	1656.77	0	1656.77	1795.82	1795.82
37	1.79602	3047.11	-9.03813	Compacted Fill	350	30	767.771	1259.05	1574.53	0	1574.53	1696.65	1696.65
38	1.79602	2862.31	-8.17811	Compacted Fill	350	30	737.238	1208.98	1487.8	0	1487.8	1593.75	1593.75
39	1.79602	2670.85	-7.31993	Compacted Fill	350	30	705.116	1156.3	1396.56	0	1396.56	1487.14	1487.14
40	1.79602	2472.76	-6.4634	Compacted Fill	350	30	671.393	1101	1300.78	0	1300.78	1376.84	1376.84
41	1.79602	2268.09	-5.60832	Compacted Fill	350	30	636.058	1043.06	1200.41	0	1200.41	1262.87	1262.87
42	1.79602	2056.85	-4.75449	Compacted Fill	350	30	599.094	982.443	1095.42	0	1095.42	1145.25	1145.25
43	1.79602	1839.09	-3.90172	Compacted Fill	350	30	560.489	919.135	985.771	0	985.771	1024	1024
44	1.79602	1614.81	-3.04981	Compacted Fill	350	30	520.223	853.104	871.404	0	871.404	899.121	899.121
45	1.79602	1384.05	-2.19858	Compacted Fill	350	30	478.28	784.321	752.265	0	752.265	770.627	770.627
46	1.79602	1146.81	-1.34783	Compacted Fill	350	30	434.637	712.752	628.304	0	628.304	638.53	638.53
47	1.79602	903.094	-0.49738	Compacted Fill	350	30	389.272	638.359	499.453	0	499.453	502.832	502.832
48	1.79602	652.919	0.352961	Compacted Fill	350	30	342.162	561.104	365.643	0	365.643	363.535	363.535
49	1.79602	396.279	1.20338	Compacted Fill	350	30	293.279	480.943	226.8	0	226.8	220.64	220.64
50	1.79602	133.171	2.05406	Compacted Fill	350	30	242.597	397.83	82.8444	0	82.8444	74.1435	74.1435

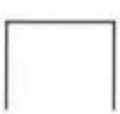
Interslice Data

Global Minimum Query (bishop simplified) - Safety Factor: 1.63988

Slice Number	X coordinate [ft]	Y coordinate - Bottom [ft]	Interslice Normal Force [lbs]	Interslice Shear Force [lbs]	Interslice Force Angle [degrees]
1	271.948	1941.48	0	0	0
2	273.744	1939.76	-427.215	0	0
3	275.54	1938.11	-615.055	0	0
4	277.336	1936.53	-592.231	0	0
5	279.132	1935	-384.847	0	0
6	280.928	1933.54	-16.7208	0	0
7	282.724	1932.13	490.342	0	0
8	284.52	1930.77	1116.32	0	0
9	286.316	1929.47	1842.77	0	0
10	288.112	1928.22	2652.68	0	0
11	289.908	1927.01	3521.2	0	0
12	291.704	1925.85	4383.55	0	0
13	293.5	1924.73	5223.94	0	0
14	295.296	1923.66	6036.02	0	0
15	297.092	1922.62	6814.16	0	0
16	298.888	1921.63	7553.38	0	0
17	300.684	1920.68	8249.3	0	0
18	302.48	1919.76	8898.08	0	0
19	304.276	1918.89	9496.41	0	0
20	306.072	1918.04	10041.5	0	0
21	307.868	1917.24	10530.9	0	0
22	309.664	1916.47	10962.7	0	0
23	311.46	1915.73	11335.4	0	0
24	313.256	1915.03	11647.8	0	0
25	315.052	1914.36	11899.1	0	0
26	316.848	1913.72	12089	0	0
27	318.644	1913.11	12217.4	0	0
28	320.44	1912.53	12284.4	0	0
29	322.236	1911.99	12290.7	0	0
30	324.032	1911.47	12237.2	0	0
31	325.829	1910.99	12132.3	0	0
32	327.625	1910.53	11980.1	0	0
33	329.421	1910.1	11776.1	0	0
34	331.217	1909.7	11512	0	0
35	333.013	1909.33	11188.8	0	0
36	334.809	1908.99	10811.2	0	0
37	336.605	1908.68	10384.1	0	0
38	338.401	1908.39	9912.74	0	0
39	340.197	1908.14	9402.69	0	0
40	341.993	1907.91	8859.76	0	0
41	343.789	1907.7	8290.12	0	0
42	345.585	1907.53	7700.26	0	0
43	347.381	1907.38	7096.98	0	0
44	349.177	1907.25	6487.46	0	0
45	350.973	1907.16	5879.21	0	0
46	352.769	1907.09	5280.13	0	0
47	354.565	1907.05	4698.48	0	0
48	356.361	1907.03	4142.95	0	0
49	358.157	1907.04	3622.63	0	0
50	359.953	1907.08	3147.04	0	0
51	361.749	1907.14	0	0	0

List Of Coordinates

External Boundary



X	Y
203	1870
390	1870
390	1907
362	1907
329	1926
324	1926
289	1941
218	1943
212	1944
203	1949

Material Boundary

X	Y
218	1943
248	1924
259	1921
341	1907
341	1904
362	1904
362	1907

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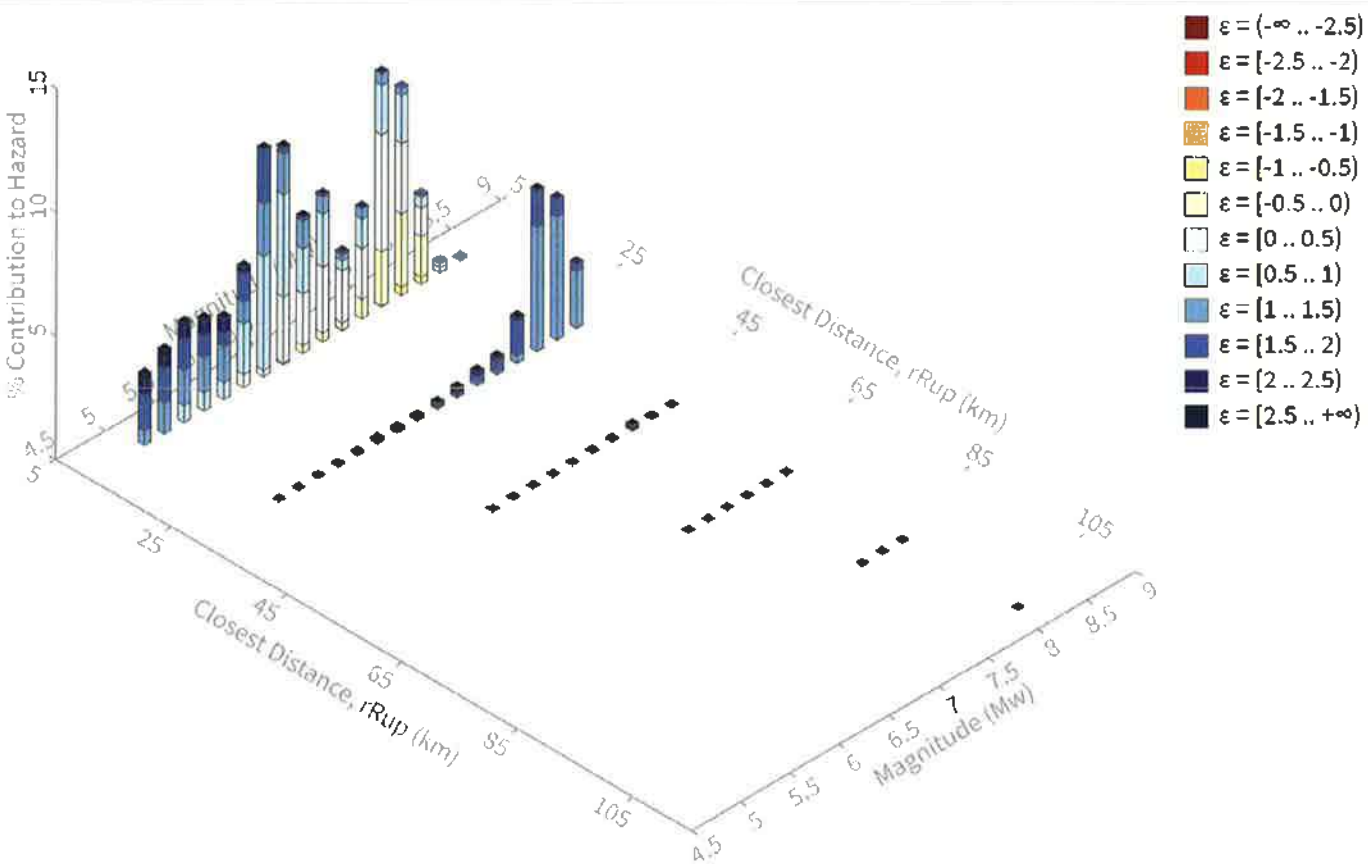
SEISMIC HAZARD DEAGGREGATION CHART
(Probability of Exceedance: 10% in 50 years)

BG: 23237 CLIENT: CIVILTEC SCVWA TANK

ENGINEER: JET

REFERENCE: USGS, 2017, Earthquake Hazards Program, Beta - Unified Hazard Tool, Seismic Hazard Deaggregation, Conterminous U.S. 2014 (Update) (v4.2.0) Edition, https://earthquake.usgs.gov/hazards/interactive/index.php.



Summary statistics for, Deaggregation: Total

Deaggregation targets	Recovered targets	Totals	Mean (over all sources)
Return period: 475 yrs	**Return period:** 505.93703 yrs	**Binned:** 100 %	**m:** 6.9
Exceedance rate: 0.0021052632 yr^{-1}	**Exceedance rate:** 0.0019765305 yr^{-1}	**Residual:** 0 %	**r:** 12.8 km
PGA ground motion: 0.53853618 g		**Trace:** 0.12 %	**ϵ_0:** 0.92 σ

Mode (largest m-r bin)	Mode (largest m-r-ϵ_0 bin)	Discretization	Epsilon keys
m: 7.51	**m:** 7.91	**r:** min = 0.0, max = 1000.0, Δ = 20.0 km	**ε0:** [-∞ .. -2.5)
r: 10.69 km	**r:** 24.26 km	**m:** min = 4.4, max = 9.4, Δ = 0.2	**ε1:** [-2.5 .. -2.0)
ϵ_0: 0.28 σ	**ϵ_0:** 1.42 σ	**ε:** min = -3.0, max = 3.0, Δ = 0.5 σ	**ε2:** [-2.0 .. -1.5)
Contribution: 9.44 %	**Contribution:** 5.02 %		**ε3:** [-1.5 .. -1.0)
			ε4: [-1.0 .. -0.5)
			ε5: [-0.5 .. 0.0)
			ε6: [0.0 .. 0.5)
			ε7: [0.5 .. 1.0)
			ε8: [1.0 .. 1.5)
			ε9: [1.5 .. 2.0)
			ε10: [2.0 .. 2.5)
			ε11: [2.5 .. +∞]

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AERIAL VICINITY MAP

BG: 23237 CIVILTEC

CONSULTANT : JET/JWB

DRAWN BY : AS

SCALE: 1" = 300'

REFERENCE: LOS ANGELES COUNTY DEPARTMENT OF REGIONAL PLANNING, GIS-NET, 2013, http://gis.planning.lacounty.gov/GIS-NET_Public/Viewer.html

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REGIONAL GEOLOGIC MAP

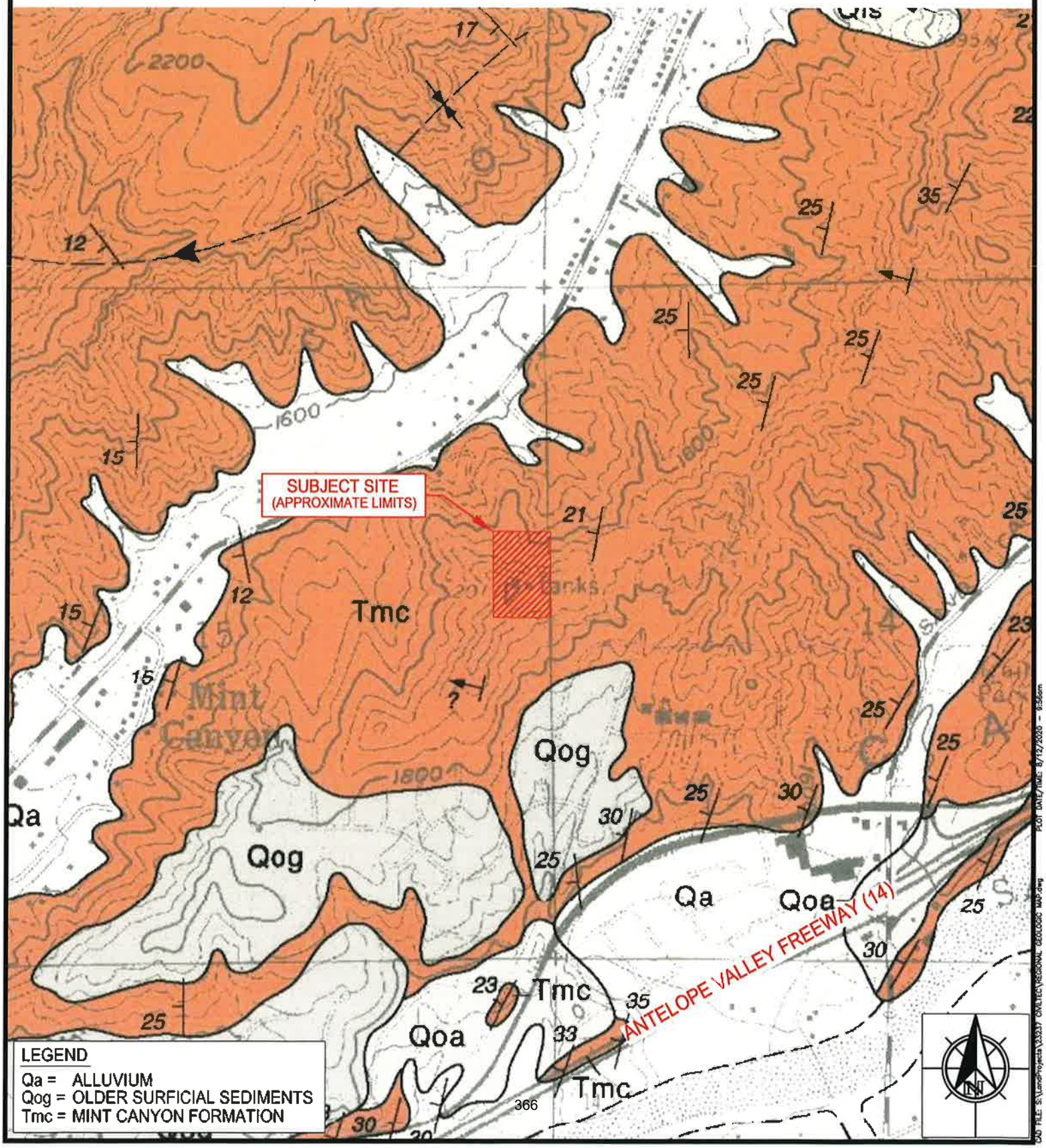
BG: 23237 CIVILTEC

CONSULTANT : JET/JWB

DRAWN BY : AS

SCALE: 1" = 1000'

REFERENCE: DIBBLEE, T.W. (1996), GEOLOGIC MAP OF THE MINT CANYON QUADRANGLES, LOS ANGELES, CALIFORNIA DIBBLEE GEOLOGICAL FOUNDATION, MAP DF-57.



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REGIONAL TOPOGRAPHIC MAP

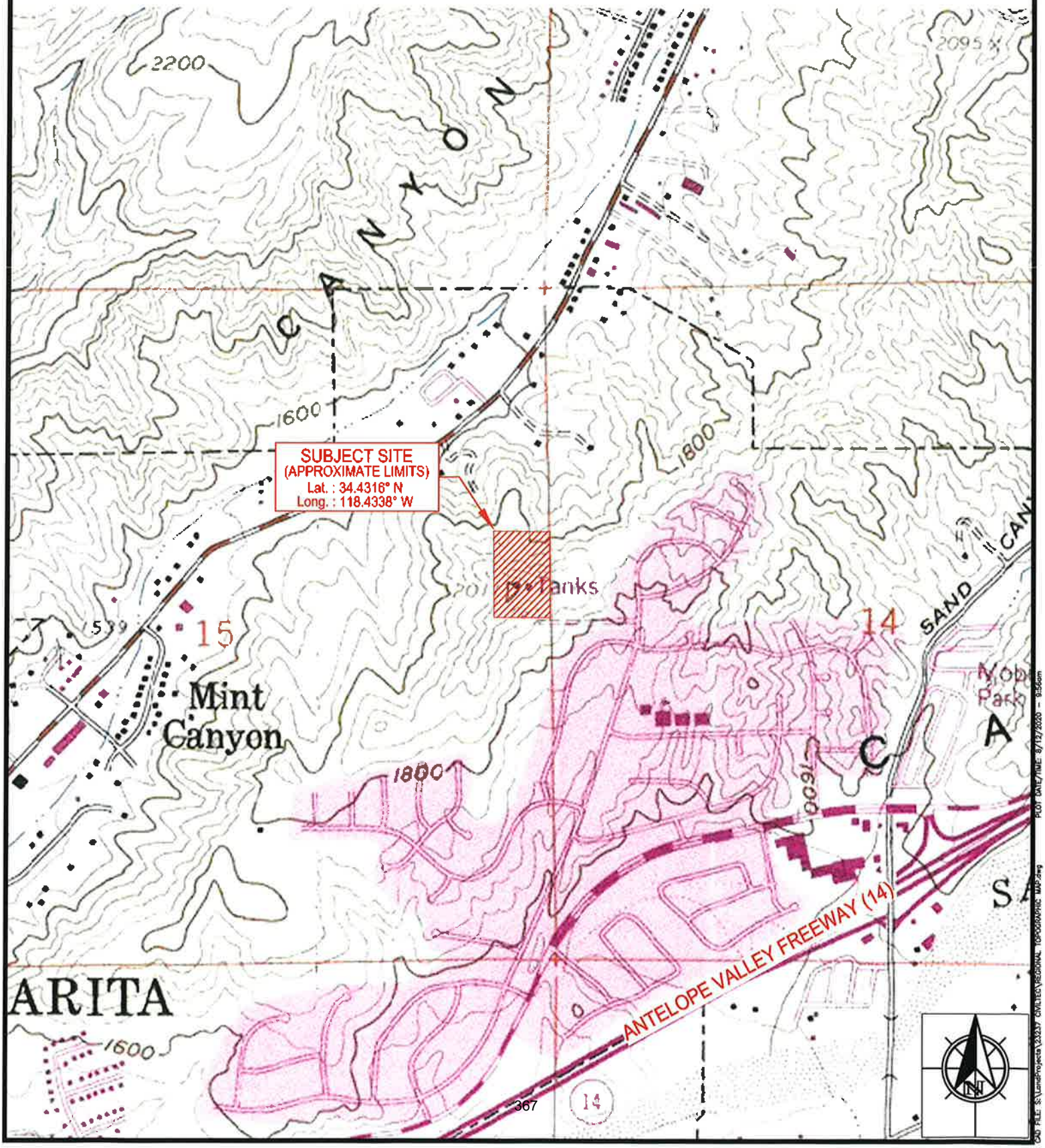
BG: 23237 CIVILTEC

CONSULTANT : JET/JWB

DRAWN BY : AS

SCALE: 1" = 1000'

REFERENCE: USGS TOPOGRAPHIC MAP, MINT CANYON 7.5-MINUTE SERIES QUADRANGLE, LOS ANGELES COUNTY, CALIFORNIA CREATED 1981.



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REGIONAL FAULT MAP

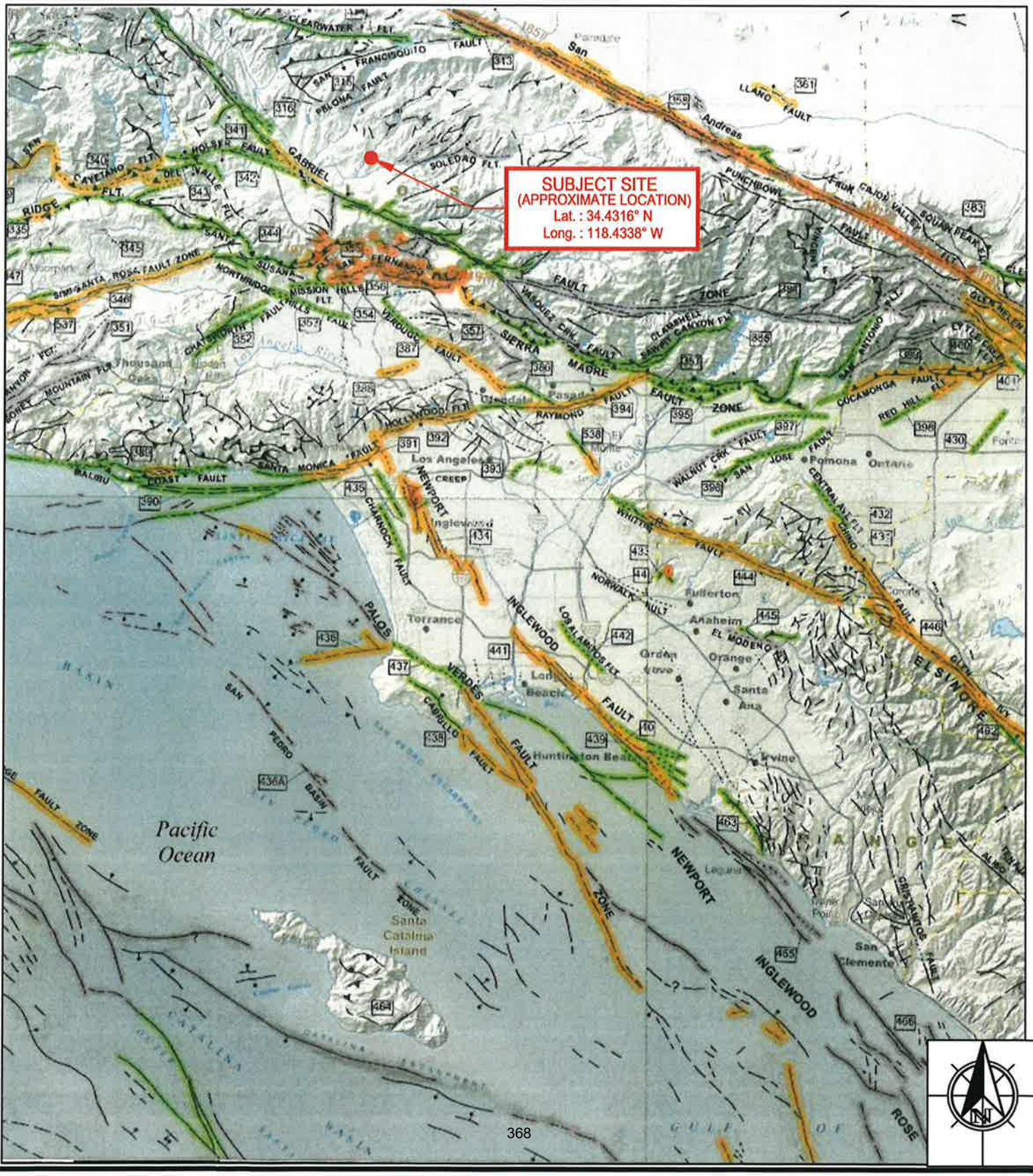
BG: 23237 CIVILTEC

CONSULTANT : JET/JWB

DRAWN BY : AS

SCALE: 1" = 12 MILES

REFERENCE: JENNINGS, C.W., AND BRYANT, W.A.,2010, FAULT ACTIVITY MAP OF CALIFORNIA GEOLOGICAL SURVEY, 150th ANNIVERSARY, MAP No 6.



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818.543.3747 FAX

SEISMIC HAZARD ZONES MAP

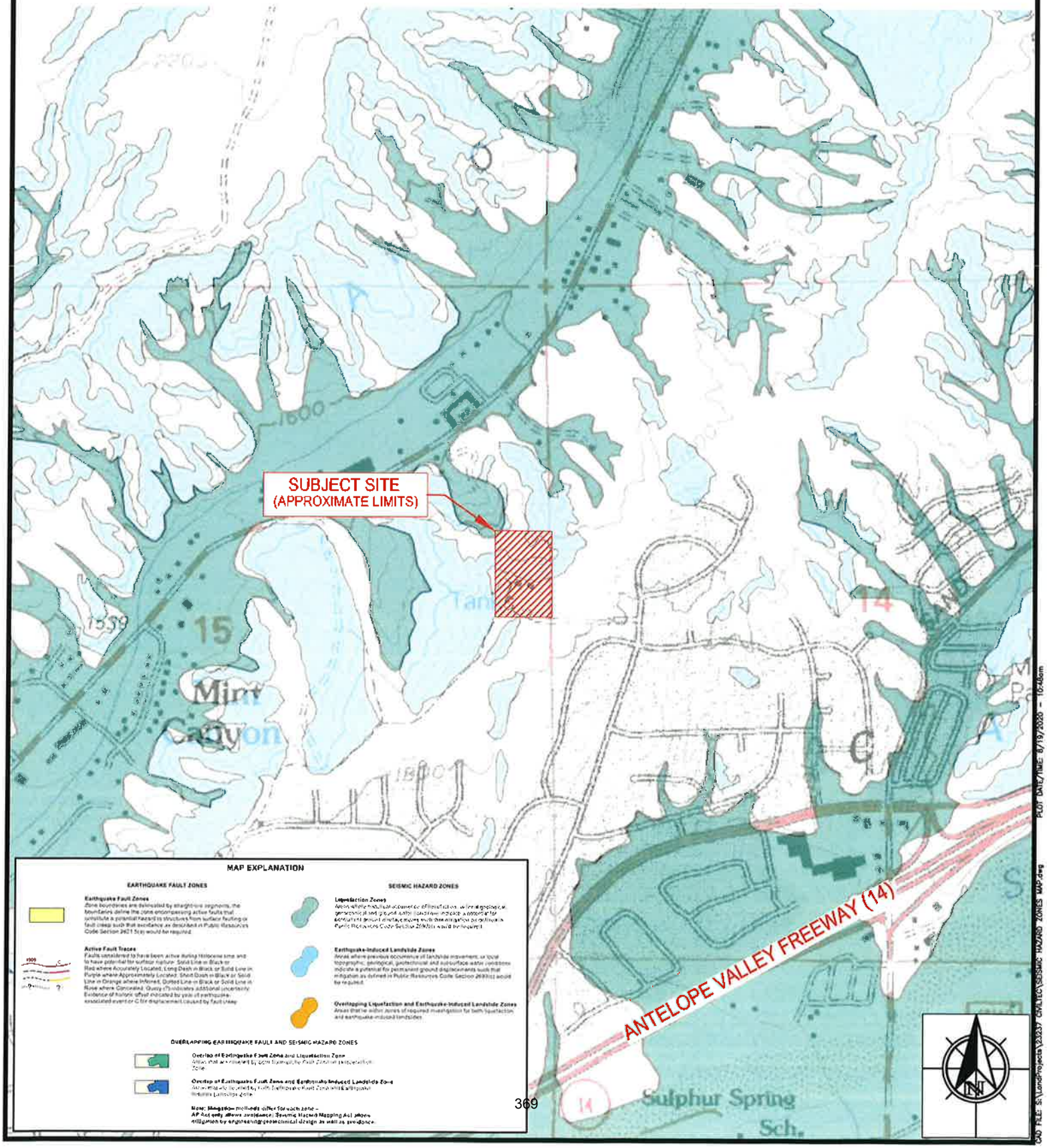
BG: 23237 CIVILTEC

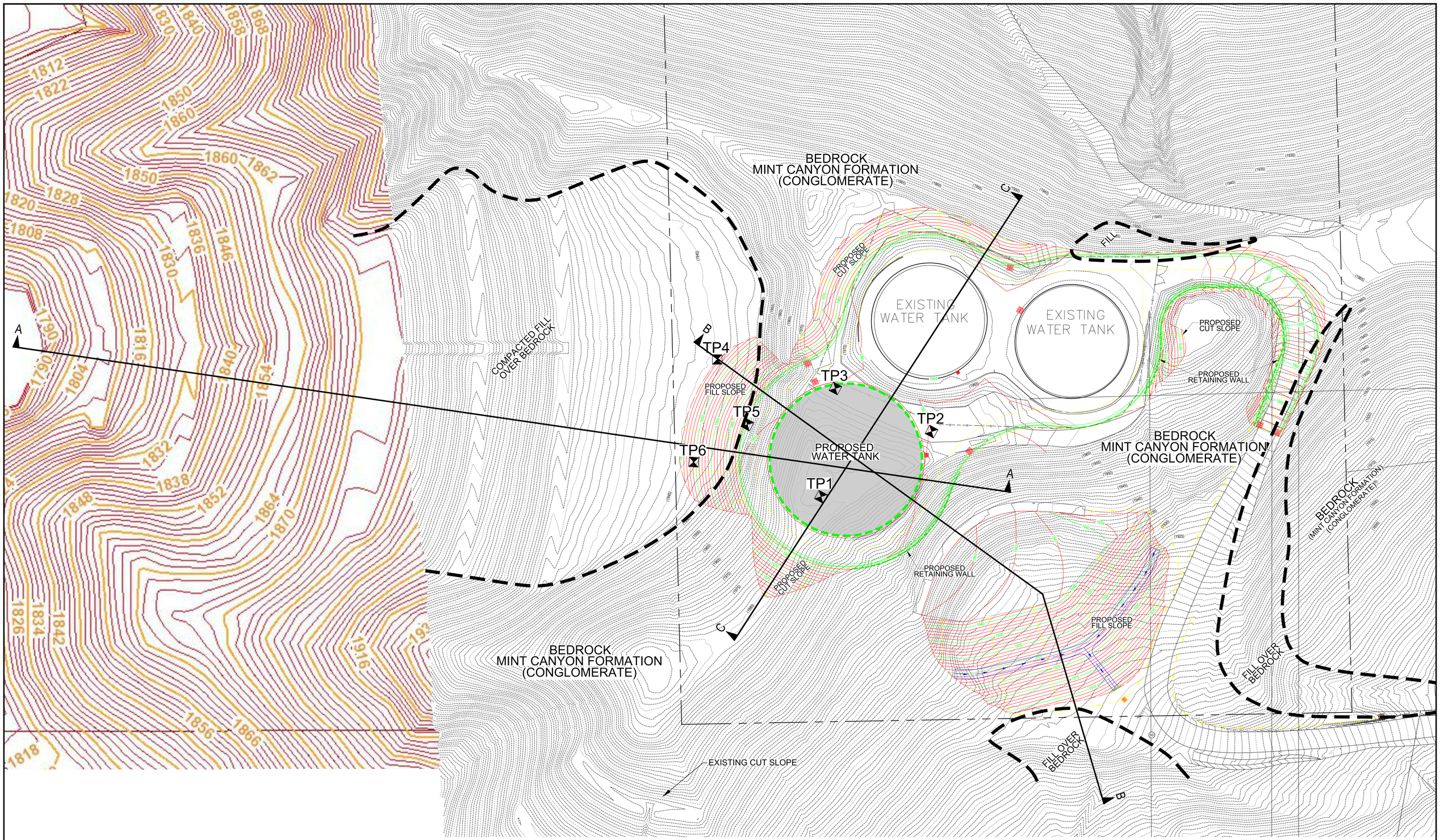
CONSULTANT : JET/JWB

DRAWN BY : AS

SCALE: 1" = 1000'

REFERENCE: EARTHQUAKE ZONES OF REQUIRED INVESTIGATION MINT CANYON QUADRANGLE; SEISMIC HAZARD ZONES, DATED MARCH 25, 1999.





LEGEND

TP6 — LOCATION AND NUMBER OF HAND-DUG TEST PIT

GEOLOGIC CONTACT

C C — LINE OF CROSS SECTION

GRAPHIC SCALE
20 15 10 5 0 10 20 40
(IN FEET)
1 inch = 20 ft.

AUGUST 25, 2020

BYER GEOTECHNICAL INC.
1900 E. CHEVY CHASE DR., SUITE 200
GLENDALE, CA 91206
818.549.9959 TEL
818.543.3747 FAX

GEOLOGIC MAP

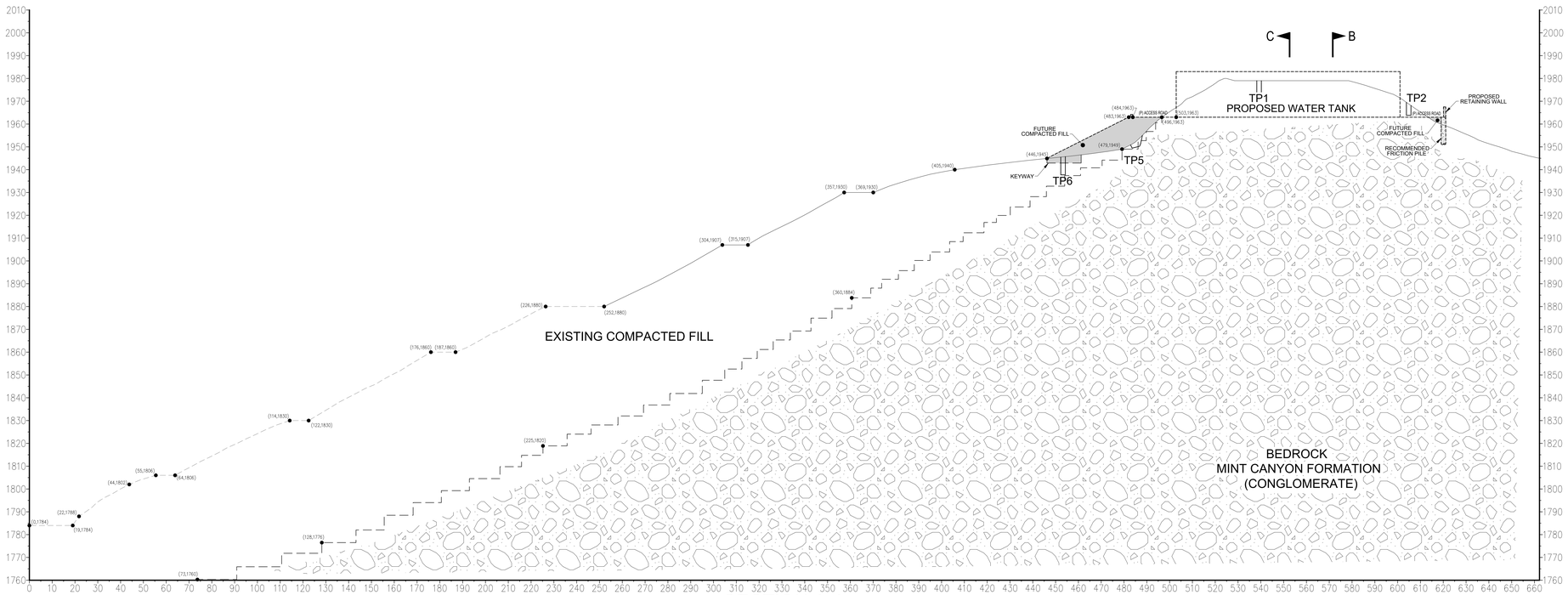
BG: 23237 CIVILTEC

CONSULTANT: JET/JWB

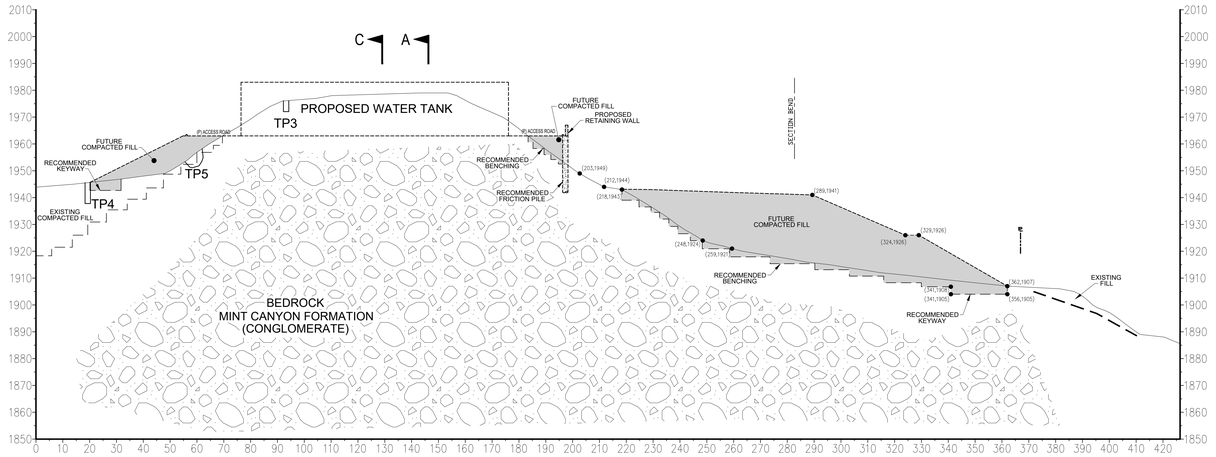
DRAWN BY: AS

SCALE: 1" = 20'

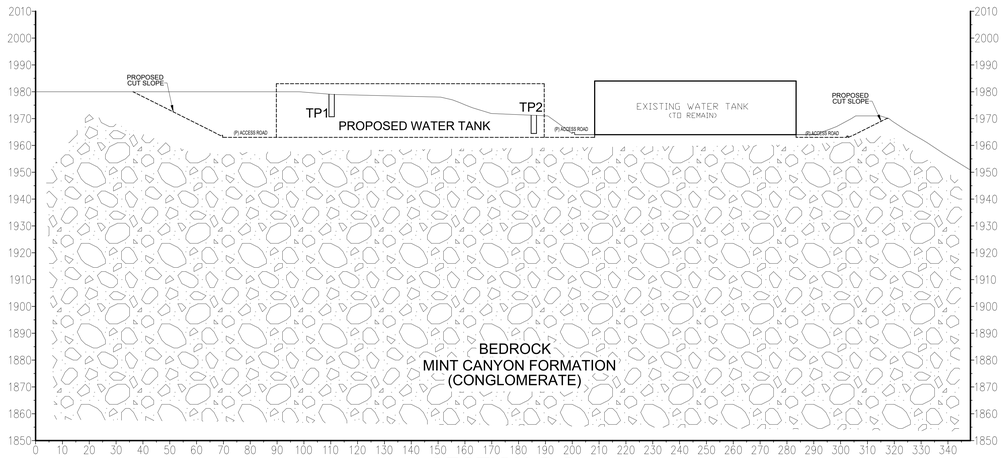
REFERENCE: DEANE TANK SITE PLANNING CONCEPTUAL GRADING PLAN SINGLE AND DUAL TANK DESIGN PREPARED BY CIVILTEC ENGINEERING, INC., DATED 06/15/2020.



SECTION A-A



SECTION B-B



SECTION C-C

AUGUST 25, 2020

BYER GEOTECHNICAL INC.
14010 E. CHEVY CHASE DR., SUITE 200
GLENDALE, CA 91206
818.543.9990 TEL
818.543.9747 FAX

SECTIONS A, B, & C

BG: 23237 CIVILTEC

CONSULTANT: JWB

DRAWN BY: AS

SCALE: 1" = 20'

APPENDIX F

Noise Measurement Data

Monitoring Location: Site 1
Monitoring Date: 10/28/2020

Monitoring Period

Time	LAeq	LASmax	LASmin
13:08:31	49.3	58.4	37.7
13:09:31	50.8	58.0	38.5
13:10:31	41.1	47.1	37.8
13:11:31	37.2	40.4	35.6
13:12:31	37.1	39.4	35.2
13:13:31	44.8	56.5	35.3
13:14:31	37.3	39.5	35.3
13:15:31	44.7	57.2	36.0
13:16:31	52.6	65.7	37.0
13:17:31	54.3	63.0	37.6
13:18:31	51.9	63.5	38.6
13:19:31	41.1	46.2	38.5
13:20:31	56.3	66.1	39.5
13:21:31	50.3	60.0	37.0
13:22:31	40.5	46.2	37.0
13:23:31	45.9	46.8	41.5

15-minute LAeq **49.7**

Monitoring Location: Site 2
Monitoring Date: 10/28/2020

Monitoring Period

Time	LAeq	LASmax	LASmin
13:26:34	37.6	49.5	35.8
13:27:34	39.7	53.3	34.0
13:28:34	35.4	37.9	33.5
13:29:34	39.2	46.8	34.1
13:30:34	40.9	48.5	37.9
13:31:34	40.8	44.0	38.1
13:32:34	41.4	46.2	38.1
13:33:34	40.0	42.2	37.4
13:34:34	38.1	40.1	35.6
13:35:34	38.0	45.8	35.7
13:36:34	39.6	44.2	36.0
13:37:34	37.8	40.1	36.3
13:38:34	41.3	45.5	37.8
13:39:34	39.8	49.8	34.9
13:40:34	51.2	63.9	39.6
13:41:34	42.1	42.9	41.3

15-minute LAeq **42.4**

Monitoring Location: Site 3
Monitoring Date: 10/28/2020

Monitoring Period

Time	LAeq	LASmax	LASmin
14:05:46	56.8	61.9	41.3
14:06:46	52.3	62.7	43.7
14:07:46	55.0	62.3	47.3
14:08:46	51.5	57.2	47.9
14:09:46	64.4	75.2	39.6
14:10:46	59.4	74.6	37.8
14:11:46	53.9	62.9	36.3
14:12:46	37.1	40.6	34.6
14:13:46	38.9	42.3	35.7
14:14:46	40.2	44.4	36.5
14:15:46	40.2	46.0	37.3
14:16:46	39.3	44.8	36.5
14:17:46	40.5	45.4	36.7
14:18:46	46.0	55.4	40.3
14:19:46	46.9	56.3	37.6
14:20:46	41.4	43.8	40.0

15-minute LAeq **55.1**

Monitoring Location: Site 4
Monitoring Date: 10/28/2020

Monitoring Period

Time	LAeq	LASmax	LASmin
14:23:20	35.1	49.9	31.5
14:24:20	32.8	35.9	31.4
14:25:20	32.4	33.5	31.3
14:26:20	33.5	35.8	32.3
14:27:20	34.4	36.5	32.5
14:28:20	36.3	41.3	34.3
14:29:20	37.9	41.2	35.0
14:30:20	35.0	36.3	34.0
14:31:20	34.7	39.1	33.2
14:32:20	34.4	36.1	33.0
14:33:20	40.1	45.7	34.3
14:34:20	35.4	39.4	33.1
14:35:20	35.9	40.4	33.8
14:36:20	41.6	53.3	34.3
14:37:20	39.5	49.1	33.3
14:38:20	38.6	42.2	39.0

15-minute LAeq **37.0**

Monitoring Location: Site 5
Monitoring Date: 10/28/2020

Monitoring Period

Time	LAeq	LASmax	LASmin
14:43:26	47.8	51.9	39.0
14:44:26	46.1	53.7	37.0
14:45:26	51.0	58.4	39.8
14:46:26	46.3	51.6	40.6
14:47:26	45.4	54.3	39.3
14:48:26	44.8	51.1	35.4
14:49:26	40.7	44.8	37.4
14:50:26	43.1	48.2	40.2
14:51:26	43.6	48.0	39.4
14:52:26	48.0	56.4	42.7
14:53:26	50.5	60.1	41.1
14:54:26	47.4	56.7	38.7
14:55:26	46.1	53.2	39.3
14:56:26	44.4	49.3	39.4
14:57:26	47.4	59.3	39.6
14:58:26	39.5	42.6	39.3

15-minute LAeq **46.7**

Monitoring Location: Site 6
Monitoring Date: 10/28/2020

Monitoring Period

Time	LAeq	LASmax	LASmin
13:45:35	55.5	62.9	42.9
13:46:35	51.5	61.6	42.9
13:47:35	52.6	59.8	42.1
13:48:35	67.1	77.9	41.0
13:49:35	43.7	46.9	41.3
13:50:35	46.5	56.5	41.9
13:51:35	49.5	58.3	43.8
13:52:35	46.8	54.3	43.0
13:53:35	54.8	59.2	45.0
13:54:35	54.0	64.4	41.2
13:55:35	56.3	66.5	42.4
13:56:35	45.8	53.9	41.1
13:57:35	44.5	49.7	41.3
13:58:35	53.7	65.2	43.7
13:59:35	53.0	58.2	42.3
14:00:35	43.9	44.4	43.2

15-minute LAeq **56.7**

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descı Demolition

---- Receptor #1 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 1	Residentia	49.7	49.7	49.7

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	50	0
Excavator	No	40		80.7	50	0
Excavator	No	40		80.7	50	0
Excavator	No	40		80.7	50	0
Dozer	No	40		81.7	50	0
Dozer	No	40		81.7	50	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.6	86.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 2	Residentia	42.4	42.4	42.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	350	0
Excavator	No	40		80.7	350	0
Excavator	No	40		80.7	350	0
Excavator	No	40		80.7	350	0
Dozer	No	40		81.7	350	0
Dozer	No	40		81.7	350	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	72.7	65.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	63.8	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	63.8	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	63.8	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	64.8	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	64.8	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	72.7	69.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 3	Residentia	55.1	55.1	55.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	415	0

Excavator	No	40	80.7	415	0
Excavator	No	40	80.7	415	0
Excavator	No	40	80.7	415	0
Dozer	No	40	81.7	415	0
Dozer	No	40	81.7	415	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	71.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	62.3	58.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	62.3	58.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	62.3	58.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	63.3	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	63.3	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.2	68.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 4	Residentia	37	37	37

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	460	0
Excavator	No	40		80.7	460	0
Excavator	No	40		80.7	460	0
Excavator	No	40		80.7	460	0
Dozer	No	40		81.7	460	0
Dozer	No	40		81.7	460	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	70.3	63.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	61.4	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	61.4	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	61.4	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	62.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	62.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	70.3	67.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 5	Residentia	46.7	46.7	46.7

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	485	0
Excavator	No	40		80.7	485	0
Excavator	No	40		80.7	485	0
Excavator	No	40		80.7	485	0
Dozer	No	40		81.7	485	0
Dozer	No	40		81.7	485	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	69.8	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	61	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	61	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	61	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	61.9	58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Dozer		61.9	58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	69.8	66.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #6 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 6	Residentia	56.7	56.7	56.7

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw	No	20		89.6	460	0
Excavator	No	40		80.7	460	0
Excavator	No	40		80.7	460	0
Excavator	No	40		80.7	460	0
Dozer	No	40		81.7	460	0
Dozer	No	40		81.7	460	0

			Results											
	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	70.3	63.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	61.4	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	61.4	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	61.4	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	62.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	62.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	70.3	67.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descı Grading

---- Receptor #1 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 1	Residentia	49.7	49.7	49.7

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crusher	No	40		86.5	50	0
Dump Truck	No	40		76.5	50	0
Dozer	No	40		81.7	50	0
Scraper	No	40		83.6	50	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crusher	86.5	82.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	76.5	72.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	86.5	85.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 2	Residentia	42.4	42.4	42.4

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crusher	No	40		86.5	350	0
Dump Truck	No	40		76.5	350	0
Dozer	No	40		81.7	350	0
Scraper	No	40		83.6	350	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crusher	69.6	65.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	59.5	55.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	64.8	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	66.7	62.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	69.6	68.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 3	Residentia	55.1	55.1	55.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crusher	No	40		86.5	415	0
Dump Truck	No	40		76.5	415	0
Dozer	No	40		81.7	415	0
Scraper	No	40		83.6	415	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq

Crusher		68.1	64.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck		58.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		63.3	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper		65.2	61.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	68.1	67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 4	Residentia	37	37	37

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crusher	No	40		86.5	460	0
Dump Truck	No	40		76.5	460	0
Dozer	No	40		81.7	460	0
Scraper	No	40		83.6	460	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crusher	67.2	63.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	57.2	53.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	62.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	64.3	60.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	67.2	66.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 5	Residentia	46.7	46.7	46.7

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crusher	No	40		86.5	485	0
Dump Truck	No	40		76.5	485	0
Dozer	No	40		81.7	485	0
Scraper	No	40		83.6	485	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crusher	66.8	62.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	56.7	52.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	61.9	58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	63.8	59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	66.8	65.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #6 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 6	Residentia	56.7	56.7	56.7

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crusher	No	40		86.5	460	0
Dump Truck	No	40		76.5	460	0
Dozer	No	40		81.7	460	0
Scraper	No	40		83.6	460	0

Results

Calculated (dBA)	Noise Limits (dBA)	Noise Limit Exceedance (dBA)

			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crusher	67.2	63.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	57.2	53.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	62.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	64.3	60.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	67.2	66.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descr Building Construction

---- Receptor #1 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 1	Residentia	49.7	49.7	49.7

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	50	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 2	Residentia	42.4	42.4	42.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	350	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	63.6	55.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	63.6	55.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 3	Residentia	55.1	55.1	55.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	415	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	62.2	54.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	62.2	54.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 4	Residentia	37	37	37

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	460	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	61.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	61.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 5	Residentia	46.7	46.7	46.7

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	485	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	60.8	52.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	60.8	52.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #6 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 6	Residentia	56.7	56.7	56.7

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	460	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	61.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	61.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descı Paving

---- Receptor #1 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 1	Residentia	49.7	49.7	49.7

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	50	0
Paver	No	50		77.2	50	0
All Other Equipment >	No	50	85		50	0
All Other Equipment >	No	50	85		50	0
Roller	No	20		80	50	0
Roller	No	20		80	50	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment >	85	82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment >	85	82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80	73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80	73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85	86.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 2	Residentia	42.4	42.4	42.4

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	350	0
Paver	No	50		77.2	350	0
All Other Equipment >	No	50	85		350	0
All Other Equipment >	No	50	85		350	0
Roller	No	20		80	350	0
Roller	No	20		80	350	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	60.3	57.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	60.3	57.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment >	68.1	65.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment >	68.1	65.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	63.1	56.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	63.1	56.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	68.1	69.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 3	Residentia	55.1	55.1	55.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	415	0

Paver	No	50		77.2	415	0
All Other Equipment >	No	50	85		415	0
All Other Equipment >	No	50	85		415	0
Roller	No	20		80	415	0
Roller	No	20		80	415	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	58.8	55.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	58.8	55.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment >	66.6	63.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment >	66.6	63.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	61.6	54.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	61.6	54.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	66.6	67.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 4	Residentia	37	37	37

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	460	0
Paver	No	50		77.2	460	0
All Other Equipment >	No	50	85		460	0
All Other Equipment >	No	50	85		460	0
Roller	No	20		80	460	0
Roller	No	20		80	460	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	57.9	54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	57.9	54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment >	65.7	62.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment >	65.7	62.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	60.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	60.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.7	66.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 5	Residentia	46.7	46.7	46.7

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	485	0
Paver	No	50		77.2	485	0
All Other Equipment >	No	50	85		485	0
All Other Equipment >	No	50	85		485	0
Roller	No	20		80	485	0
Roller	No	20		80	485	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	57.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	57.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment >	65.3	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment >	65.3	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	60.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roller		60.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	65.3	66.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #6 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 6	Residentia	56.7	56.7	56.7

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Paver	No	50		77.2	460	0
Paver	No	50		77.2	0	0
All Other Equipment :	No	50	85		0	0
All Other Equipment :	No	50	85		0	0
Roller	No	20		80	0	0
Roller	No	20		80	0	0

			Results											
	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	61.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	0		0		0		0		0		0		0	
All Other Equipment > 5 HP	0		0		0		0		0		0		0	
All Other Equipment > 5 HP	0		0		0		0		0		0		0	
Roller	0		0		0		0		0		0		0	
Roller	0		0		0		0		0		0		0	
Total	61.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descr Architectural Coating

---- Receptor #1 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 1	Residentia	49.7	49.7	49.7

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 2	Residentia	42.4	42.4	42.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	350	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	60.8	56.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	60.8	56.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 3	Residentia	55.1	55.1	55.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	415	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	59.3	55.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	59.3	55.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 4	Residentia	37	37	37

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	460	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	58.4	54.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	58.4	54.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 5	Residentia	46.7	46.7	46.7

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	485	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	57.9	54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	57.9	54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #6 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Site 6	Residentia	56.7	56.7	56.7

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	460	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	58.4	54.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	58.4	54.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Equipment		Pieces of Equipment	PPV at 25 feet (in/sec)	Distance from Equipment	PPV at adjusted distance	RMS velocity amplitude in in/sec at adjusted distance[a]	RMS Vibration level in VdB at adjusted distance
Caisson drilling		1	0.089	50	0.031	0.008	78
Jackhammer		1	0.035	50	0.012	0.003	70
Large bulldozer		1	0.089	50	0.031	0.008	78
Loaded trucks		1	0.076	50	0.027	0.007	77
Pile Drive (impact)		1	0.644	50	0.228	0.057	95
Vibratory Roller		1	0.210	50	0.074	0.019	85
Small bulldozer		1	0.003	50	0.001	0.000	48

*** Suggested Vibration Thresholds per the Federal Transit Administration, United States Department of Transportation, Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06), May 2006, pg. 12-12.**

-Fragile Buildings- 0.20 in/sec

Equipment		Pieces of Equipment	PPV at 25 feet (in/sec)	Distance from Equipment	PPV at adjusted distance	RMS velocity amplitude in in/sec at adjusted distance[a]	RMS Vibration level in VdB at adjusted distance
Caisson drilling		1	0.089	350	0.002	0.000	53
Jackhammer		1	0.035	350	0.001	0.000	44
Large bulldozer		1	0.089	350	0.002	0.000	53
Loaded trucks		1	0.076	350	0.001	0.000	51
Pile Drive (impact)		1	0.644	350	0.012	0.003	70
Vibratory Roller		1	0.210	350	0.004	0.001	60
Small bulldozer		1	0.003	350	0.000	0.000	23

*** Suggested Vibration Thresholds per the Federal Transit Administration, United States Department of Transportation, Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06), May 2006, pg. 12-12.**

-Fragile Buildings- 0.20 in/sec

Equipment		Pieces of Equipment	PPV at 25 feet (in/sec)	Distance from Equipment	PPV at adjusted distance	RMS velocity amplitude in in/sec at adjusted distance[a]	RMS Vibration level in VdB at adjusted distance
Caisson drilling		1	0.089	415	0.001	0.000	50
Jackhammer		1	0.035	415	0.001	0.000	42
Large bulldozer		1	0.089	415	0.001	0.000	50
Loaded trucks		1	0.076	415	0.001	0.000	49
Pile Drive (impact)		1	0.644	415	0.010	0.002	68
Vibratory Roller		1	0.210	415	0.003	0.001	58
Small bulldozer		1	0.003	415	0.000	0.000	21

*** Suggested Vibration Thresholds per the Federal Transit Administration, United States Department of Transportation, Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06), May 2006, pg. 12-12.**

-Fragile Buildings- 0.20 in/sec

Equipment		Pieces of Equipment	PPV at 25 feet (in/sec)	Distance from Equipment	PPV at adjusted distance	RMS velocity amplitude in in/sec at adjusted distance[a]	RMS Vibration level in VdB at adjusted distance
Caisson drilling		1	0.089	460	0.001	0.000	49
Jackhammer		1	0.035	460	0.000	0.000	41
Large bulldozer		1	0.089	460	0.001	0.000	49
Loaded trucks		1	0.076	460	0.001	0.000	48
Pile Drive (impact)		1	0.644	460	0.008	0.002	66
Vibratory Roller		1	0.210	460	0.003	0.001	56
Small bulldozer		1	0.003	460	0.000	0.000	20

*** Suggested Vibration Thresholds per the Federal Transit Administration, United States Department of Transportation, Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06), May 2006, pg. 12-12.**

-Fragile Buildings- 0.20 in/sec

Equipment		Pieces of Equipment	PPV at 25 feet (in/sec)	Distance from Equipment	PPV at adjusted distance	RMS velocity amplitude in in/sec at adjusted distance[a]	RMS Vibration level in VdB at adjusted distance
Caisson drilling		1	0.089	485	0.001	0.000	48
Jackhammer		1	0.035	485	0.000	0.000	40
Large bulldozer		1	0.089	485	0.001	0.000	48
Loaded trucks		1	0.076	485	0.001	0.000	47
Pile Drive (impact)		1	0.644	485	0.008	0.002	66
Vibratory Roller		1	0.210	485	0.002	0.001	56
Small bulldozer		1	0.003	485	0.000	0.000	19

*** Suggested Vibration Thresholds per the Federal Transit Administration, United States Department of Transportation, Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06), May 2006, pg. 12-12.**

-Fragile Buildings- 0.20 in/sec

Equipment		Pieces of Equipment	PPV at 25 feet (in/sec)	Distance from Equipment	PPV at adjusted distance	RMS velocity amplitude in in/sec at adjusted distance[a]	RMS Vibration level in VdB at adjusted distance
Caisson drilling		1	0.089	460	0.001	0.000	49
Jackhammer		1	0.035	460	0.000	0.000	41
Large bulldozer		1	0.089	460	0.001	0.000	49
Loaded trucks		1	0.076	460	0.001	0.000	48
Pile Drive (impact)		1	0.644	460	0.008	0.002	66
Vibratory Roller		1	0.210	460	0.003	0.001	56
Small bulldozer		1	0.003	460	0.000	0.000	20

*** Suggested Vibration Thresholds per the Federal Transit Administration, United States Department of Transportation, Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06), May 2006, pg. 12-12.**

-Fragile Buildings- 0.20 in/sec

APPENDIX G

AB 52 Consultation Letters

Water Resources & Outreach 26501 Summit Circle, Santa Clarita, CA 91350-3049

(661) 297-1600 | yourSCVwater.com

October 14, 2020

Fernandeño Tataviam Band of Mission Indians
Attn: Kimia Fatehi
Tribal Historic and Cultural Preservation Department
1019 Second Street, Suite 1
San Fernando, CA 91340

Subject: Notice of Proposed Project Pursuant to Public Resources Code Section 21090.3.1 ("AB 52"), *Deane Tank Site Expansion Project*

Dear Ms. Fatehi:

This letter is to inform you that the Santa Clarita Valley Water Agency (SCVWA) is planning the Deane Tank Site Expansion Project (the proposed Project) as described below. Per AB 52, the tribe has the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

The SCVWA is planning to design and build additional storage capacity in the Deane Pressure Zone, located on parcel APN 2839-002-902 west of Winterdale Drive and south of Sierra Highway in the City of Santa Clarita, California. The rectangular project parcel is approximately 6.7 acres in size on top of a hill with access to the site provided through a paved roadway located within an easement off Winterdale Drive near the intersection of Nearview Drive.

The purpose of the proposed Project is to supplement existing water service at the Deane Pressure Zone which is deficient in storage by 4.22 million-gallons (MG), and new development within the Deane Pressure Zone has increased the deficiency. For reference, the portion of the Skyline Ranch development within the Deane Pressure Zone equates to an additional 0.87 MG of storage needed, while the Sand Canyon Plaza development adds another 0.65 MG of storage needed. Together, the total additional storage volume required is 5.66 MG.

SCVWA has proposed an additional tank for the Deane Tank site to supplement the storage shortage at the Deane Pressure Zone. A single 100-foot diameter reservoir will be constructed with 29 feet operation water depth, providing an additional 1.70 MG capacity. The water supply for the new tank will be delivered from the two existing pump stations located north of the site on Sierra Highway- the Linda Vista Pump Station and Honby House Pump Station. These two pump stations currently supply water to the existing tanks at the project parcel and pipes from these stations will eventually be tied to the new piping on the site. The discharge pipeline from these pump stations is aligned along the north facing slope at the site.

To stay consistent with the existing floor elevation onsite, the ground elevation for the new tank will be cut and graded to match the elevation of the existing tanks. Existing utilities onsite will remain operational during the construction of the new tank. Related proposed Project components include utilities, a 20 feet wide asphalt paved access roadway around all tanks, drainage system around the

tank site and the access roadway, potential retaining walls, and an extra fill pad to assist with balancing earthwork.

The proposed Project will be evaluated pursuant to the California Environmental Quality Act (CEQA). An Initial Study/Mitigated Negative Declaration will evaluate the potential environmental impacts associated with implementing the proposed Project.

You have 30 calendar days from receipt of this letter to notify us in writing that you would like to consult on the Project. Please provide the lead contact person's contact information in your response.

Should the Fernandeño Tataviam Band of Mission Indians elect to engage in the consultation process, please provide written comments to the following address:

Santa Clarita Valley Water Agency
26501 Summit Circle
Santa Clarita, CA 91350
Attn.: Rick Vasilopulos, Water Resources Planner

Should you have any questions, you can contact Mr. Rick Vasilopulos via email at rvasilopulos@scvwa.org or (661) 705-7912.

Sincerely,

Rick Vasilopulos
Water Resources Planner

Cc: Orlando Moreno, P.E., Civil Engineer

Deane Tank Expansion Project Site

Water Resources & Outreach 26501 Summit Circle, Santa Clarita, CA 91350-3049

(661) 297-1600 | yourSCVwater.com

October 14, 2020

Gabrieleño Band of Mission Indians-Kizh Nation
Attn: Andrew Salas, Chairman
P.O. Box 393
Covina, CA 91723

Subject: Notice of Proposed Project Pursuant to Public Resources Code Section 21090.3.1 ("AB 52"), *Deane Tank Site Expansion Project*

Dear Mr. Salas:

This letter is to inform you that the Santa Clarita Valley Water Agency (SCVWA) is planning the Deane Tank Site Expansion Project (the proposed Project) as described below. Per AB 52, the tribe has the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

The SCVWA is planning to design and build additional storage capacity in the Deane Pressure Zone, located on parcel APN 2839-002-902 west of Winterdale Drive and south of Sierra Highway in the City of Santa Clarita, California. The rectangular project parcel is approximately 6.7 acres in size on top of a hill with access to the site provided through a paved roadway located within an easement off Winterdale Drive near the intersection of Nearview Drive.

The purpose of the proposed Project is to supplement existing water service at the Deane Pressure Zone which is deficient in storage by 4.22 million-gallons (MG), and new development within the Deane Pressure Zone has increased the deficiency. For reference, the portion of the Skyline Ranch development within the Deane Pressure Zone equates to an additional 0.87 MG of storage needed, while the Sand Canyon Plaza development adds another 0.65 MG of storage needed. Together, the total additional storage volume required is 5.66 MG.

SCVWA has proposed an additional tank for the Deane Tank site to supplement the storage shortage at the Deane Pressure Zone. A single 100-foot diameter reservoir will be constructed with 29 feet operation water depth, providing an additional 1.70 MG capacity. The water supply for the new tank will be delivered from the two existing pump stations located north of the site on Sierra Highway- the Linda Vista Pump Station and Honby House Pump Station. These two pump stations currently supply water to the existing tanks at the project parcel and pipes from these stations will eventually be tied to the new piping on the site. The discharge pipeline from these pump stations is aligned along the north facing slope at the site.

To stay consistent with the existing floor elevation onsite, the ground elevation for the new tank will be cut and graded to match the elevation of the existing tanks. Existing utilities onsite will remain operational during the construction of the new tank. Related proposed Project components include utilities, a 20 feet wide asphalt paved access roadway around all tanks, drainage system around the tank site and the access roadway, potential retaining walls, and an extra fill pad to assist with balancing earthwork.

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Santa Clarita Valley Water Agency
26501 Summit Circle
Santa Clarita, CA 91350
Attn.: Rick Vasilopulos, Water Resources Planner

Should you have any questions, you can contact Mr. Rick Vasilopulos via email at rvasilopulos@scvwa.org or (661) 705-7912.

Sincerely,

Rick Vasilopulos
Water Resources Planner

Cc: Orlando Moreno, P.E., Civil Engineer

Deane Tank Expansion Project Site

Water Resources & Outreach 26501 Summit Circle, Santa Clarita, CA 91350-3049

(661) 297-1600 | yourSCVwater.com

October 14, 2020

San Gabriel Band of Mission Indians
Attn: Anthony Morales, Chief
P.O. Box 693
San Gabriel, CA 91778

Subject: Notice of Proposed Project Pursuant to Public Resources Code Section 21090.3.1 ("AB 52"), *Deane Tank Site Expansion Project*

Dear Mr. Morales:

This letter is to inform you that the Santa Clarita Valley Water Agency (SCVWA) is planning the Deane Tank Site Expansion Project (the proposed Project) as described below. Per AB 52, the tribe has the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

The SCVWA is planning to design and build additional storage capacity in the Deane Pressure Zone, located on parcel APN 2839-002-902 west of Winterdale Drive and south of Sierra Highway in the City of Santa Clarita, California. The rectangular project parcel is approximately 6.7 acres in size on top of a hill with access to the site provided through a paved roadway located within an easement off Winterdale Drive near the intersection of Nearview Drive.

The purpose of the proposed Project is to supplement existing water service at the Deane Pressure Zone which is deficient in storage by 4.22 million-gallons (MG), and new development within the Deane Pressure Zone has increased the deficiency. For reference, the portion of the Skyline Ranch development within the Deane Pressure Zone equates to an additional 0.87 MG of storage needed, while the Sand Canyon Plaza development adds another 0.65 MG of storage needed. Together, the total additional storage volume required is 5.66 MG.

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Santa Clarita Valley Water Agency
26501 Summit Circle
Santa Clarita, CA 91350
Attn.: Rick Vasilopulos, Water Resources Planner

Should you have any questions, you can contact Mr. Rick Vasilopulos via email at rvasilopulos@scvwa.org or (661) 705-7912.

Sincerely,

Rick Vasilopulos
Water Resources Planner

Cc: Orlando Moreno, P.E., Civil Engineer

Deane Tank Expansion Project Site

Water Resources & Outreach 26501 Summit Circle, Santa Clarita, CA 91350-3049

(661) 297-1600 | yourSCVwater.com

October 14, 2020

Torres Martinez Desert Cahuilla Indians
Attn: Michael Mirelez, Cultural Resource Coordinador
P.O. Box 1160
Thermal, CA 92274

Subject: Notice of Proposed Project Pursuant to Public Resources Code Section 21090.3.1 ("AB 52"), *Deane Tank Site Expansion Project*

Dear Mr. Mirelez:

This letter is to inform you that the Santa Clarita Valley Water Agency (SCVWA) is planning the Deane Tank Site Expansion Project (the proposed Project) as described below. Per AB 52, the tribe has the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

The SCVWA is planning to design and build additional storage capacity in the Deane Pressure Zone, located on parcel APN 2839-002-902 west of Winterdale Drive and south of Sierra Highway in the City of Santa Clarita, California. The rectangular project parcel is approximately 6.7 acres in size on top of a hill with access to the site provided through a paved roadway located within an easement off Winterdale Drive near the intersection of Nearview Drive.

The purpose of the proposed Project is to supplement existing water service at the Deane Pressure Zone which is deficient in storage by 4.22 million-gallons (MG), and new development within the Deane Pressure Zone has increased the deficiency. For reference, the portion of the Skyline Ranch development within the Deane Pressure Zone equates to an additional 0.87 MG of storage needed, while the Sand Canyon Plaza development adds another 0.65 MG of storage needed. Together, the total additional storage volume required is 5.66 MG.

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Should the Fernandeño Tataviam Band of Mission Indians elect to engage in the consultation process, please provide written comments to the following address:

Santa Clarita Valley Water Agency
26501 Summit Circle
Santa Clarita, CA 91350
Attn.: Rick Vasilopulos, Water Resources Planner

Should you have any questions, you can contact Mr. Rick Vasilopulos via email at rvasilopulos@scvwa.org or (661) 705-7912.

Sincerely,

Rick Vasilopulos
Water Resources Planner

Cc: Orlando Moreno, P.E., Civil Engineer

Deane Tank Expansion Project Site

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Sent To: Anthony Morales

Street and Apt. No., or PO Box No.: P.O. Box 693

City, State, ZIP+4®: San Gabriel, CA 91778

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☐ Certified Mail Restricted Delivery $0.00	
☐ Adult Signature Required $0.00	
☐ Adult Signature Restricted Delivery $	
Postage $0.55	Postmark Here
Total Postage and Fees $4.10	OCT 16 2020 10/16/2020

Sent To: Kimia Fatehi

Street and Apt. No., or PO Box No.: 1019 Second St Suite 2

City, State, ZIP+4®: San Fernando, CA 91340

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Certified Mail Restricted Delivery $0.00	
☐ Adult Signature Required $0.00	
☐ Adult Signature Restricted Delivery $	
Postage $0.55	Postmark Here
Total Postage and Fees $4.10	OCT 16 2020 10/16/2020

Sent To: Michael Miselez

Street and Apt. No., or PO Box No.: P.O. Box 1160

City, State, ZIP+4®: Thermal, CA 92274

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Covina, CA 91723

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Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy) $0.00	
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☐ Certified Mail Restricted Delivery $0.00	
☐ Adult Signature Required $0.00	
☐ Adult Signature Restricted Delivery $	
Postage $0.55	Postmark Here
Total Postage and Fees $4.10	OCT 16 2020 10/16/2020

Sent To: Andrew Salas

Street and Apt. No., or PO Box No.: P.O. Box 393

City, State, ZIP+4®: Covina, CA 91723

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

APPENDIX C

Signal Newspaper Proof

THE SIGNAL
26330 Diamond Pl #100
Santa Clarita, CA 91350

Proof of Publication
(2015.5 C.C.P.)

STATE OF CALIFORNIA
County of Los Angeles

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years and not a party to or interested in the action for which the attached notice was published. I am a principal clerk of THE SIGNAL, which was adjudged a newspaper of general circulation on March 25, 1988 (Case number NVC 15880) for the City of Santa Clarita and State of California. Attached to this Affidavit is a true and complete copy as was printed and published on the following date(s):

1/7

All in the year 2021

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at Santa Clarita, California, this

7th day of January 2021

Signature

Notice of Intent to Adopt a Mitigated Negative Declaration for the Deane Tank Site Expansion Project

The proposed Project would include the construction of a new water storage tank that would provide additional water storage capacity for fire protection, emergency and operational needs at the Deane Pressure Zone, which is deficient in storage by 4.22 million gallons (MG), as of 2013. New developments within the Deane Pressure Zone will increase the existing deficiency to 5.74 MG. New developments within the Deane Pressure Zone include the Skyline Ranch development, which requires an additional 0.87 MG of water demand, and the Sand Canyon Plaza development, which requires 0.65 MG of water demand. The proposed Project includes the construction of a new aboveground steel water storage tank with approximately 1.70 MG of storage capacity to address the recent developments.

As part of the proposed Project, other infrastructure-related components include: the installation of new underground water piping and electrical lines and the relocation of existing utilities; a 20-foot-wide asphalt paved access road adjacent to each tank; a new drainage system around the proposed tank and along the access roadway; retaining walls; and an extra fill pad to assist with balancing earthwork on site. An optional access road may be constructed north of the Project Site that would connect the Project Site to the College of Canyons property to the north and downslope of the hilltop.

Public review date: January 6, 2021 through February 5, 2021.

The Signal 01/07/21

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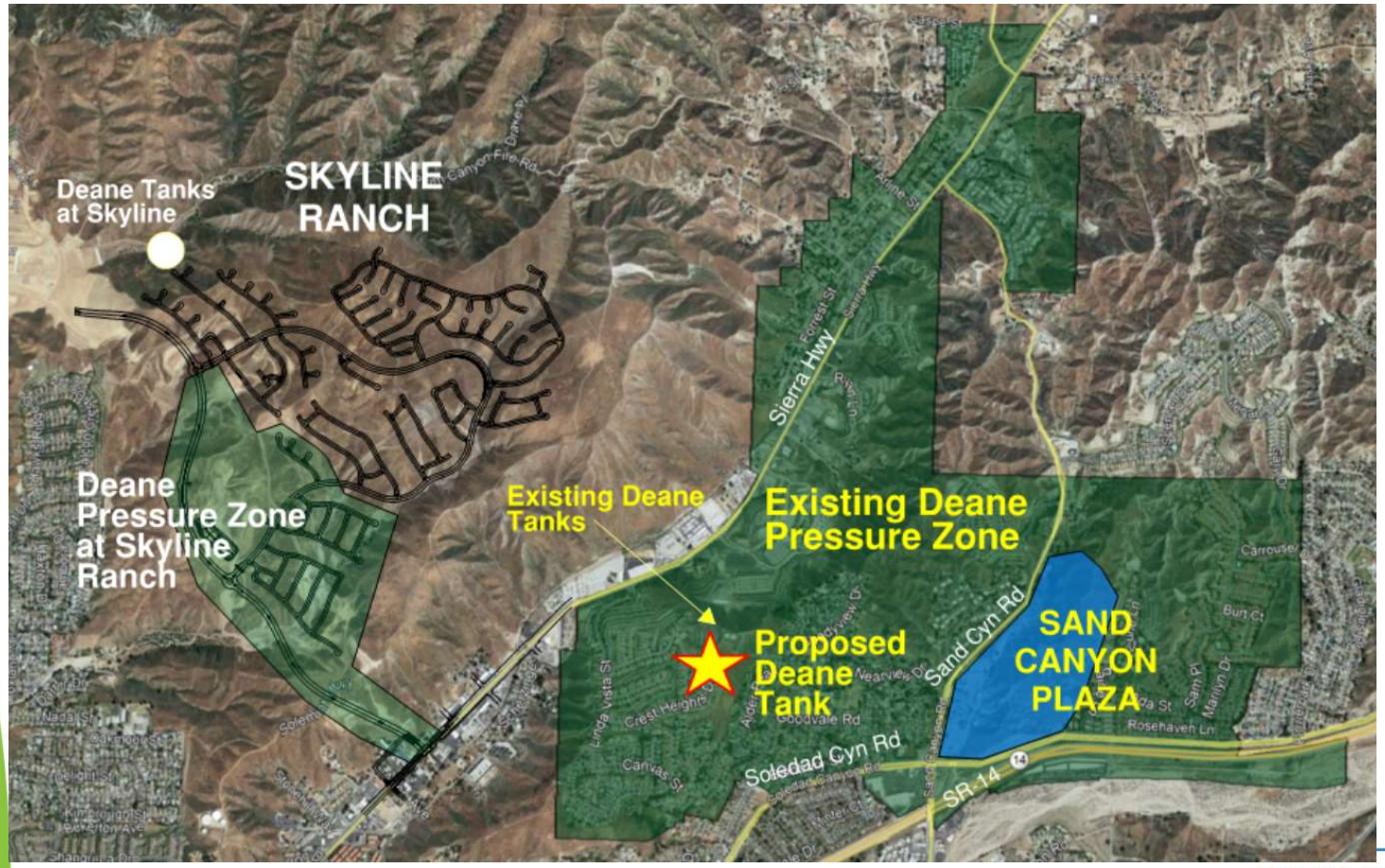
June 3, 2021

New 1.7 MG Deane Tank Expansion at Existing Deane Zone Tank Site

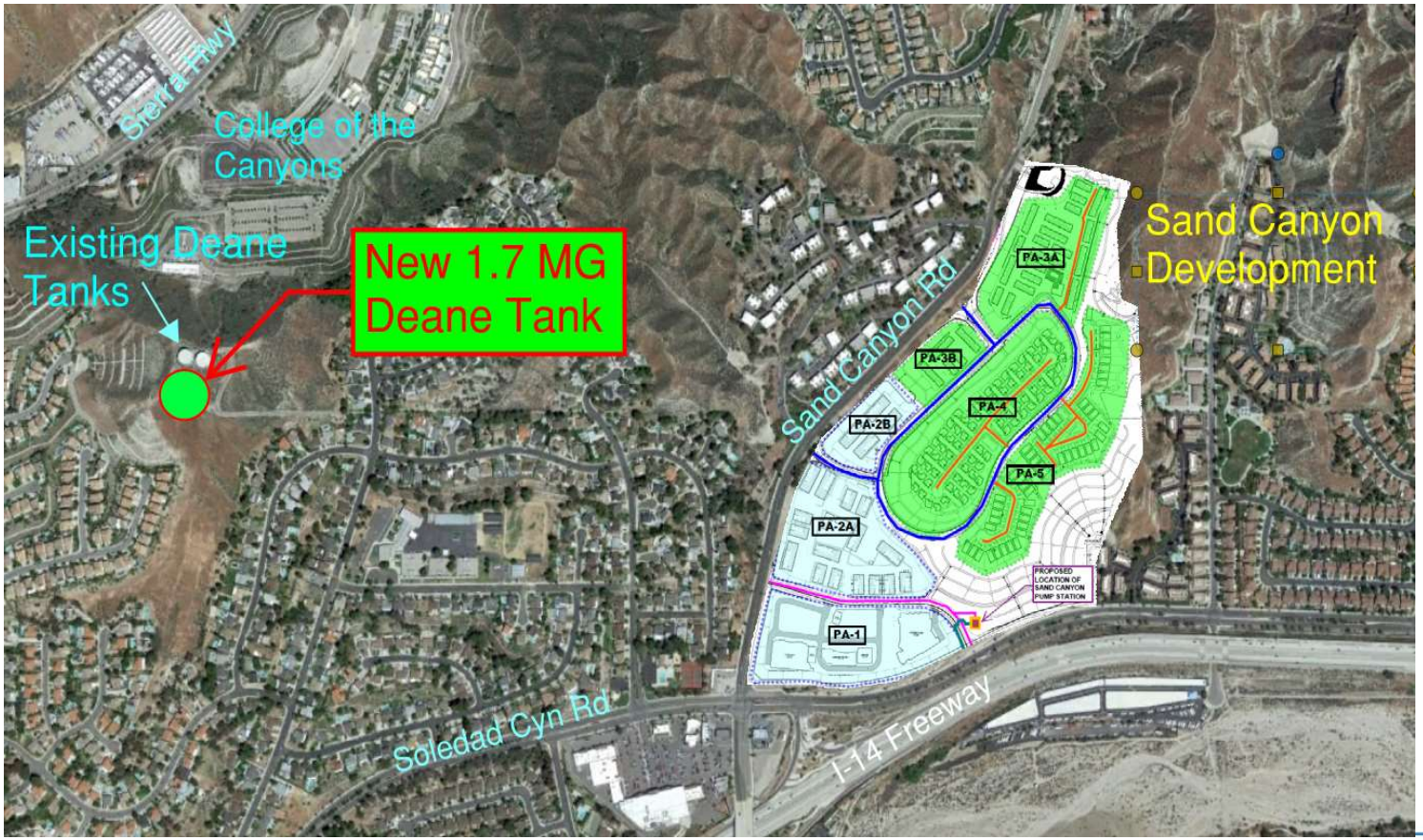
Engineering and Operations Committee Meeting

Deane Pressure Zone Map



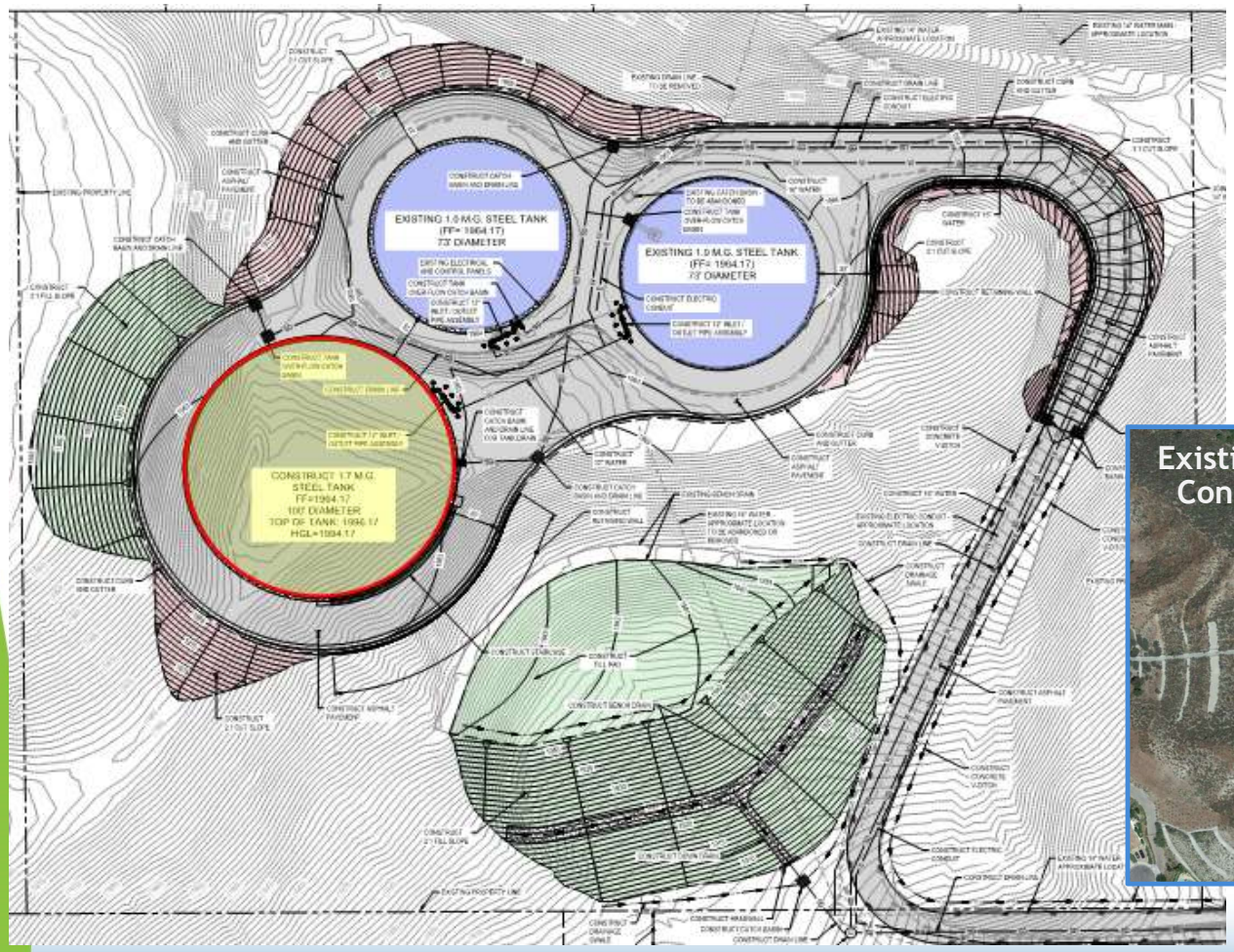
- Existing 4.22 MG Storage Deficit per 2013 SCWD Master Plan
- A portion of the storage deficit and the Deane Pressure Zone expansion at Skyline Ranch to be served by new Deane Tanks at Skyline *(As separate project)*
- A portion of the storage deficit and Sand Canyon Plaza development to be served by new Deane tank expansion

Sand Canyon Plaza Development Vicinity Map



- 580 residential units
- 140 bed senior living
- 55,000 SF of commercial
- Project adds 0.65 MG of storage to Deane Pressure Zone
- Off-Tract water main pipeline improvements to be constructed by developer.

New 1.7 MG Deane Tank- Preliminary Site Plan



- 1.7 MG Steel Tank (100 ft diameter by 32 ft height) and appurtenances
- Widening of access road around existing tanks and access road pavement improvements
- Geotechnical Investigations, Grading, earth stockpiling and retaining walls
- Water piping, drainage and electrical improvements

1.7 MG Deane Tank Expansion
Final Design Proposals

- RFP was issued to six (6) of the engineering firms from the on-call list.
- Received fee proposals from four (4) engineering consultants.
- Selection committee scored consultants based on the following:
  - ✓ Project approach
  - ✓ Project team
  - ✓ Project schedule
  - ✓ Qualifications
- Consultant with the highest combined score was recommended for award of the project (Civiltec Engineering, Inc.)

1.7 MG Deane Tank Expansion Design Project Budget

Final Engineering Budget

Total Final Engineering Fee: $249,656

Facility	Final Design Fee	SCV Water Fair Share (1) Percent	SCV Water Fair Share Amount (2)	Developer Fair Share (1) Percent	Developer Fair Share Amount
1.7 MG Deane Tank	$249,656	61.8%	**$154,231**	38.2%	$95,334

(1) Determined by Hydraulic Analysis (Civiltec, May 14, 2021)
(2) FY 2021/22 CIP Budget for Design is $230,000

Total Estimated Tank Construction Budget (Planning Level): $4.9 Million

1.7 MG Deane Tank Expansion
Potential Environmental Impacts & Mitigation Measures

Environmental Impacts due to project would be reduced to less than significant with implementation of the Mitigation Measures noted below:

	Potential Environmental Concern	Proposed Mitigation Measure	Conclusion
1.7 MG Deane Tank Final MND & MMRP	Aesthetics	AES-1	Impact reduced to less than significant
	Biological Resources	BIO-1	Impact reduced to less than significant
		BIO-2	Impact reduced to less than significant
	Cultural Resources	CUL-1	Impact reduced to less than significant
		CUL-2	Impact reduced to less than significant
	Geology and Soils	GEO-1	Impact reduced to less than significant
	Hazards and Hazardous Materials	HAZ-1	Impact reduced to less than significant
	Noise	N-1	Impact reduced to less than significant
	Tribal Cultural Resources	TCR-1	Impact reduced to less than significant

1.7 MG Deane Tank Expansion Project Schedule

- MND & MMRP Adoption 7/6/2021
- Final Design & Plans 7/12/2021 - 6/10/2022

- Estimated Construction Award Timeline
  - E&O Committee's Approval 8/4/2022
  - Board of Director's Approval 9/6/2022
  - Start Construction 10/10/2022
  - Substantial Completion 9/29/2023

1.7 MG Deane Tank Expansion for Sand Canyon Plaza Project Recommendation

That the Engineering and Operations Committee recommends that the Board of Directors approve:

1. A resolution adopting the Final Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program Under the California Environmental Quality Act for the Deane Tank Expansion Project; and
2. The General Manager to issue a work authorization to Civiltec Engineering Inc. for final engineering services in the amount of $154,231 for SCV Water's portion of the New 1.7 MG Tank Expansion at the Existing Deane Zone Tank Site.

Questions?

ITEM NO. 3

COMMITTEE MEMORANDUM

DATE: May 18, 2021

TO: Enginering & Operations Committee

FROM: Mike Alvord
Director of Operations & Maintenance

SUBJECT: Recommend Approval of the Procurement of a Generator for the Earl Schmidt Filtration Plant

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SUMMARY

In October 2020, SCV Water applied for a grant from the California Office of Emergency Services (CalOES) through its Community Power Resiliency Allocation to Special Districts Program to purchase a backup power generator. Over the last several years SCV Water has experienced multiple Public Safety Power Shutoffs from Southern California Edison (SCE). In an effort to improve resiliency and response during power outages, SCV Water continues to look for ways to maintain system operations. On March 12, 2021, SCV Water was awarded grant funds for the procurement of equipment associated with the Power Resiliency program, in the amount of $249,854, to improve backup power at the Earl Schmidt Filtration Plant (ESFP).

DISCUSSION

Currently the Earl Schmidt Filtration Plant (ESFP) has a capacity of 55 million gallons per day (MGD). An existing propane generator supplies sufficient power to operate the plant at a reduced capacity of approximately 30 MGD. In order to operate the ESFP at full capacity another generator is required. While a portable generator is a temporary option, staff believes a permanent on site solution is more appropriate.

Water Resources staff identified the California Governor's Office of Emergency Services (Cal OES) Community Power Resiliency grant opportunity and began working with Engineering and Operations staff on suitable options for SCV Water. SCV Water has approximately 20 different generators. They range in size and operation from stationary back up office power and treatment plant operations to portable generators which can be used at wells and booster pump stations. These portable generators are deployed based on need at the time of power outages. After an assessment of the current fleet of generators, it was determined that the best candidate for the grant opportunity was to add a second generator at ESFP in order to be able to operate the plant at full capacity with standby power.

On March 12, 2021, SCV Water was awarded a grant in the amount of $249,854 for the procurement of equipment, which includes generators and generator connections for essential facilities in accordance with the provisions of the grant allocation:

Three quotes for suitable generators were obtained and are listed in the table below.

Vendor	Equipment	Quotation*
Valley Power Systems	Blue Star – NG600-01	$245,575
Collicutt Energy	MTU – 12V0183 GS400	$314,995
Waukesha-Pearce Industries, LLC.	Waukesha – H24SE	$475,000

*Quotes do not include tax and offloading

Staff reviewed the quotes, the equipment specifications and recommends awarding the contract to Valley Power Systems for the Blue Star model NG600-01 Dual Fuel Generator. While California Air Resources Board (CARB) regulations allow the use of large diesel generators during Public Safety Power Shutoff (PSPS) events, natural gas and liquid propane are cleaner fuel options. A dual fuel (NG/LP) generator provides added redundancy and reliability during power outages. Procurement of the generator is being requested prior to the Agency's Engineering Services Section (ESS) completing the design due to limited availability and long lead times. ESS will be leading the design, permitting, construction, installation, and start-up procedures of this project, which will include all appropriate Committee and Board approvals. ESS has an estimated budget of $490,000 for these items, for a combined budget of approximately $760,000.

FINANCIAL CONSIDERATIONS

Funds for this equipment will be covered by the CalOES Community Power Resiliency Allocation to Special Districts in an amount up to $249,854, which has already been received by the Agency.

RECOMMENDATION

That the Engineering and Operations Committee recommend that the Board of Directors approve the procurement of a Blue Star model NG600-01 Dual Fuel Generator in the amount of approximately $275,000.

M65

ITEM NO.
4

Monthly Operations & Production Report

April 2021

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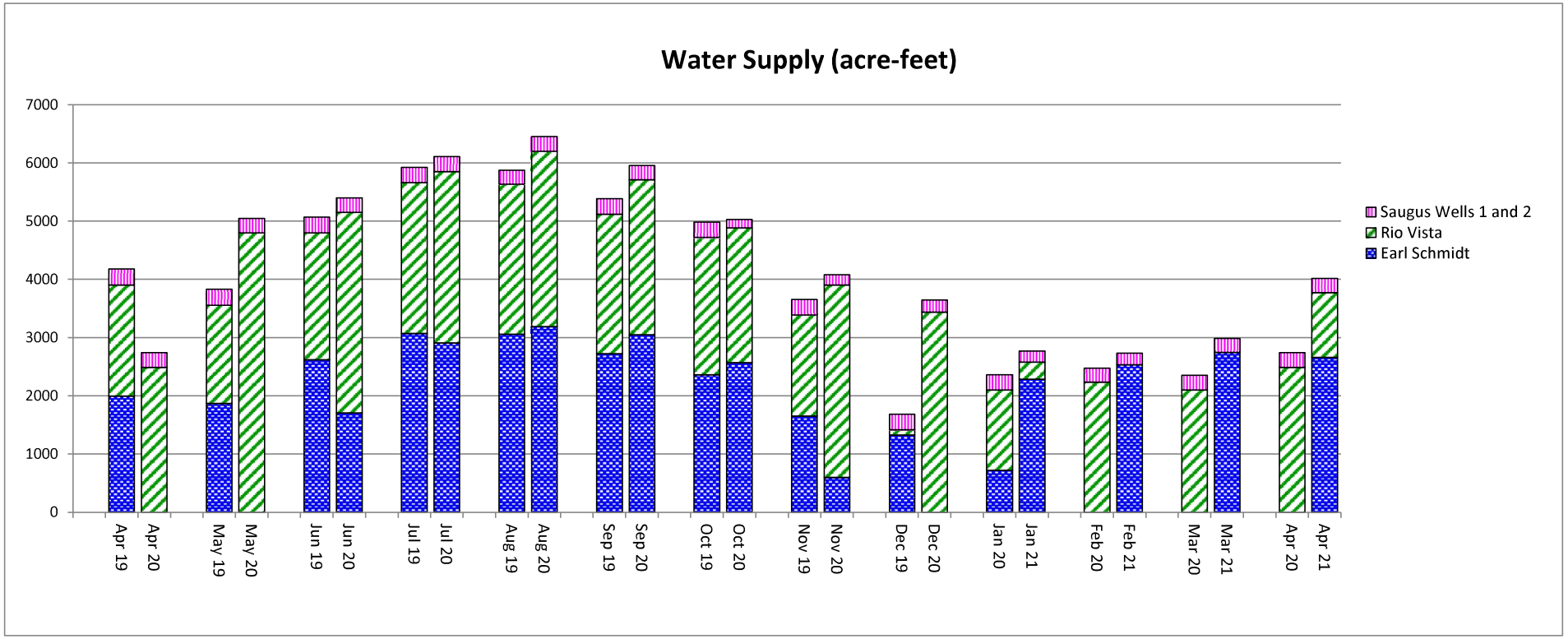
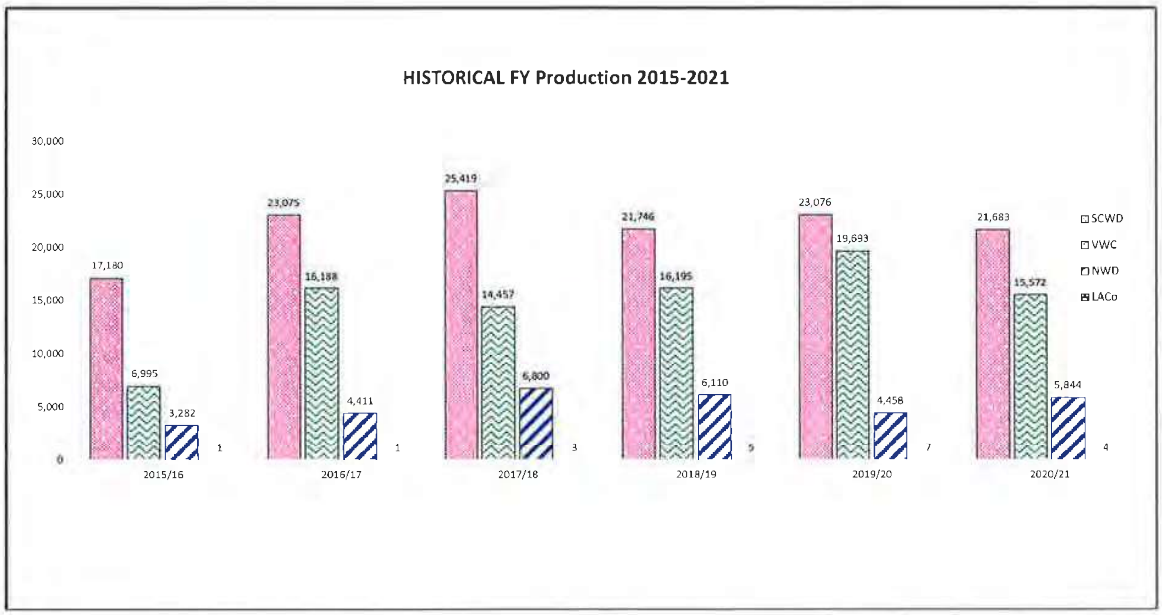
SANTA CLARITA VALLEY WATER AGENCY

April 2021 Regional Operations Report



Source	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Total
Earl Schmidt	0	0	1706	2906	3187	3050	2571	601	0	2289	2533	2748	2659	24250
Rio Vista	2490	4801	3445	2950	3013	2662	2314	3302	3436	292	0	0	1115	29820
Saugus 1 and 2	253	249	249	251	252	245	145	176	211	189	197	239	241	2897
Total	2743	5050	5400	6107	6452	5957	5030	4079	3647	2770	2730	2987	4015	56967
Total Sold	2660	5004	5336	6048	6373	5870	4970	4050	3605	2766	2662	2871	3887	56102
RVWTP Use/Storage	49	39	35	22	43.68	31.48	33.8	6.41	42.02	-39.16	7.31	4.66	34.82	310.02
Total Use	2709	5043	5371	6070	6416.68	5901.48	5003.8	4056.41	3647.02	2726.84	2669.31	2875.66	3921.82	56412.02
Water Loss	-1.24%	-0.14%	-0.54%	-0.61%	-0.55%	-0.93%	-0.52%	-0.55%	-0.01%	-1.56%	-2.22%	-3.73%	-2.32%	-1.15%
Recycled Water	**Apr-20**	**May-20**	**Jun-20**	**Jul-20**	**Aug-20**	**Sep-20**	**Oct-20**	**Nov-20**	**Dec-20**	**Jan-21**	**Feb-21**	**Mar-21**	**Apr-21**	**Total**
Valencia	22	64	70	76	68	64	18	27	20	16	15	23	38	521

* Water loss includes water usage at Rio Vista Water Treatment Plant facilities and system storage.



HISTORICAL FY PRODUCTION 2015-2021

2015/16	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
SCWD	1,731	1,800	1,616	1,629	1,427	1,160	929	1,060	1,185	1,176	1,612	1,935	17,180
VWC	691	773	583	550	547	364	157	366	412	462	715	1,375	6,995
NCWD	347	373	325	276	233	199	148	195	206	250	319	411	3,282
LACo	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	2,769	2,946	2,524	2,455	2,207	1,743	1,134	1,622	1,803	1,888	2,646	3,721	**27,458**
Cum. FYTD	2,769	5,715	8,239	10,694	12,901	14,644	15,778	17,400	19,203	21,091	23,737	27,458	
2016/17	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Total**
SCWD	2,404	2,663	2,368	2,128	1,712	1,377	952	844	1,359	2,040	2,456	2,772	23,075
VWC	1,565	1,640	1,305	1,080	807	620	643	764	1,123	1,728	2,499	2,614	16,188
NCWD	478	467	418	372	293	234	141	109	216	384	604	695	4,411
LACo	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	4,447	4,770	4,091	3,580	2,812	2,231	1,736	1,716	2,699	4,152	5,559	6,081	**43,674**
Cum. FYTD	4,447	9,218	13,309	16,888	19,501	21,732	23,467	25,184	27,882	32,034	37,593	43,674	
2017/18	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Total**
SCWD	3,085	3,035	2,589	2,462	1,922	1,955	1,578	1,580	969	1,905	2,076	2,264	25,419
VWC	2,089	1,723	1,164	1,280	966	969	853	676	619	1,160	1,336	1,622	14,457
NCWD	785	656	845	801	640	556	253	275	157	349	473	808	6,800
LACo	0	0	0	0	0	0	0	1	0	0	1	0	3
Total	5,958	5,615	4,619	4,522	3,528	3,481	2,684	2,532	1,746	3,414	3,885	4,695	**46,680**
Cum. FYTD	5,958	11,573	16,192	20,714	24,242	27,723	30,407	32,939	34,685	38,099	41,984	46,680	
2018/19	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Total**
SCWD	2,894	2,816	2,535	2,174	1,882	1,274	1,110	493	1,177	1,770	1,632	2,189	21,746
VWD	1,921	2,026	1,743	1,300	1,084	459	513	232	1,205	1,819	1,701	2,193	16,195
NWD	1,023	1,012	861	537	382	214	181	76	352	428	422	603	6,110
LACo	1	0	0	1	0	0	1	1	1	0	0	0	5
Total	5,639	5,855	5,160	4,011	3,349	1,947	1,805	802	2,735	4,016	3,754	4,985	**44,057**
Cum. FYTD	5,639	11,494	16,654	20,665	24,014	25,961	27,766	28,567	31,302	35,318	39,072	44,057	
2019/20	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Total**
SCWD	2,610	2,743	2,475	2,310	1,845	980	1,207	1,416	1,212	1,368	2,358	2,552	23,076
VWD	2,491	2,618	2,348	2,145	1,526	604	957	762	919	1,066	2,171	2,186	19,693
NWD	721	518	492	422	280	130	188	232	177	226	475	597	4,458
LACo	2	0	0	1	1	1	1	0	0	0	0	0	7
Total	5,823	5,779	5,316	4,879	3,651	1,715	2,353	2,411	2,309	2,660	5,004	5,336	**47,234**
Cum. FYTD	5,823	11,602	16,918	21,796	25,448	27,162	29,515	31,926	34,235	36,894	41,898	47,234	
2020/21	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Total**
SCWD	2,849	3,117	2,792	2,470	1,907	1,907	1,548	1,423	1,590	2,080	0	0	21,683
VWD	2,316	2,257	2,115	1,915	1,653	1,324	904	892	962	1,233	0	0	15,572
NWD	882	999	963	584	490	375	313	347	318	573	0	0	5,844
LACo	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	6,048	6,373	5,870	4,970	4,050	3,605	2,766	2,662	2,871	3,887	0	0	**43,103**
Cum. FYTD	6,048	12,422	18,292	23,262	27,312	30,918	33,683	36,346	39,216	43,103	43,103	43,103	

* Total does not include recycled water.

SANTA CLARITA VALLEY WATER AGENCY

Record of Weather Observations

April 2021

DATE	High Temperature (°F)	Low Temperature (°F)	Precipitation (inches) 2021	Precipitation (inches) 2020
1-Apr	85	50	0.00	0.00
2-Apr	79	44	0.00	0.00
3-Apr	81	42	0.00	0.00
4-Apr	86	41	0.00	0.00
5-Apr	74	48	0.00	0.32
6-Apr	74	45	0.00	2.01
7-Apr	84	43	0.00	0.93
8-Apr	83	52	0.00	0.06
9-Apr	83	42	0.00	0.90
10-Apr	86	47	0.00	0.20
11-Apr	77	45	0.00	0.01
12-Apr	71	44	0.00	0.00
13-Apr	61	52	0.00	0.00
14-Apr	61	43	0.00	0.01
15-Apr	69	35	0.00	0.00
16-Apr	74	38	0.00	0.00
17-Apr	80	40	0.00	0.00
18-Apr	83	43	0.00	0.00
19-Apr	89	45	0.00	0.00
20-Apr	74	47	0.00	0.00
21-Apr	59	52	0.00	0.01
22-Apr	65	51	0.00	0.00
23-Apr	65	52	0.00	0.00
24-Apr	68	45	0.00	0.00
25-Apr	64	47	0.01	0.00
26-Apr	62	50	0.00	0.00
27-Apr	67	45	0.00	0.00
28-Apr	85	41	0.00	0.00
29-Apr	94	46	0.00	0.00
30-Apr	96	51	0.00	0.00
TOTAL			**0.01**	**4.45**

		2020-2021	2019-2020
Total Precipitation (inches) of Current Month		0.01	4.45
Total Precipitation (inches) End of Previous Month		4.53	14.21
Total Precipitation (inches) Since October 1st		**4.54**	**18.66**
Temperature (°F) Averages for Current Month	**HIGH**	76.0	72.0
	LOW	45.5	47.4

Santa Clarita Valley Water Agency

Summary of Annual Precipitation

October 1st through September 30th

(Total in Inches)

	1999-00	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*	*2008-09*	*2009-10*
Oct	0.00	1.13	0.22	0.00	1.10	4.79	1.91	0.42	0.25	0.09	4.04
Nov	0.00	0.00	3.18	3.01	0.63	0.64	0.59	0.05	0.50	1.78	0.08
Dec	0.05	0.00	1.30	5.85	2.57	8.54	0.14	0.83	2.67	3.01	4.28
Jan	1.21	5.84	1.55	0.00	0.65	17.06	3.27	1.66	17.54	0.69	9.13
Feb	9.43	10.76	0.51	9.03	8.07	16.69	3.78	1.38	1.82	6.78	4.96
Mar	3.15	3.38	0.38	2.38	0.37	2.70	5.68	0.17	0.10	1.18	0.69
Apr	2.10	2.56	0.05	2.35	0.20	1.42	4.22	0.71	0.07	0.07	2.40
May	0.00	0.00	0.12	1.70	0.00	0.45	0.99	0.00	0.17	0.01	0.07
Jun	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
Jul	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.04	0.00	0.00	0.00
Aug	0.31	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00
Sep	0.00	0.00	0.02	0.00	0.00	0.17	0.00	1.32	0.00	0.00	0.00
TOTAL	**16.25**	**23.67**	**7.34**	**24.34**	**13.59**	**52.55**	**20.58**	**6.58**	**23.12**	**13.64**	**25.65**

	2010-11	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-19*	*2019-20*	*2020-21*
Oct	1.34	1.97	0.15	0.11	0.32	0.17	0.43	0.00	0.52	0.01	0.04
Nov	1.87	2.50	2.20	1.41	0.64	0.21	1.49	0.06	1.87	2.61	0.14
Dec	11.97	1.19	1.54	0.37	6.16	0.49	3.44	0.01	2.77	5.12	1.40
Jan	0.96	1.23	1.94	0.06	1.44	6.07	10.30	3.18	8.08	0.54	2.08
Feb	5.36	0.13	0.42	5.26	0.74	0.69	8.98	0.35	8.56	0.12	0.03
Mar	8.86	4.99	1.21	1.64	1.09	2.75	0.33	7.50	4.15	5.81	0.84
Apr	0.12	4.02	0.00	0.31	0.16	0.37	0.09	0.02	0.09	4.45	0.01
May	0.74	0.01	0.74	0.00	0.66	0.09	0.26	0.01	1.60	0.16	
Jun	0.04	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	
Jul	0.01	0.00	0.08	0.02	0.87	0.00	0.01	0.00	0.00	0.00	
Aug	0.00	0.01	0.00	0.05	0.00	0.02	0.07	0.00	0.00	0.00	
Sep	0.00	0.02	0.00	0.00	0.78	0.00	0.13	0.02	0.03	0.01	
TOTAL	**31.27**	**16.07**	**8.28**	**9.23**	**12.87**	**10.87**	**25.53**	**11.15**	**27.68**	**18.84**	**4.54**

SANTA CLARITA VALLEY WATER AGENCY
WATER PRODUCTION BY WELL 2021 (ACRE-FEET)

NEWHALL WATER DIVISION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
N12	108	70	132	160	0	0	0	0	0	0	0	0	**470**
N13	120	77	146	178	0	0	0	0	0	0	0	0	**521**
C1	27	30	33	39	0	0	0	0	0	0	0	0	**130**
C2	13	14	15	19	0	0	0	0	0	0	0	0	**60**
C7	36	39	44	56	0	0	0	0	0	0	0	0	**176**
P1	0	0	0	0	0	0	0	0	0	0	0	0	**0**
P3	0	0	0	0	0	0	0	0	0	0	0	0	**0**
P4	0	0	0	0	0	0	0	0	0	0	0	0	**0**
P5	0	0	0	0	0	0	0	0	0	0	0	0	**0**
TOTAL NWD	**303**	**230**	**371**	**452**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1357**

SANTA CLARITA WATER DIVISION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
LOST CANYON NO.2	23	21	23	27	0	0	0	0	0	0	0	0	**94**
LOST CANYON NO.2A	48	23	52	69	0	0	0	0	0	0	0	0	**192**
SAND CANYON	50	48	58	58	0	0	0	0	0	0	0	0	**214**
MITCHELL 5A	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MITCHELL 5B	0	0	0	0	0	0	0	0	0	0	0	0	**0**
SIERRA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NORTH OAKS EAST	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NORTH OAKS CENTRAL	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NORTH OAKS WEST	0	0	0	0	0	0	0	0	0	0	0	0	**0**
HONBY	0	0	0	0	0	0	0	0	0	0	0	0	**0**
GUIDA	16	47	51	57	0	0	0	0	0	0	0	0	**171**
CLARK	0	0	0	0	0	0	0	0	0	0	0	0	**0**
SANTA CLARA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
VALLEY CENTER	0	0	0	0	0	0	0	0	0	0	0	0	**0**
TOTAL SCWD	**137**	**139**	**184**	**211**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**671**

VALENCIA WATER DIVISION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
D	0	0	0	0	0	0	0	0	0	0	0	0	**0**
E15	47	54	69	103	0	0	0	0	0	0	0	0	**272**
E17	34	41	44	81	0	0	0	0	0	0	0	0	**201**
N	77	117	107	99	0	0	0	0	0	0	0	0	**400**
N7	116	164	158	100	0	0	0	0	0	0	0	0	**538**
N8	74	128	145	169	0	0	0	0	0	0	0	0	**516**
Q2	0	0	0	0	0	0	0	0	0	0	0	0	**0**
T7	0	0	0	0	0	0	0	0	0	0	0	0	**0**
U6	0	0	0	0	0	0	0	0	0	0	0	0	**0**
U4	0	0	0	0	0	0	0	0	0	0	0	0	**0**
S6	0	0	0	0	0	0	0	0	0	0	0	0	**0**
S7	0	0	0	0	0	0	0	0	0	0	0	0	**0**
S8	0	0	0	0	0	0	0	0	0	0	0	0	**0**
W11	2	51	66	97	0	0	0	0	0	0	0	0	**217**
W9	31	32	48	90	0	0	0	0	0	0	0	0	**201**
W10	0	0	0	0	0	0	0	0	0	0	0	0	**0**
159 (GOLF COURSE IRRIGATION)	0	1	2	0	0	0	0	0	0	0	0	0	**3**
160 (SYSTEM)	1	9	6	6	0	0	0	0	0	0	0	0	**22**
160 (GOLF COURSE IRRIGATION)	22	33	37	65	0	0	0	0	0	0	0	0	**157**
201 (SYSTEM)	0	0	0	0	0	0	0	0	0	0	0	0	**0**
205	0	0	0	0	0	0	0	0	0	0	0	0	**0**
206	76	95	145	205	0	0	0	0	0	0	0	0	**521**
207	82	2	0	39	0	0	0	0	0	0	0	0	**123**
TOTAL VWD	**562**	**727**	**827**	**1053**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3169**

S1	113	114	132	134	0	0	0	0	0	0	0	0	**493**
S2	76	84	107	106	0	0	0	0	0	0	0	0	**373**
TOTAL S1 & S2	**189**	**197**	**239**	**241**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**866**
TOTAL WELL PRODUCTION	***1192***	***1294***	***1621***	***1957***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***6063***

WELL 201 (NON-SYSTEM)	106	97	98	86	0	0	0	0	0	0	0	0	**387**
WELL 205 (NON-SYSTEM)	0.00	0.00	0.00	5.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**5.42**
HONBY (NON-SYSTEM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
MITCHELL 5B (NON-SYSTEM)	0.19	0.42	0.00	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**1.04**
N (NON-SYSTEM)	4.13	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**4.25**
N7 (NON-SYSTEM)	4.04	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**4.39**
N8 (NON-SYSTEM)	2.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**2.04**
NORTH OAKS CENTAL (NON-SYSTEM)	0.00	0.59	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**1.18**
Q2 (NON SYSTEM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
S8 (NON-SYSTEM)	0.72	0.31	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**1.22**
T7 (NON-SYSTEM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
VALLEY CENTER (NON-SYSTEM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
W10 (NON-SYSTEM)	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.42**

NEWHALL WATER DIVISION
WATER PRODUCTION 2021 (ACRE-FEET)

GROUNDWATER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
NEWHALL SYSTEM													
N12	108	70	132	160									***470***
N13	120	77	146	178									***521***
CASTAIC SYSTEM													
C1	27	30	33	39									***130***
C2	13	14	15	19									***60***
C7	36	39	44	56									***176***
PINETREE SYSTEM													
P1	0	0	0	0									***0***
P3	0	0	0	0									***0***
P4	0	0	0	0									***0***
P5	0	0	0	0									***0***
S1 & S2	51	53	64	64									**232**
TOTAL GROUNDWATER	**354**	**283**	**435**	**517**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	***1589***

SURFACE WATER + S1 & S2	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
NEWHALL SYSTEM													
N-3	43	125	38	58									***262***
CASTAIC SYSTEM													
N-1	32	20	26	35									***113***
PINETREE SYSTEM													
N-2	122	111	127	169									***529***
TESORO SYSTEM													
N-4	117	91	127	311									**647**
TOTAL SURFACE WATER + S1 & S2	**313**	**347**	**318**	**573**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1552**

TOTAL GROUNDWATER (INCLUDES S1 & S2)	**354**	**283**	**435**	**517**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1589**
TOTAL SURFACE WATER (NO S1 & S2)	**263**	**294**	**254**	**508**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1320**
TOTAL PRODUCTION *(GW + SURFACE WATER)*	**617**	**578**	**689**	**1025**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2908**

% BY SOURCE													
GROUNDWATER	57%	49%	63%	50%									55%
SURFACE WATER	43%	51%	37%	50%									45%

SANTA CLARITA WATER DIVISION
WATER PRODUCTION 2021 (ACRE-FEET)

GROUNDWATER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
LOST CANYON NO.2	23	21	23	27									94
LOST CANYON NO.2A	48	23	52	69									192
SAND CANYON	50	48	58	58									214
MITCHELL 5A	0	0	0	0									0
MITCHELL 5B	0	0	0	0									0
SIERRA	0	0	0	0									0
NORTH OAKS EAST	0	0	0	0									0
NORTH OAKS CENTRAL	0	0	0	0									0
NORTH OAKS WEST	0	0	0	0									0
HONBY	0	0	0	0									0
GUIDA	16	47	51	57									171
CLARK	0	0	0	0									0
SANTA CLARA	0	0	0	0									0
VALLEY CENTER	0	0	0	0									0
TOTAL ALLUVIUM	137	139	184	211	0	0	0	0	0	0	0	0	671
SAUGUS WELLS S1 & S2	139	144	175	176									634
TOTAL GROUNDWATER	**276**	**283**	**359**	**387**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1305**

SURFACE + S1 & S2	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
SC-1 BOUQUET	326	227	189	200									942
SC-2 HONBY	0	0	0	0									0
SC-3 WILEY	73	76	93	128									371
SC-4 HONBY #2	356	404	486	450									1696
SC-5 RIO VISTA	20	0	0	74									94
SC-6 LOST CANYON	64	83	91	123									361
SC-7	175	97	119	356									748
SC-8	159	169	173	231									732
SC-9	87	94	106	119									406
SC-10	35	45	52	60									192
SC-11	0	0	0	0									0
SC-12	126	113	115	162									516
SC-13	127	114	166	178									585
TOTAL SURFACE WATER + S1 & S2	**1548**	**1,423**	**1,590**	**2,080**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,641**
METERING ADJUSTMENT	-4.8	-4.6	-3.9	-7.99									-21.2
NET SURFACE WATER + S1 & S2	***1,543***	***1,418***	***1,586***	***2,072***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***6,619***
TOTAL GROUNDWATER (INCLUDES S1 & S2)	**276**	**283**	**359**	**387**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1305**
TOTAL SURFACE WATER (NO S1 & S2)	**1,409**	**1,278**	**1,415**	**1,904**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,007**
TOTAL PRODUCTION *(GW + SURFACE WATER)*	**1,685**	**1,562**	**1,774**	**2,291**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7,312**
% BY SOURCE													
GROUNDWATER	16%	18%	20%	17%									18%
SURFACE WATER	84%	82%	80%	83%									82%
HONBY (NON-SYSTEM) *	0.00	0.00	0.00	0.00									0.00
MITCHELL 5B (NON-SYSTEM) *	0.19	0.42	0.00	0.43									1.04
NORTH OAKS CENTRAL (NON-SYSTEM) *	0.00	0.59	0.00	0.60									1.18
VALLEY CENTER (NON-SYSTEM) *	0.00	0.00	0.00	0.00									0.00

* Not used in the calculation for % by Source

VALENCIA WATER DIVISION
WATER PRODUCTION 2021 (ACRE-FEET)

ALLUVIUM	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
D	0	0	0	0									0
E15	47	54	69	103									272
E17	34	41	44	81									201
N	77	117	107	99									400
N7	116	164	158	100									538
N8	74	128	145	169									516
Q2	0	0	0	0									0
T7	0	0	0	0									0
U6	0	0	0	0									0
U4	0	0	0	0									0
S6	0	0	0	0									0
S7	0	0	0	0									0
S8	0	0	0	0									0
W11	2	51	66	97									217
W9	31	32	48	90									201
W10	0	0	0	0									0
TOTAL ALLUVIUM	***381***	***587***	***637***	***739***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	**2344**

SAUGUS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
159	0	1	2	0									3
160 - DOM	1	9	6	6									22
160 - VGC*	22	33	37	65									157
201	0	0	0	0									0
205	0	0	0	0									0
206	76	95	145	205									521
207	82	2	0	39									123
TOTAL SAUGUS	**181**	**140**	**190**	**315**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**825**

SURFACE WATER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
V-1	81	90	116	114									402
V-2	120	238	230	176									765
V-4	75	80	110	140									405
V-5	219	260	194	213									885
V-6	136	68	58	55									317
V-7	111	68	66	76									322
V-8	162	88	188	459									896
TOTAL SURFACE WATER	**904**	**892**	**962**	**1,233**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,991**
TOTAL GROUNDWATER	**562**	**727**	**827**	**1,053**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,169**
TOTAL SURFACE WATER	**904**	**892**	**962**	**1,233**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,991**
TOTAL PRODUCTION *(GW + SURFACE WATER)*	**1,466**	**1,619**	**1,789**	**2,286**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7,161**

% BY SOURCE													
GROUNDWATER	37%	44%	45%	44%									43%
SURFACE WATER	63%	56%	55%	56%									57%
RECYCLED WATER	**16**	**15**	**23**	**38**									**92**
Well 201 Discharge *	**106**	**97**	**98**	**86**									**387**
Well 205 Non-System *	**0.00**	**0.00**	**0.00**	**5.42**									**5.42**
Well N Non-System *	**4.13**	**0.12**	**0.00**	**0.00**									**4.25**
Well N7 Non-System *	**4.04**	**0.35**	**0.00**	**0.00**									**4.39**
Well N8 Non-System *	**2.04**	**0.00**	**0.00**	**0.00**									**2.04**
Well Q2 Non-System *	**0.00**	**0.00**	**0.00**	**0.00**									**0.00**
Well S8 Non-System *	**0.72**	**0.31**	**0.00**	**0.19**									**1.22**
Well T7 Non-System *	**0.00**	**0.00**	**0.00**	**0.00**									**0.00**
Well W10 Non-System *	**0.00**	**0.42**	**0.00**	**0.00**									**0.42**

*Not used in the calculation for % by source

LOS ANGELES COUNTY WATERWORKS DISTRICT 36

SOURCE

TURNOUT	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	TOTAL
LA 1	0.00	0	0	0									0.00
LA 2	0.40	0.3069	0.3836	0.3959									1.49
TOTAL	0.40	0.3069	0.3836	0.3959	0	0	0	0	0	0	0	0.00	1.49

RAW WATER

SOURCE	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	TOTAL
RVTP	292	0	0	1,115									1,406.18
ESTP	2,289	2,533	2,748	2,659									10,228.90
Wells	189	197	239	241									866.19
TOTAL	2,770	2,730	2,987	4,014	0	0	0	0	0	0	0	0	12,501.26

S1/S2 TREATMENT

SOURCE	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	TOTAL
S1	113.09	113.79	131.86	134.46									493.20
S2	76.197	83.52	107.11	106.16									372.98
TOTAL	189.29	197.31	238.97	240.62	0	0	0	0	0	0	0	0	866.19

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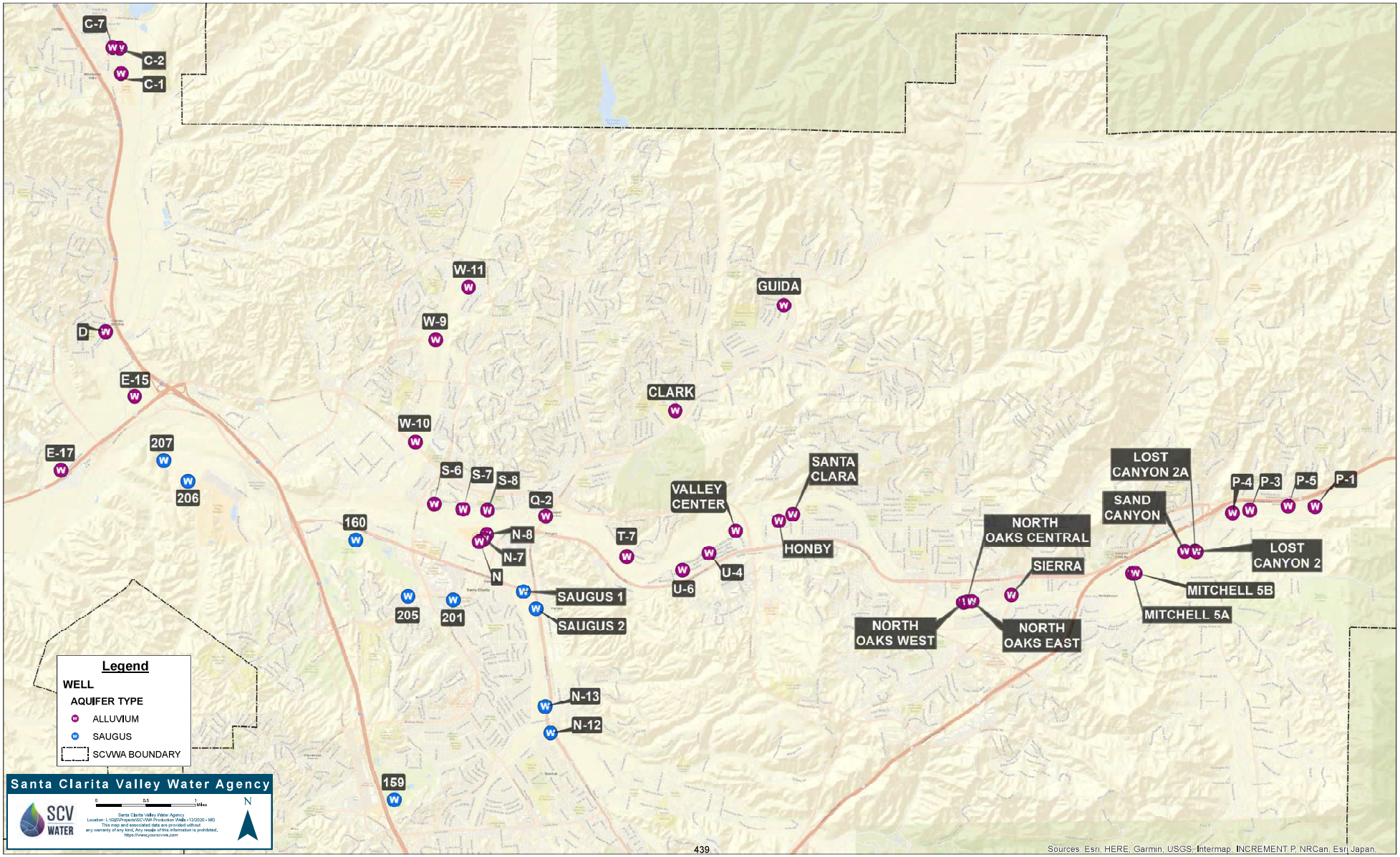
SCVWA PRODUCTION WELLS



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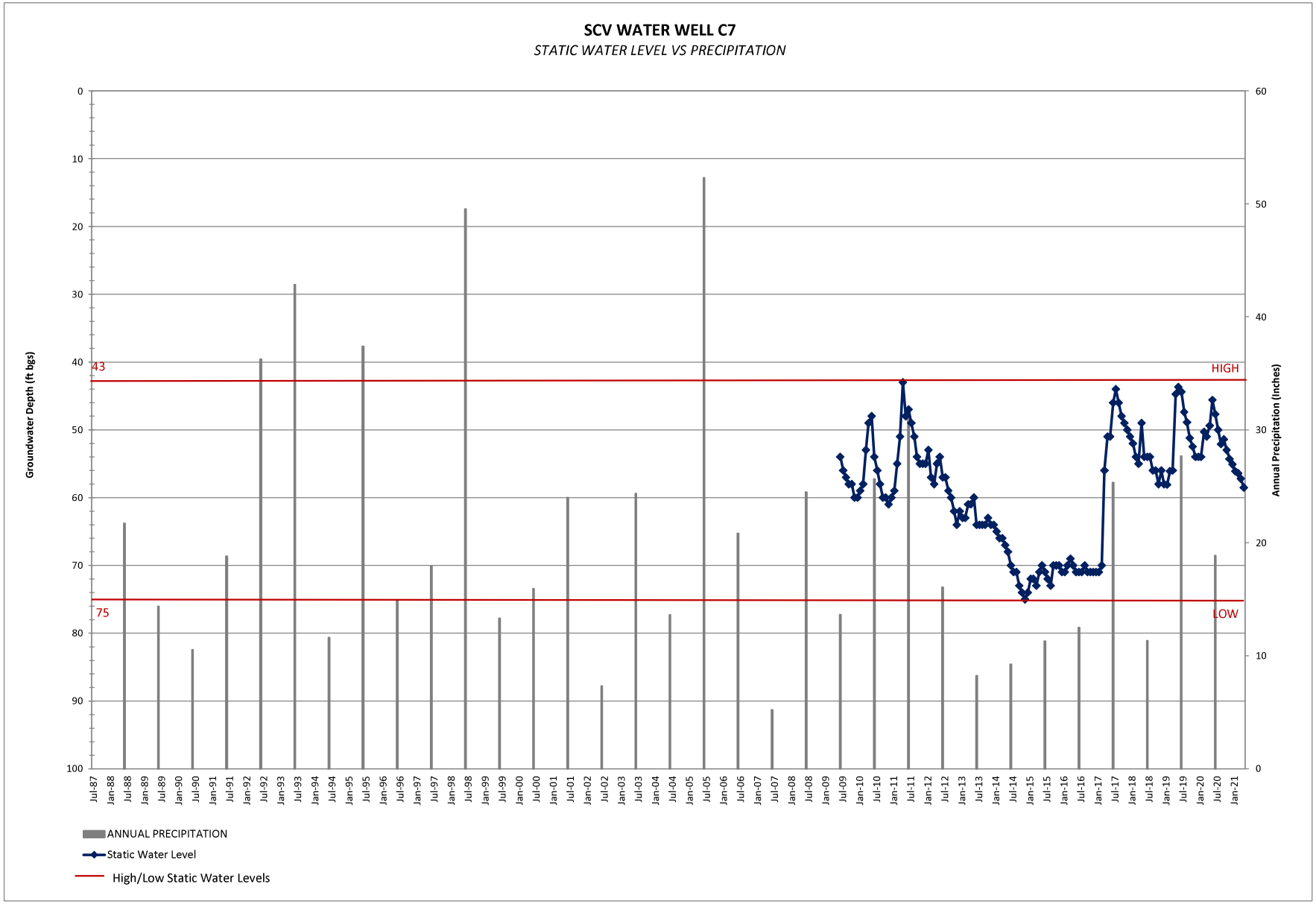
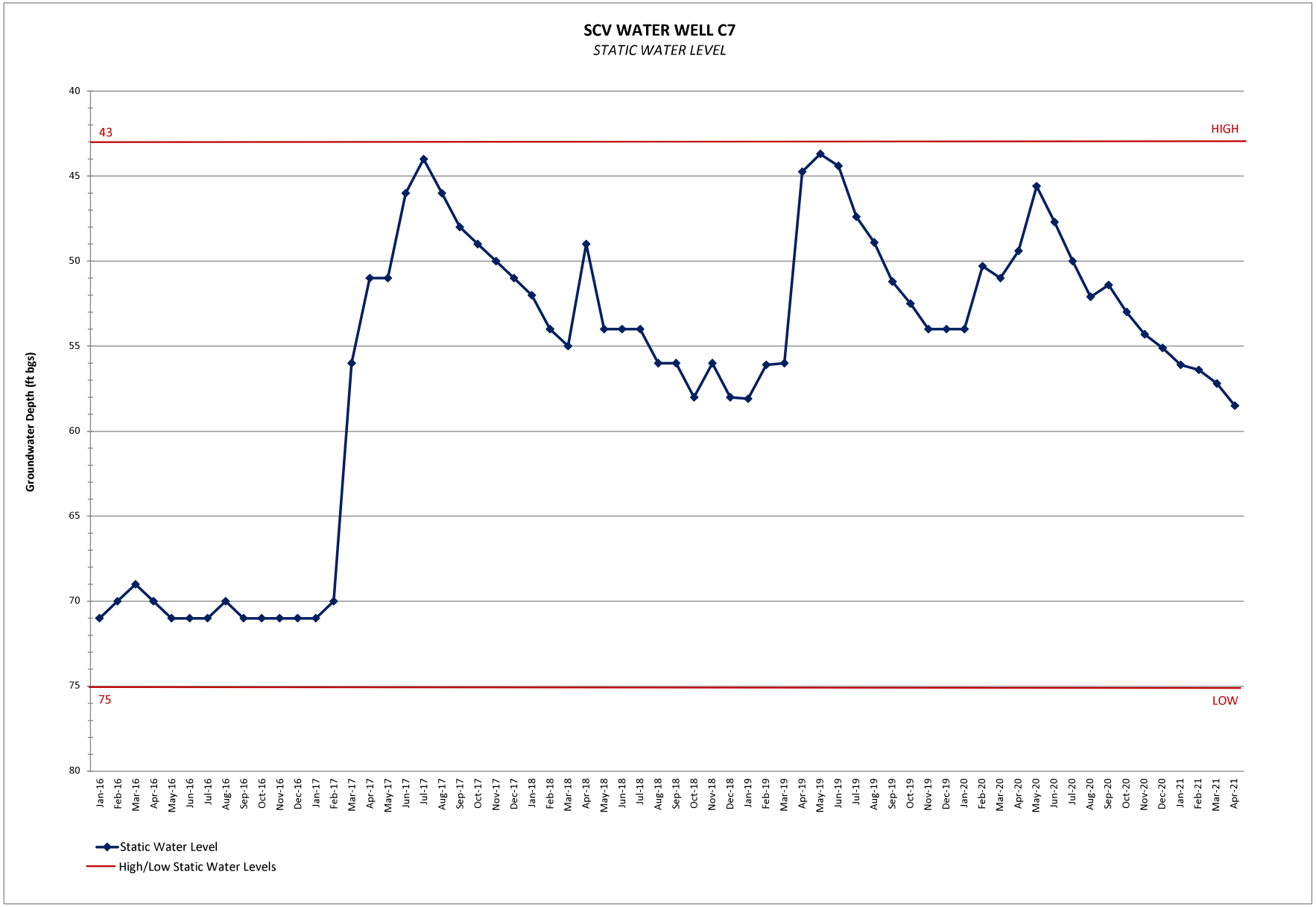

SCV WATER WELL C7
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
43
HIGH
75
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL C7
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
40
45
50
55
60
65
70
75
80
43
HIGH
75
LOW
Jan-16
Feb-16
Mar-16
Apr-16
May-16
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Jul-16
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Nov-16
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Feb-17
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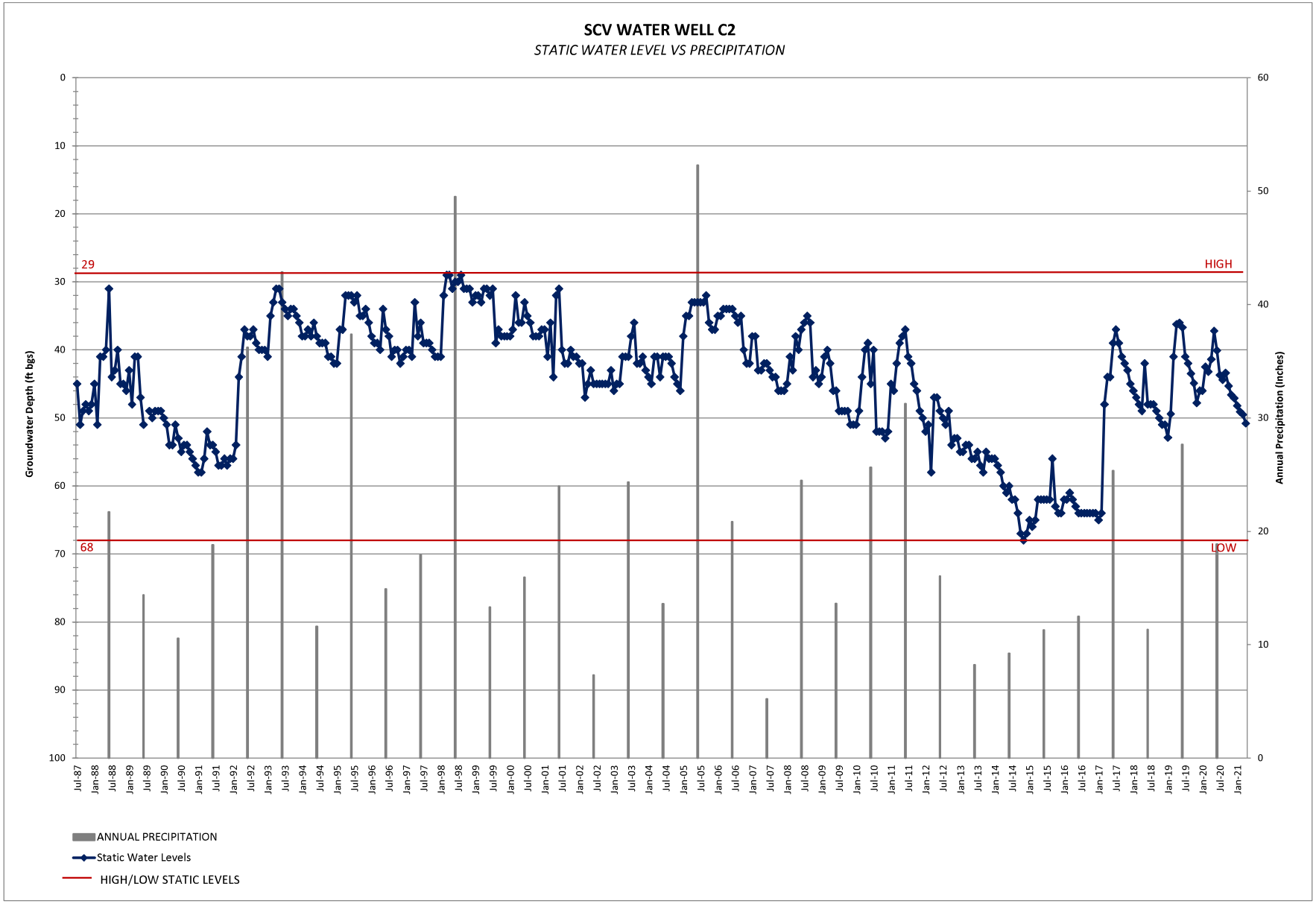
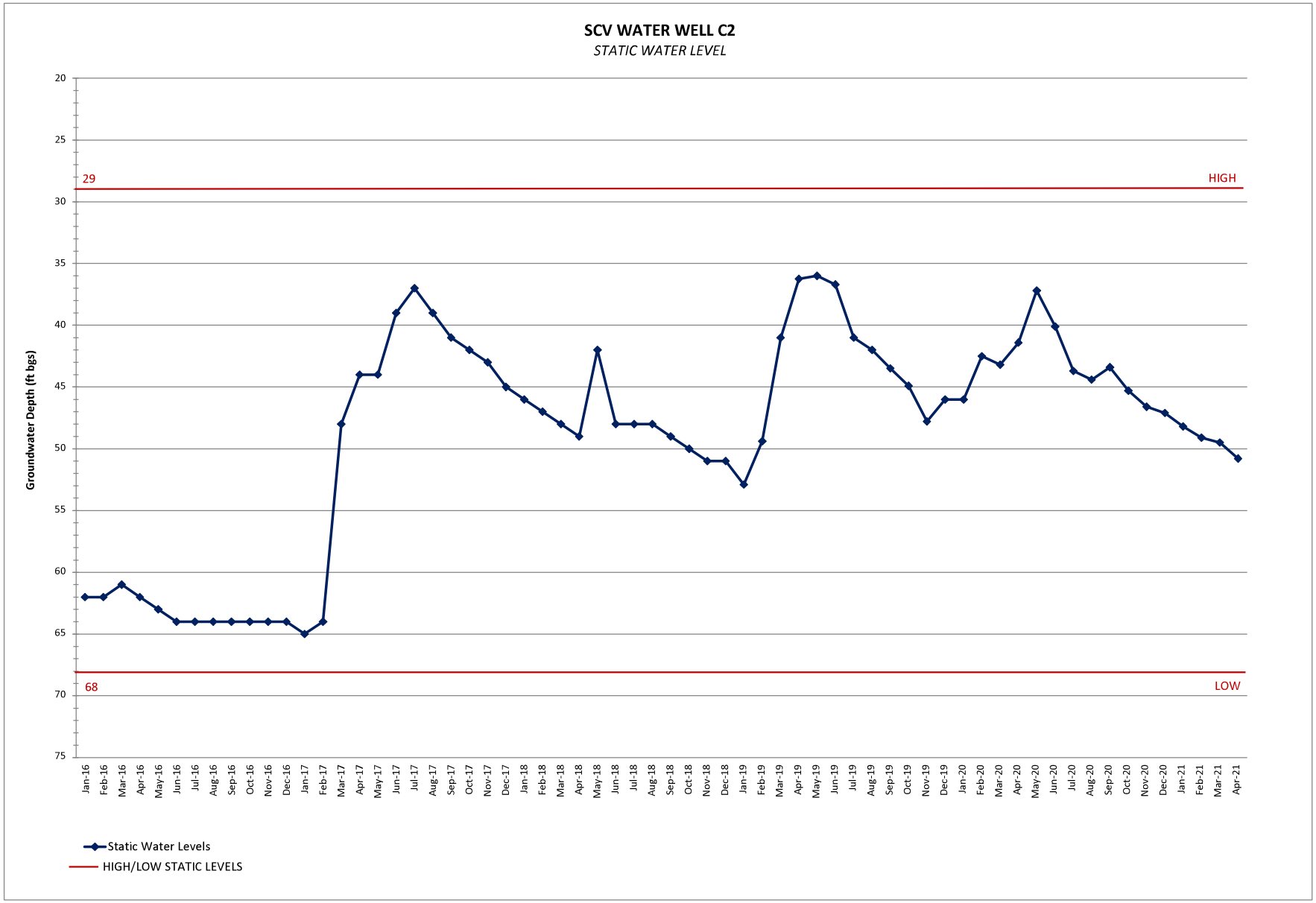
Apr-21
Static Water Level
High/Low Static Water Levels


SCV WATER WELL C2
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
29
HIGH
68
LOW
ANNUAL PRECIPITATION
Static Water Levels
HIGH/LOW STATIC LEVELS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STATIC WATER LEVEL
Groundwater Depth (ft bgs)
20
25
29
HIGH
30
35
40
45
50
55
60
65
68
LOW
70
75
Jan-16
Feb-16
Mar-16
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May-16
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May-19
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Jul-19
Aug-19
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Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
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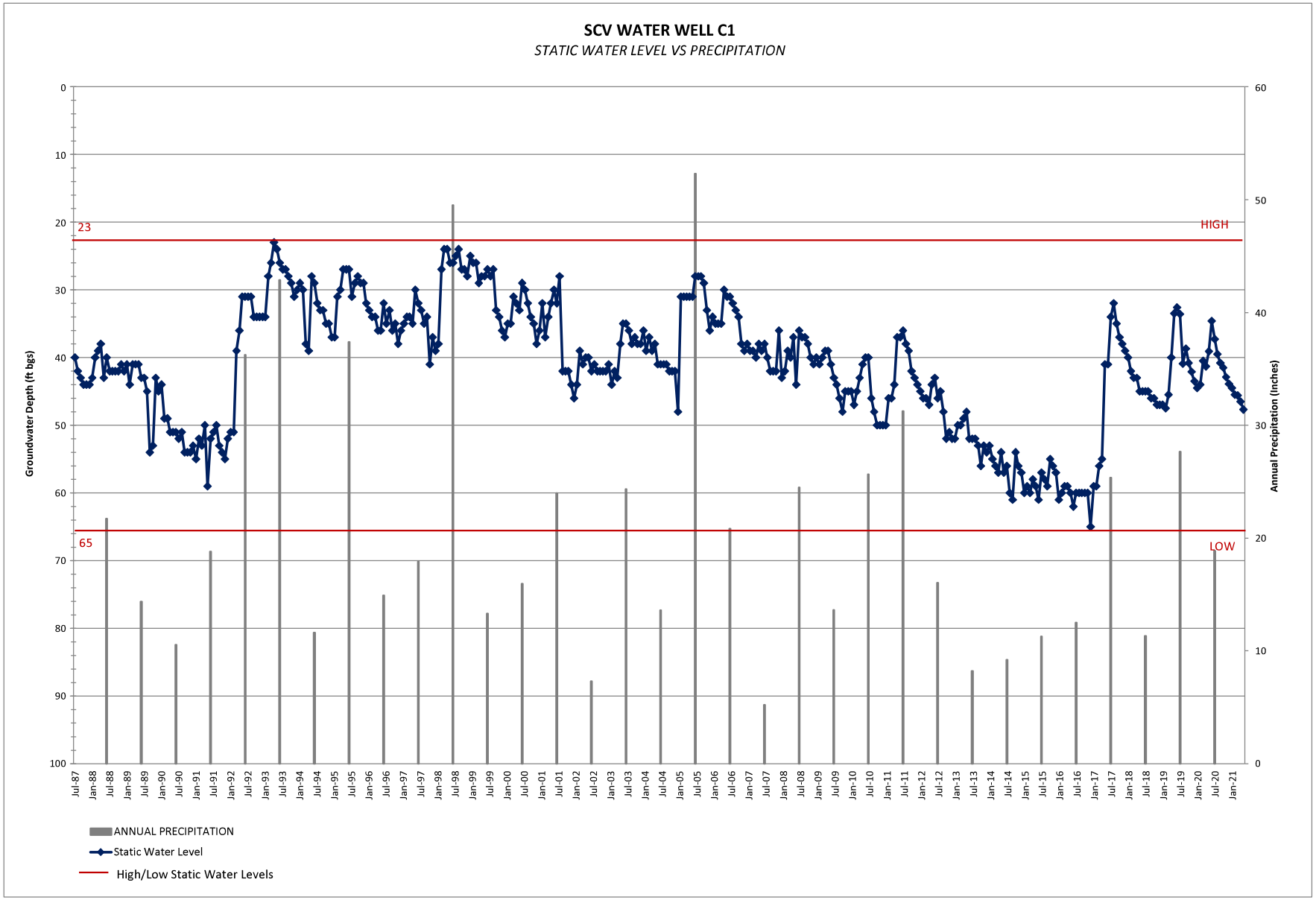
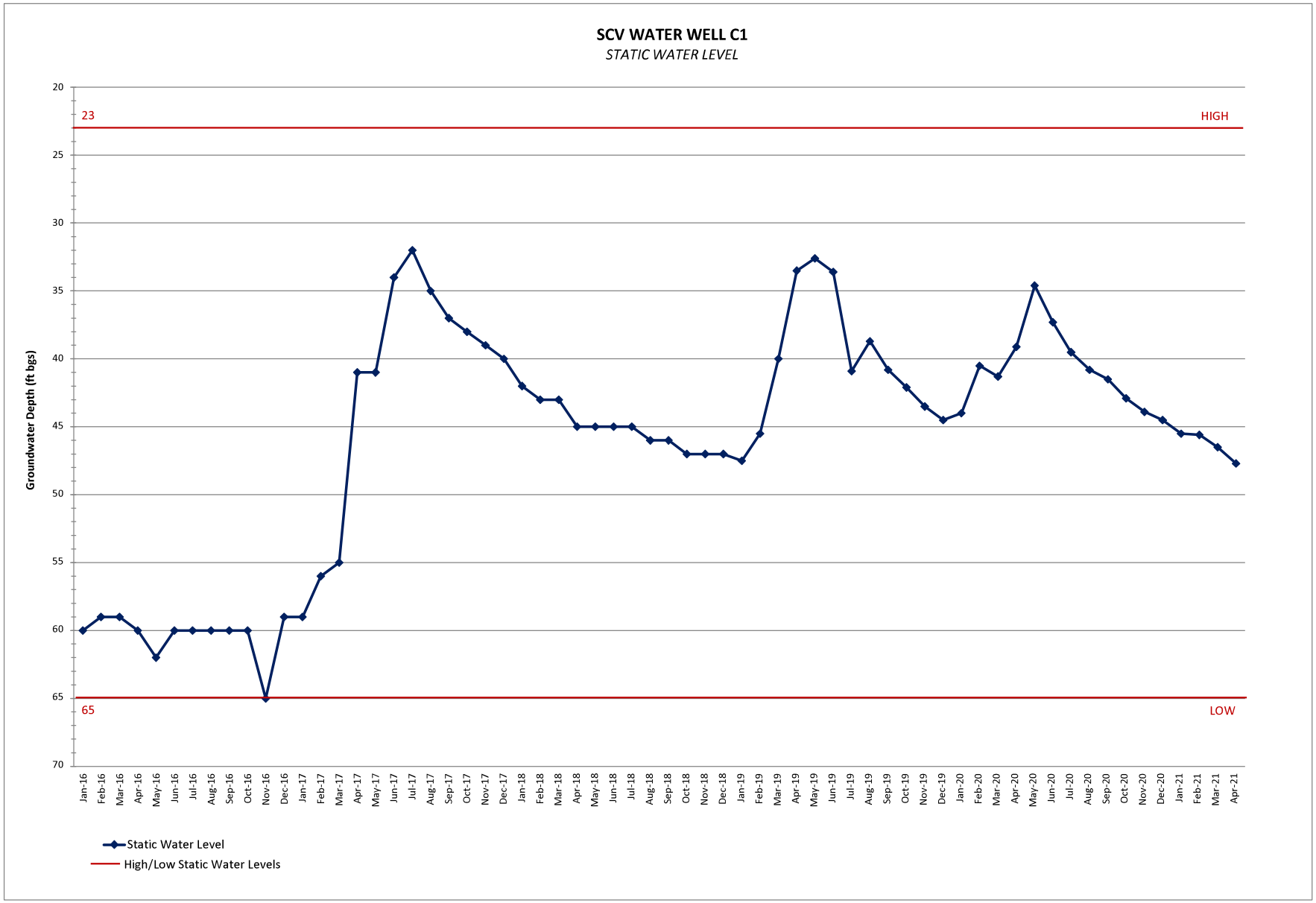
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
Static Water Levels
HIGH/LOW STATIC LEVELS


SCV WATER WELL C1
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
23
HIGH
65
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL C1
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
20
25
30
35
40
45
50
55
60
65
70
23
HIGH
65
LOW
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17
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Oct-17
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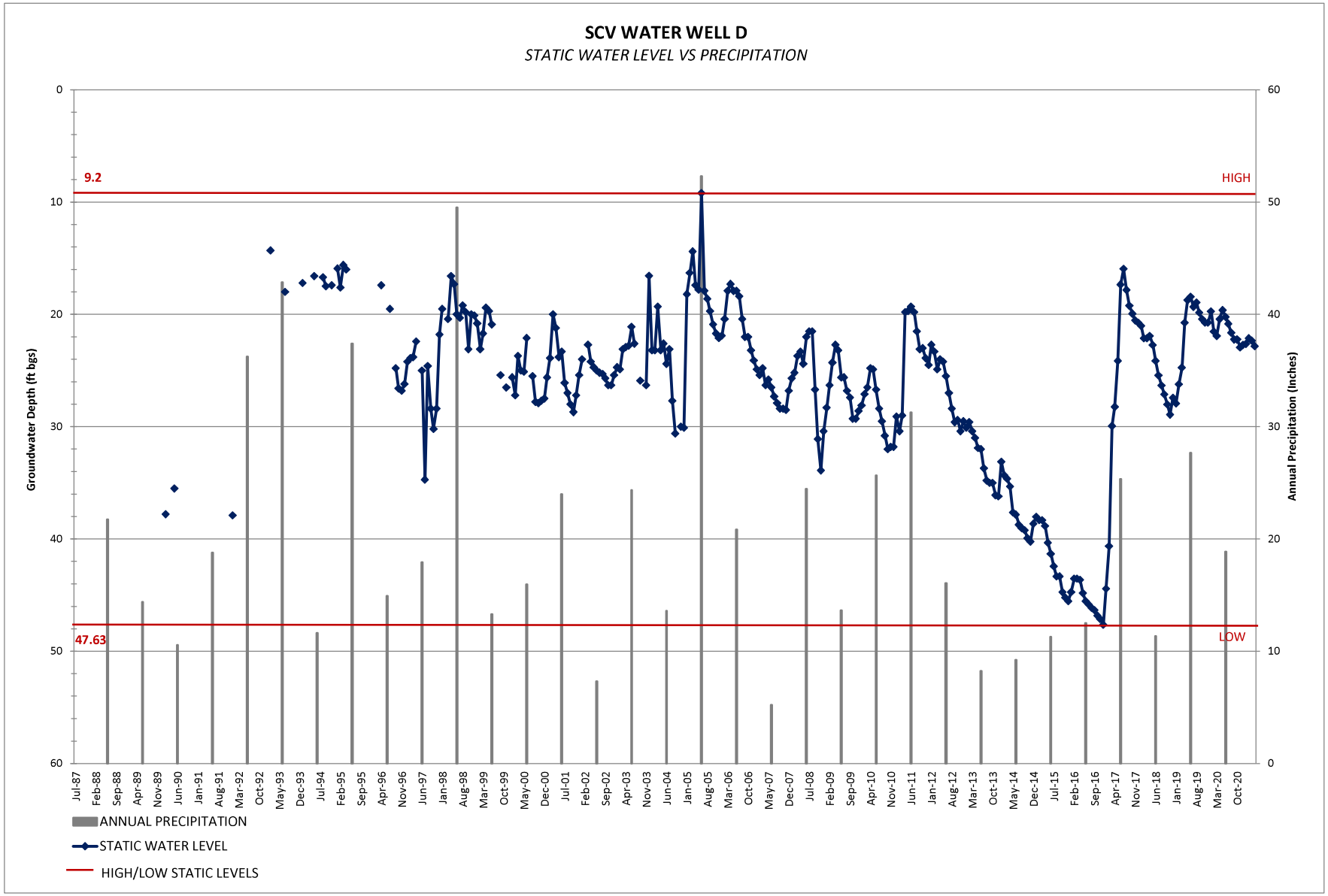
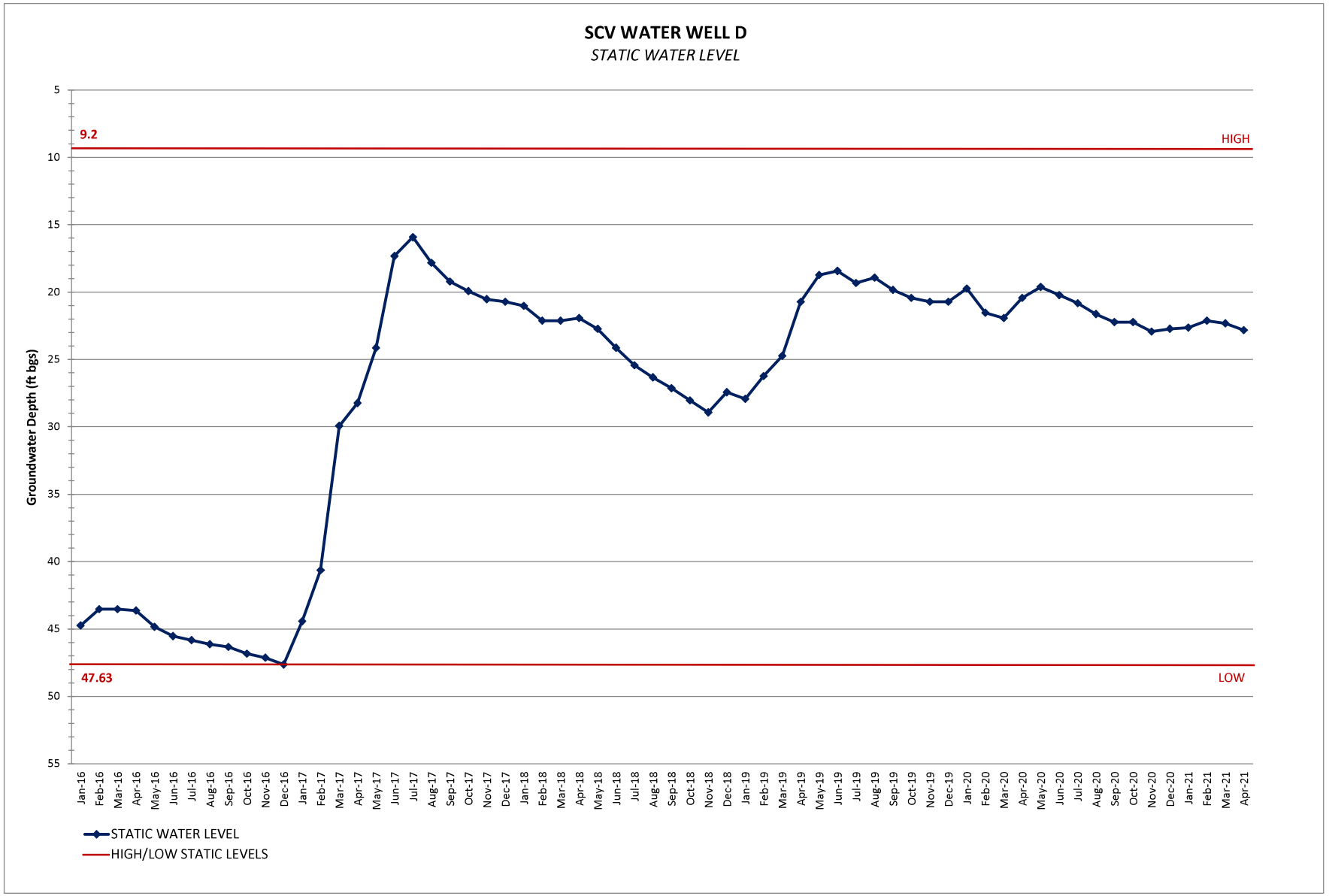
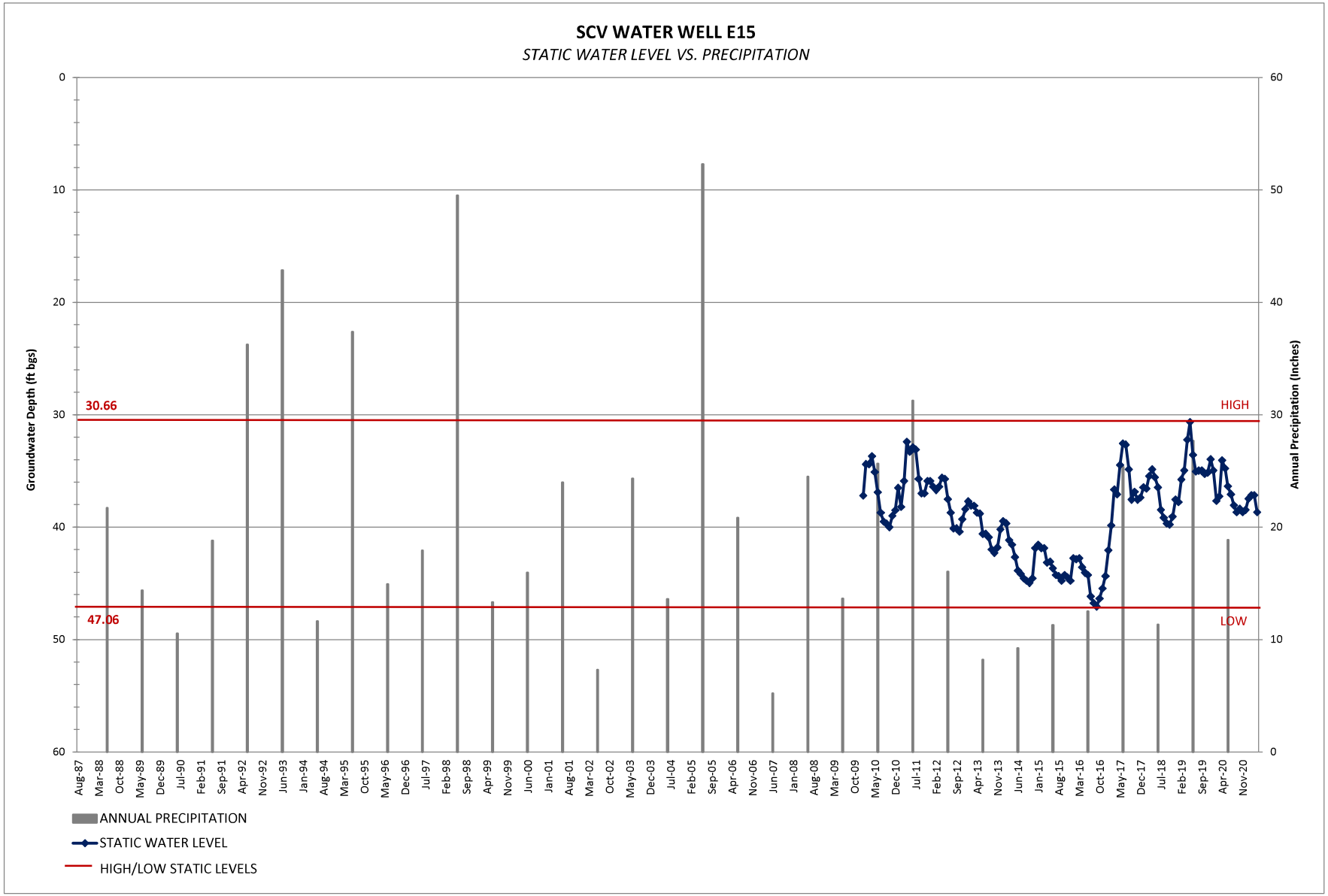
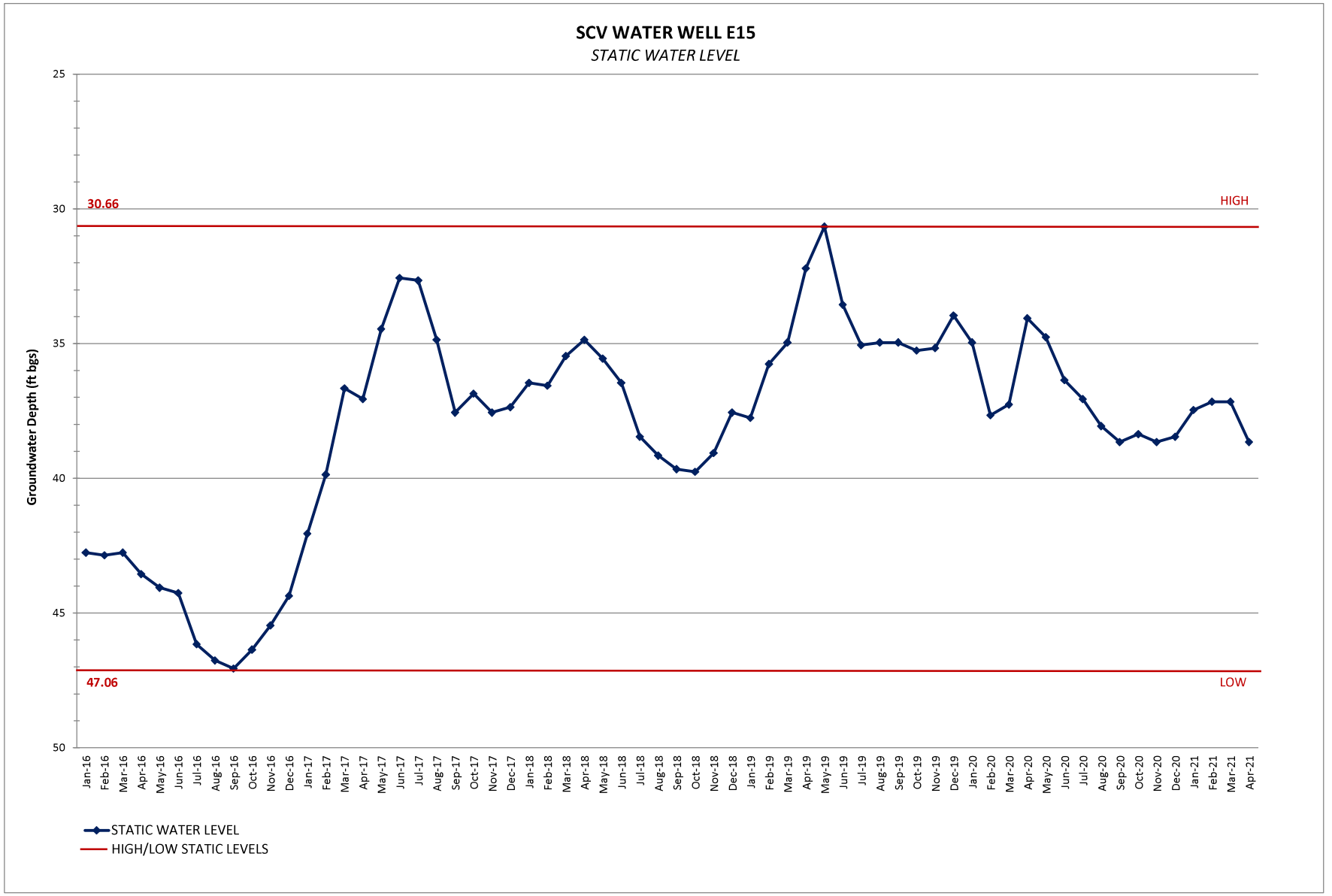
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
Static Water Level
High/Low Static Water Levels


SCV WATER WELL D
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
9.2
HIGH
47.63
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL D
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
9.2
HIGH
47.63
LOW
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL E15
STATIC WATER LEVEL VS. PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
30.66
HIGH
47.06
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL E15
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
25
30
35
40
45
50
30.66
HIGH
47.06
LOW
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
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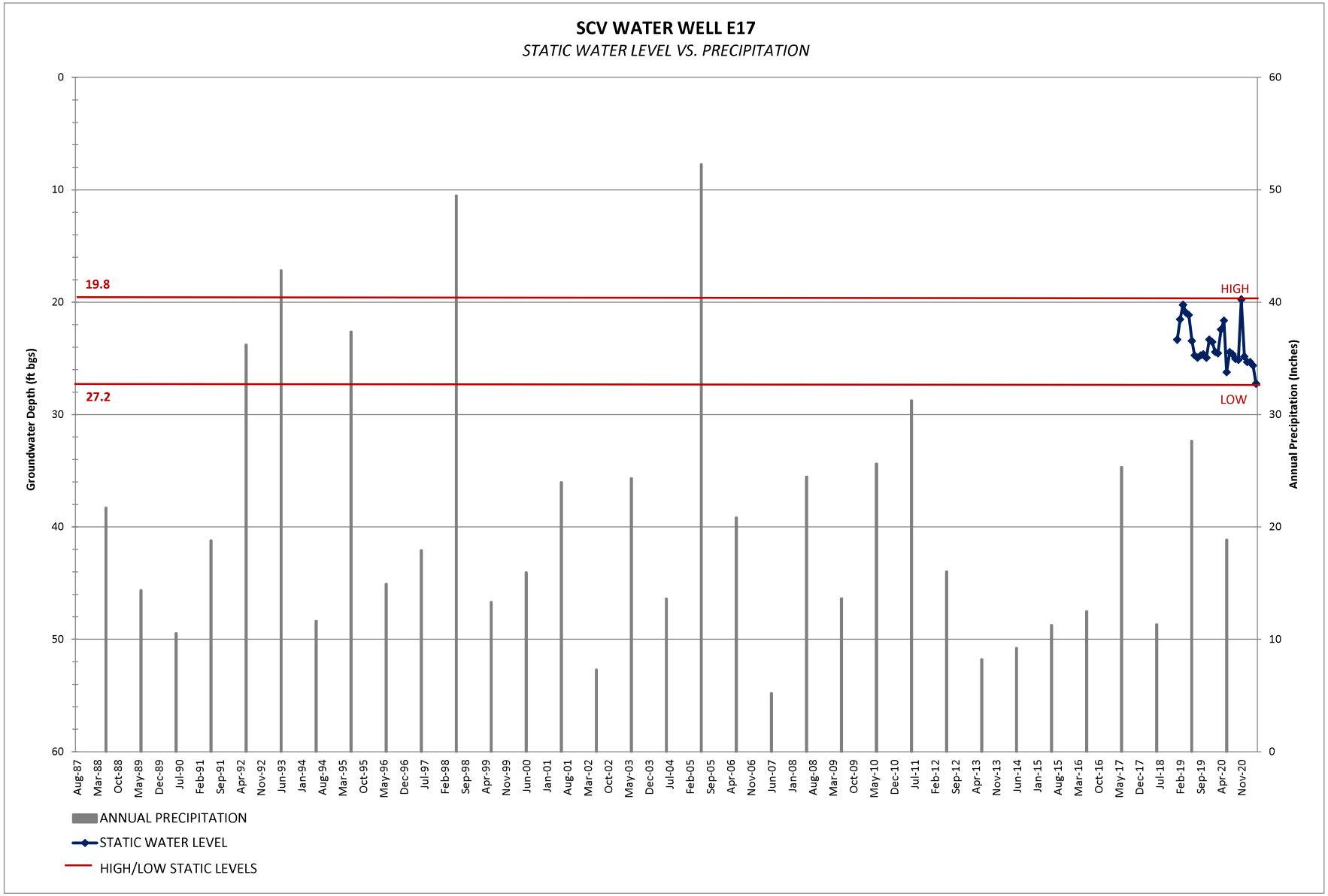
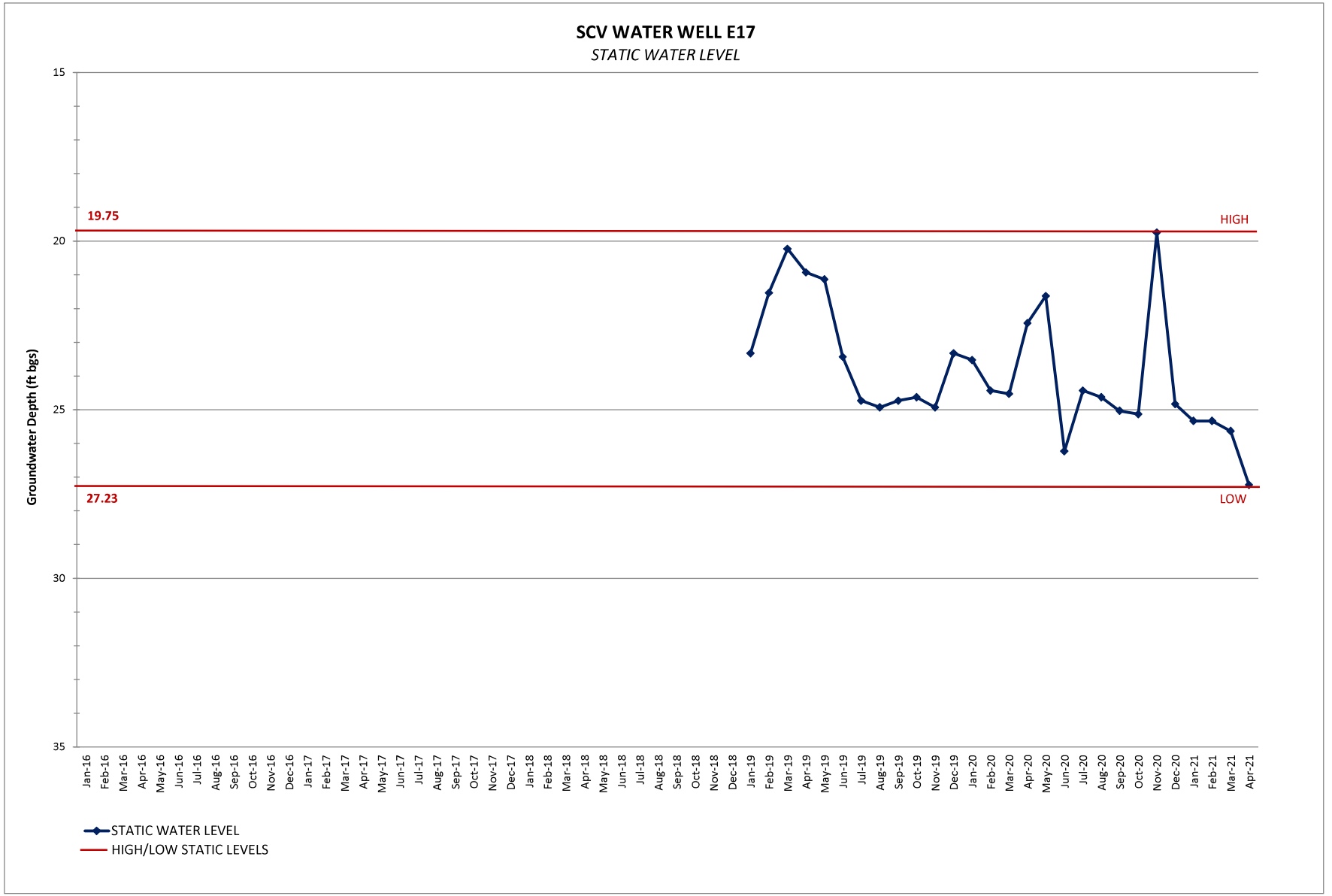
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL E17
STATIC WATER LEVEL VS. PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
19.8
27.2
HIGH
LOW
0
10
20
30
40
50
60
Aug-87
Mar-88
Oct-88
May-89
Dec-89
Jul-90
Feb-91
Sep-91
Apr-92
Nov-92
Jun-93
Jan-94
Aug-94
Mar-95
Oct-95
May-96
Dec-96
Jul-97
Feb-98
Sep-98
Apr-99
Nov-99
Jun-00
Jan-01
Aug-01
Mar-02
Oct-02
May-03
Dec-03
Jul-04
Feb-05
Sep-05
Apr-06
Nov-06
Jun-07
Jan-08
Aug-08
Mar-09
Oct-09
May-10
Dec-10
Jul-11
Feb-12
Sep-12
Apr-13
Nov-13
Jun-14
Jan-15
Aug-15
Mar-16
Oct-16
May-17
Dec-17
Jul-18
Feb-19
Sep-19
Apr-20
Nov-20
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL E17
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
15
20
25
30
35
19.75
HIGH
27.23
LOW
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
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Jun-20
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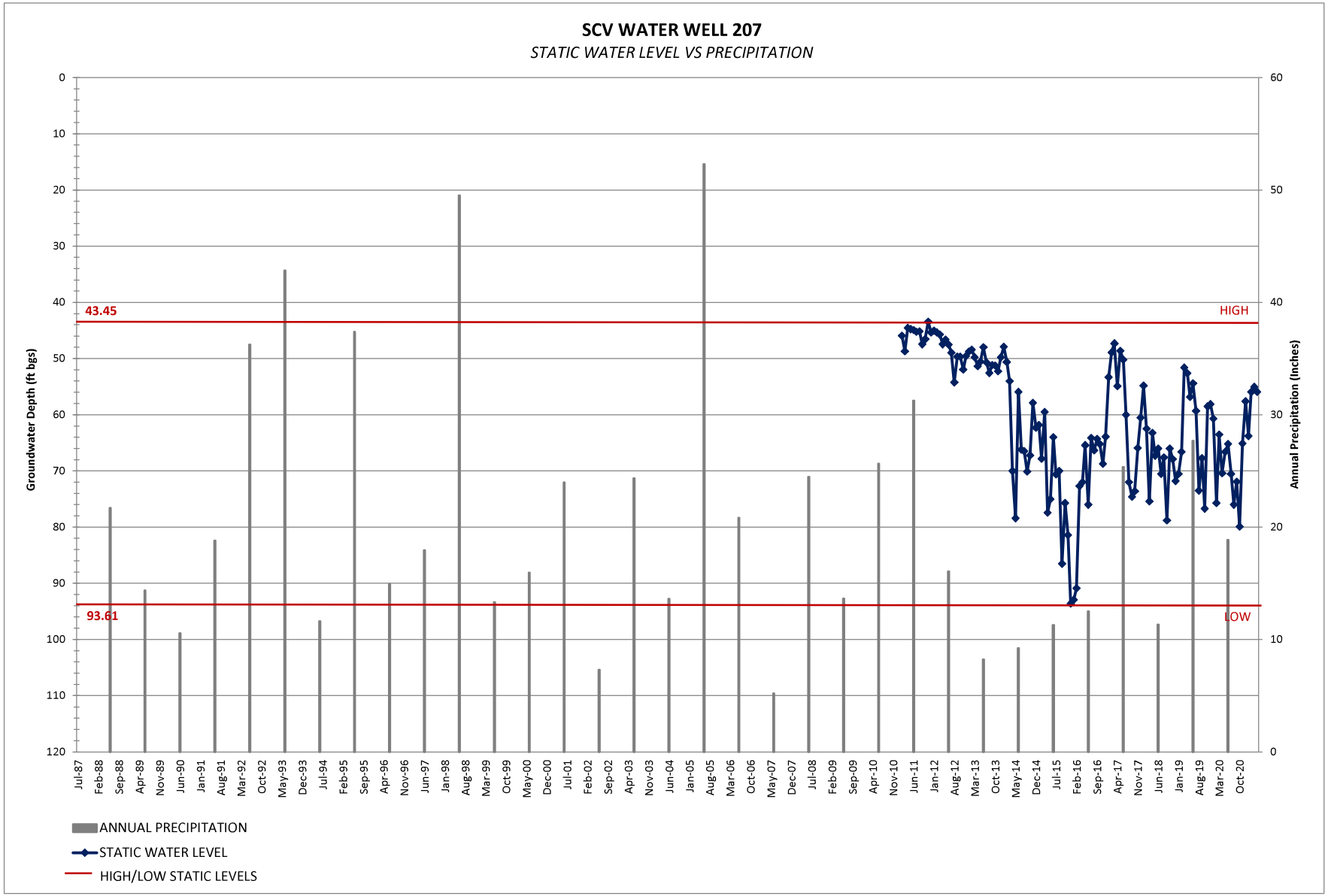
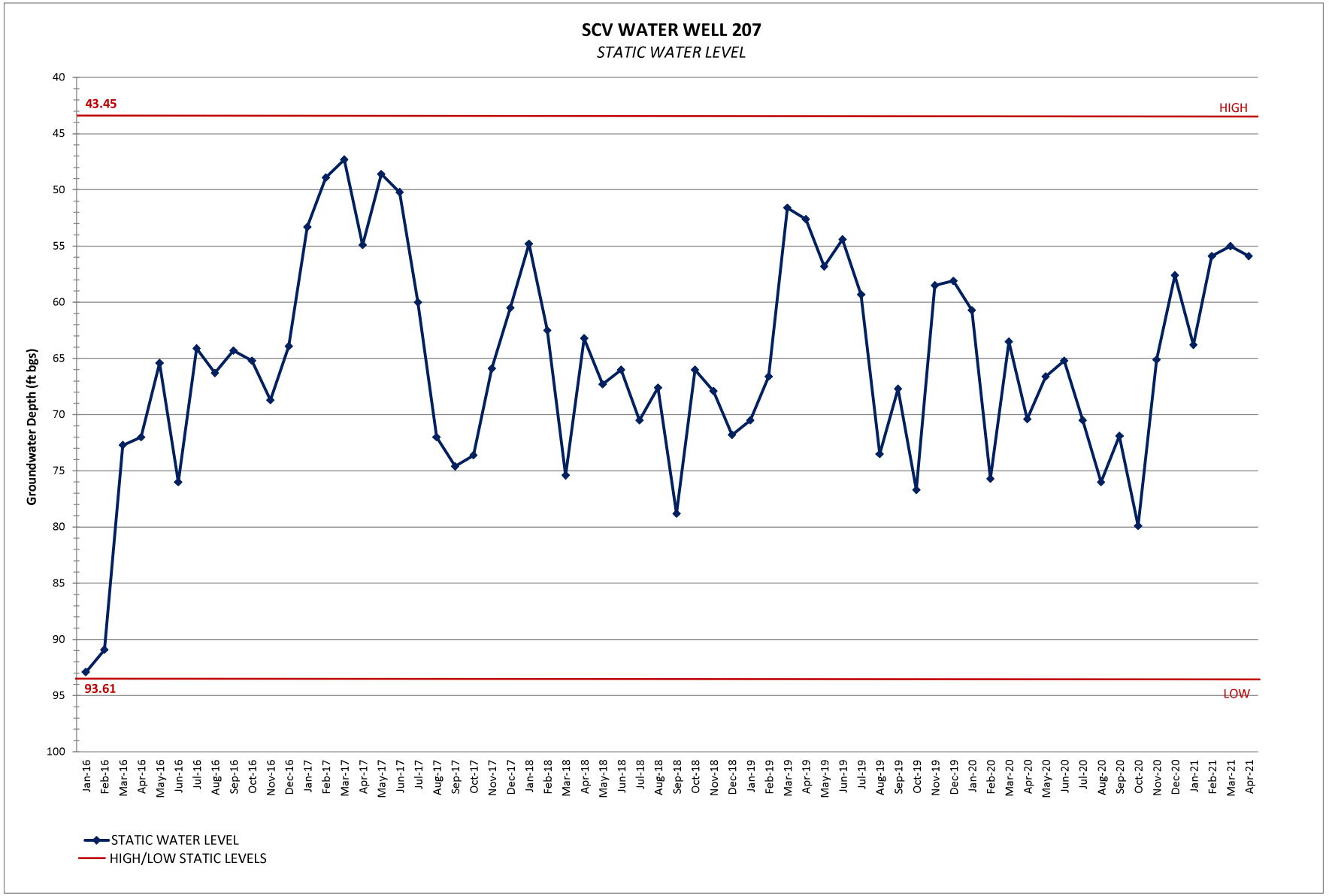
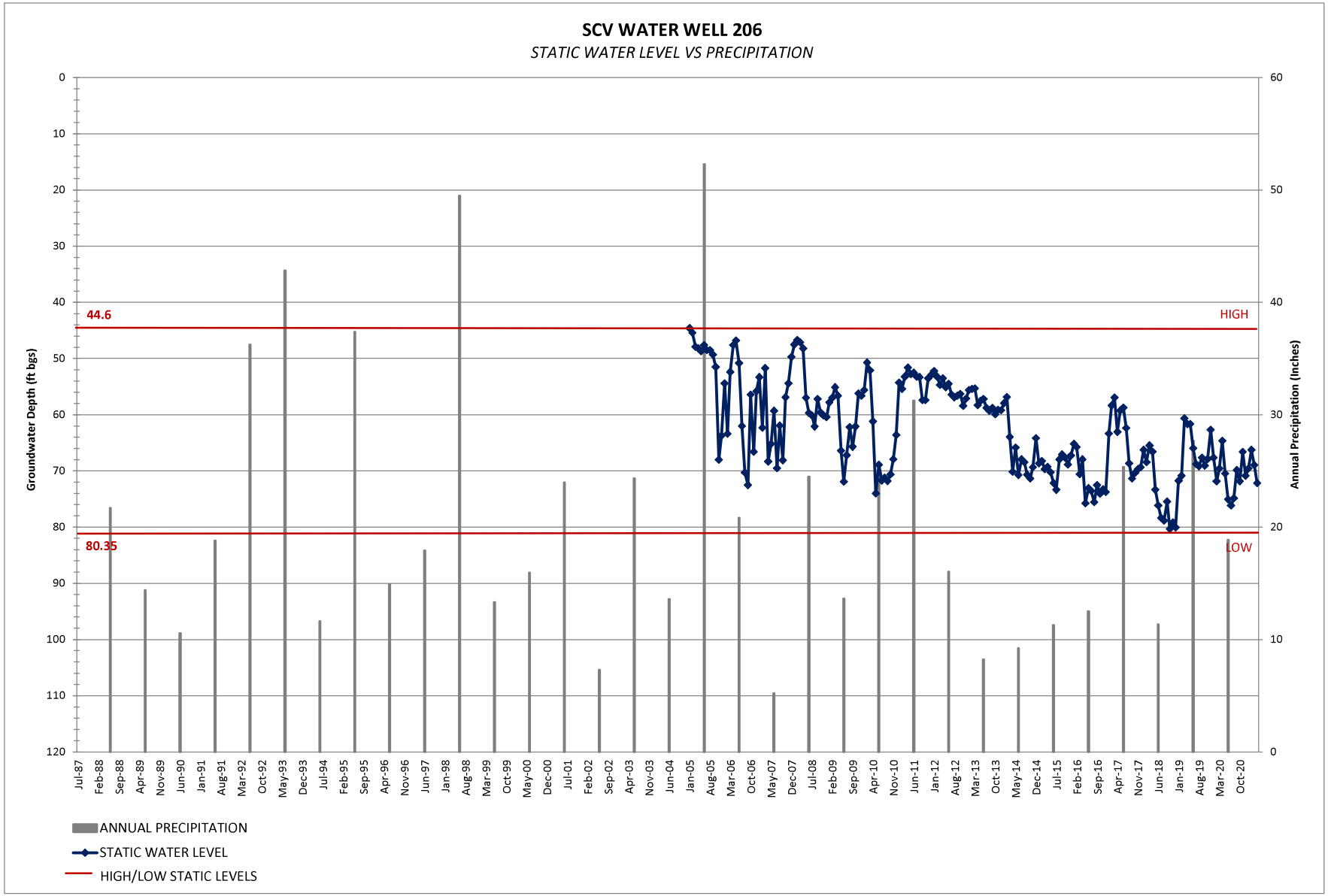
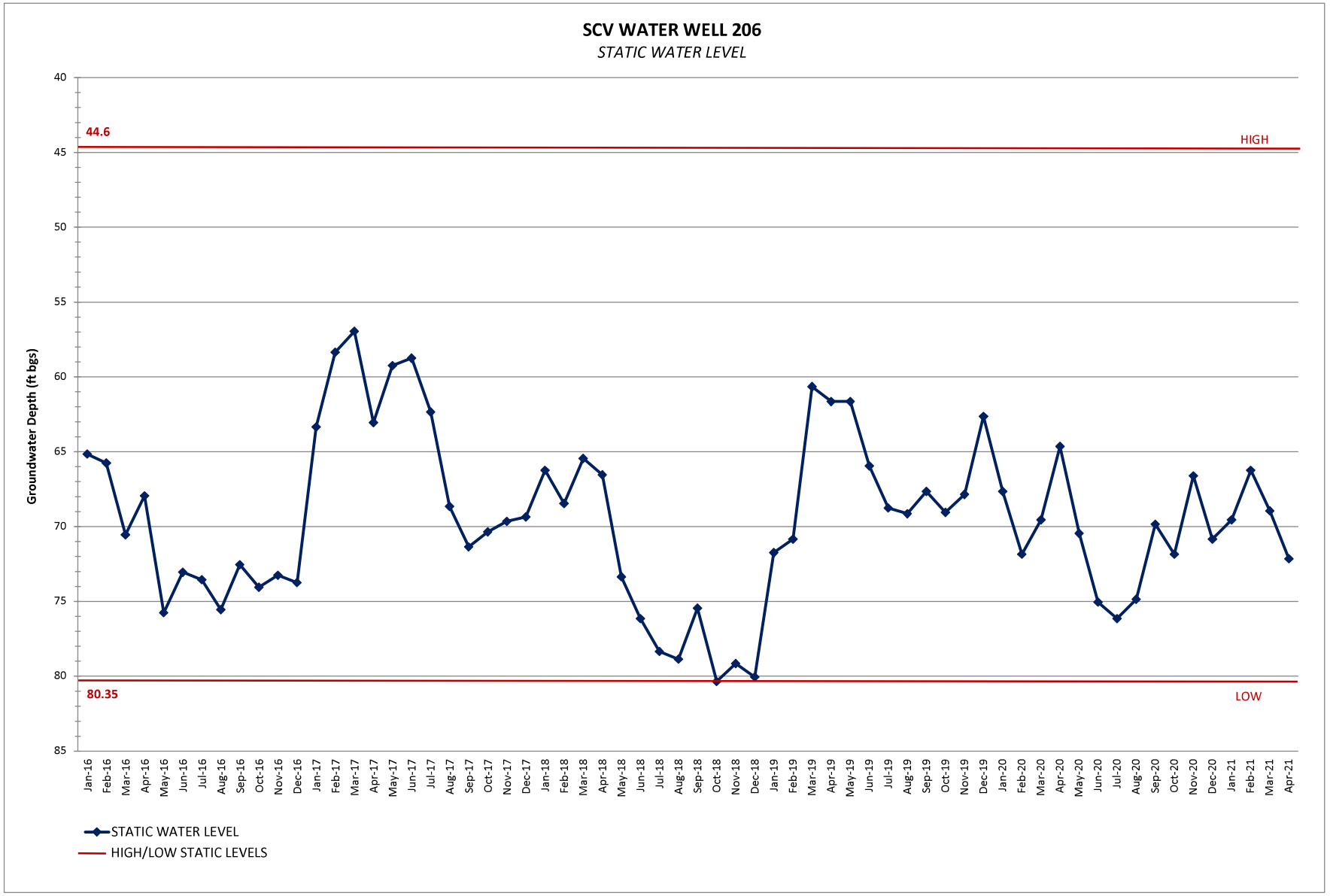
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL 207
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
43.45
HIGH
93.61
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL 207
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
43.45
HIGH
93.61
LOW
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL 206
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
44.6
HIGH
80.35
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL 206
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
40
45
50
55
60
65
70
75
80
85
44.6
HIGH
80.35
LOW
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
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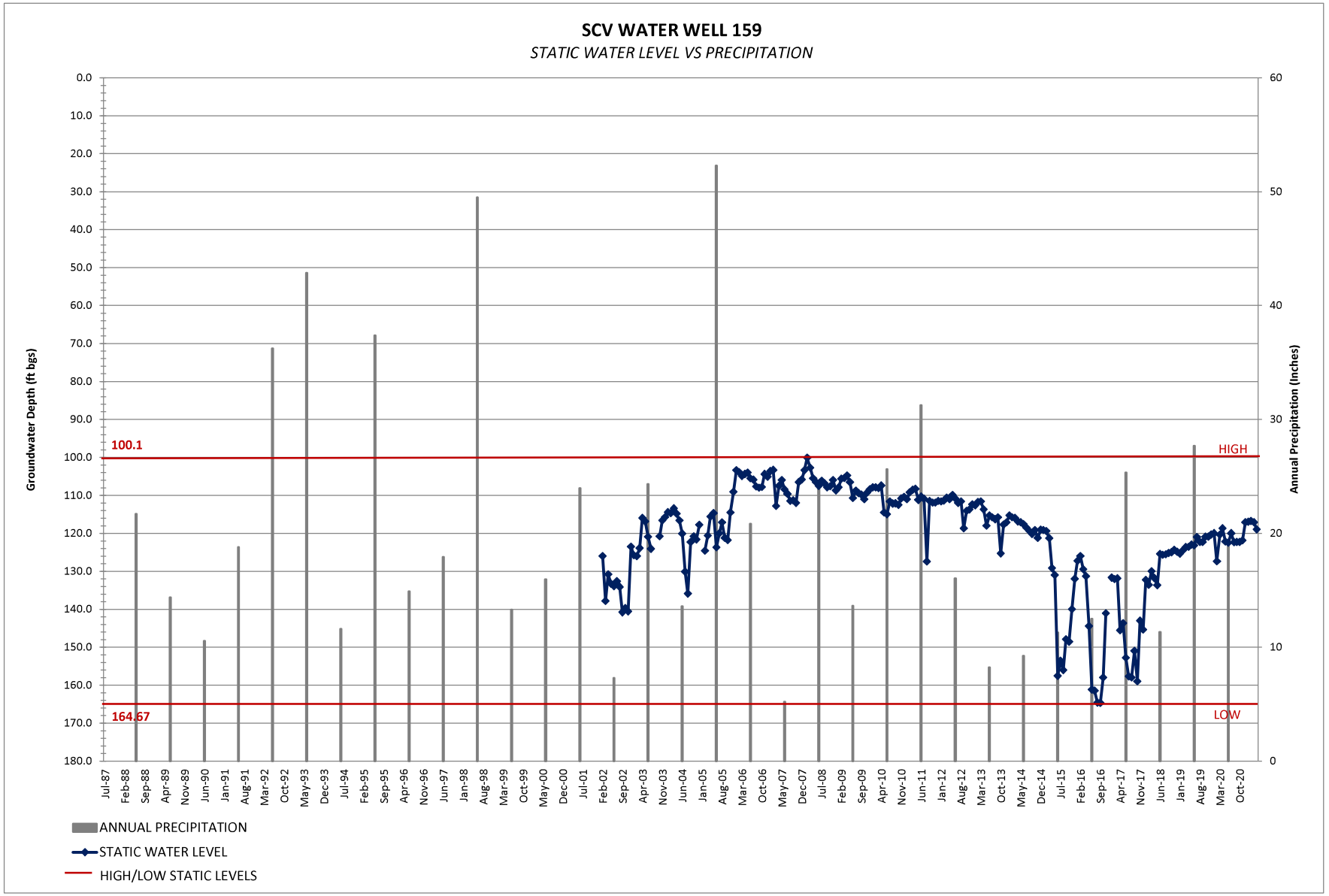
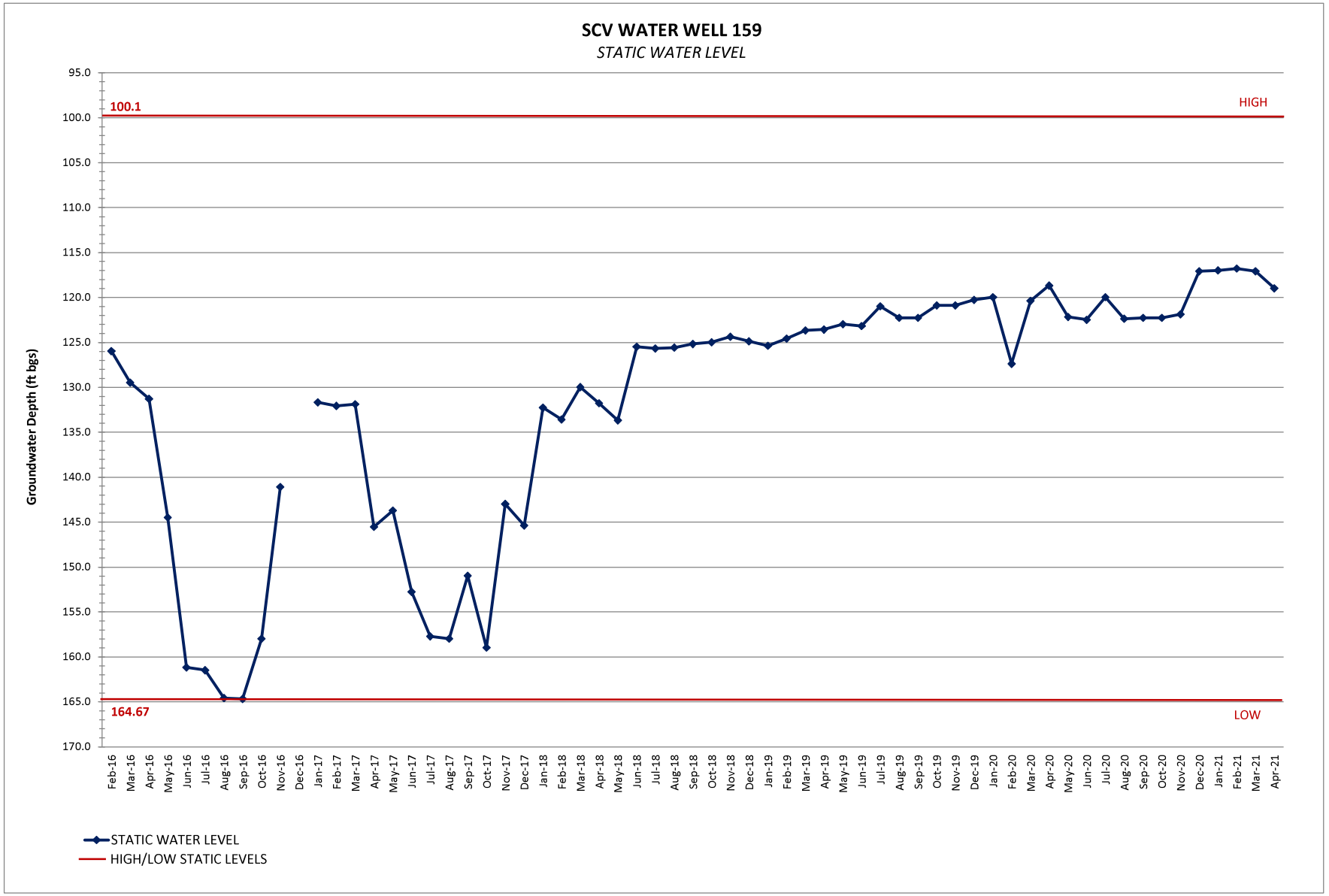
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL 159
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
100.1
HIGH
164.67
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL 159
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
95.0
100.0
105.0
110.0
115.0
120.0
125.0
130.0
135.0
140.0
145.0
150.0
155.0
160.0
165.0
170.0
100.1
HIGH
164.67
LOW
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
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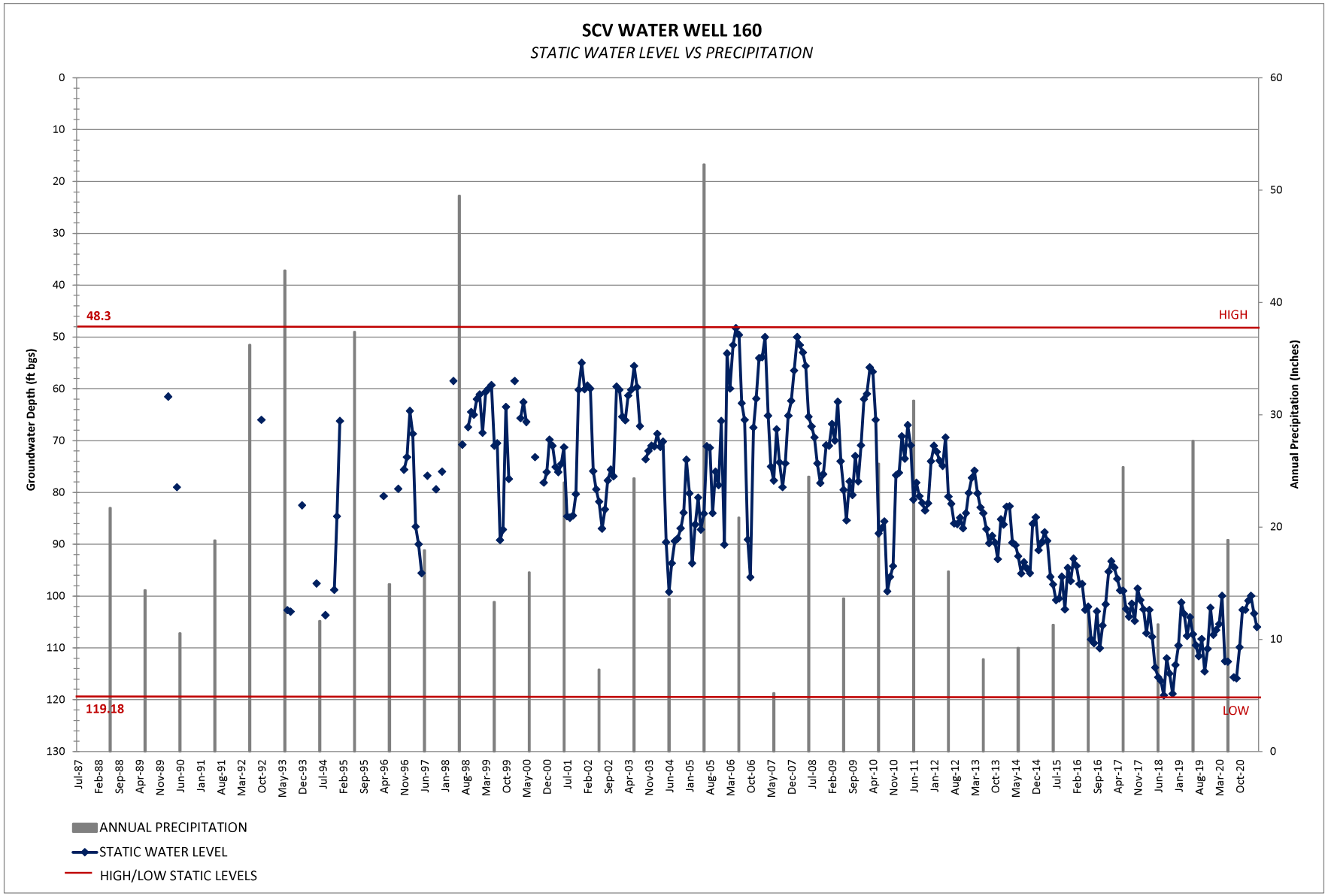
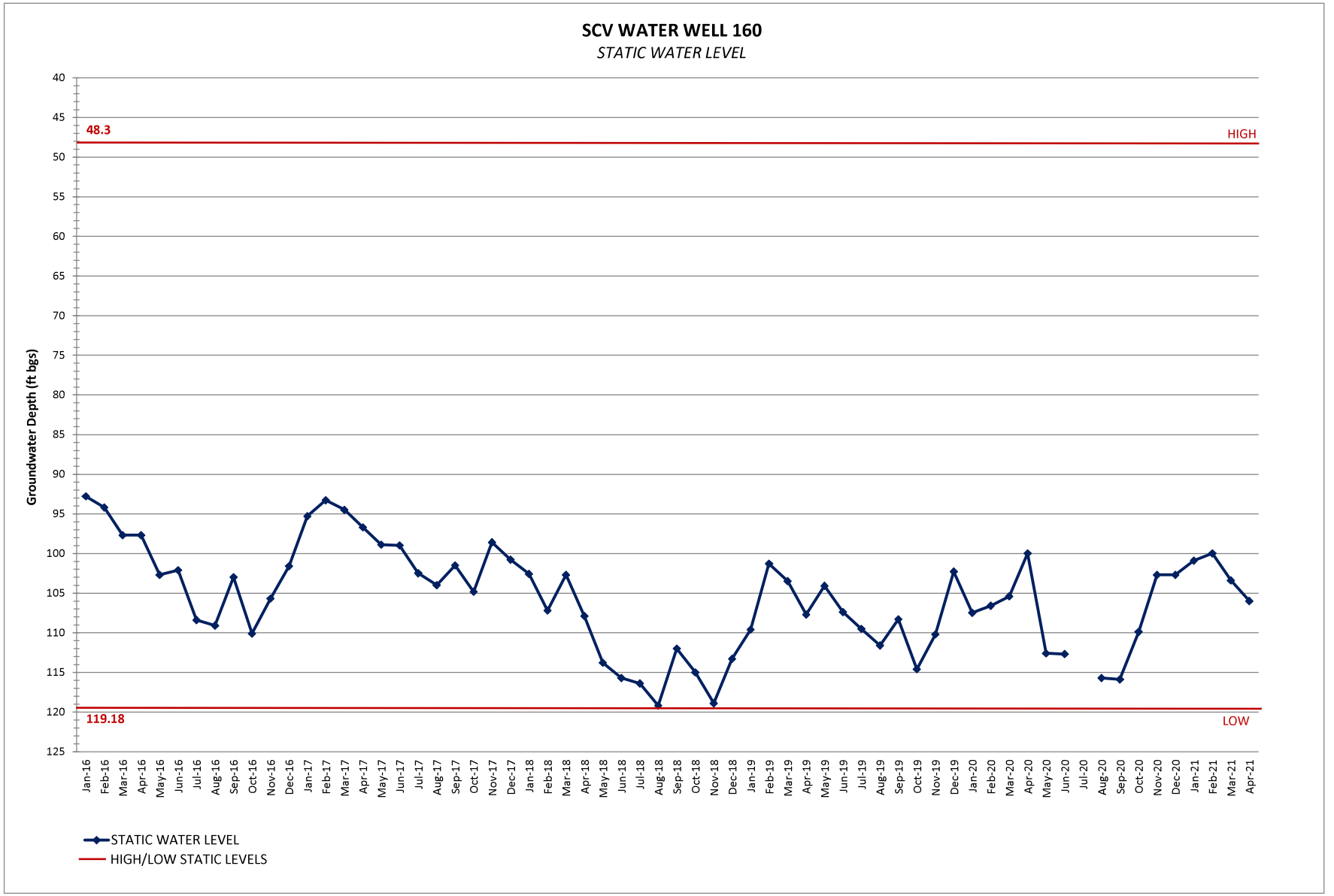
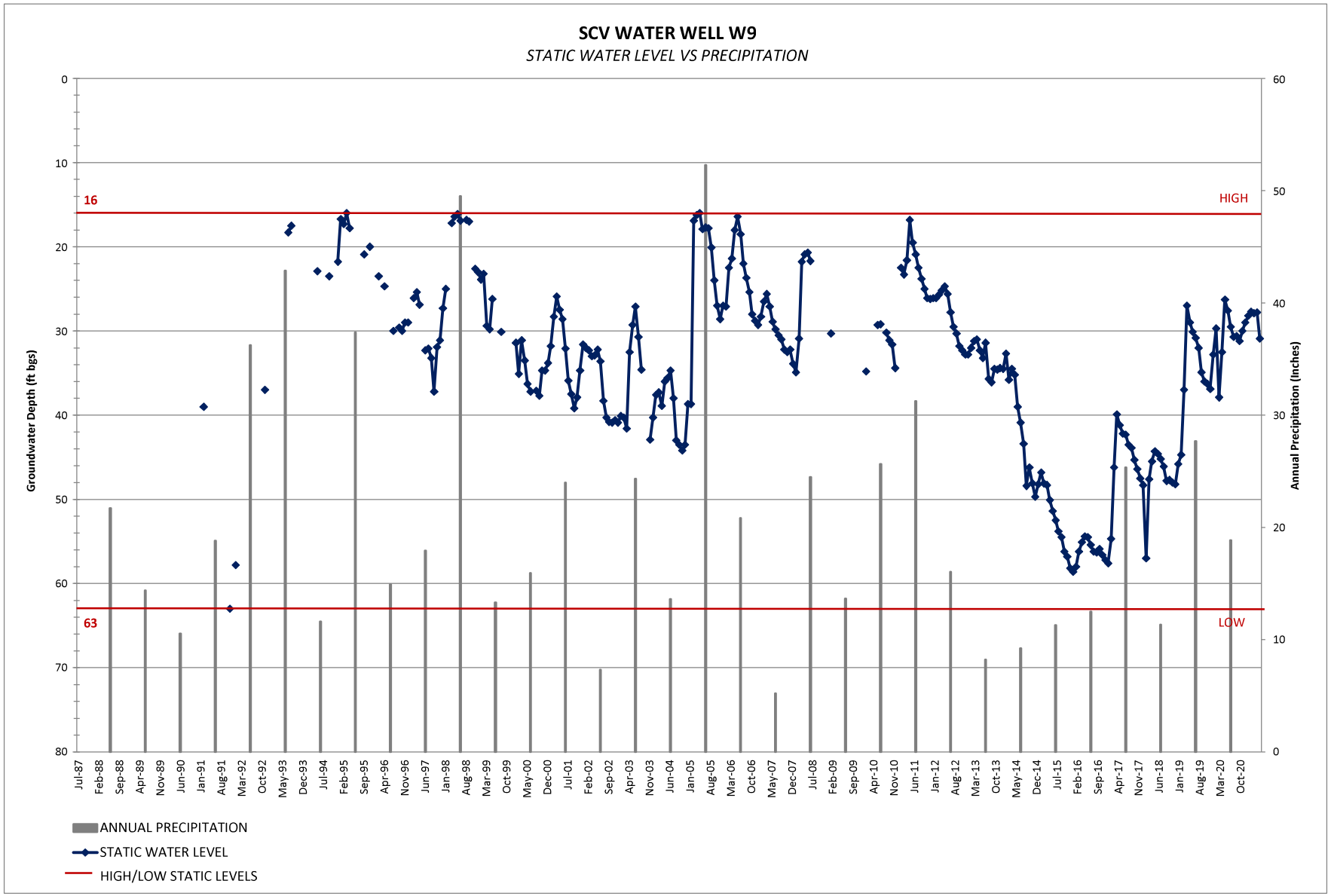
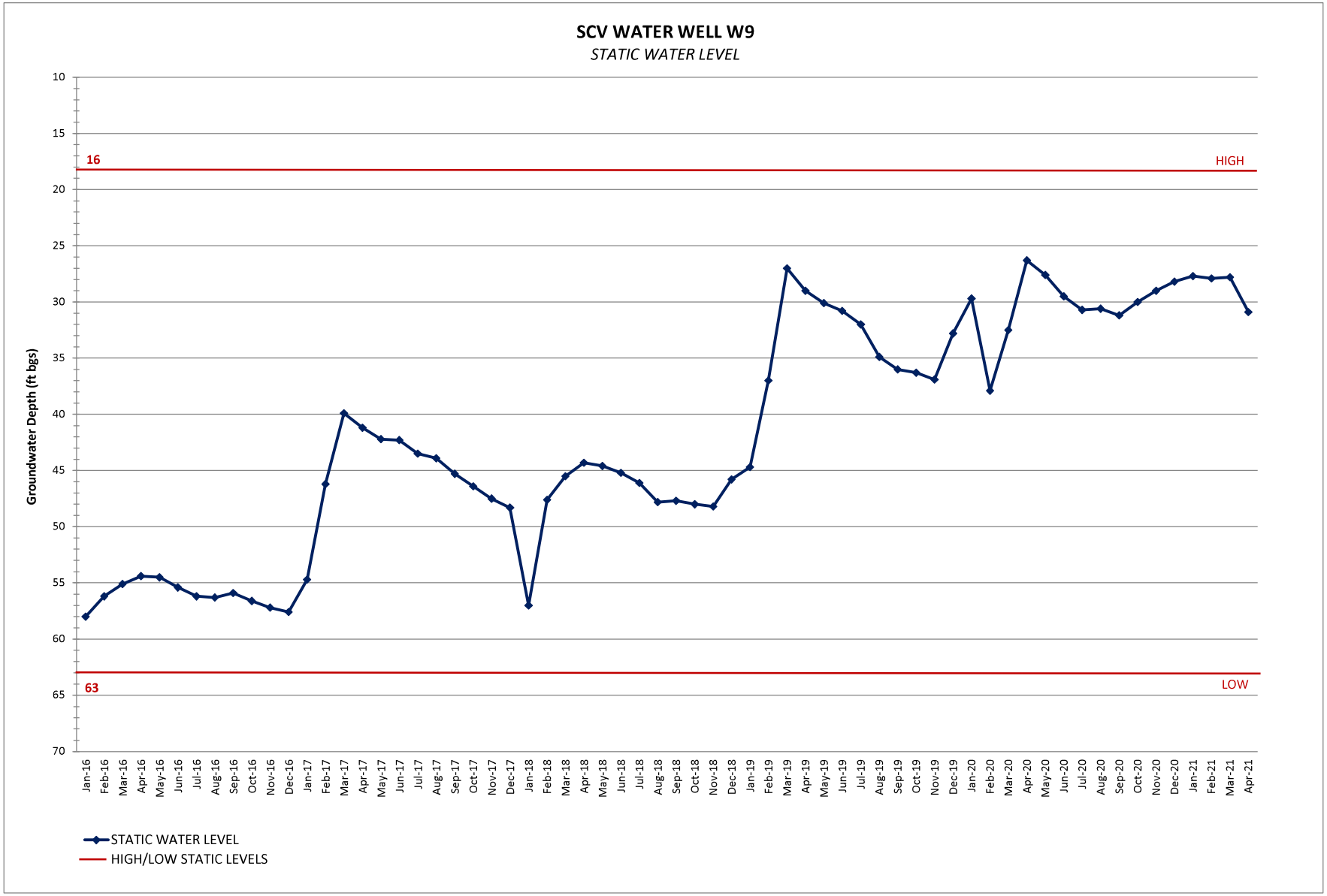
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL 160
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
48.3
HIGH
119.18
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL 160
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
48.3
HIGH
119.18
LOW
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL W9
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
16
HIGH
63
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL W9
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
10
15
16
HIGH
20
25
30
35
40
45
50
55
60
63
LOW
65
70
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
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May-17
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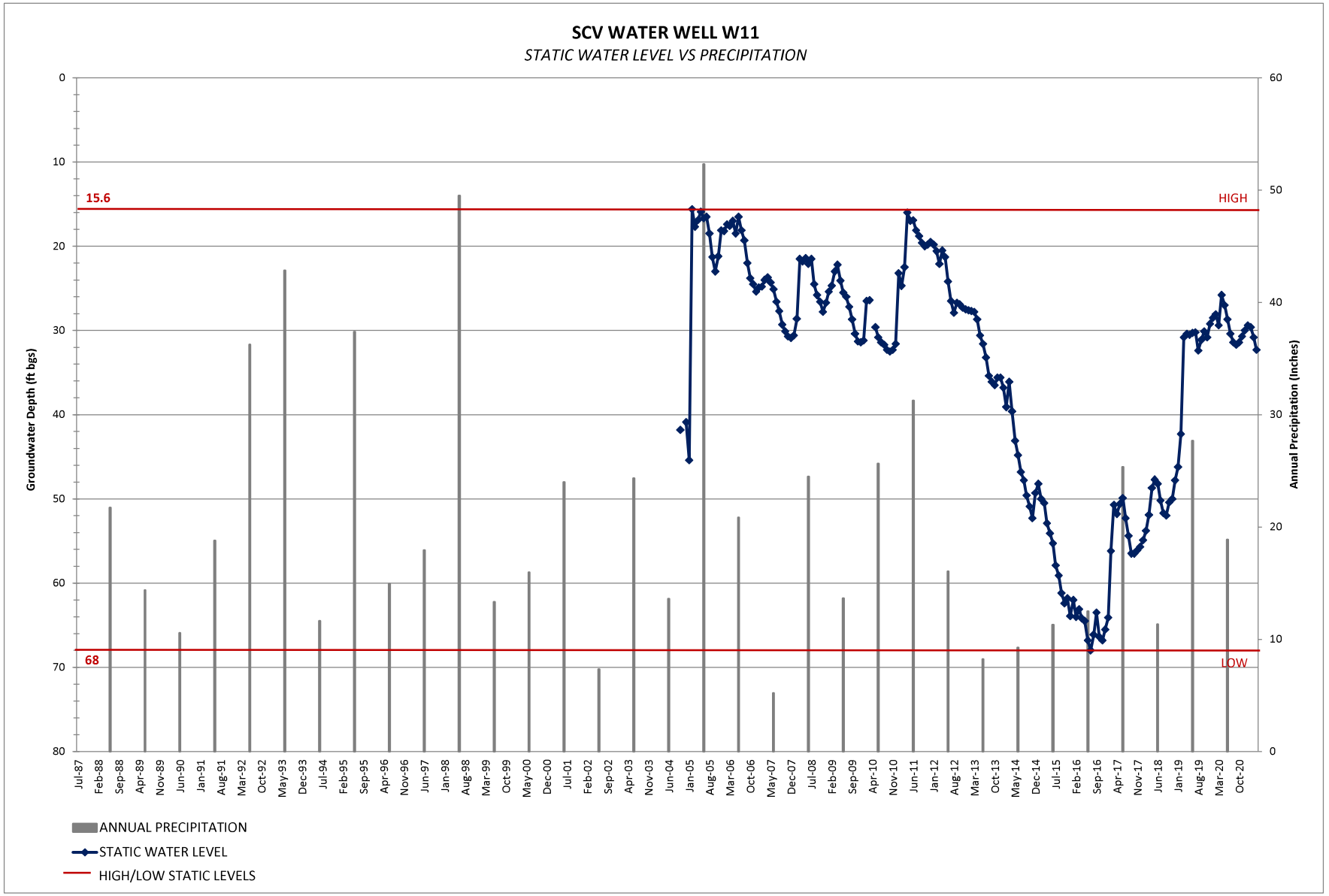
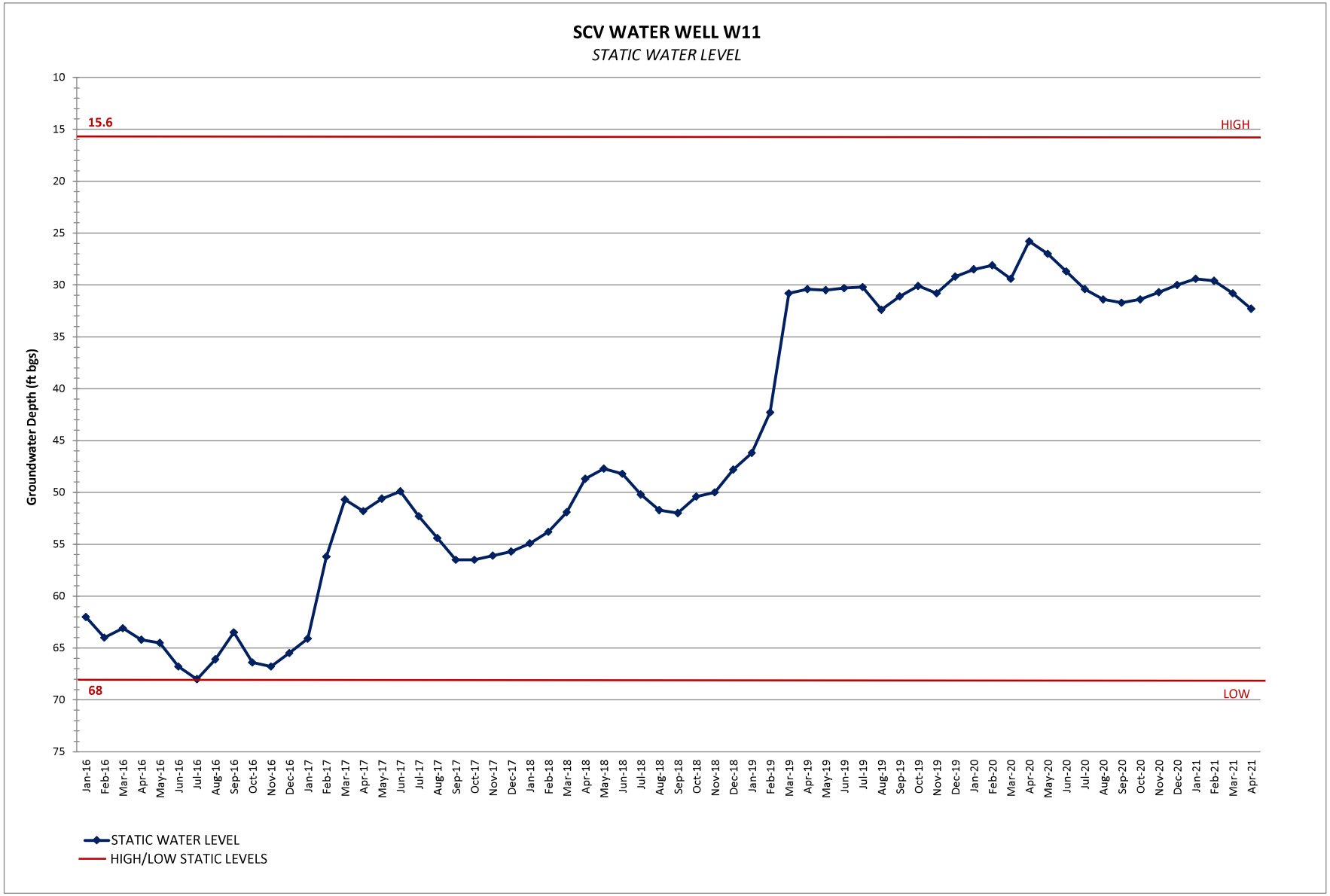
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL W11
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
15.6
HIGH
68
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL W11
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
10
15
20
25
30
35
40
45
50
55
60
65
70
75
15.6
HIGH
68
LOW
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
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Apr-20
May-20
Jun-20
Jul-20
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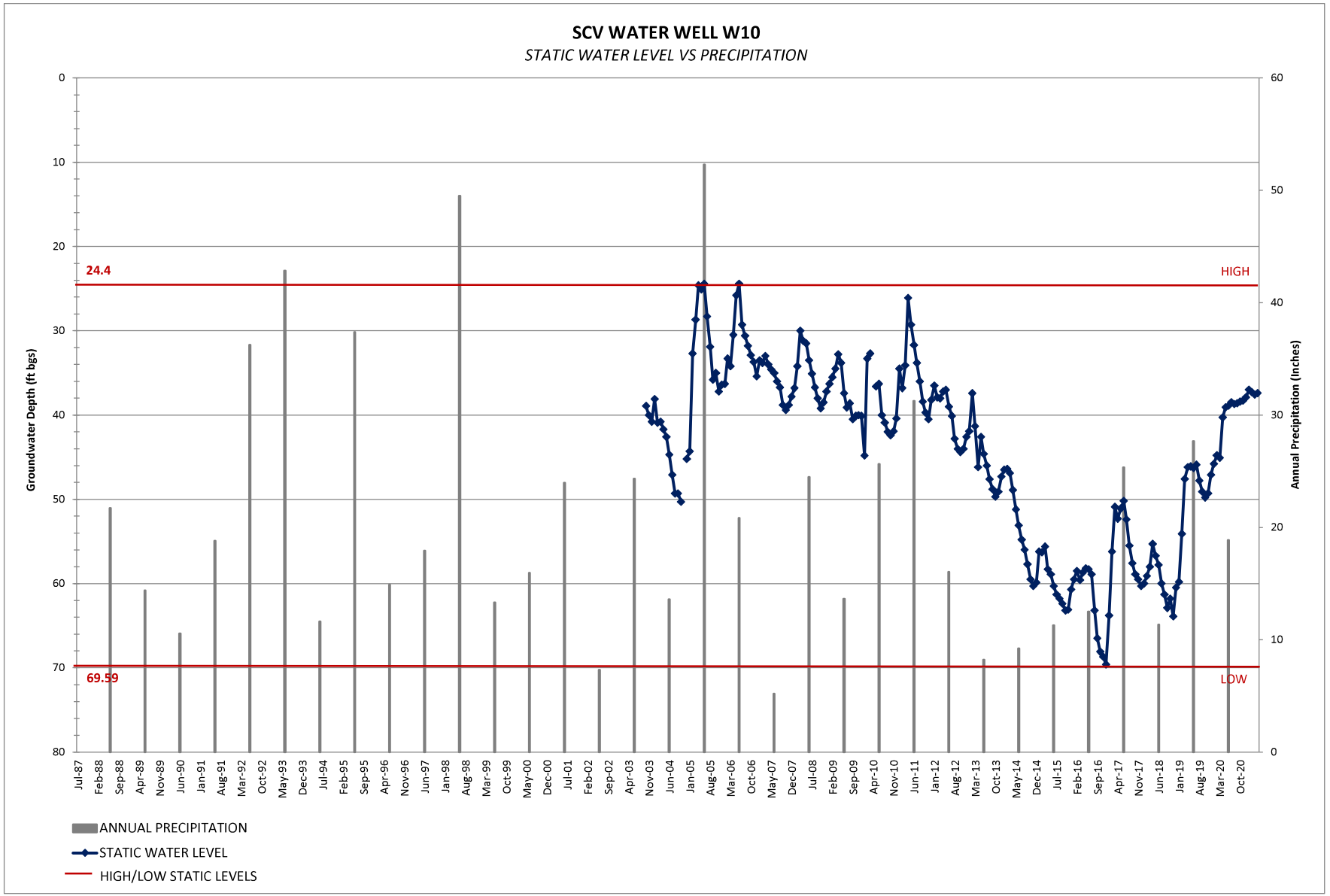
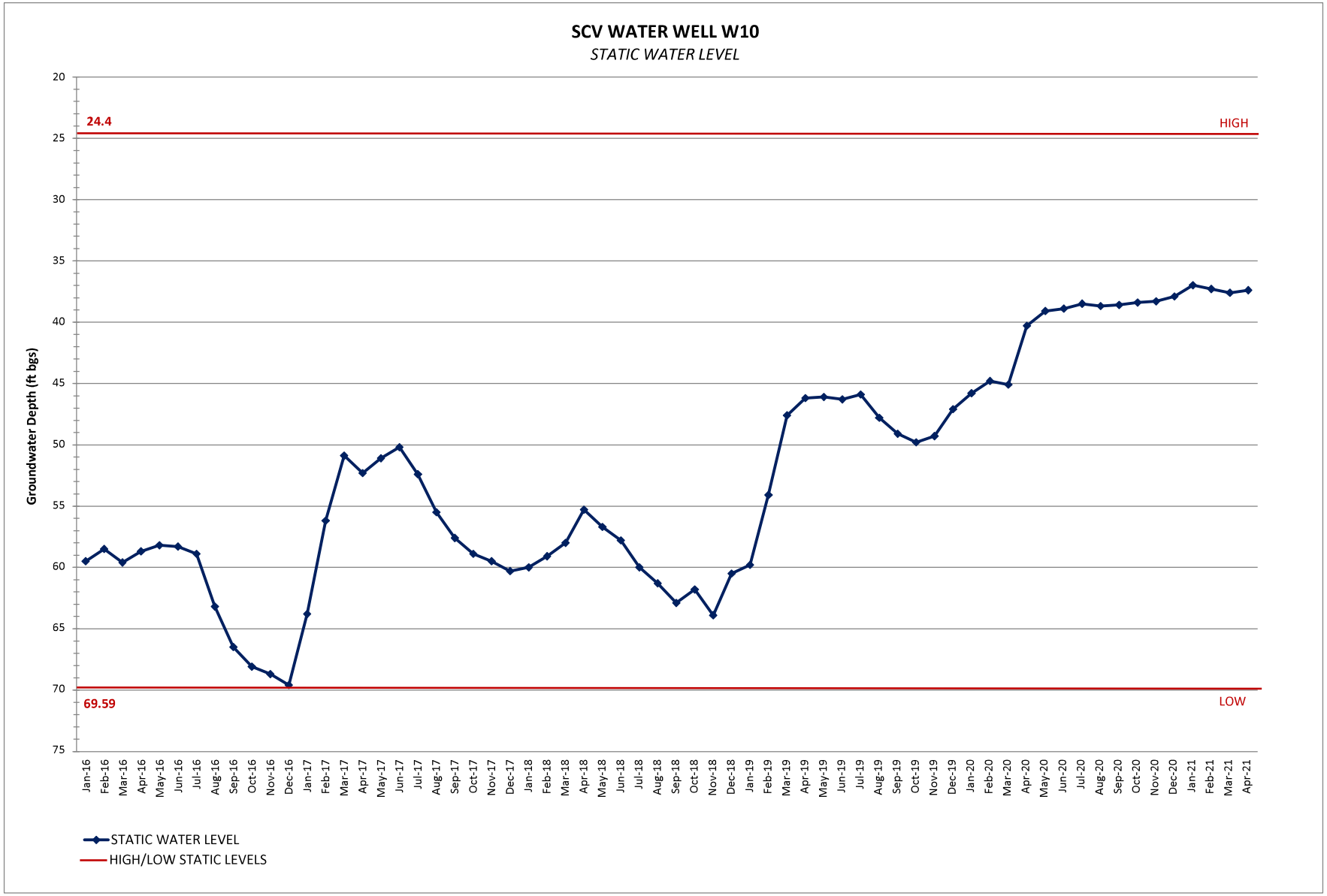
Sep-20
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL W10
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
24.4
HIGH
69.59
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL W10
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
20
25
30
35
40
45
50
55
60
65
70
75
24.4
HIGH
69.59
LOW
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
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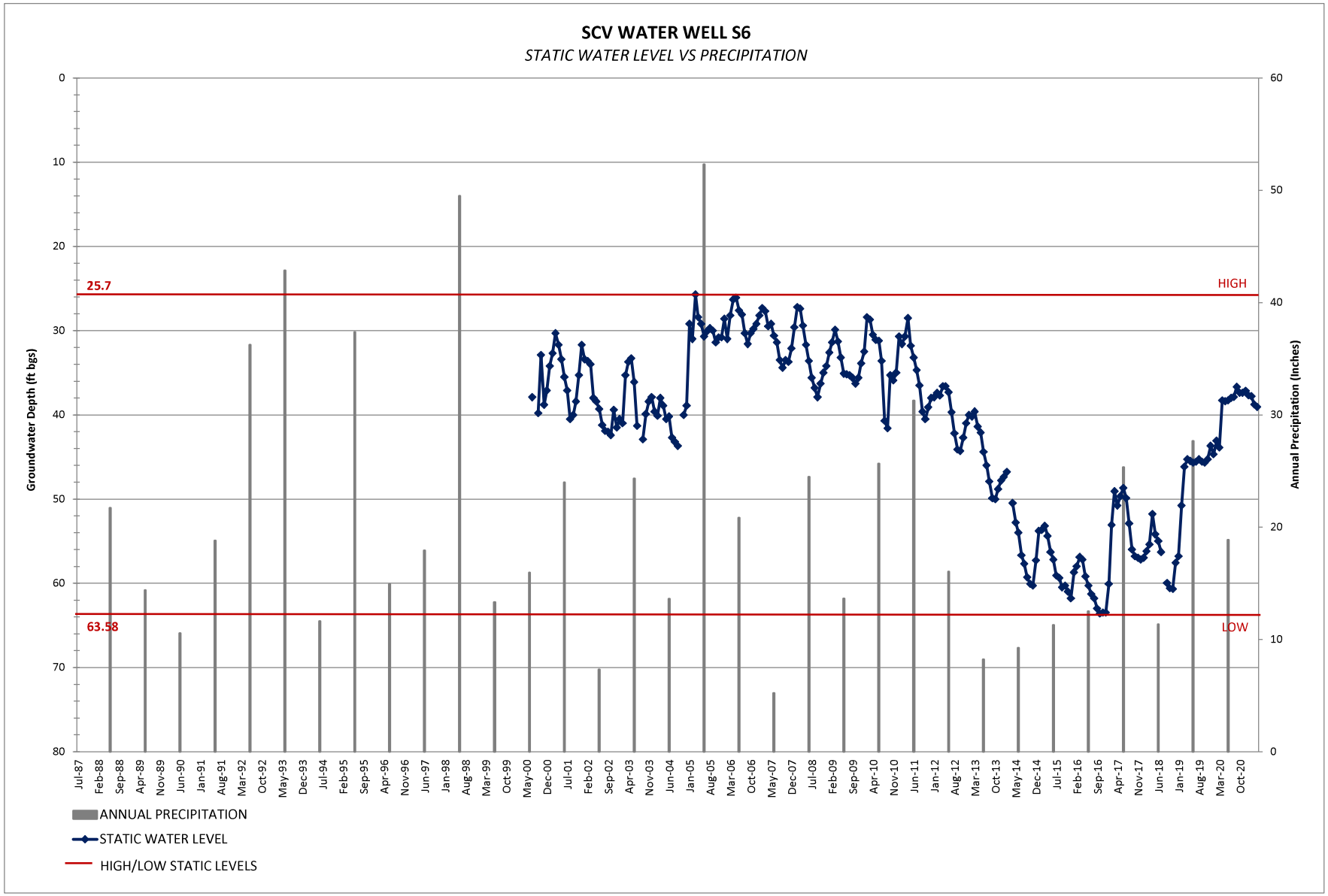
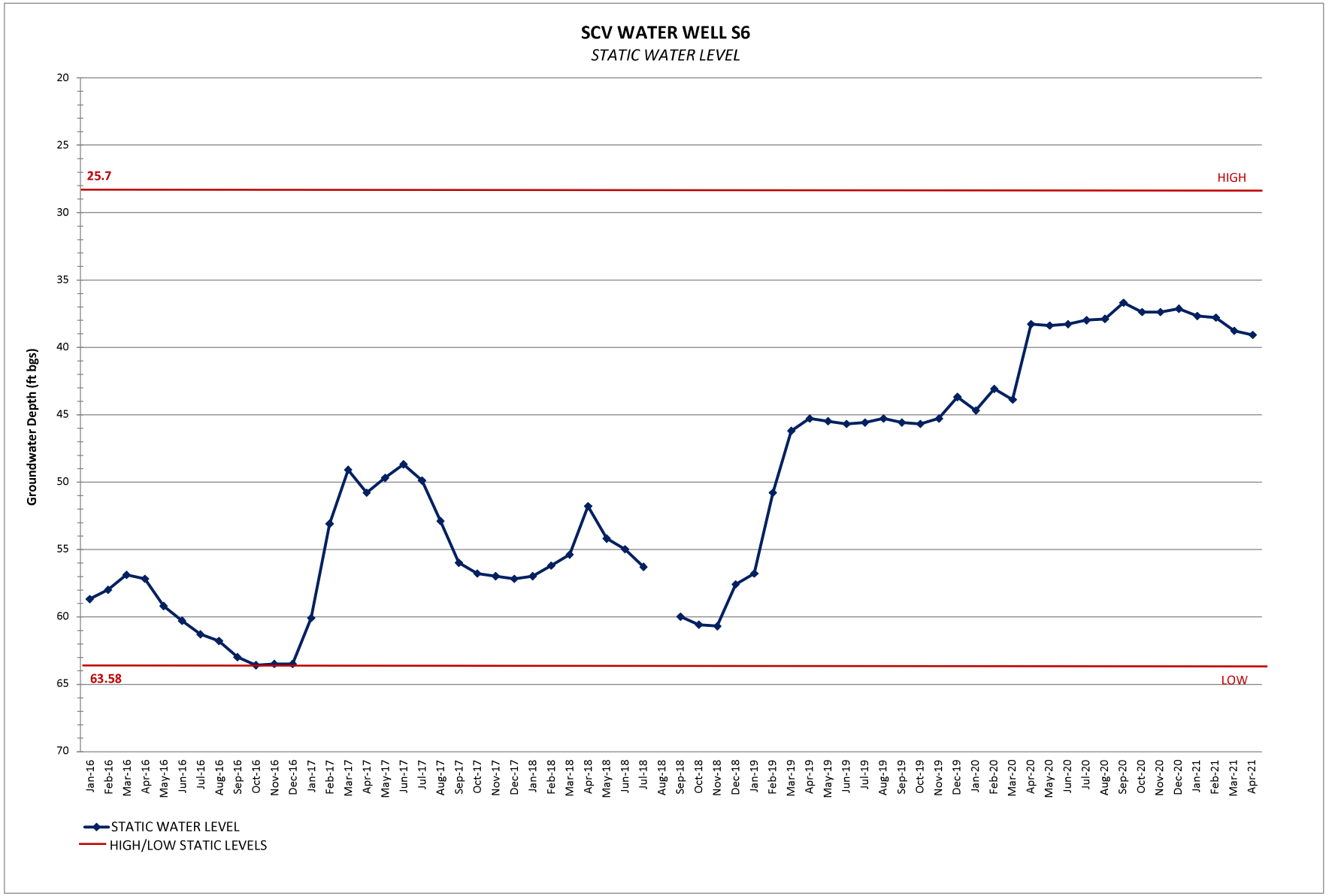
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL S6
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
25.7
HIGH
63.58
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL S6
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
20
25
30
35
40
45
50
55
60
65
70
25.7
HIGH
63.58
LOW
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
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Apr-17
May-17
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Jul-20
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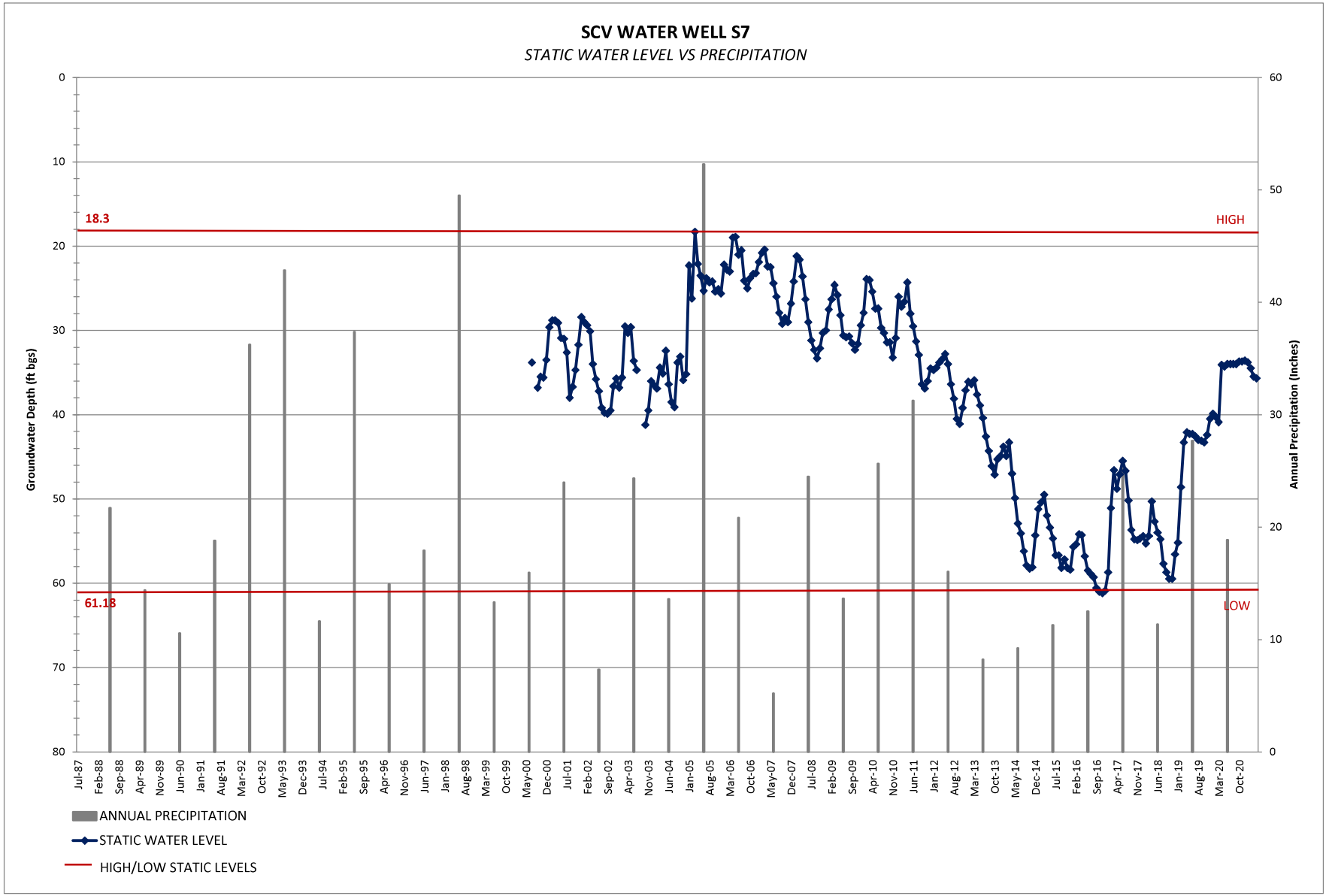
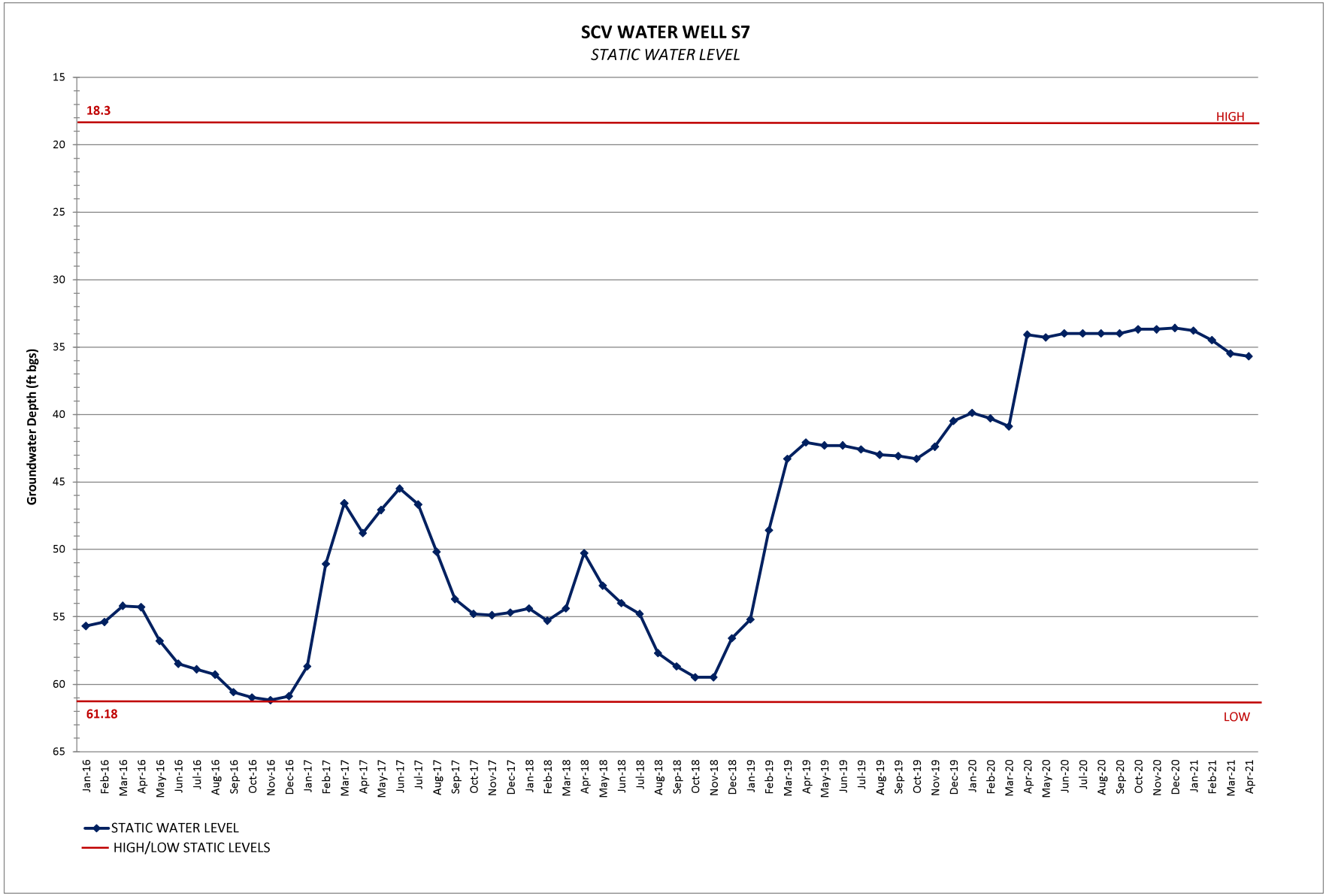
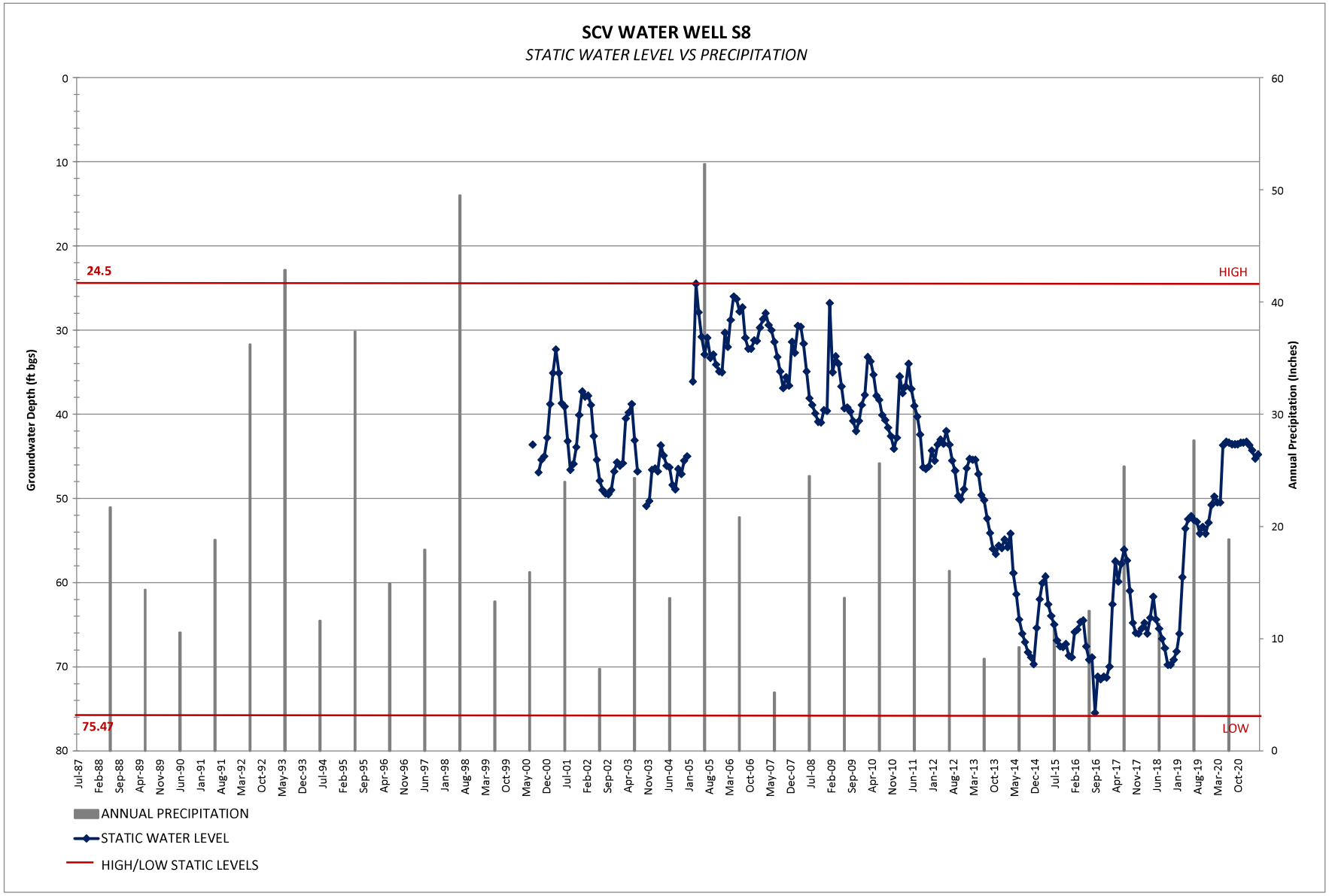
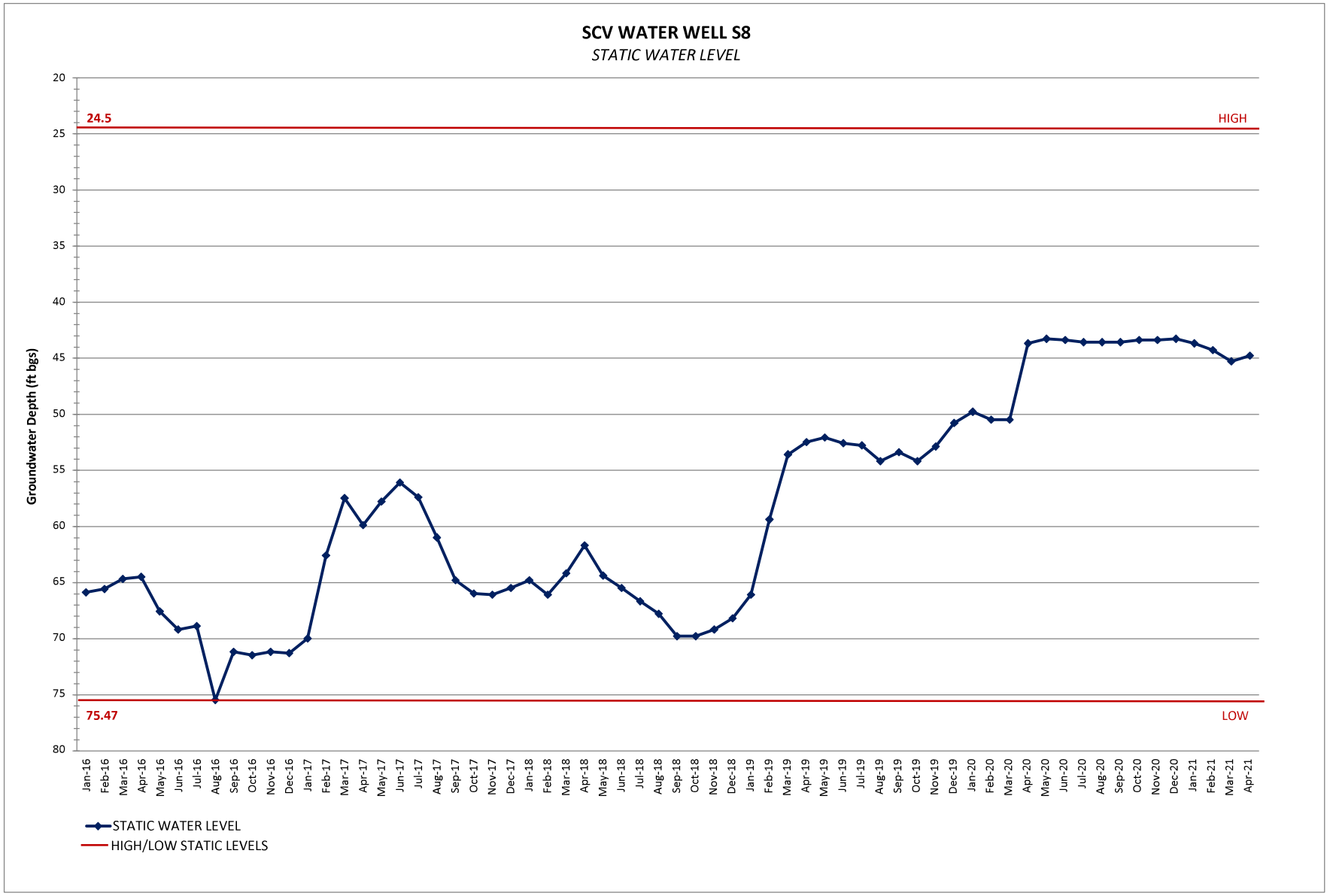
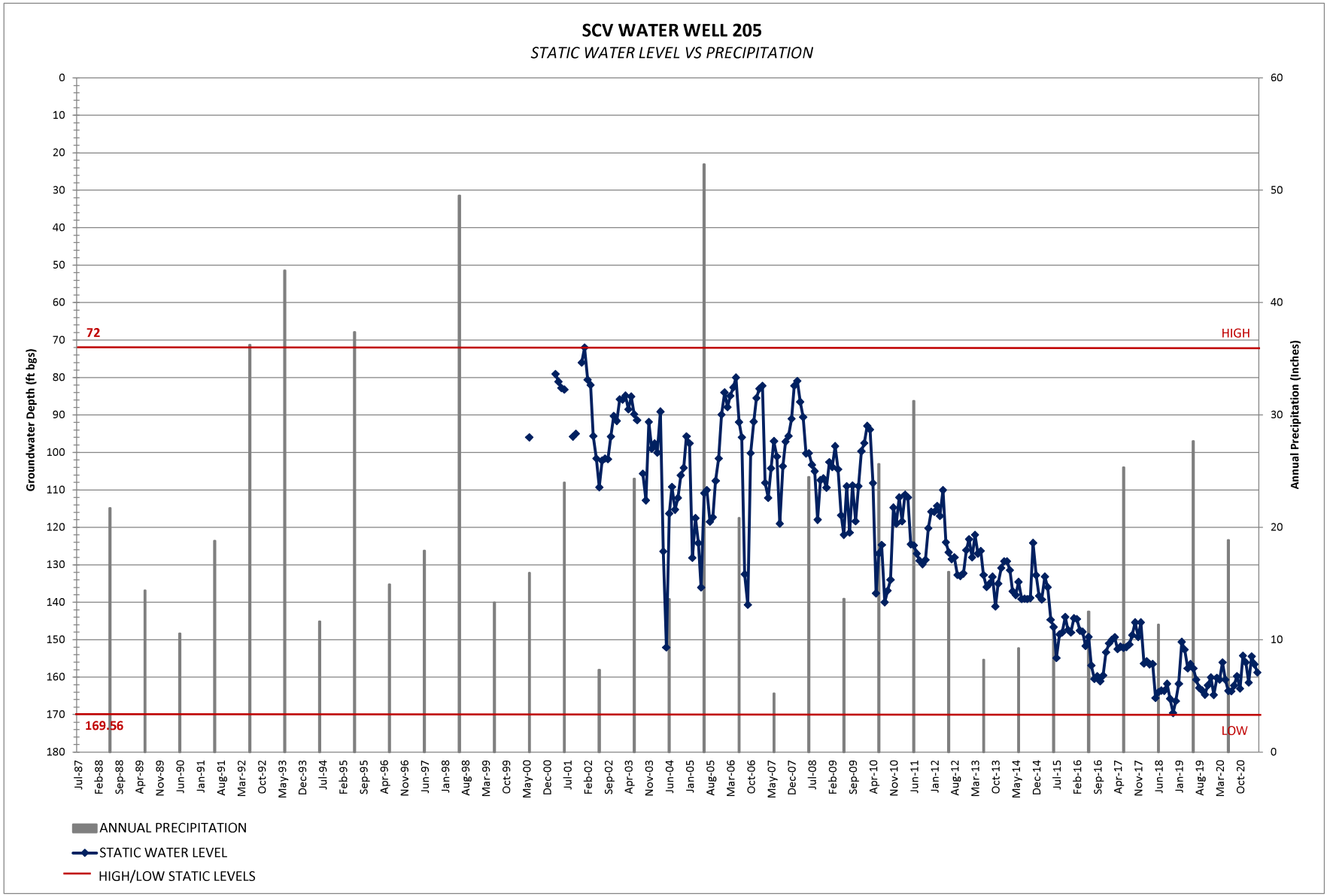
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS

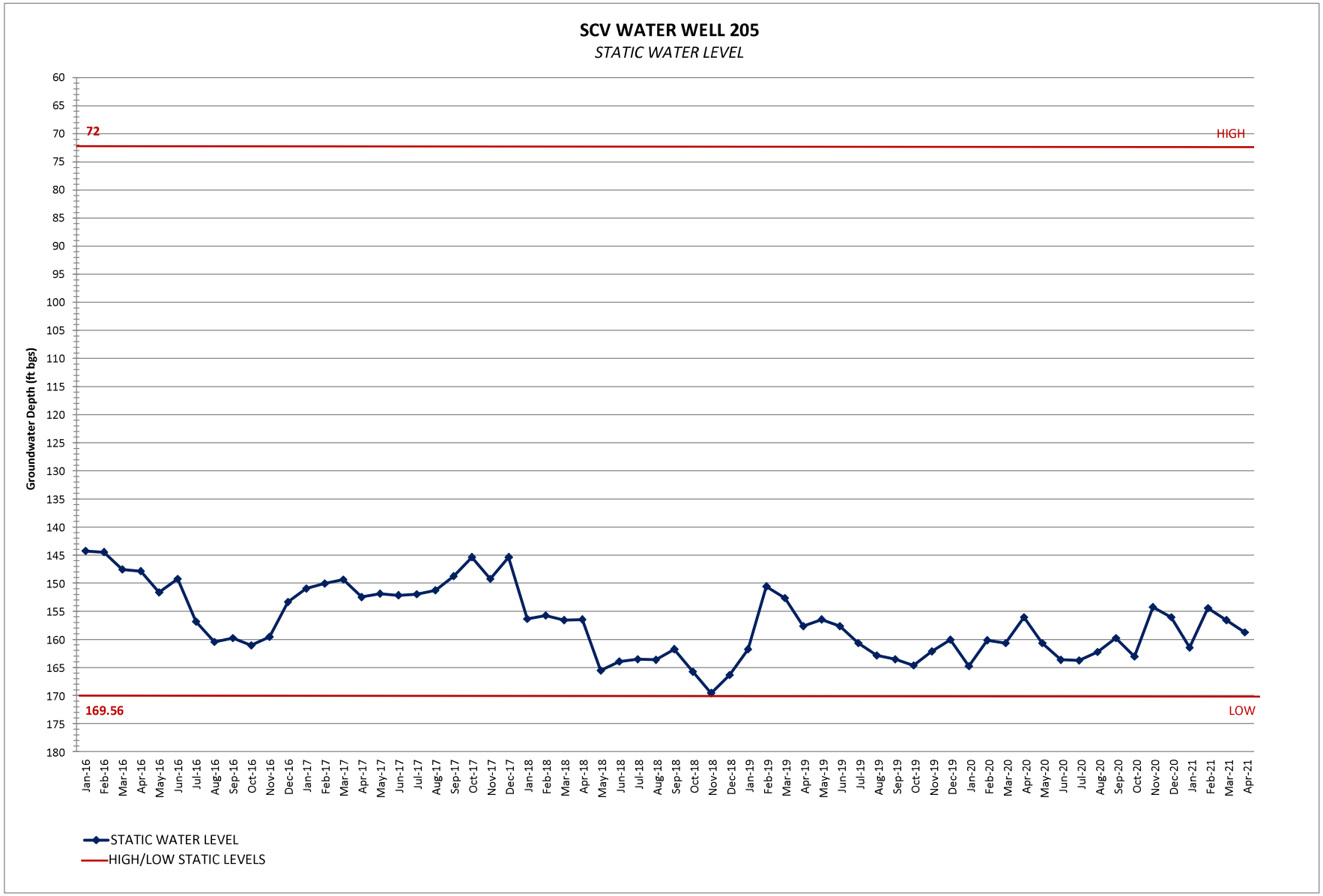

SCV WATER WELL S7
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
18.3
HIGH
61.18
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS

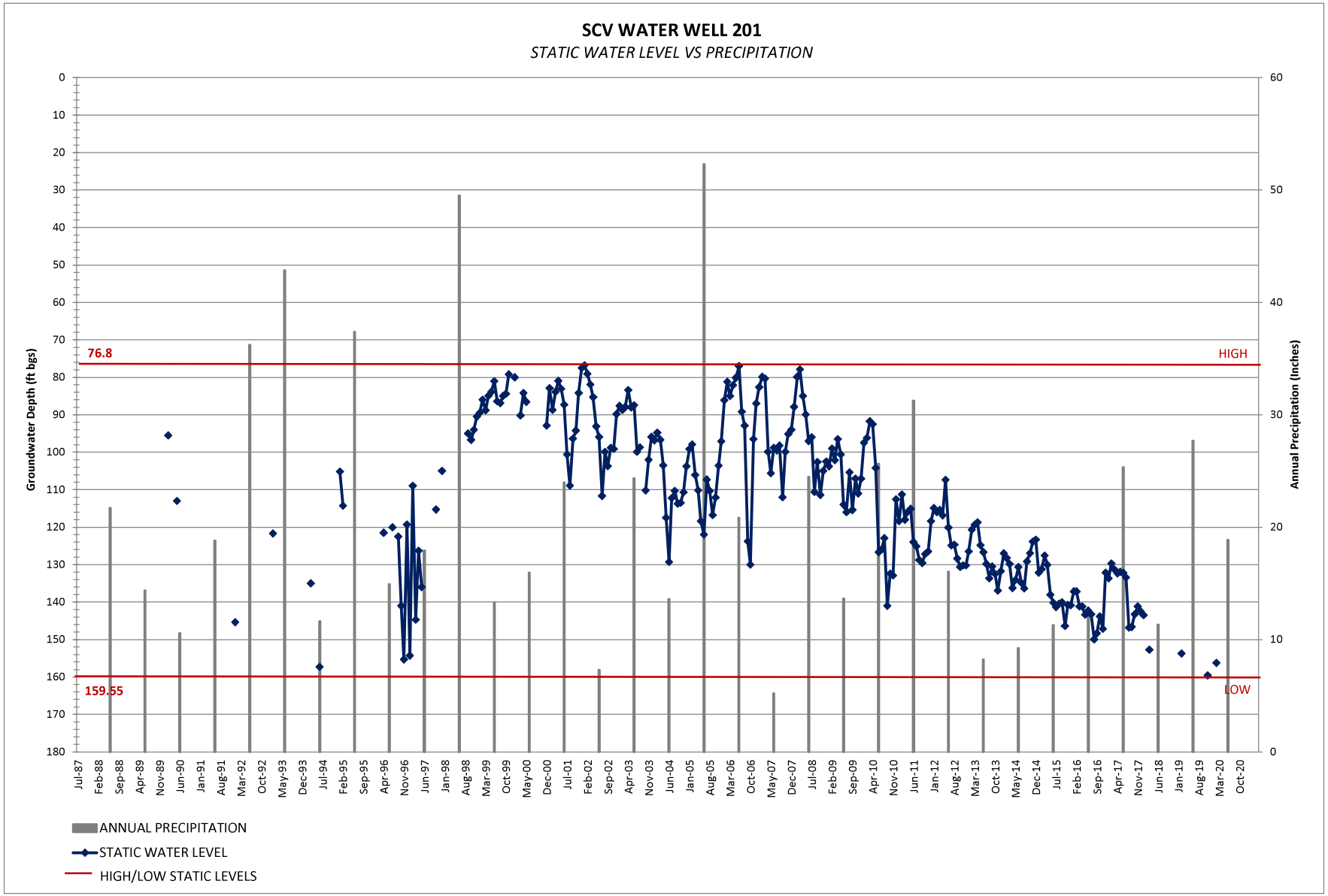

SCV WATER WELL S7
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
18.3
HIGH
61.18
LOW
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS

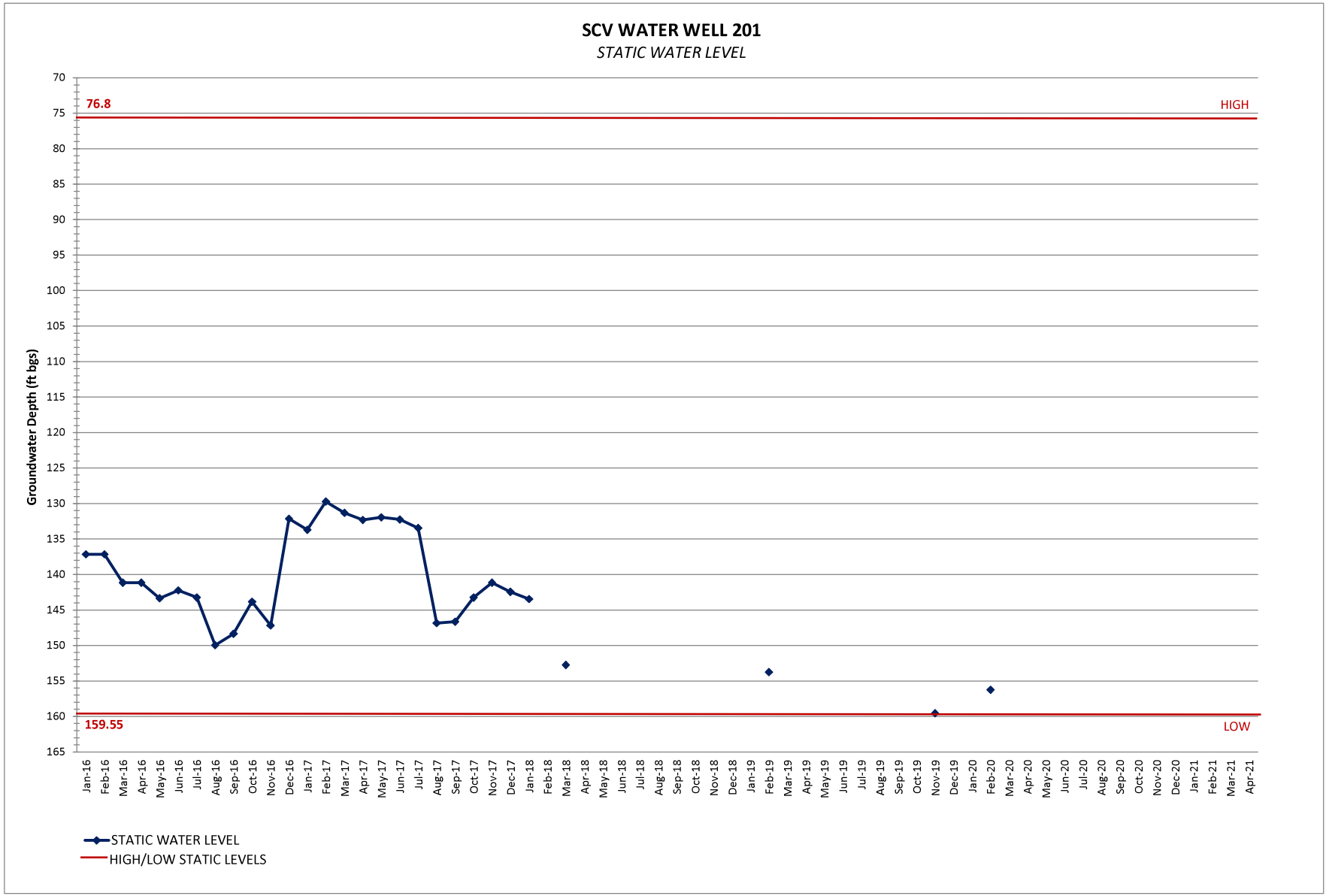

SCV WATER WELL S8
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
24.5
HIGH
75.47
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL S8
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
24.5
HIGH
75.47
LOW
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL 205
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
72
HIGH
169.56
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL 205
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
72
HIGH
169.56
LOW
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL 201
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
76.8
HIGH
159.55
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL 201
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
76.8
HIGH
159.55
LOW
70
75
80
85
90
95
100
105
110
115
120
125
130
135
140
145
150
155
160
165
Jan-16
Feb-16
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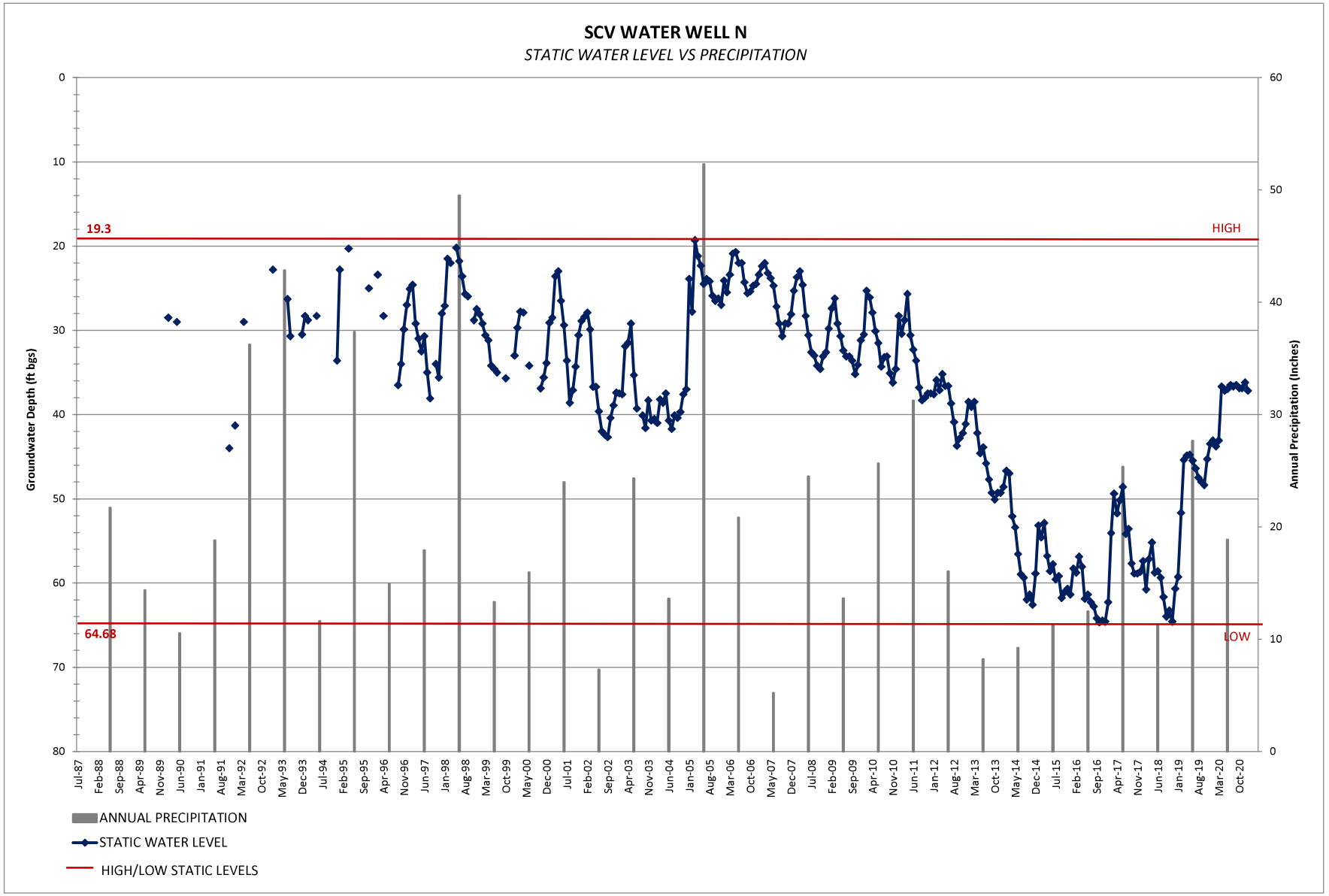
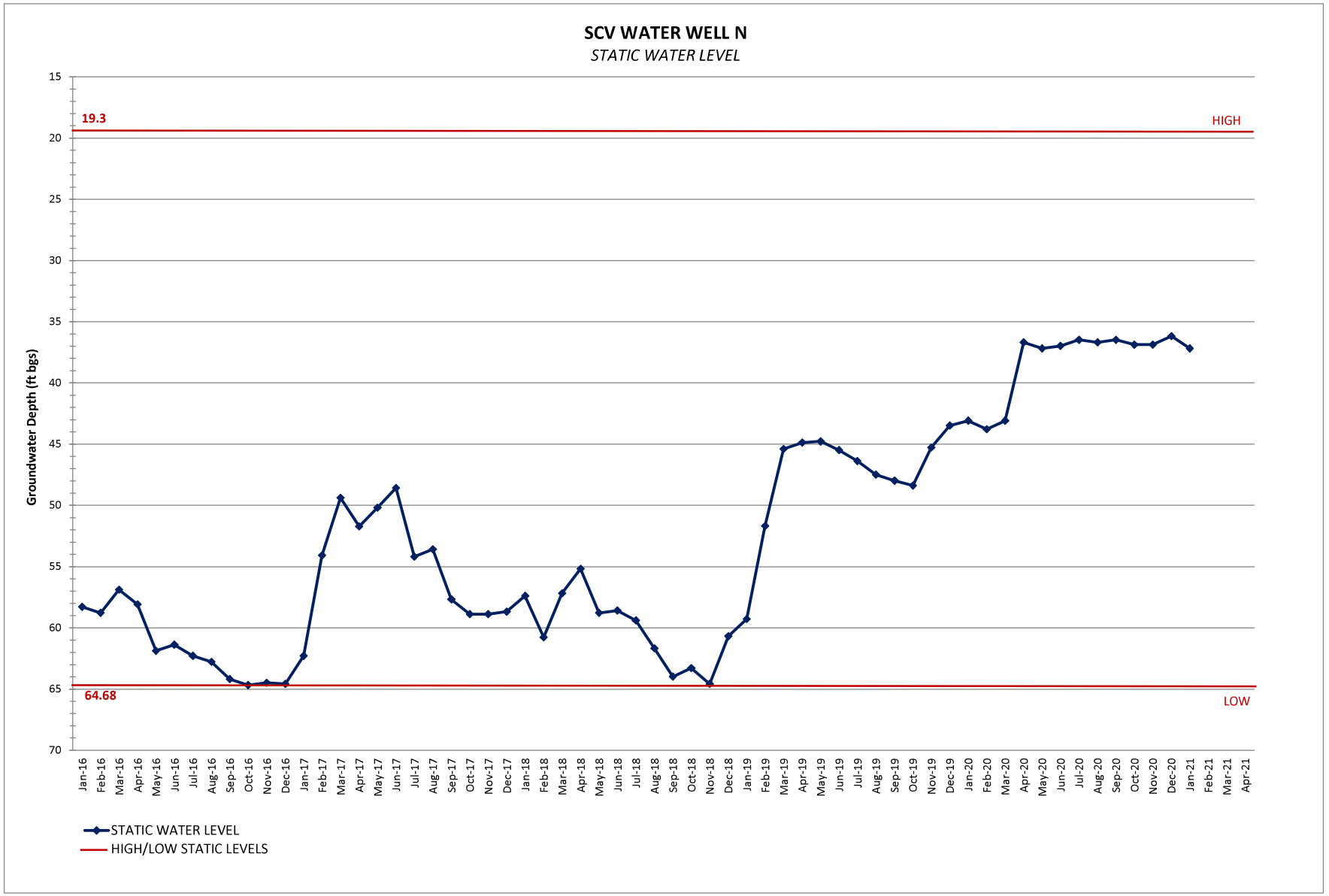
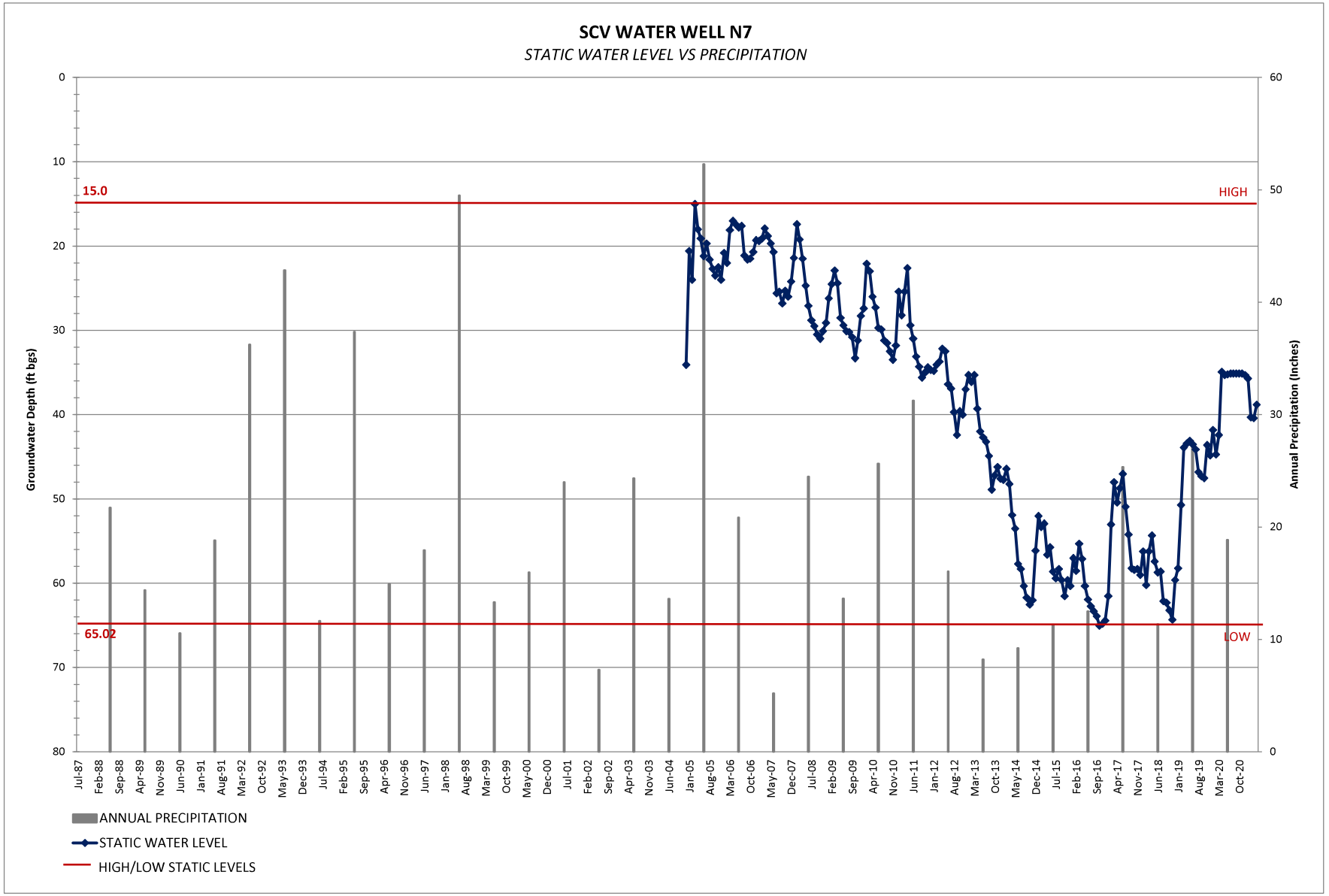
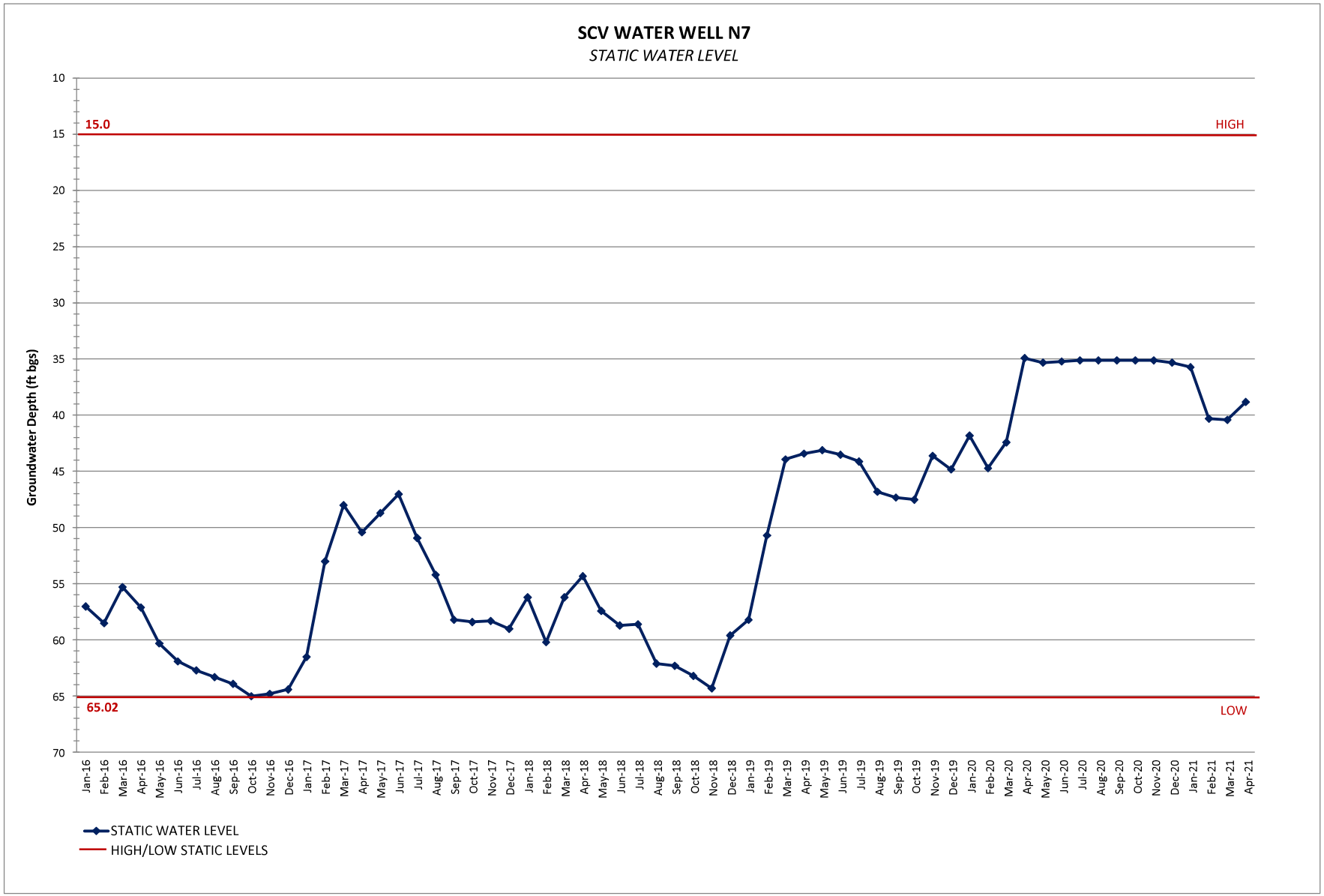
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL N
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
19.3
HIGH
64.68
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL N
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
19.3
HIGH
64.68
LOW
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL N7
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
15.0
HIGH
65.02
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL N7
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
10
15
20
25
30
35
40
45
50
55
60
65
70
15.0
HIGH
65.02
LOW
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
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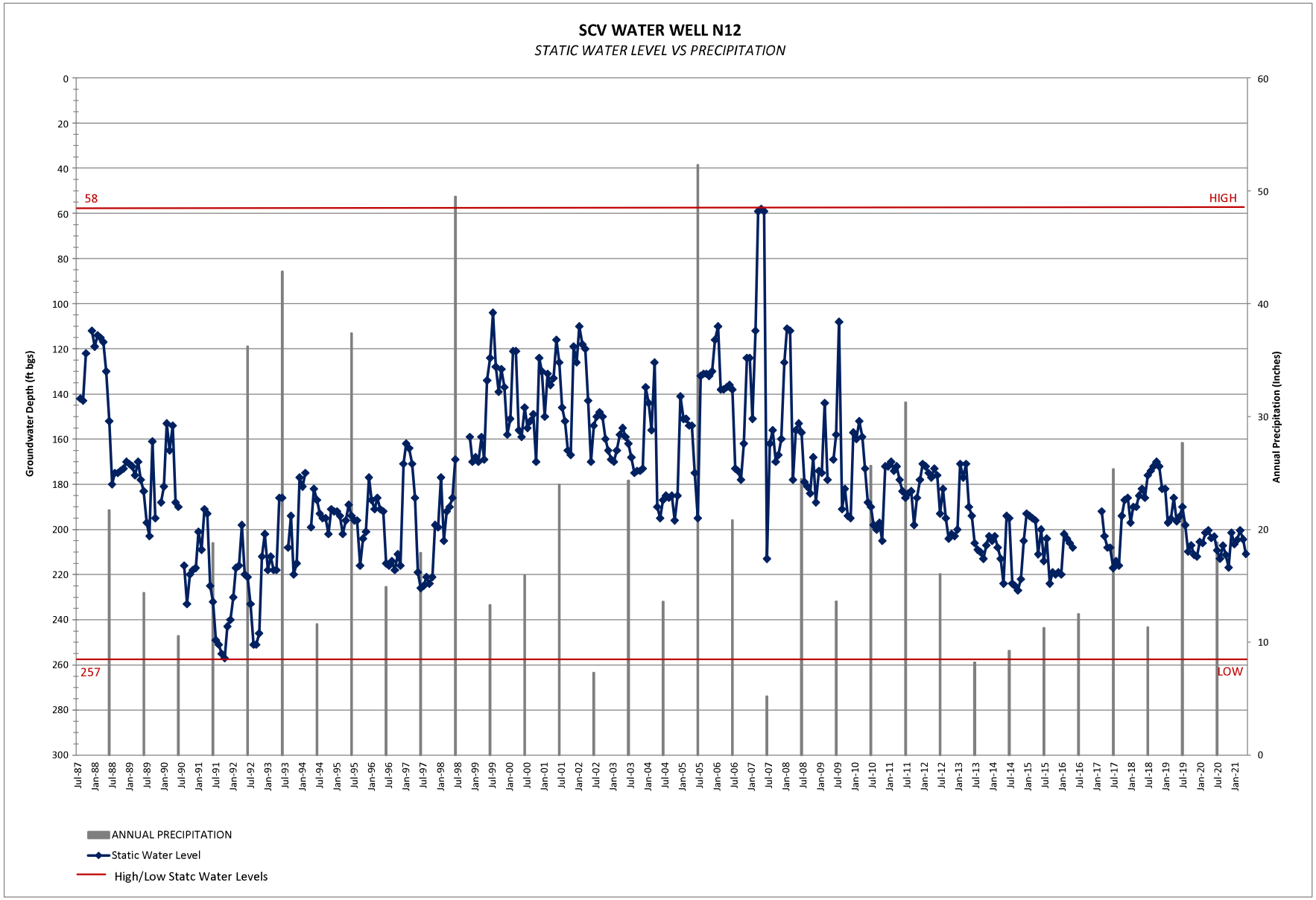
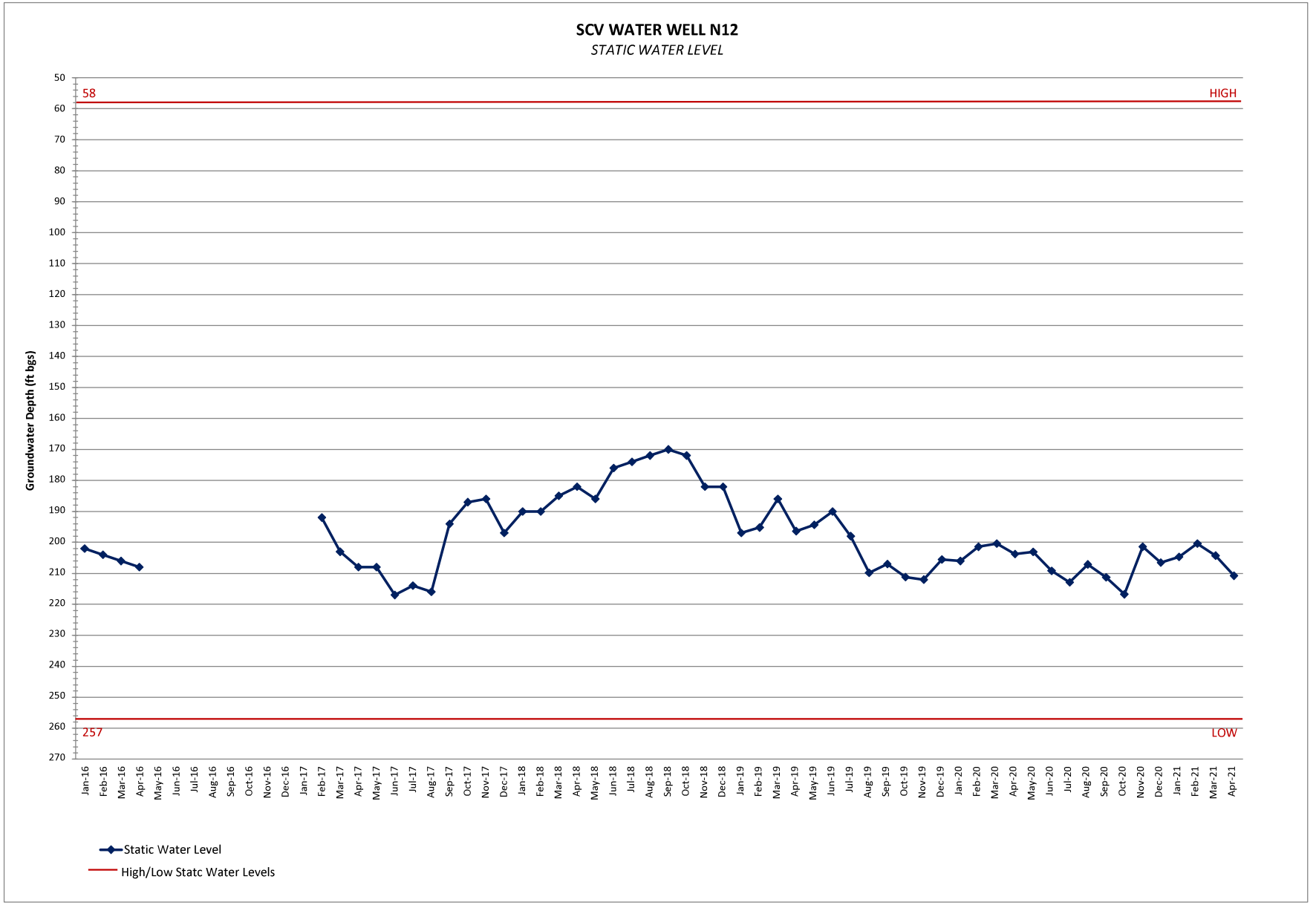
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL N12
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
58
HIGH
257
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Statc Water Levels


SCV WATER WELL N12
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
58
HIGH
257
LOW
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
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Apr-17
May-17
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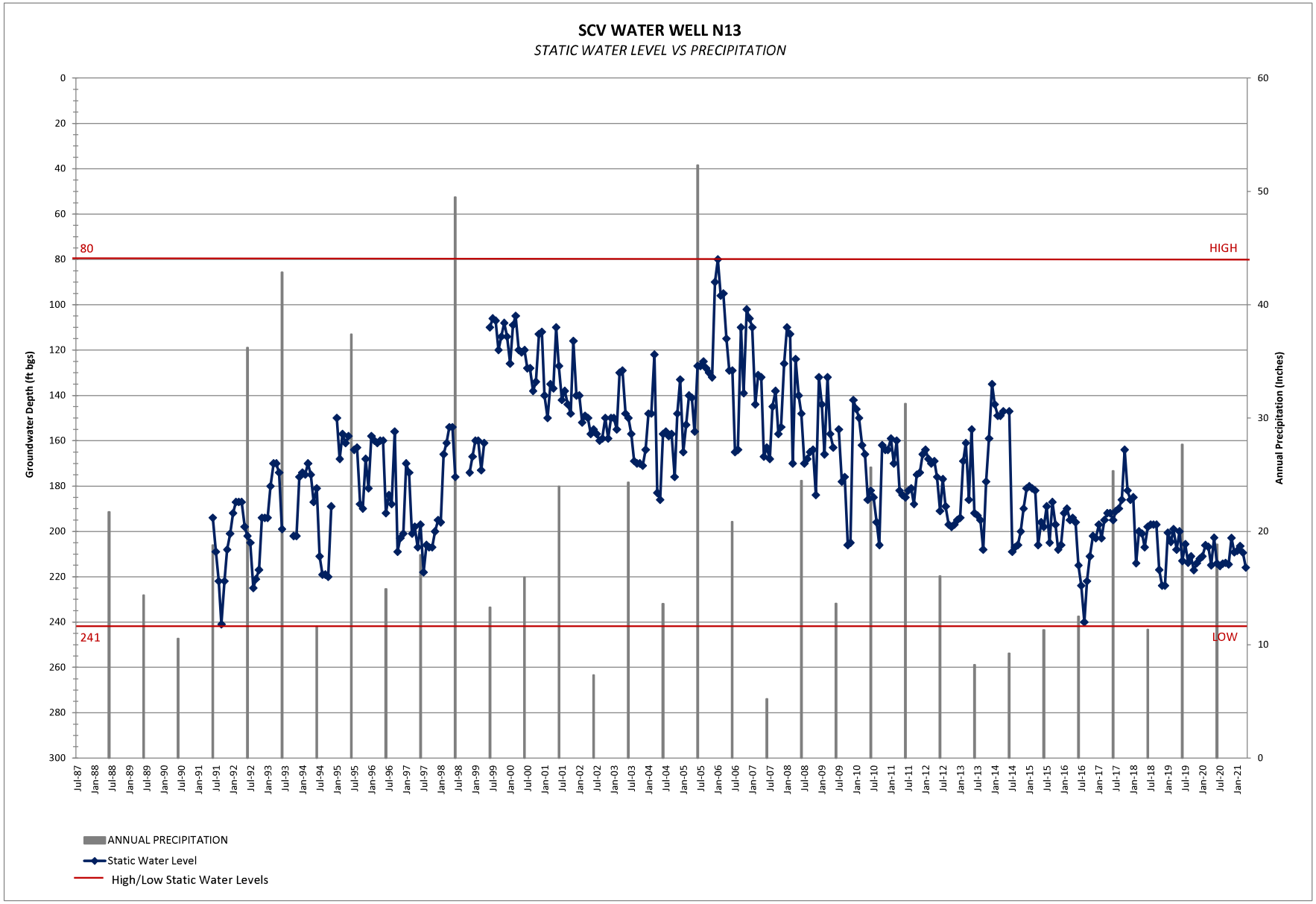
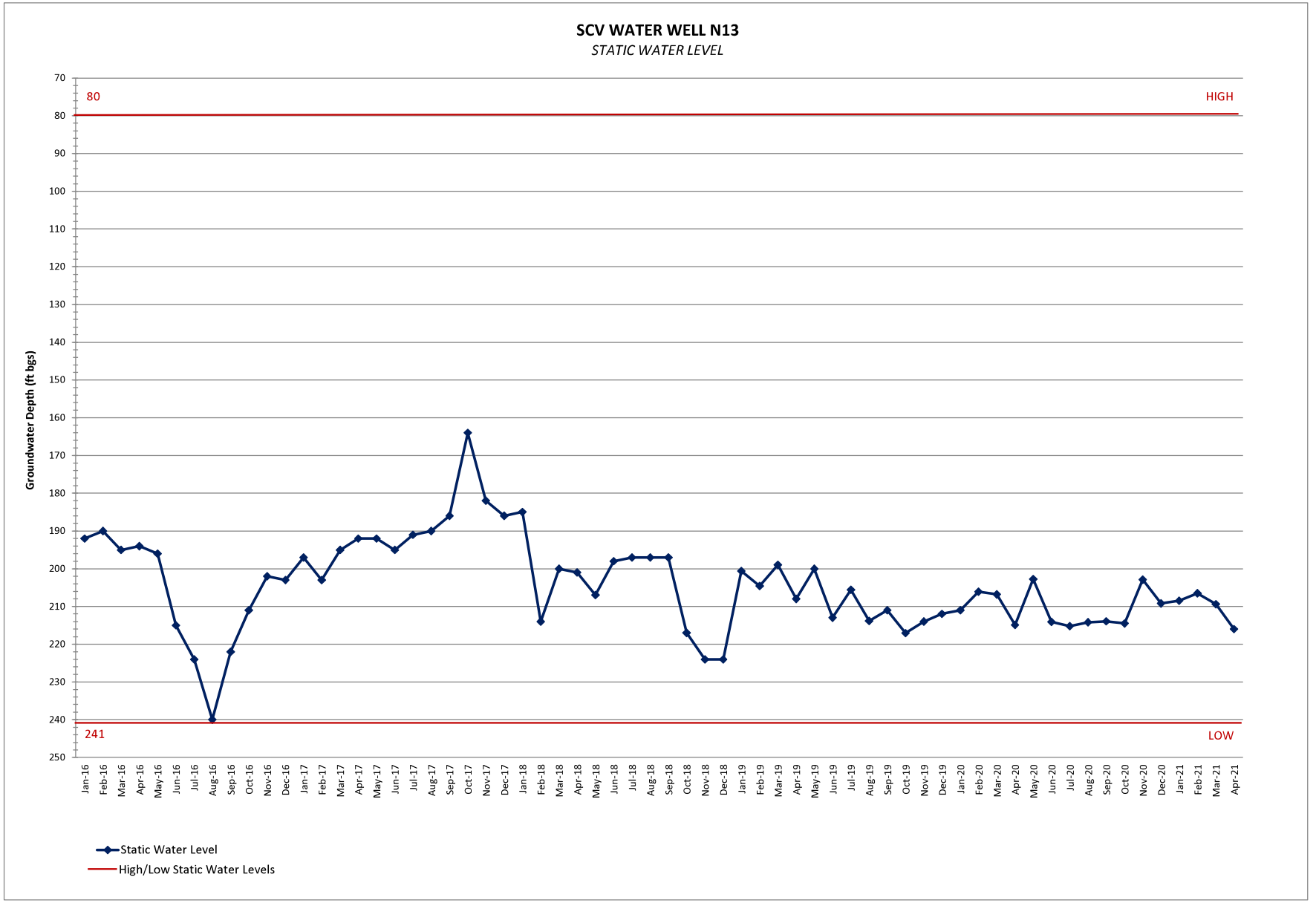
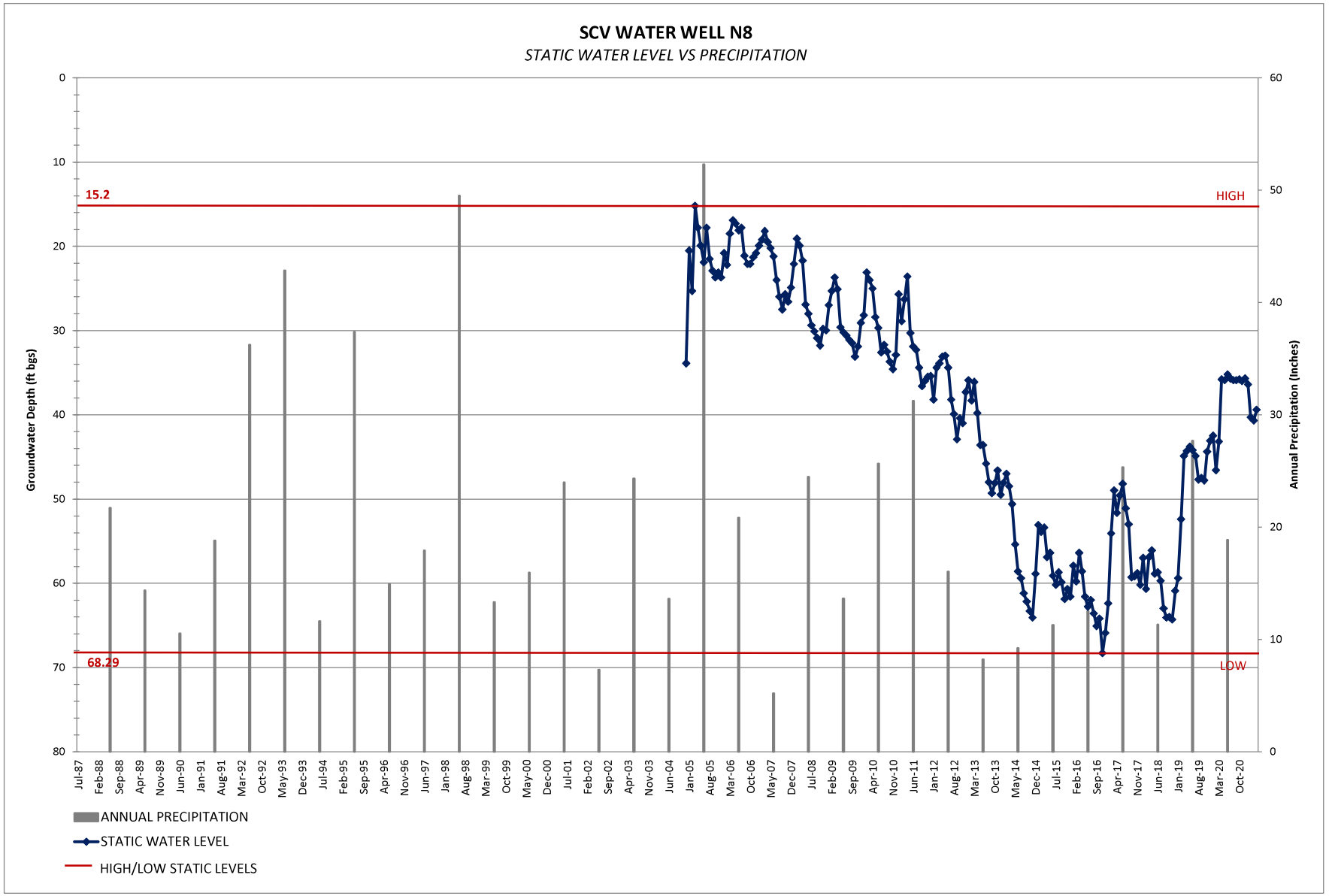
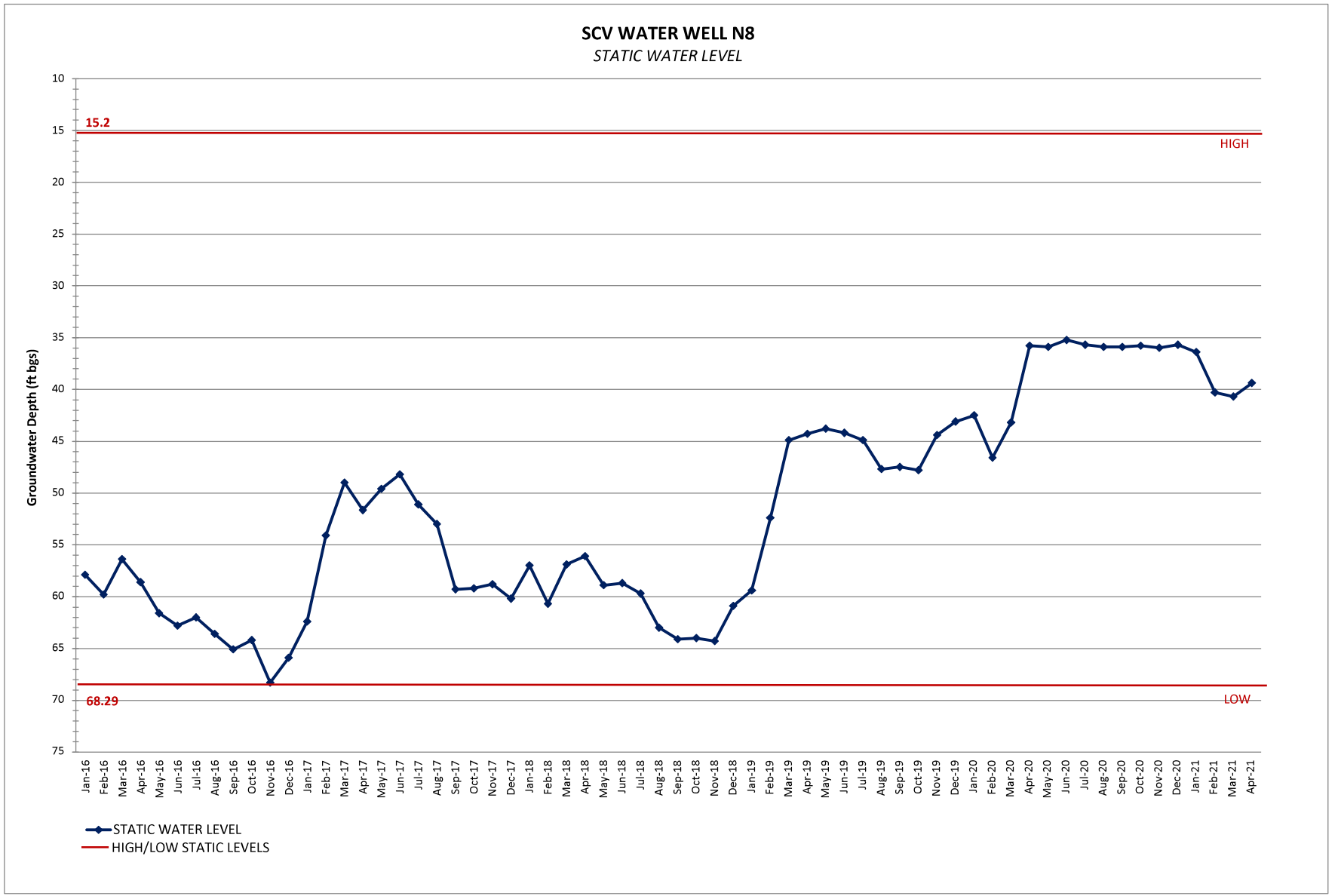
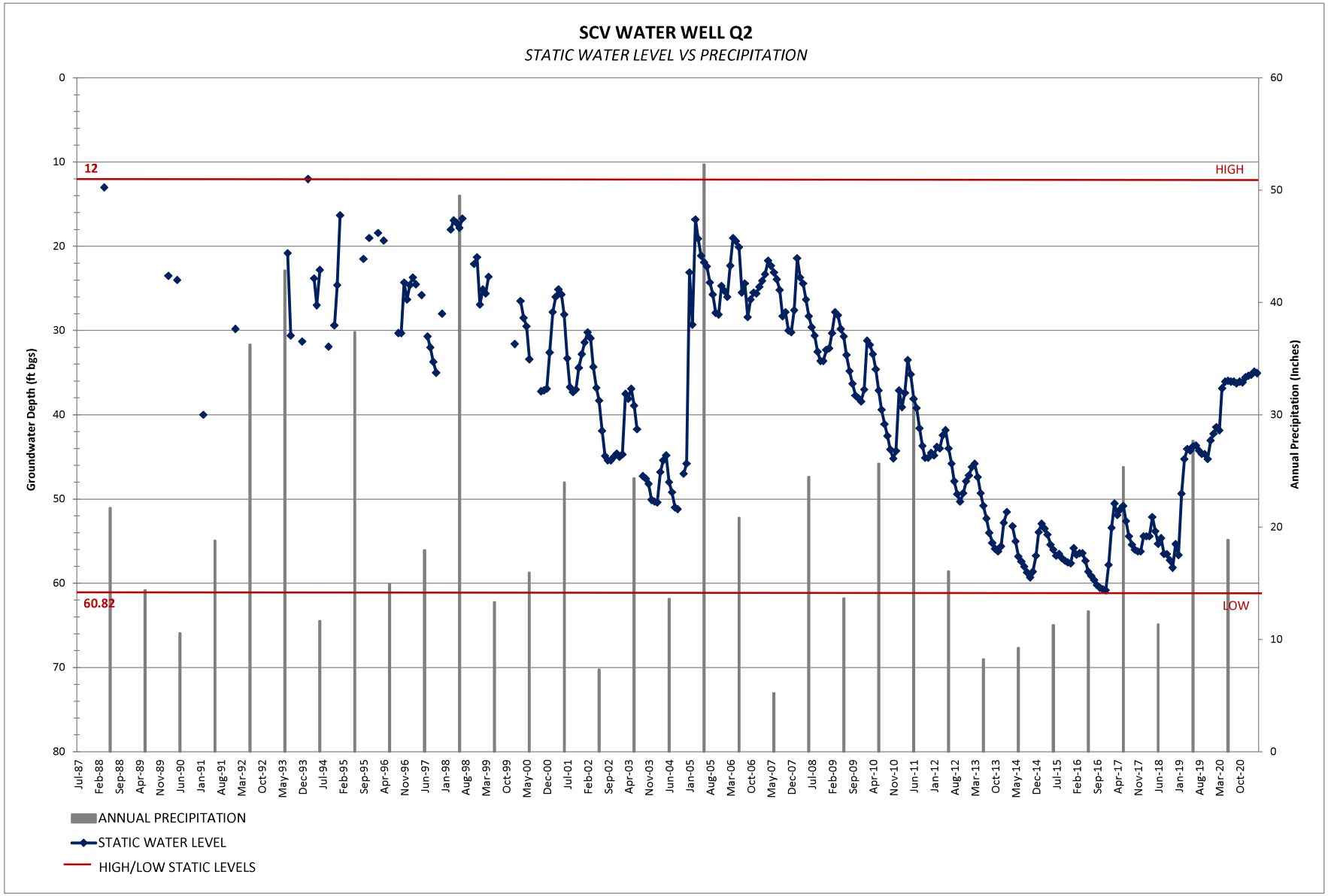
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
Static Water Level
High/Low Statc Water Levels

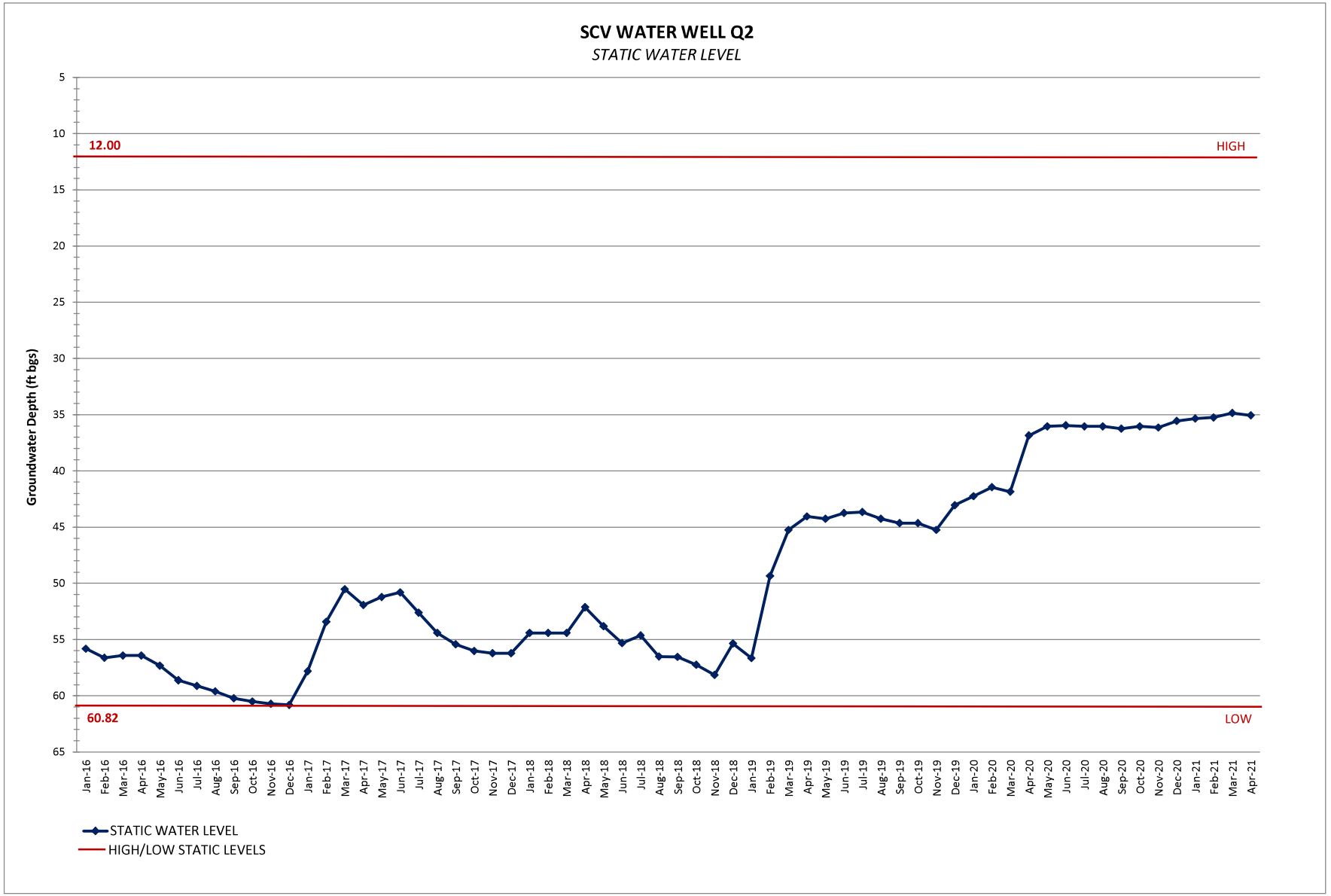

SCV WATER WELL N13
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
80
HIGH
241
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL N13
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
80
HIGH
241
LOW
Static Water Level
High/Low Static Water Levels


SCV WATER WELL N8
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
15.2
HIGH
68.29
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL N8
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
15.2
HIGH
68.29
LOW
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL Q2
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
12
HIGH
60.82
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL Q2
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
5
10
15
20
25
30
35
40
45
50
55
60
65
12.00
HIGH
60.82
LOW
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
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Oct-16
Nov-16
Dec-16
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Apr-20
May-20
Jun-20
Jul-20
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Sep-20
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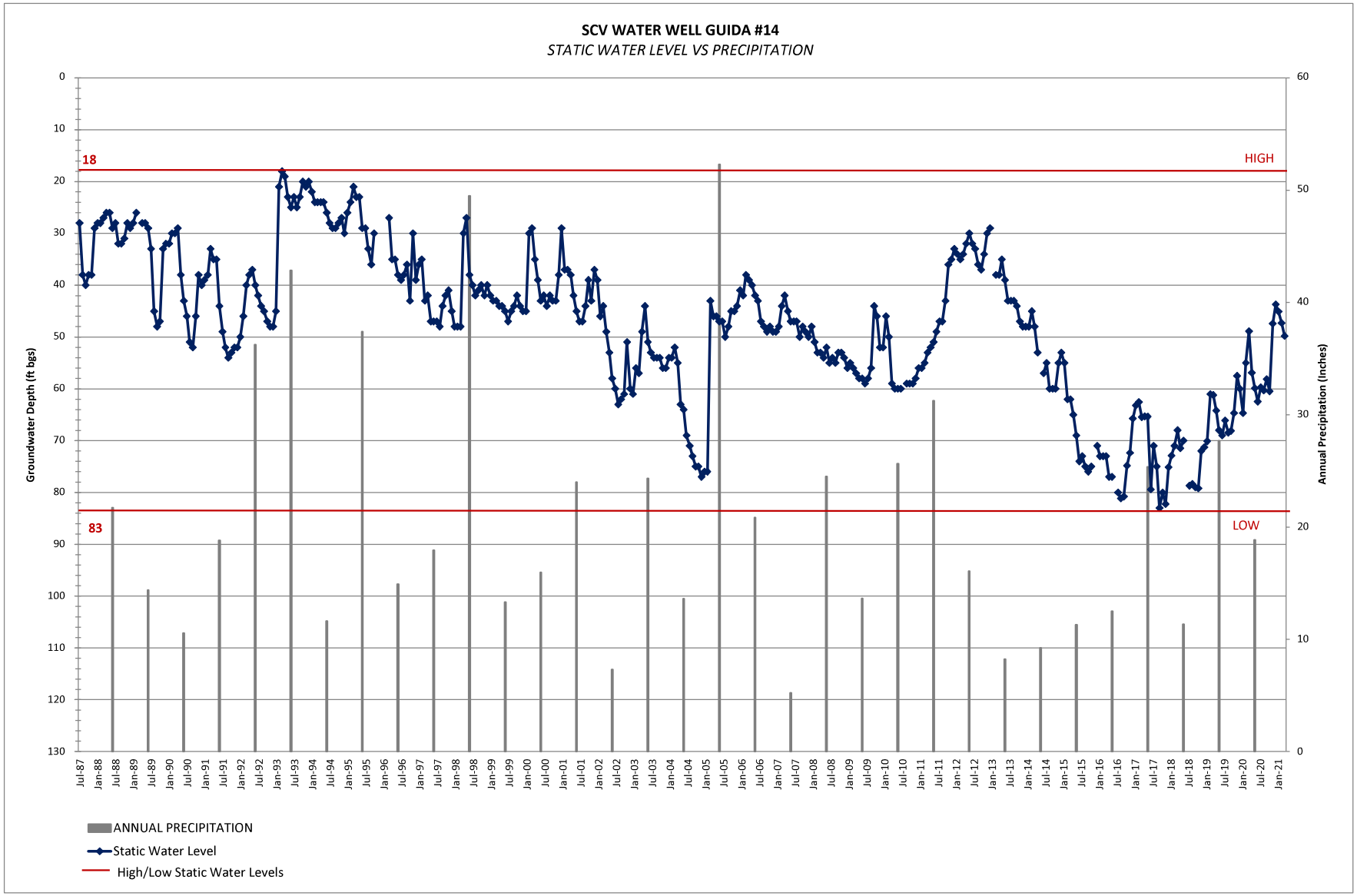
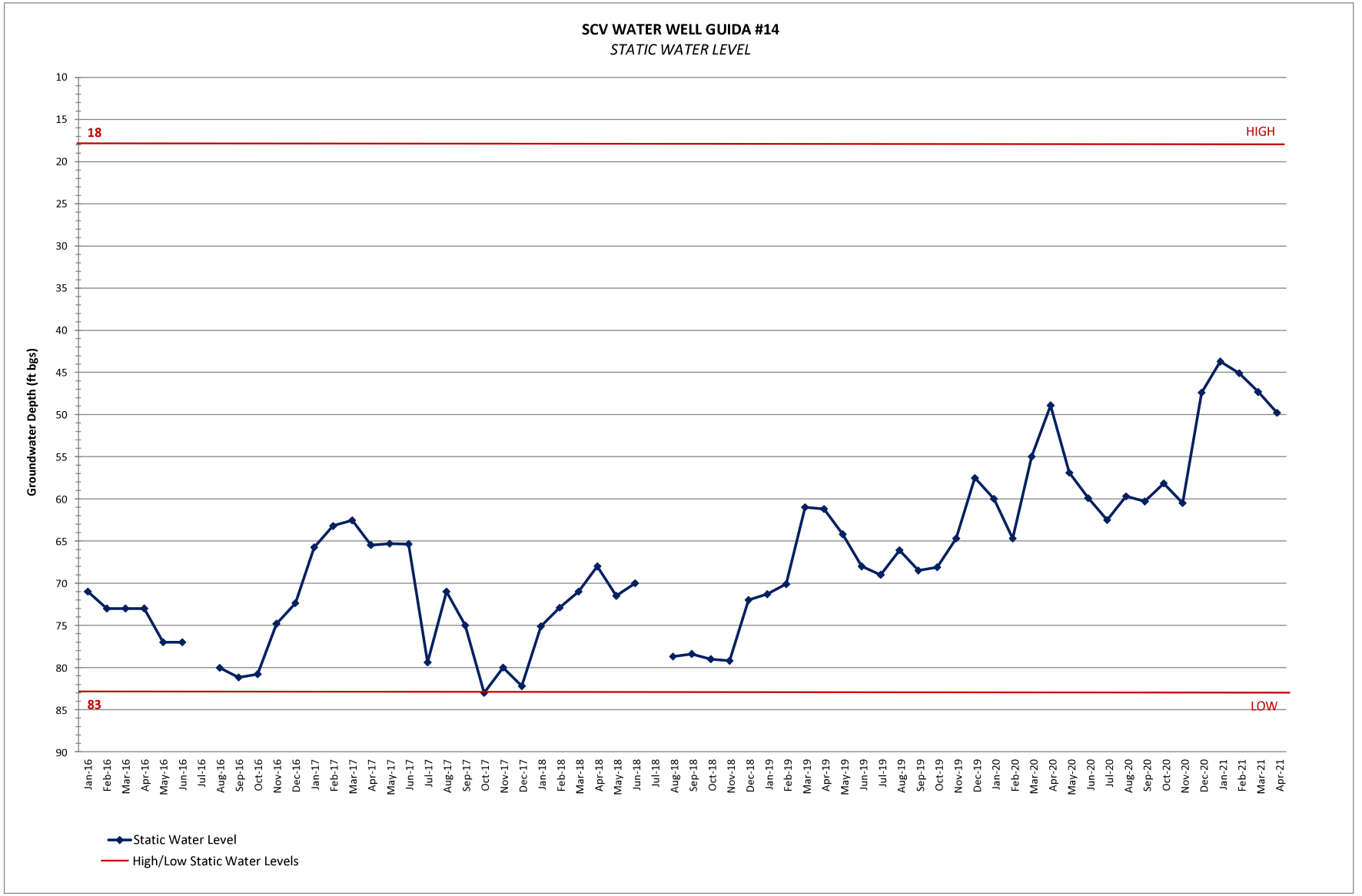
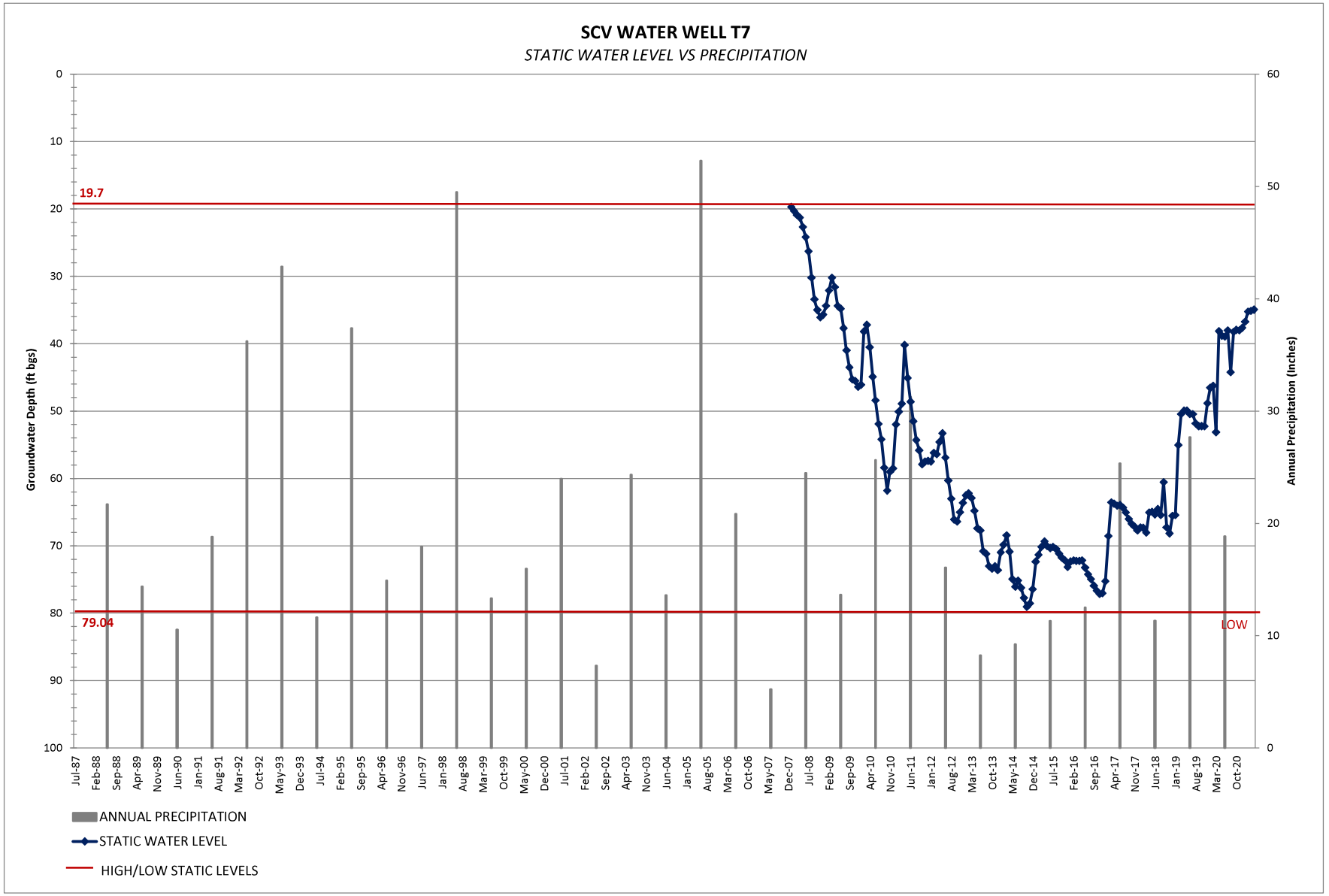
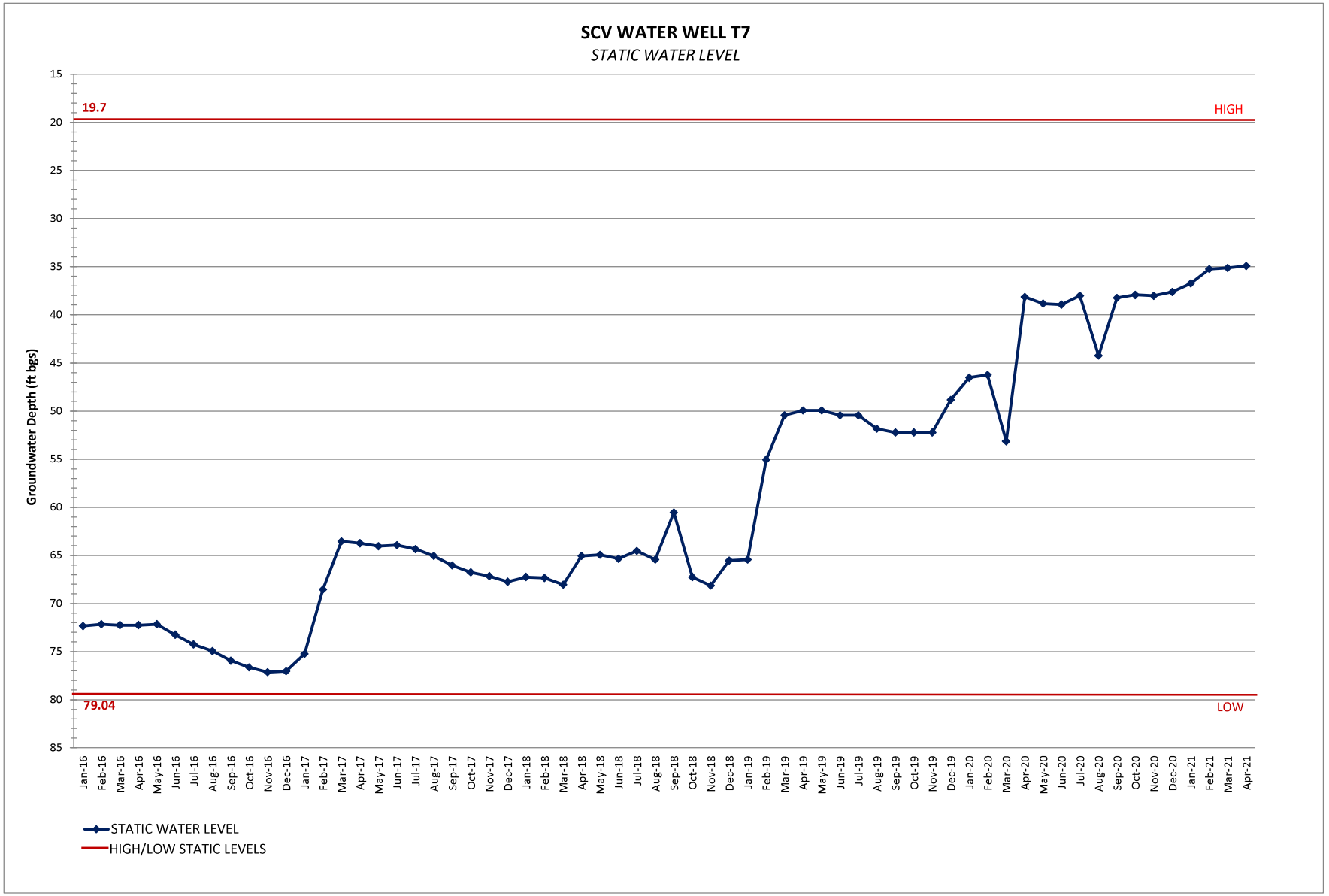
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL GUIDA #14
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
18
HIGH
83
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL GUIDA #14
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
18
HIGH
83
LOW
Static Water Level
High/Low Static Water Levels


SCV WATER WELL T7
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
19.7
79.04
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL T7
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
19.7
HIGH
79.04
LOW
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
Jan-16
Feb-16
Mar-16
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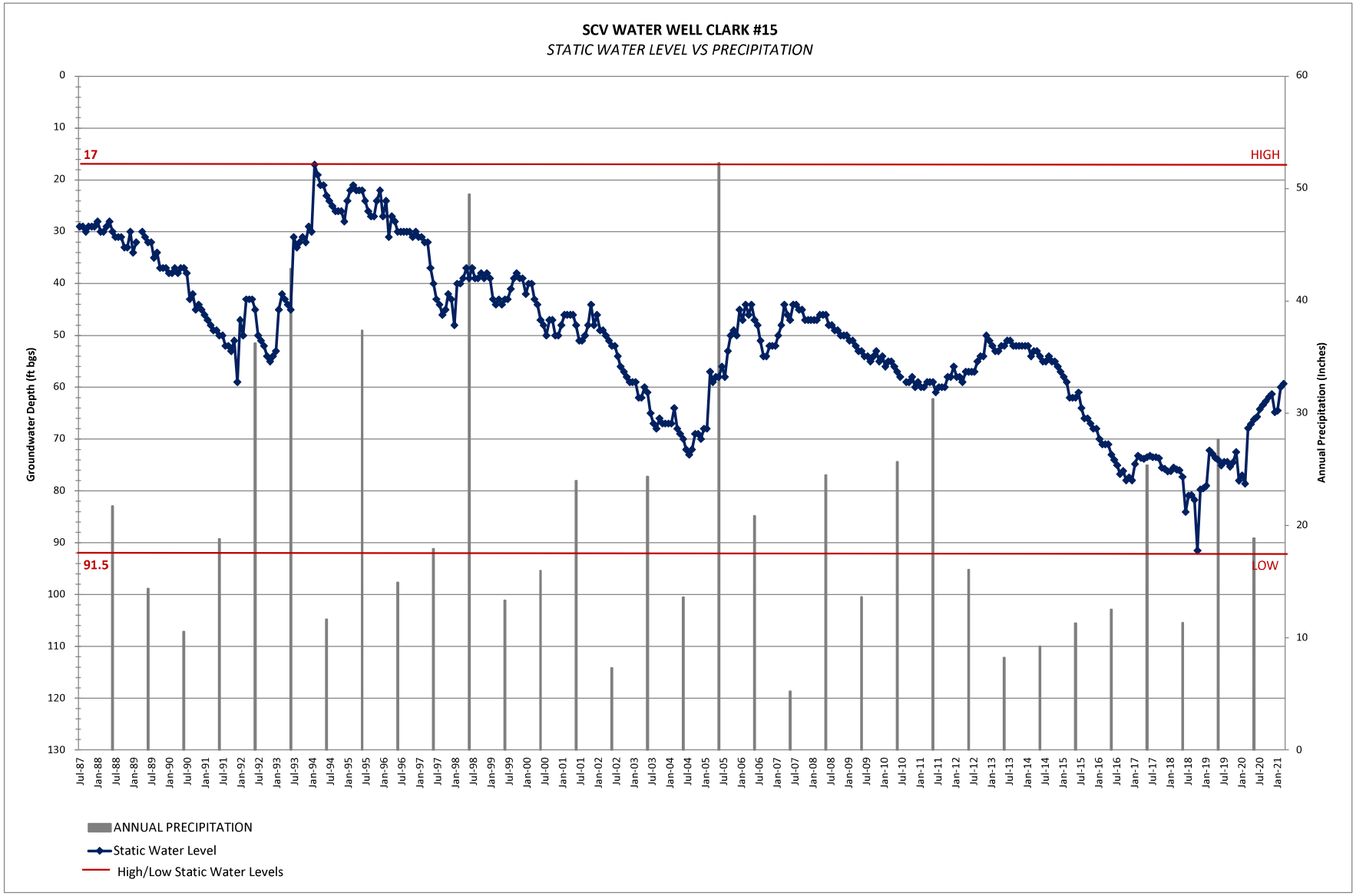
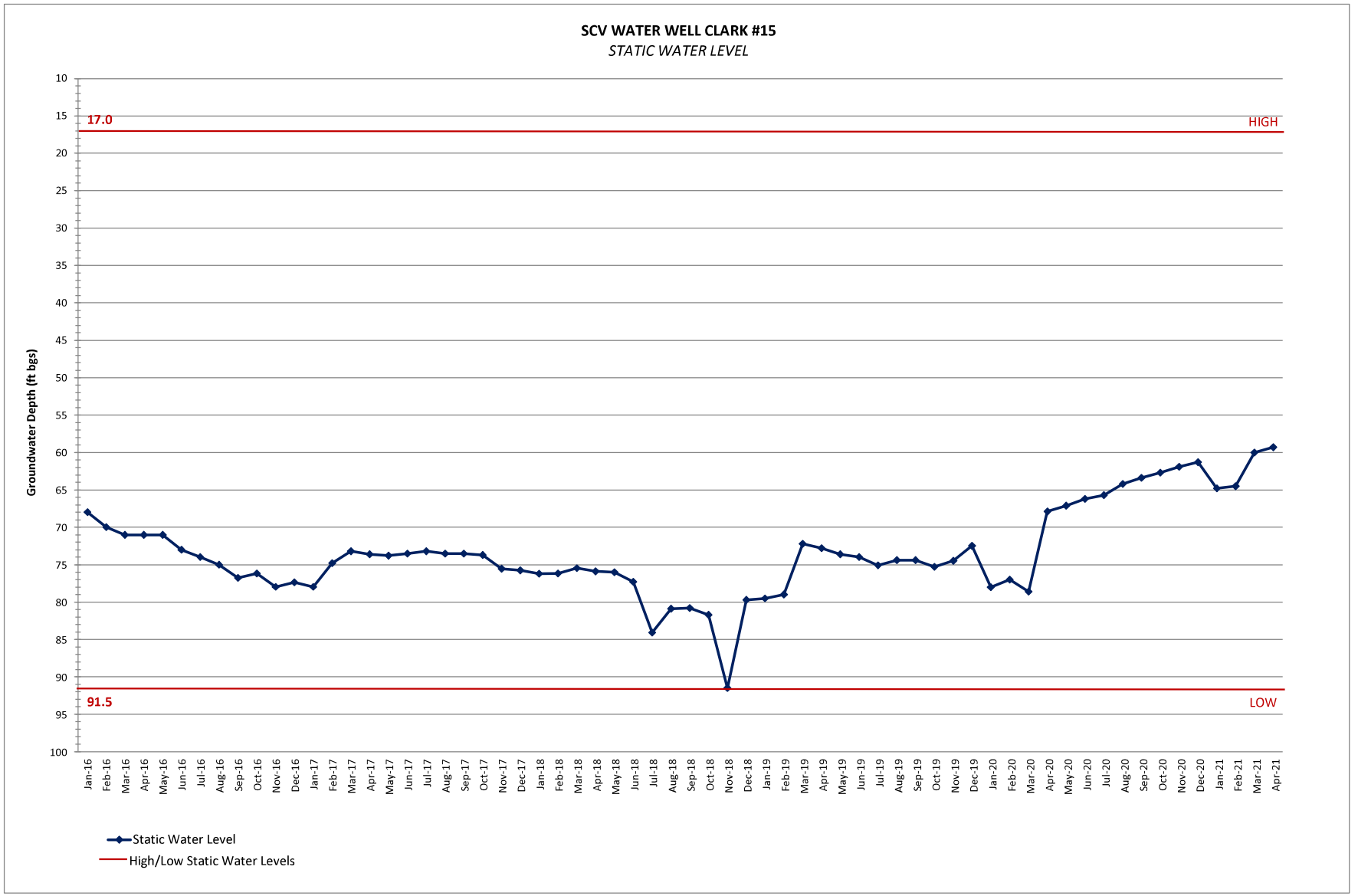
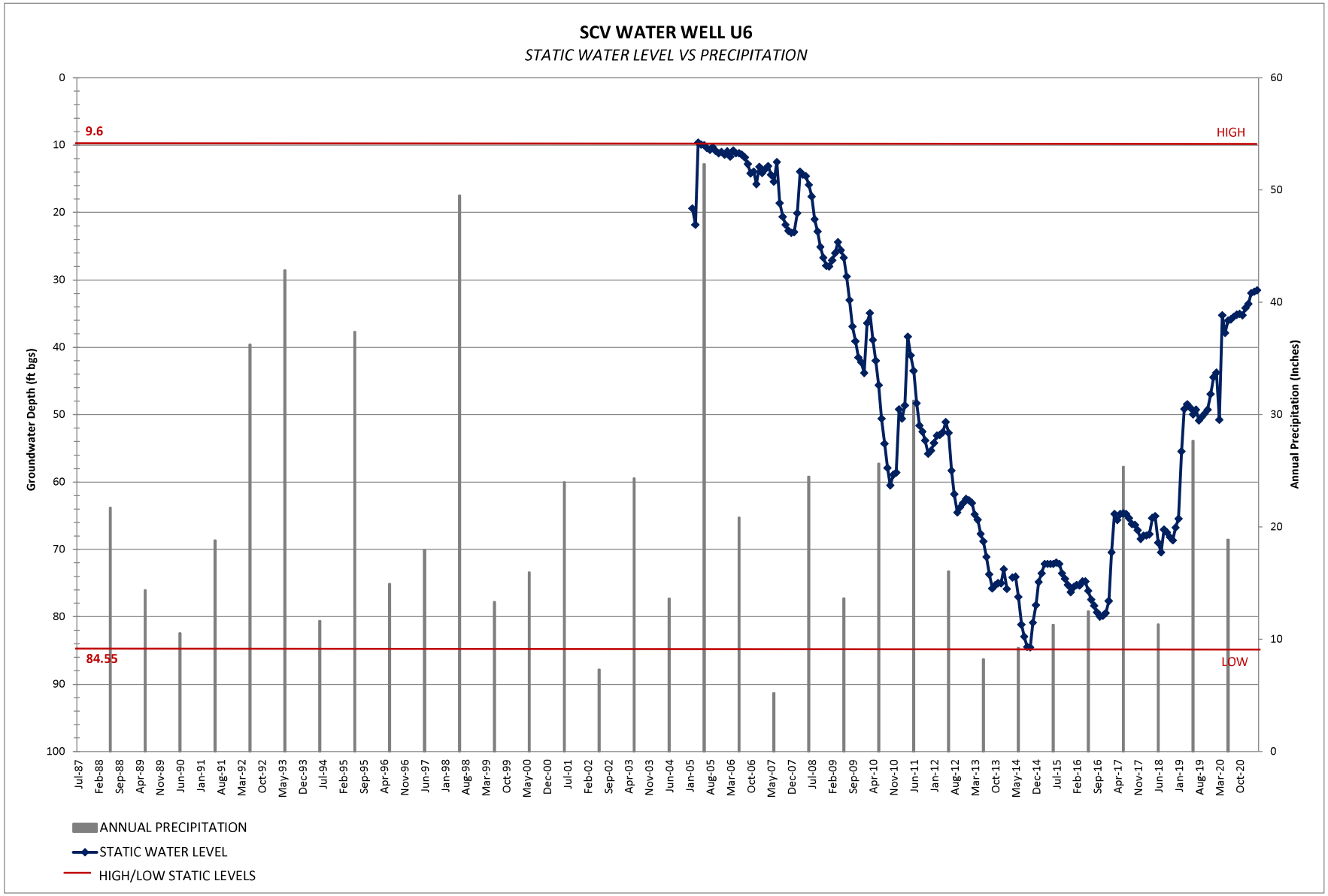
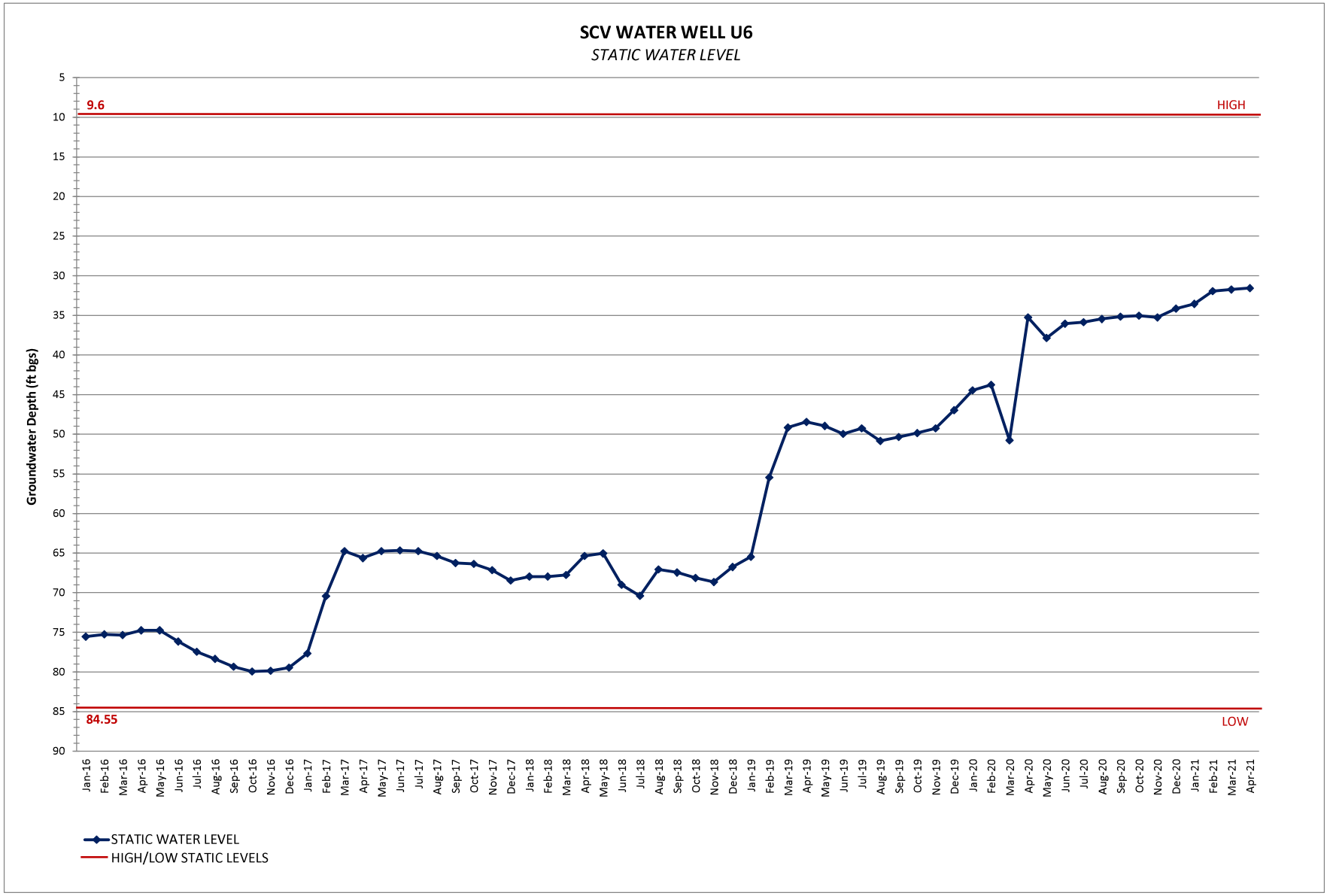
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL CLARK #15
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
17
HIGH
91.5
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL CLARK #15
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
17.0
HIGH
91.5
LOW
Static Water Level
High/Low Static Water Levels


SCV WATER WELL U6
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
9.6
HIGH
84.55
LOW
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL U6
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
9.6
HIGH
84.55
LOW
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
Mar-18
Apr-18
May-18
Jun-18
Jul-18
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Oct-18
Nov-18
Dec-18
Jan-19
Feb-19
Mar-19
Apr-19
May-19
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Jun-20
Jul-20
Aug-20
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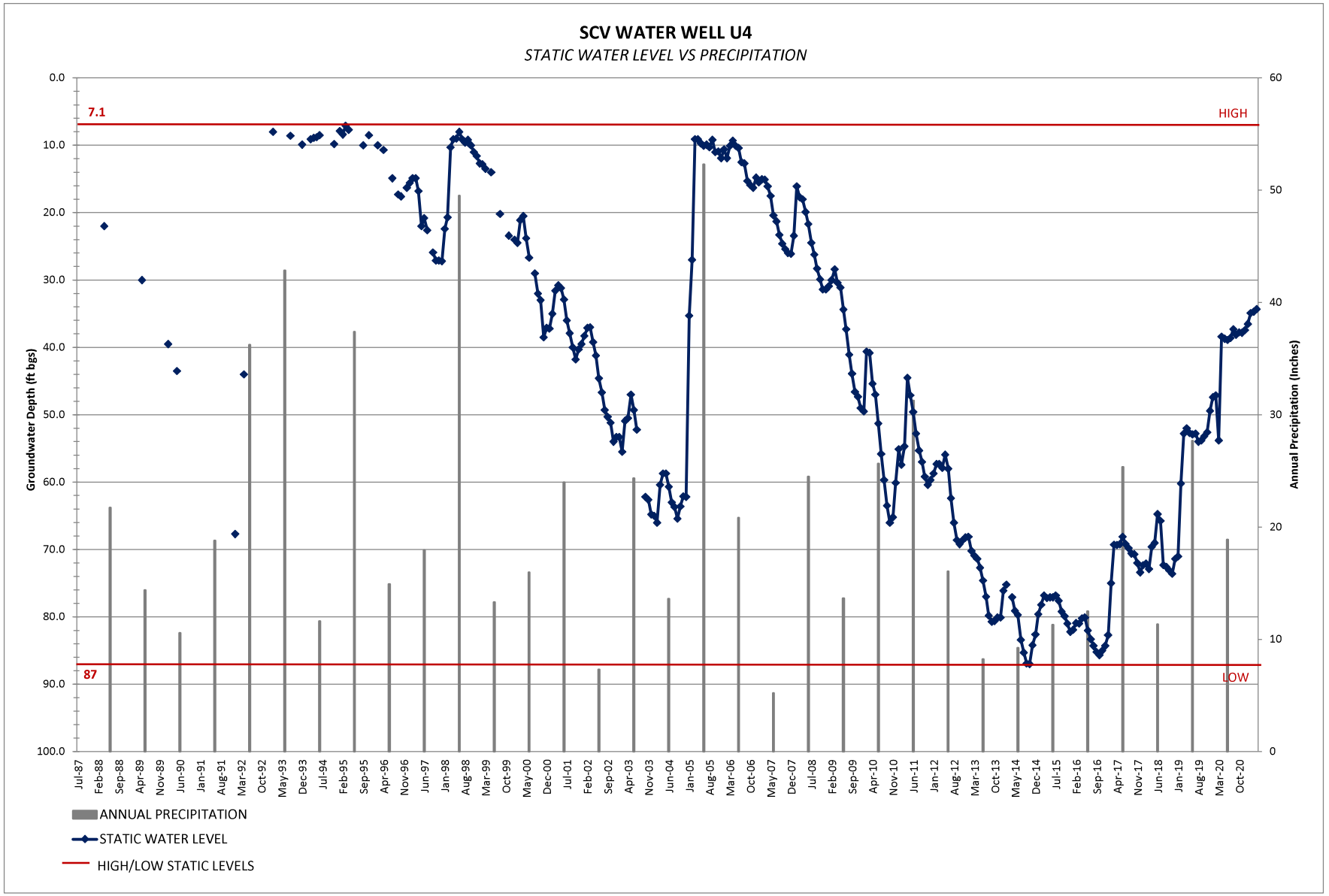
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS


SCV WATER WELL U4
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
7.1
HIGH
87
LOW
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
60
50
40
30
20
10
0
Jul-87
Feb-88
Sep-88
Apr-89
Nov-89
Jun-90
Jan-91
Aug-91
Mar-92
Oct-92
May-93
Dec-93
Jul-94
Feb-95
Sep-95
Apr-96
Nov-96
Jun-97
Jan-98
Aug-98
Mar-99
Oct-99
May-00
Dec-00
Jul-01
Feb-02
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Apr-03
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Jun-04
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Nov-10
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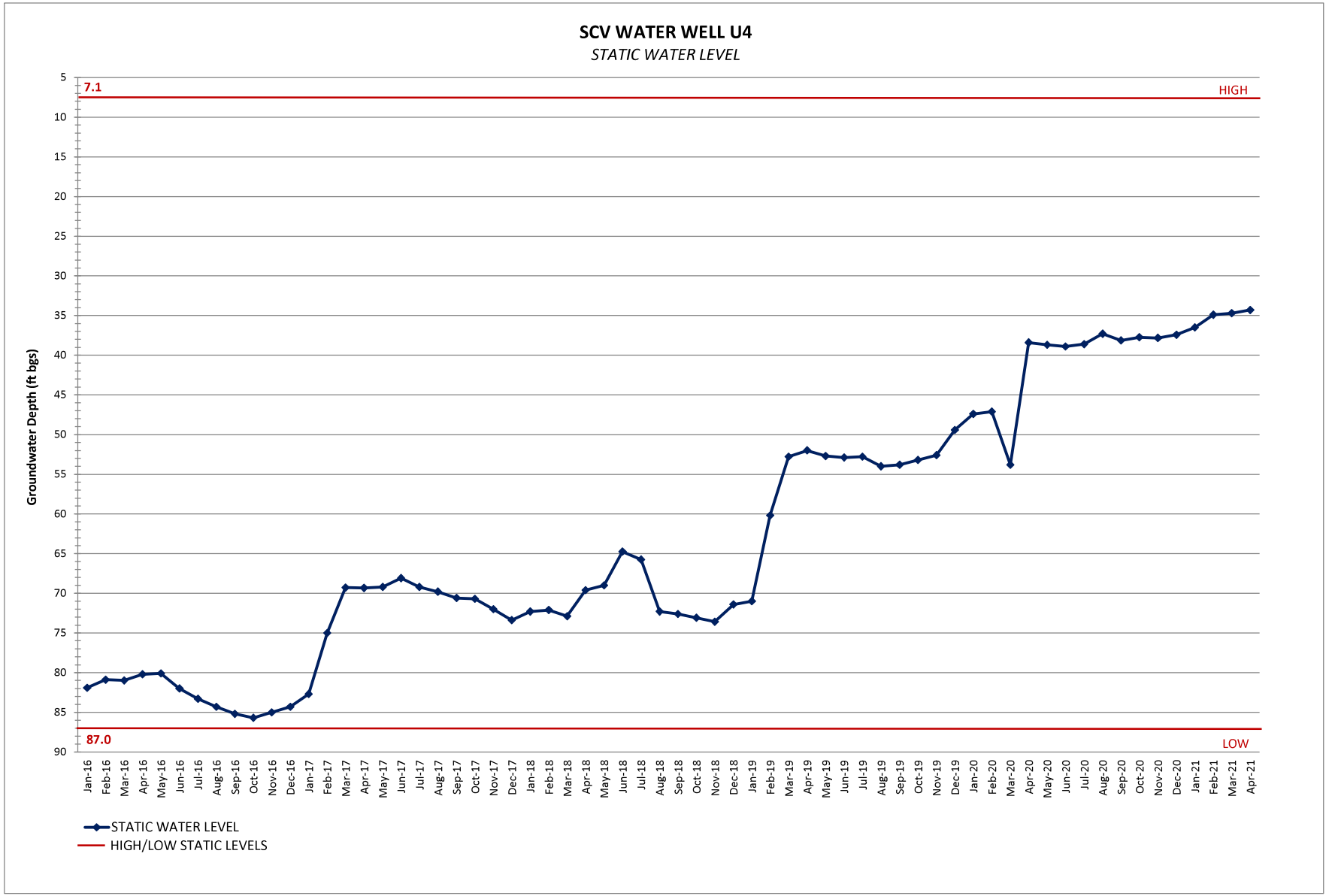
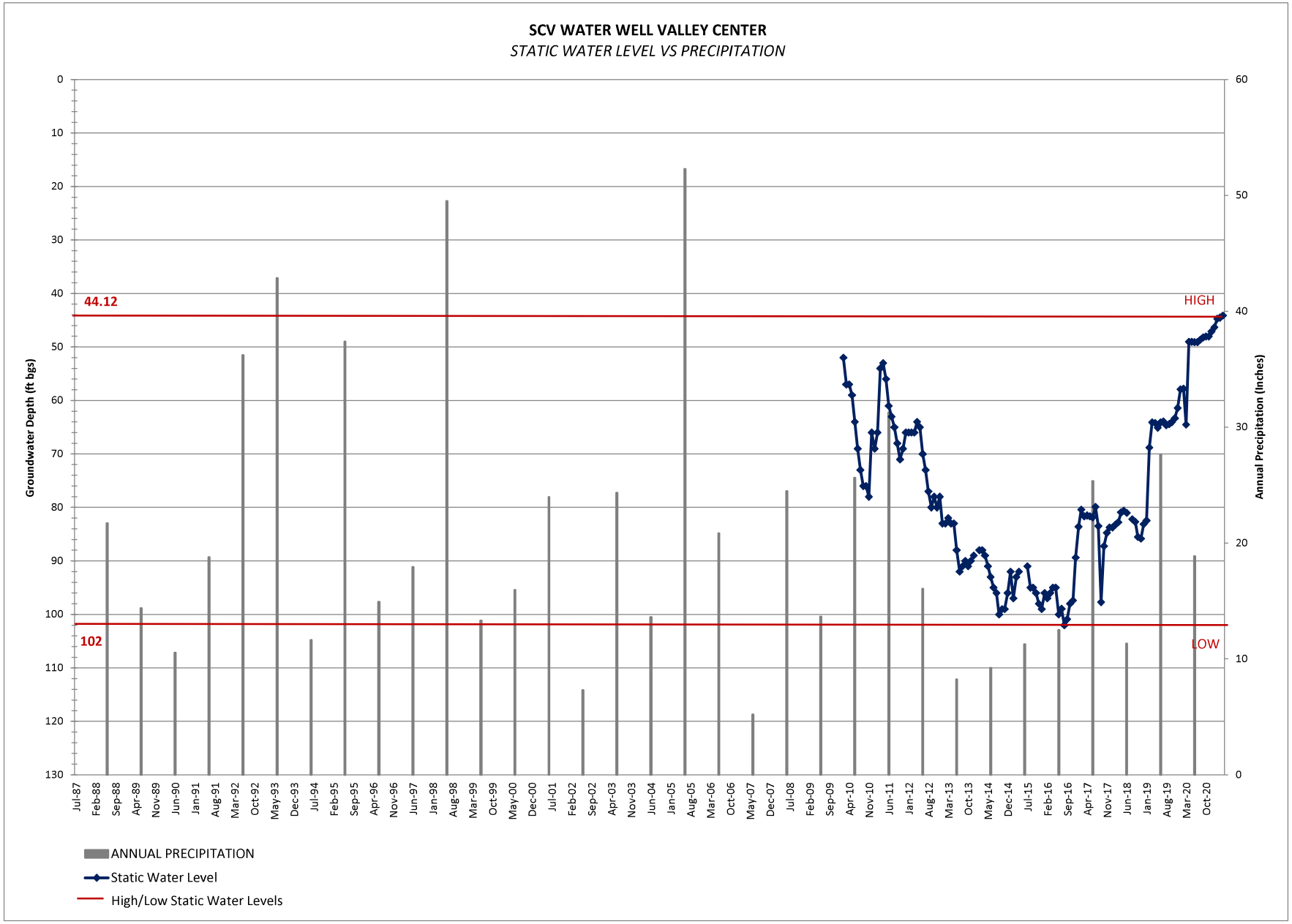
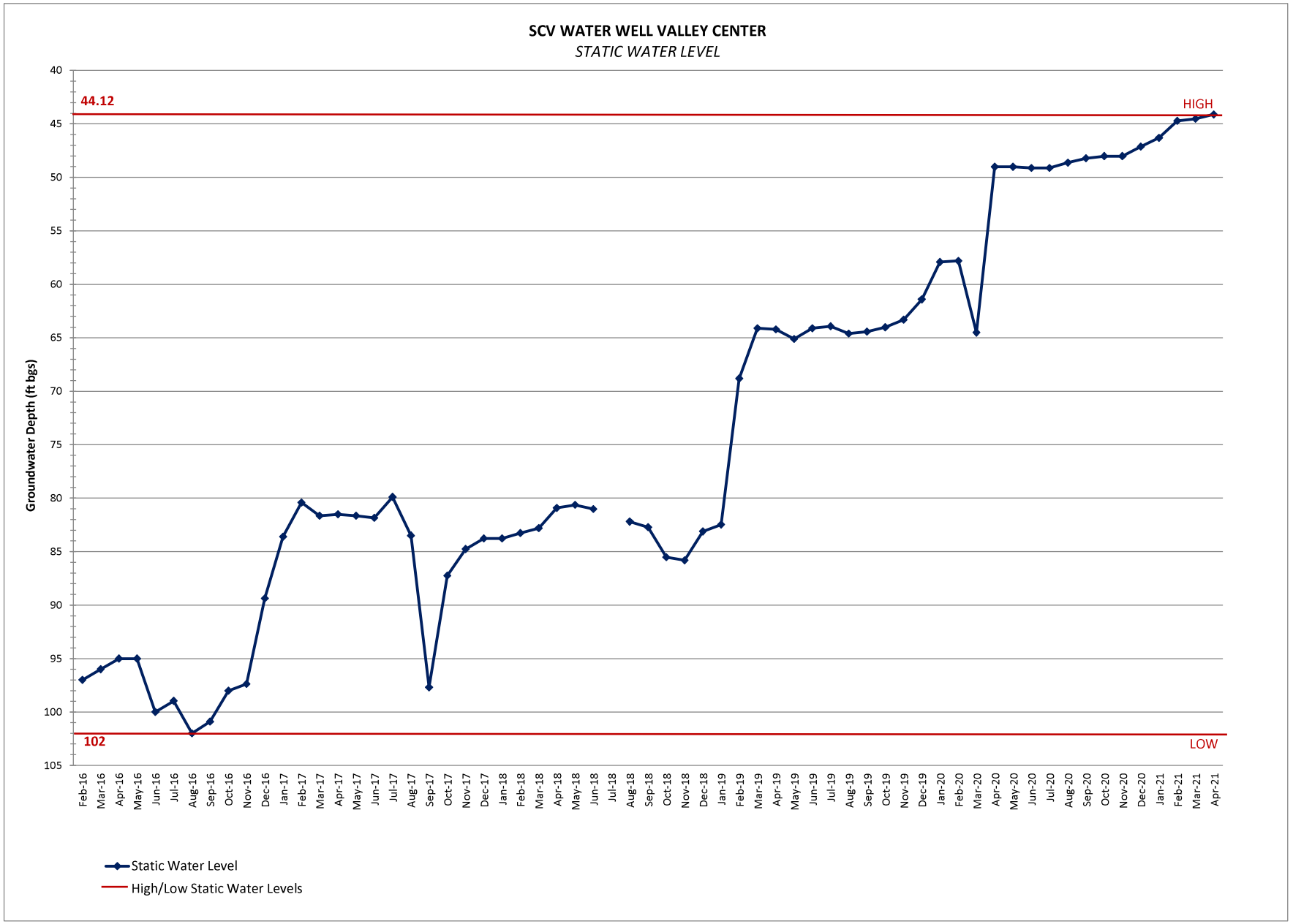
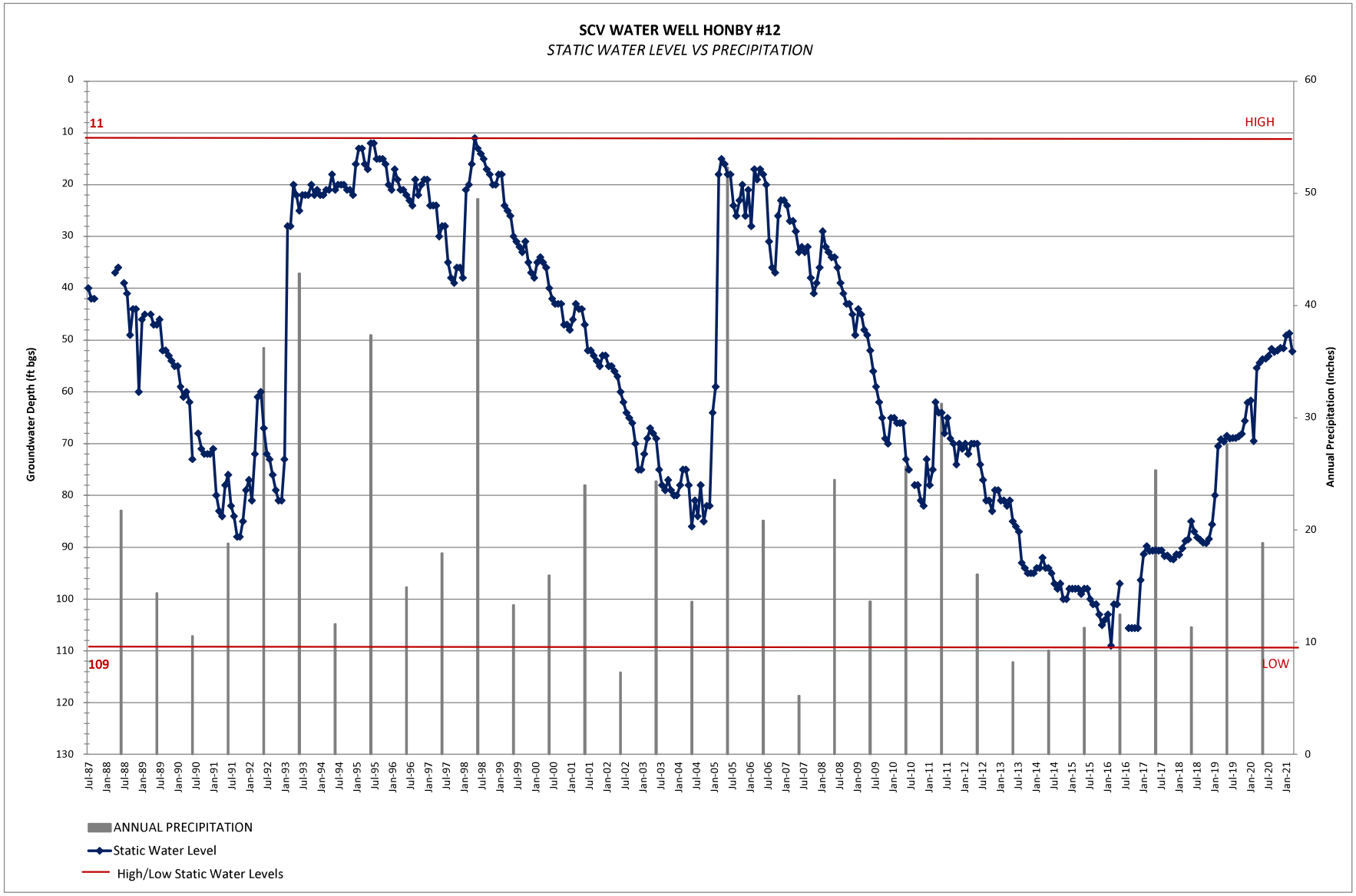
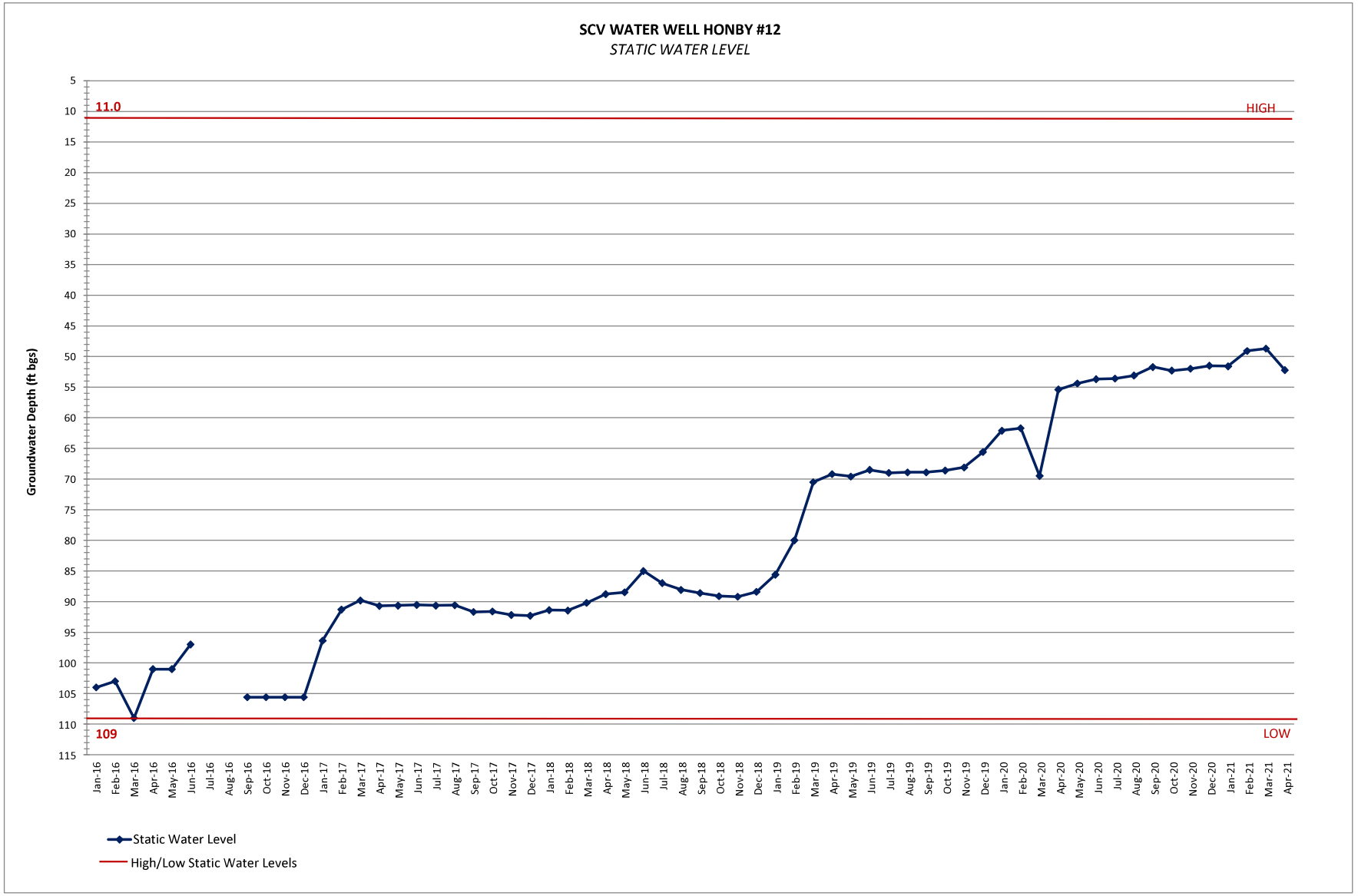
Jan-12
Aug-12
Mar-13
Oct-13
May-14
Dec-14
Jul-15
Feb-16
Sep-16
Apr-17
Nov-17
Jun-18
Jan-19
Aug-19
Mar-20
Oct-20
ANNUAL PRECIPITATION
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS

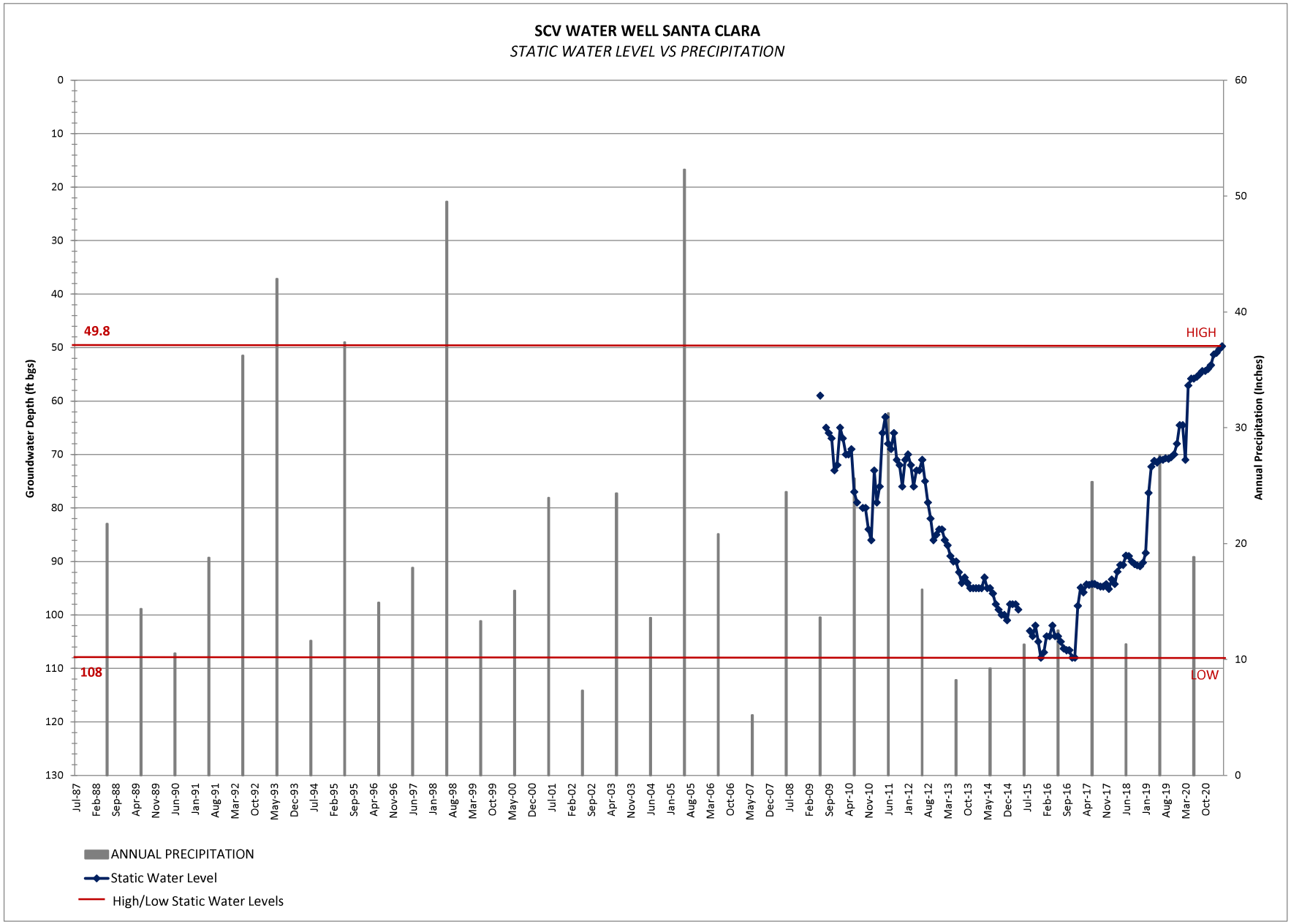

SCV WATER WELL U4
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
7.1
HIGH
87.0
LOW
STATIC WATER LEVEL
HIGH/LOW STATIC LEVELS

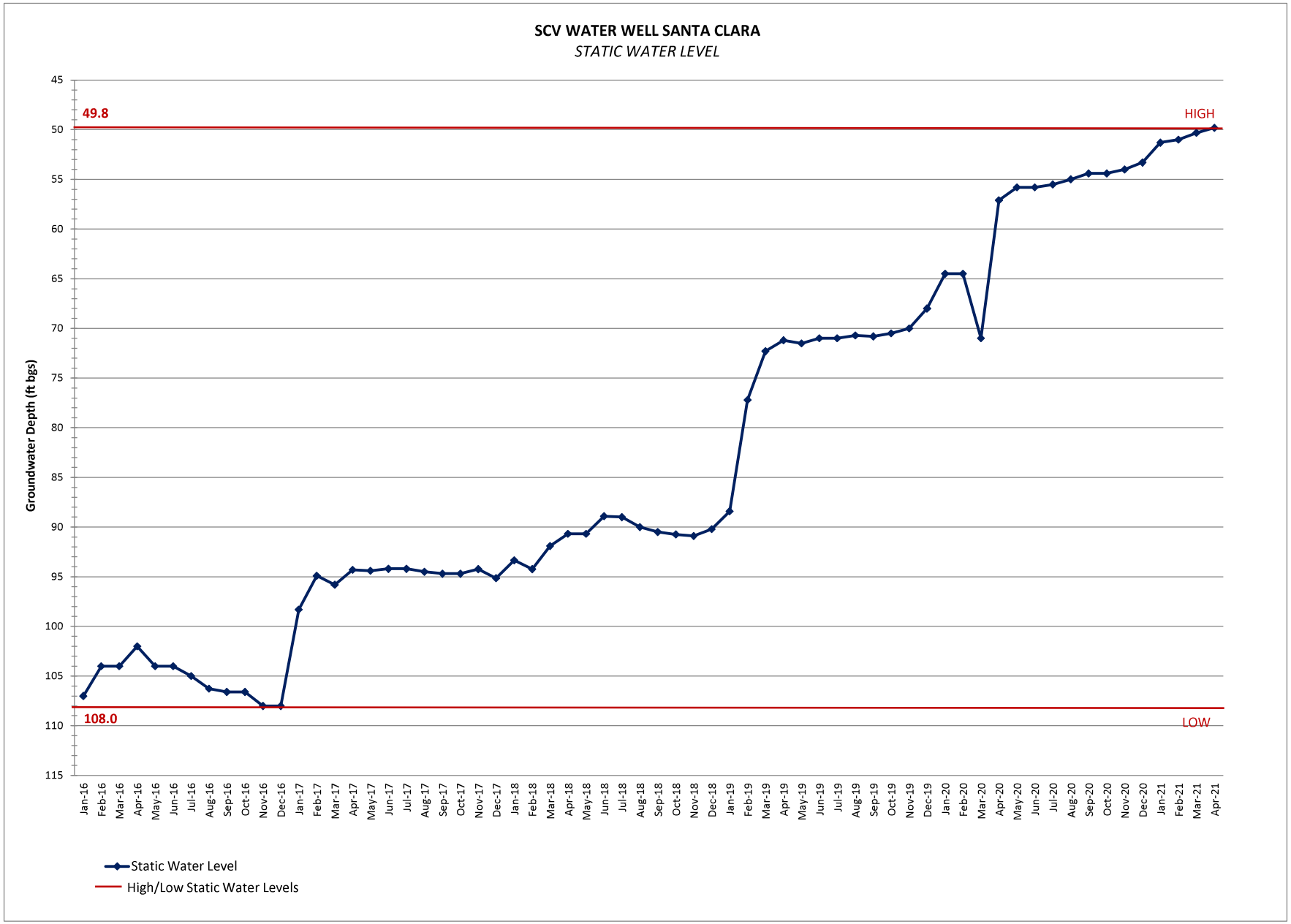

SCV WATER WELL VALLEY CENTER
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
44.12
HIGH
102
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL VALLEY CENTER
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
44.12
HIGH
102
LOW
Static Water Level
High/Low Static Water Levels


SCV WATER WELL HONBY #12
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
11
HIGH
109
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels

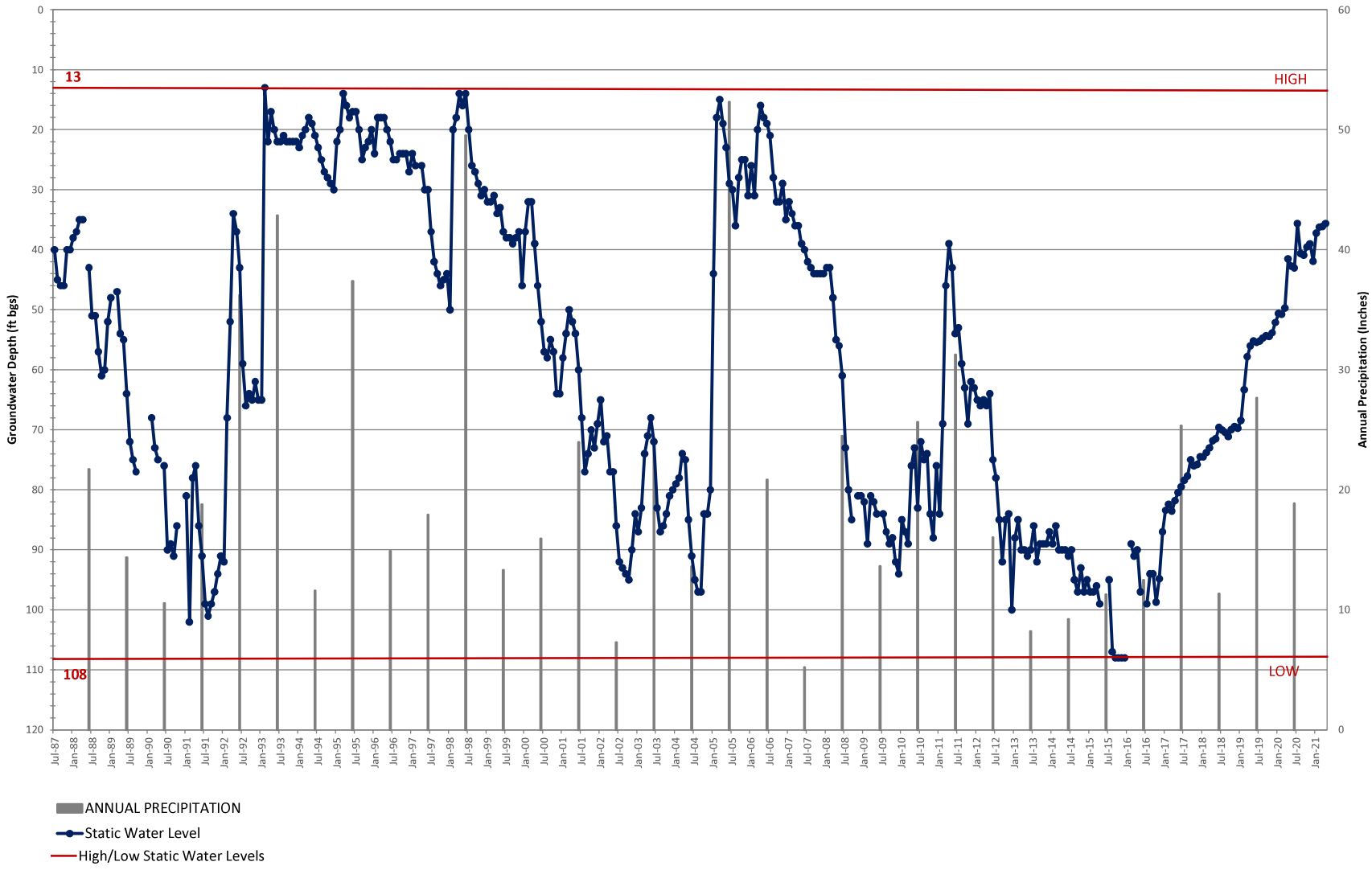

SCV WATER WELL HONBY #12
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
11.0
HIGH
109
LOW
Static Water Level
High/Low Static Water Levels


SCV WATER WELL SANTA CLARA
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
49.8
HIGH
108
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL SANTA CLARA
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
49.8
HIGH
108.0
LOW
Static Water Level
High/Low Static Water Levels

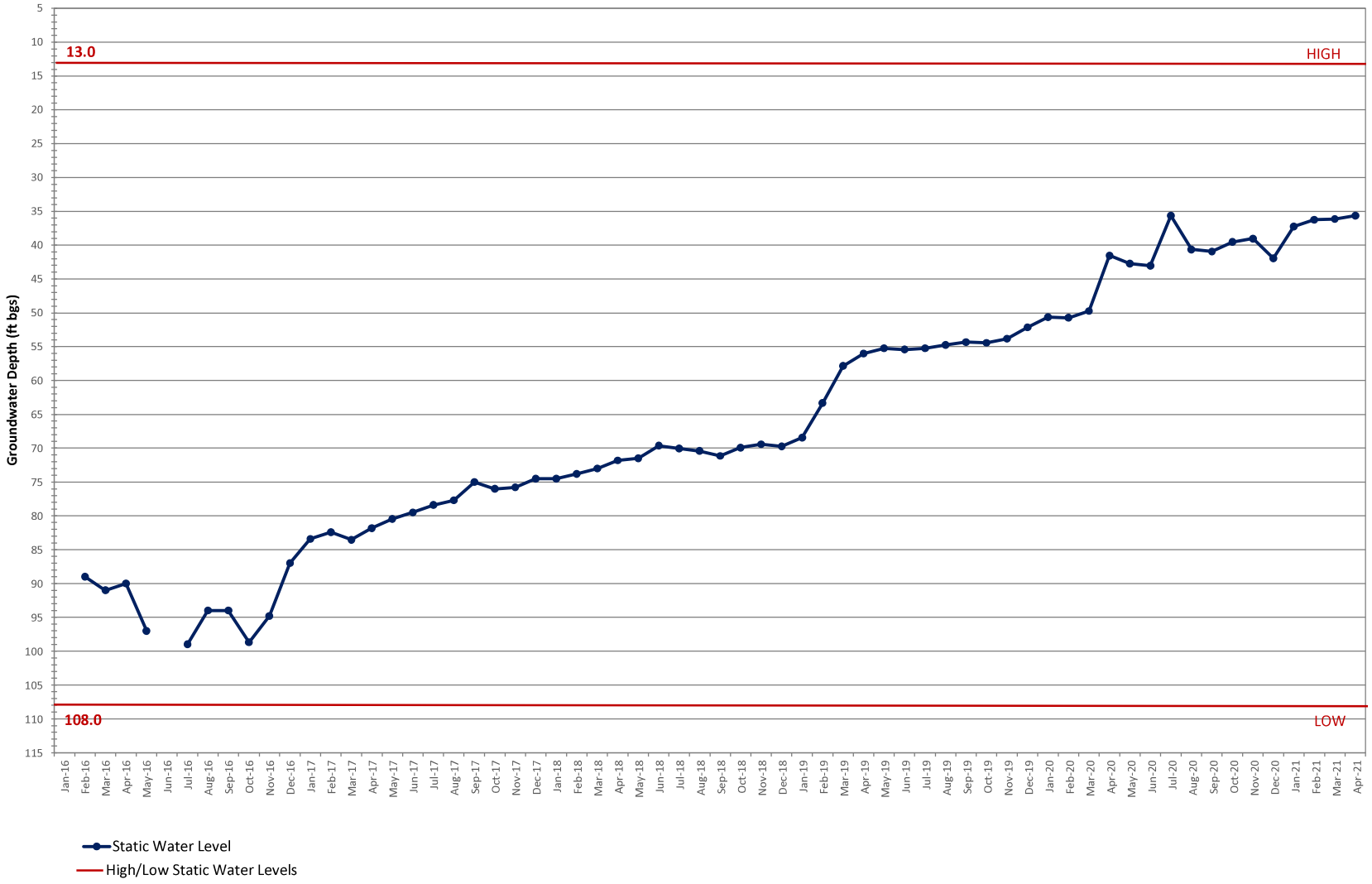
SCV WATER WELL NORTH OAKS CENTRAL #8

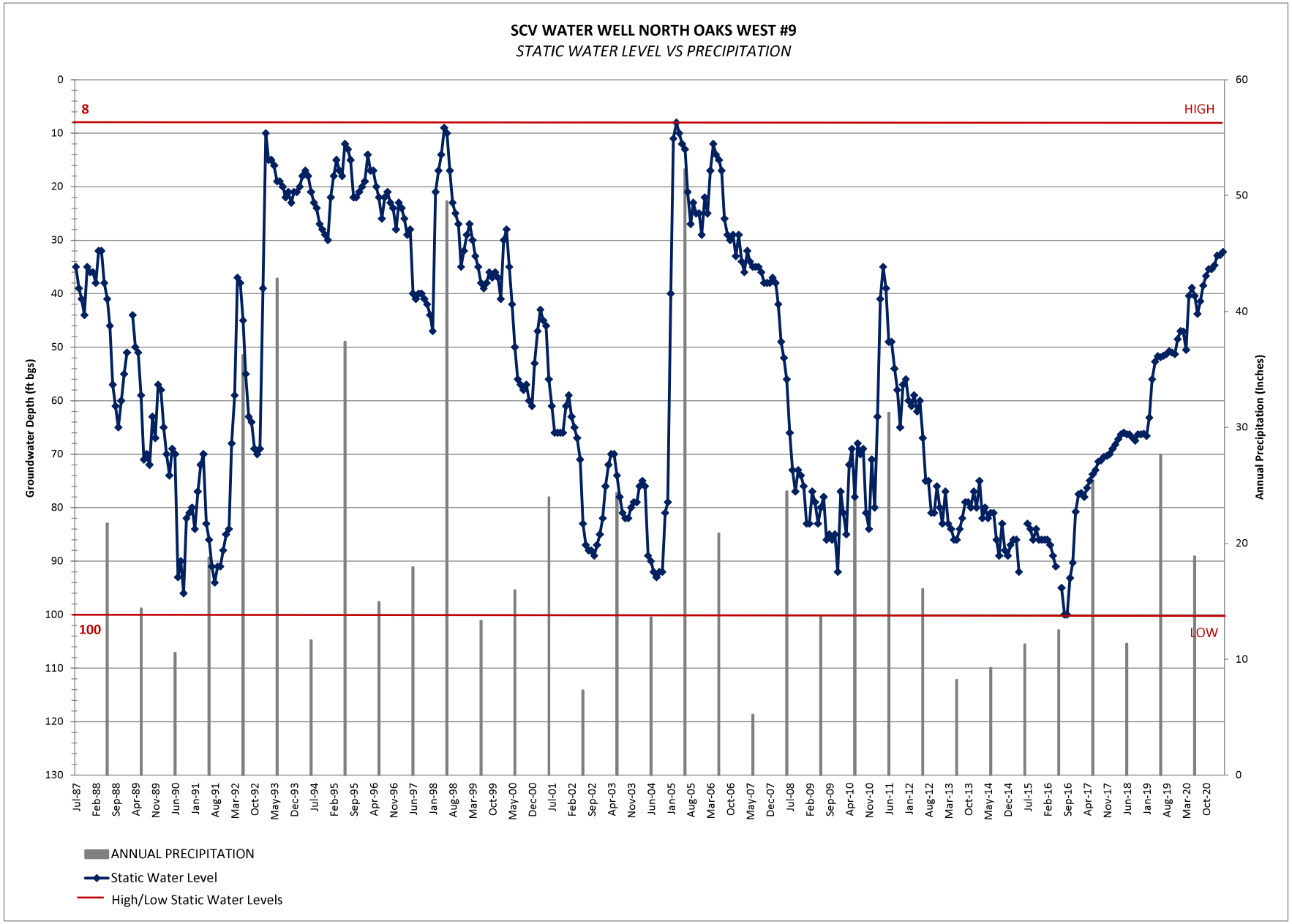
STATIC WATER LEVEL VS. PRECIPITATION



SCV WATER WELL NORTH OAKS CENTRAL #8

STATIC WATER LEVEL




SCV WATER WELL NORTH OAKS WEST #9
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
8
HIGH
100
LOW
0
10
20
30
40
50
60
70
80
90
100
110
120
130
0
10
20
30
40
50
60
Jul-87
Feb-88
Sep-88
Apr-89
Nov-89
Jun-90
Jan-91
Aug-91
Mar-92
Oct-92
May-93
Dec-93
Jul-94
Feb-95
Sep-95
Apr-96
Nov-96
Jun-97
Jan-98
Aug-98
Mar-99
Oct-99
May-00
Dec-00
Jul-01
Feb-02
Sep-02
Apr-03
Nov-03
Jun-04
Jan-05
Aug-05
Mar-06
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May-07
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Jul-08
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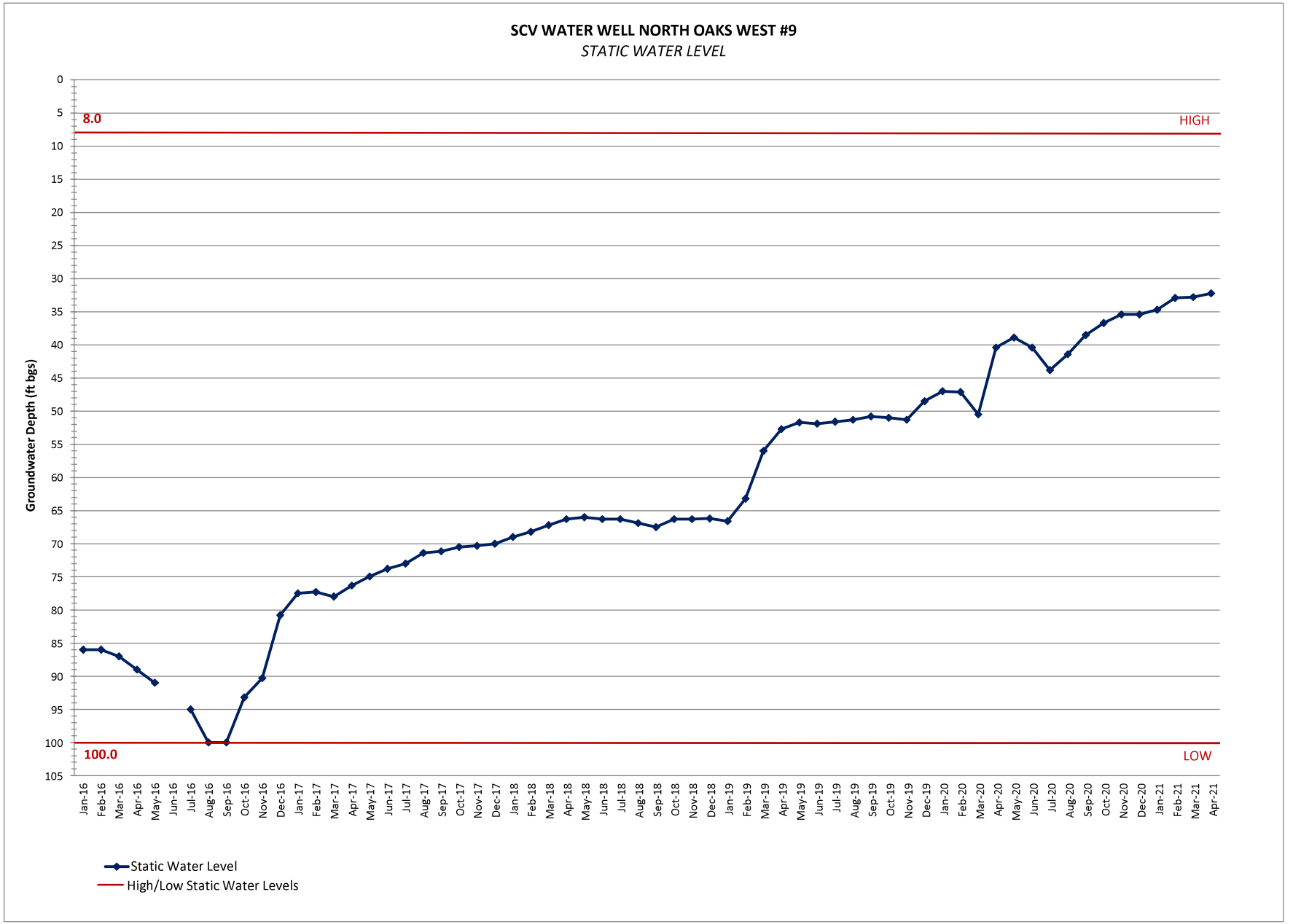
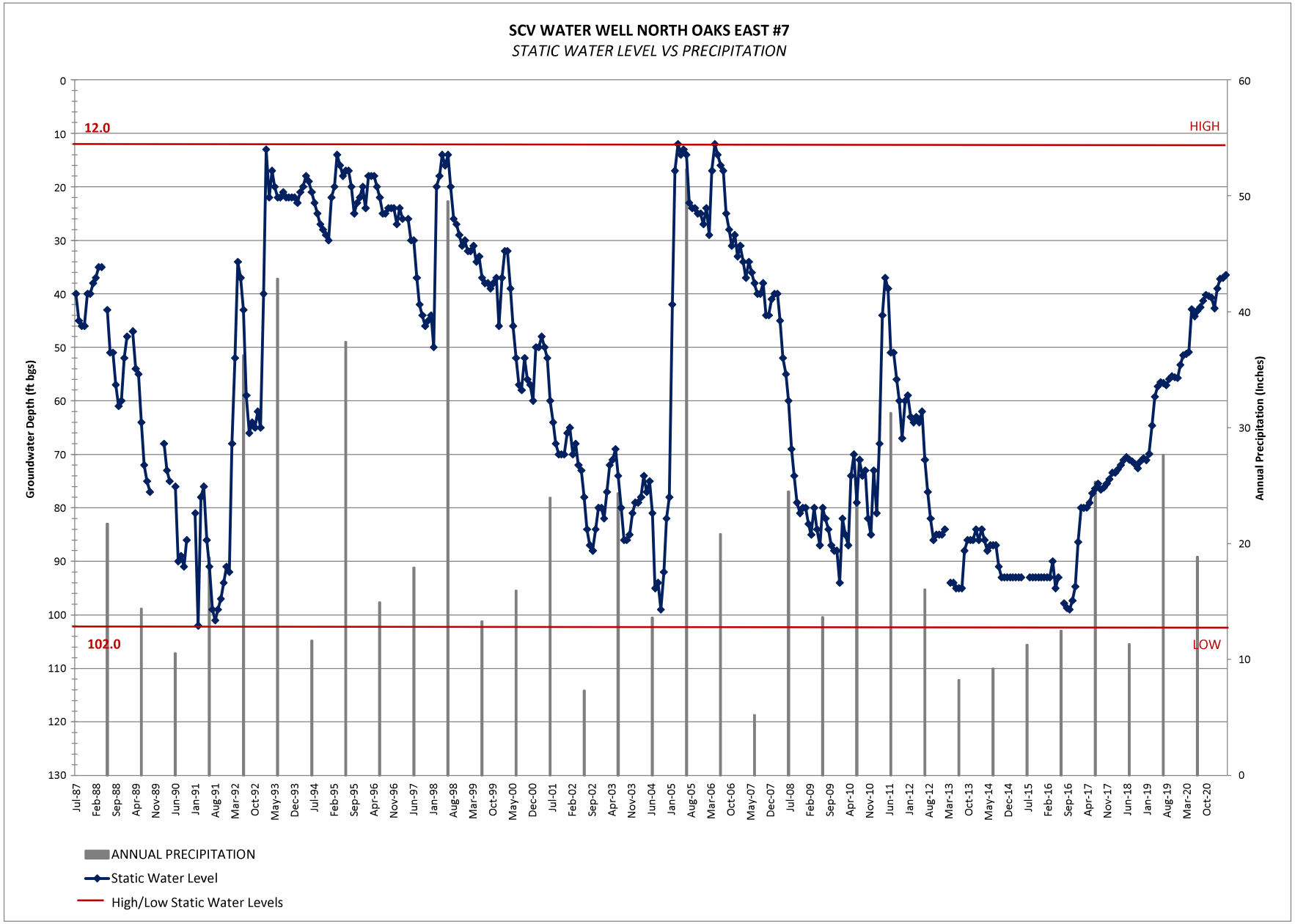
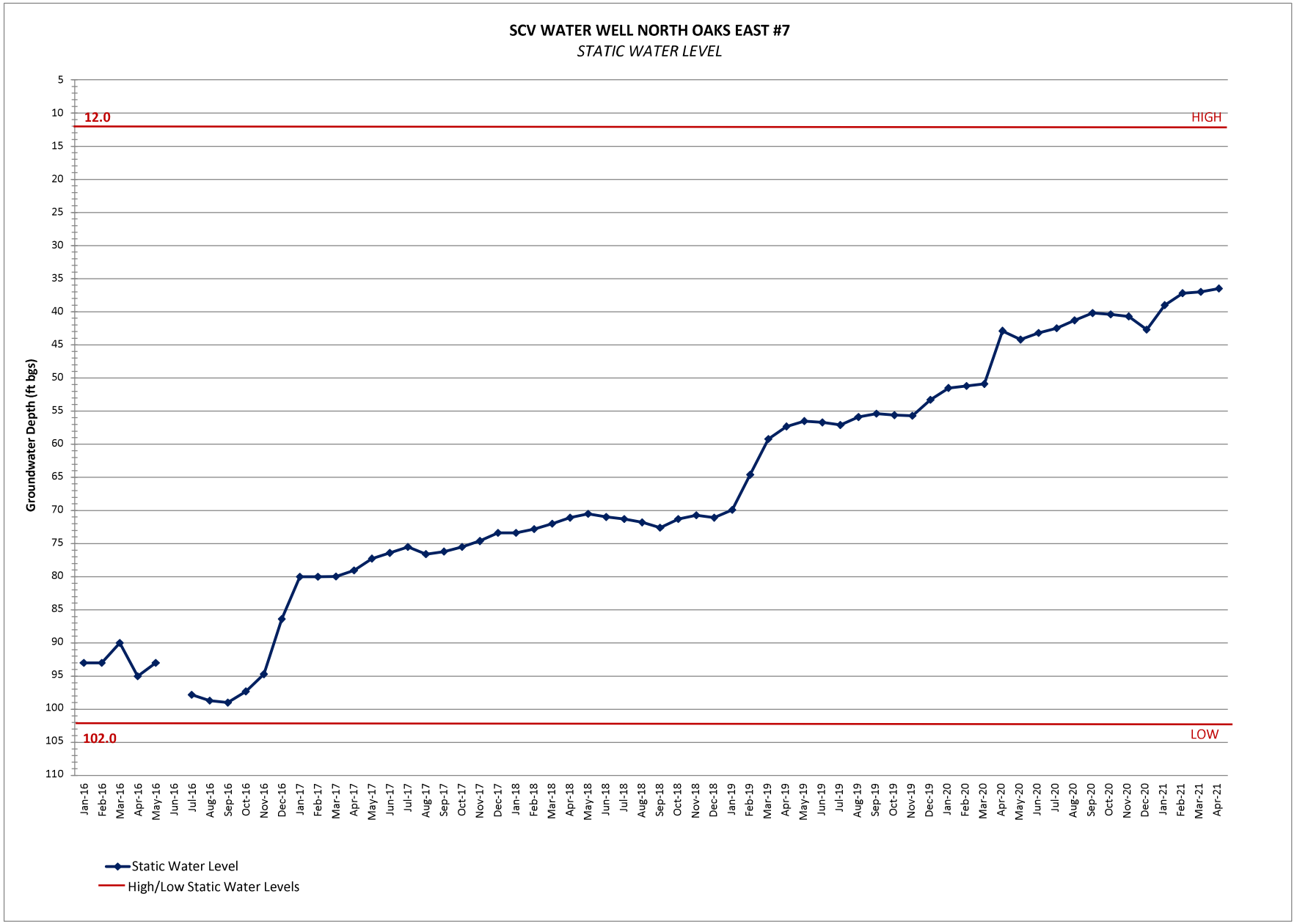
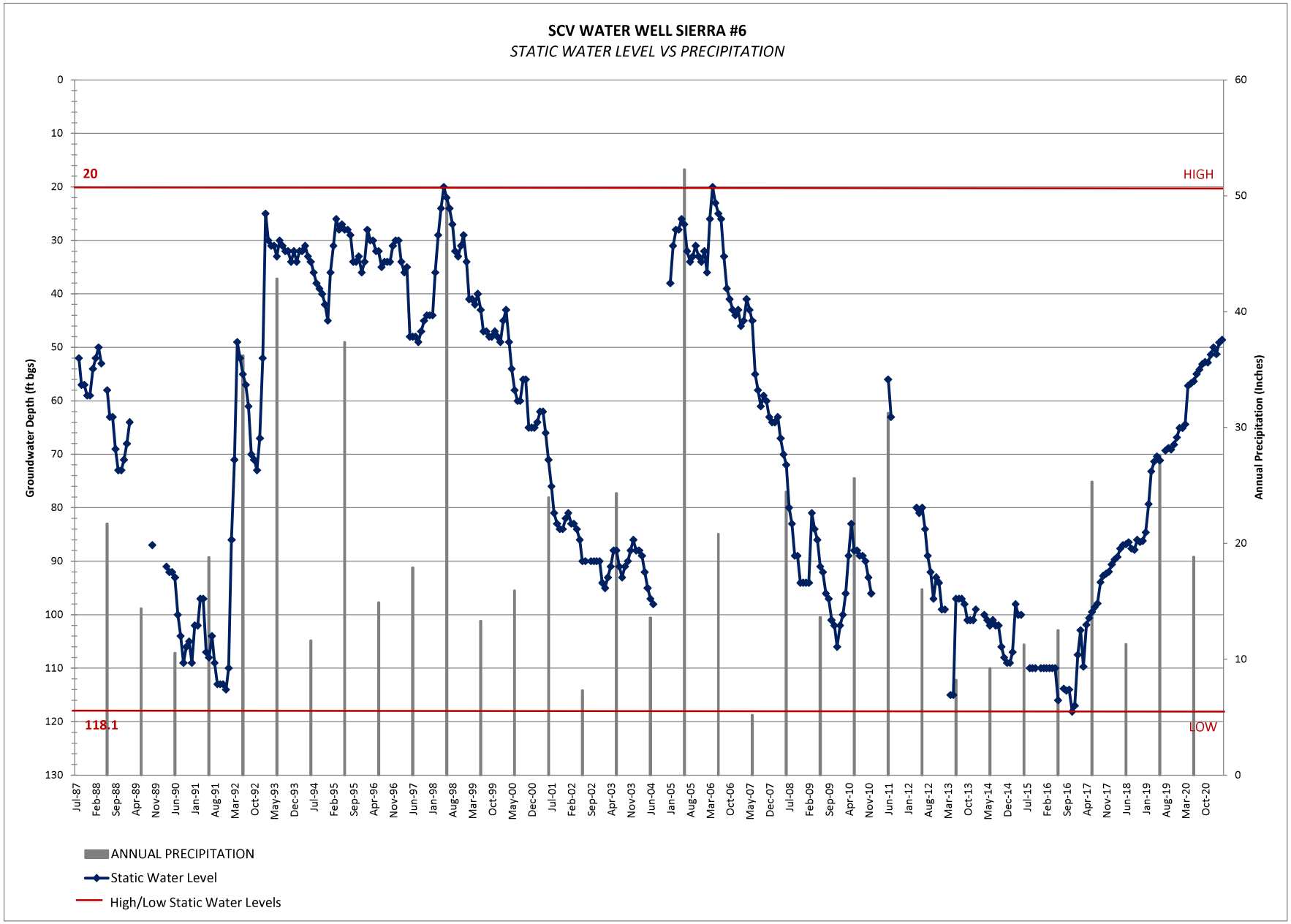
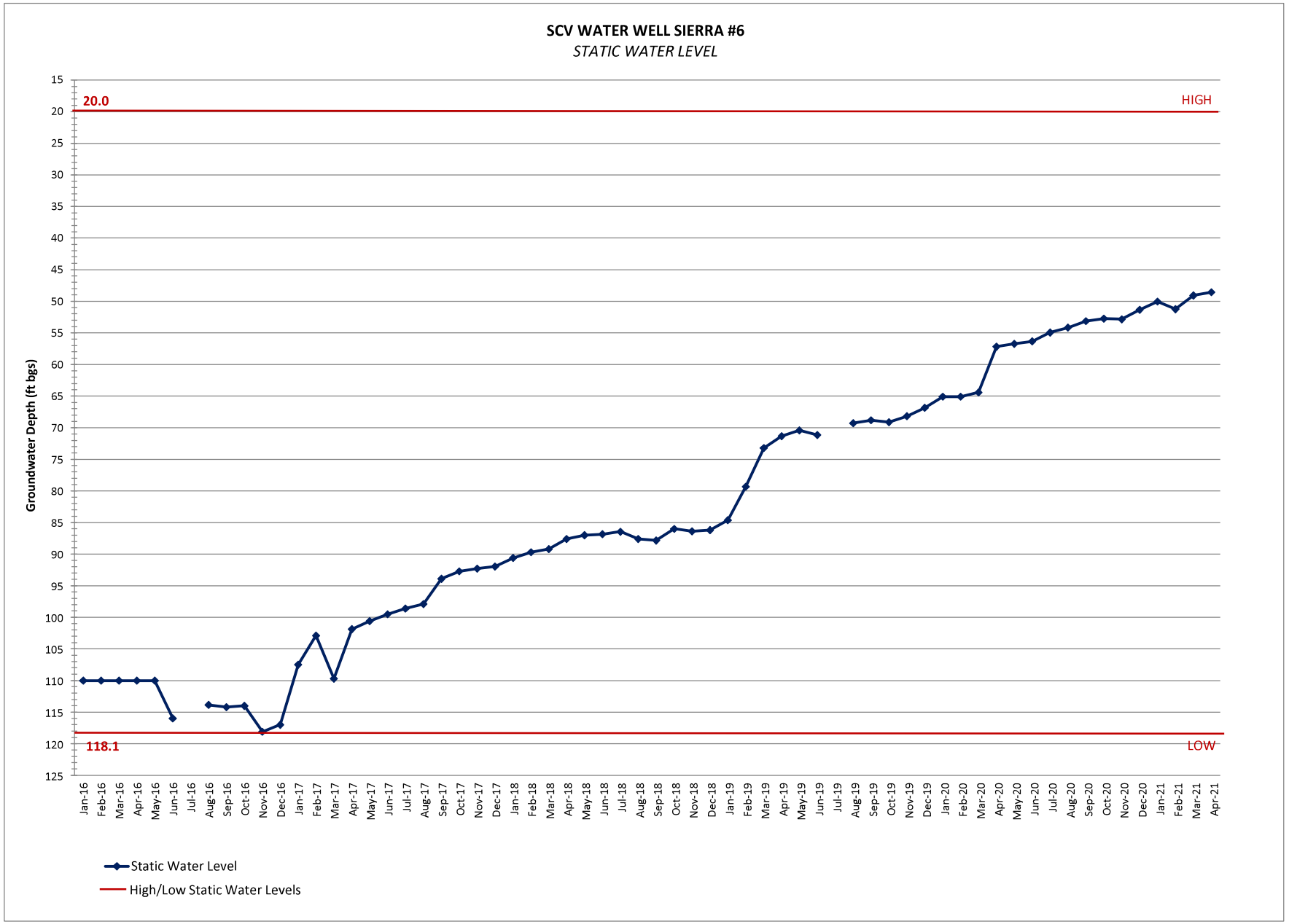
Jun-11
Jan-12
Aug-12
Mar-13
Oct-13
May-14
Dec-14
Jul-15
Feb-16
Sep-16
Apr-17
Nov-17
Jun-18
Jan-19
Aug-19
Mar-20
Oct-20
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels

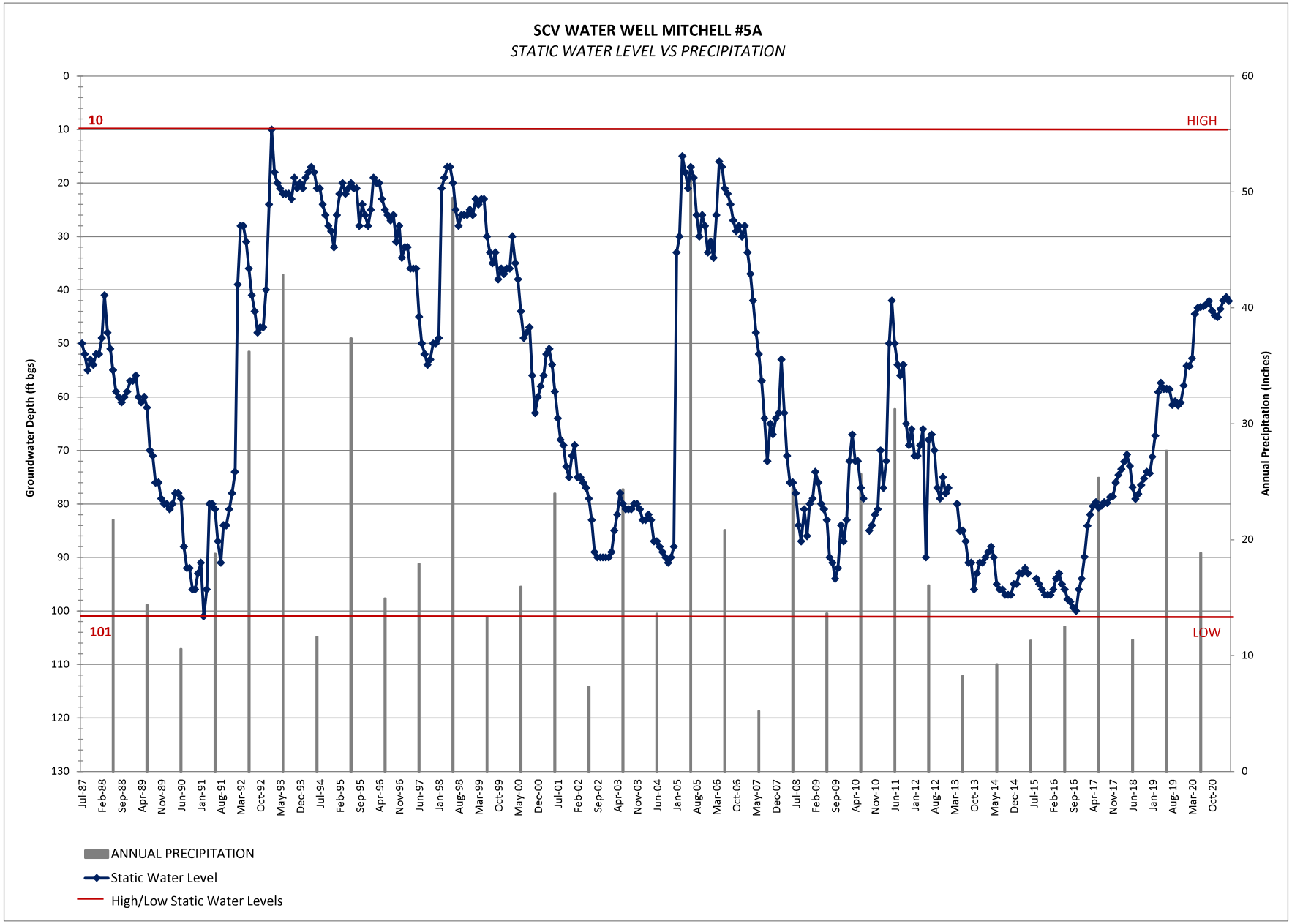

SCV WATER WELL NORTH OAKS WEST #9
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
8.0
HIGH
100.0
LOW
Static Water Level
High/Low Static Water Levels

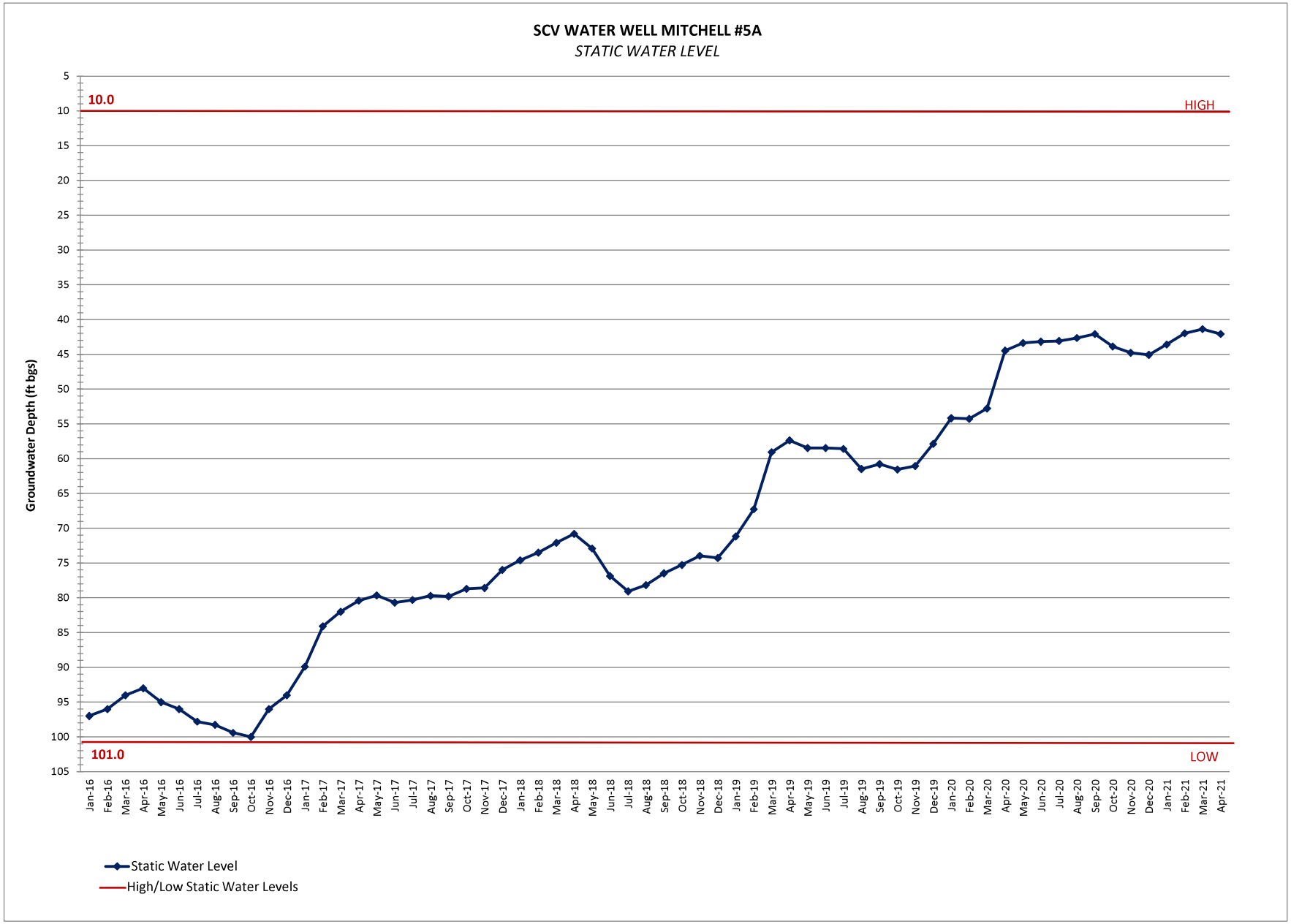

SCV WATER WELL NORTH OAKS EAST #7
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
12.0
HIGH
102.0
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels

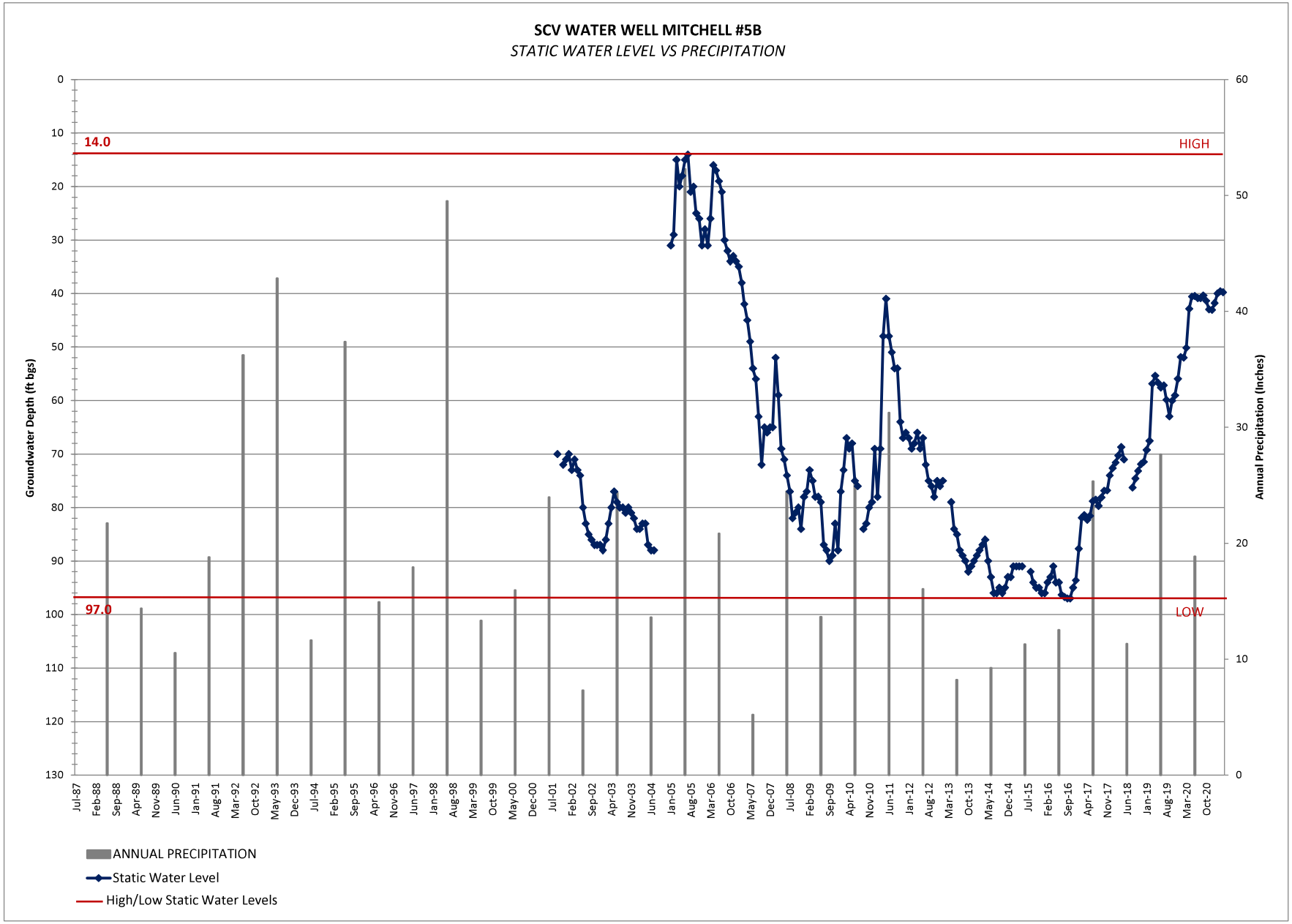

SCV WATER WELL NORTH OAKS EAST #7
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
12.0
HIGH
102.0
LOW
Static Water Level
High/Low Static Water Levels

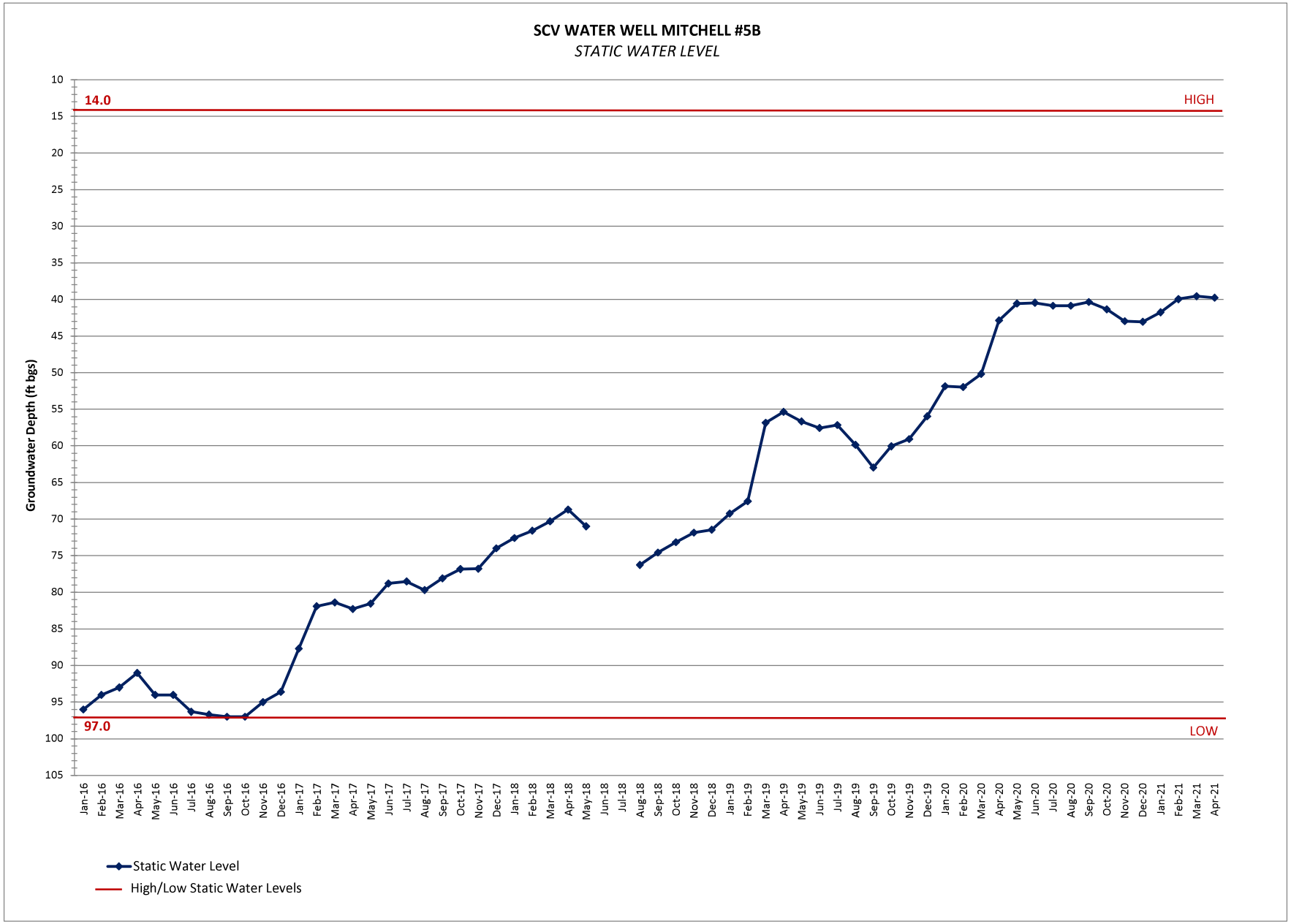

SCV WATER WELL SIERRA #6
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
20
HIGH
118.1
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels

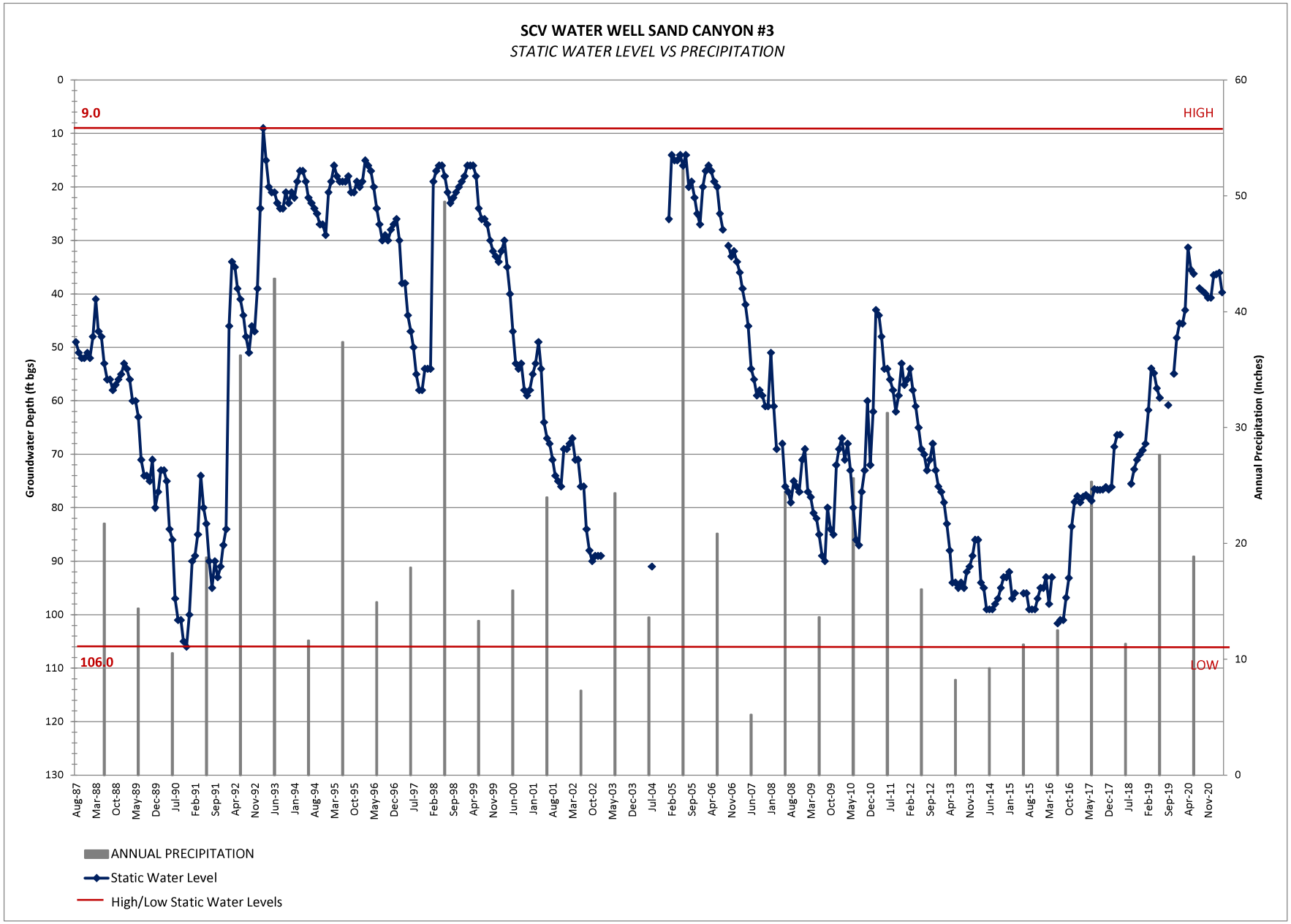

SCV WATER WELL SIERRA #6
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
20.0
HIGH
118.1
LOW
Static Water Level
High/Low Static Water Levels

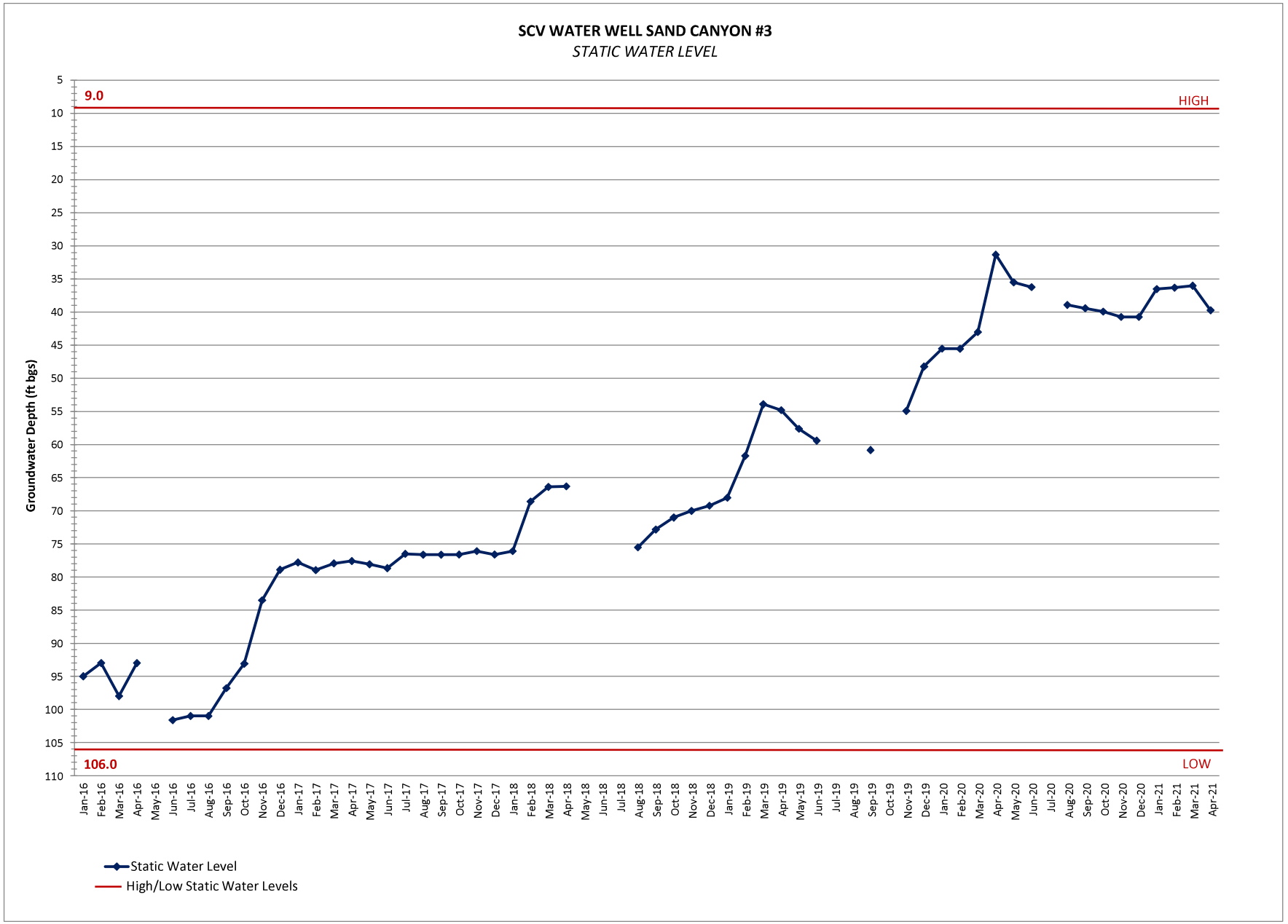

SCV WATER WELL MITCHELL #5A
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
10
HIGH
101
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels

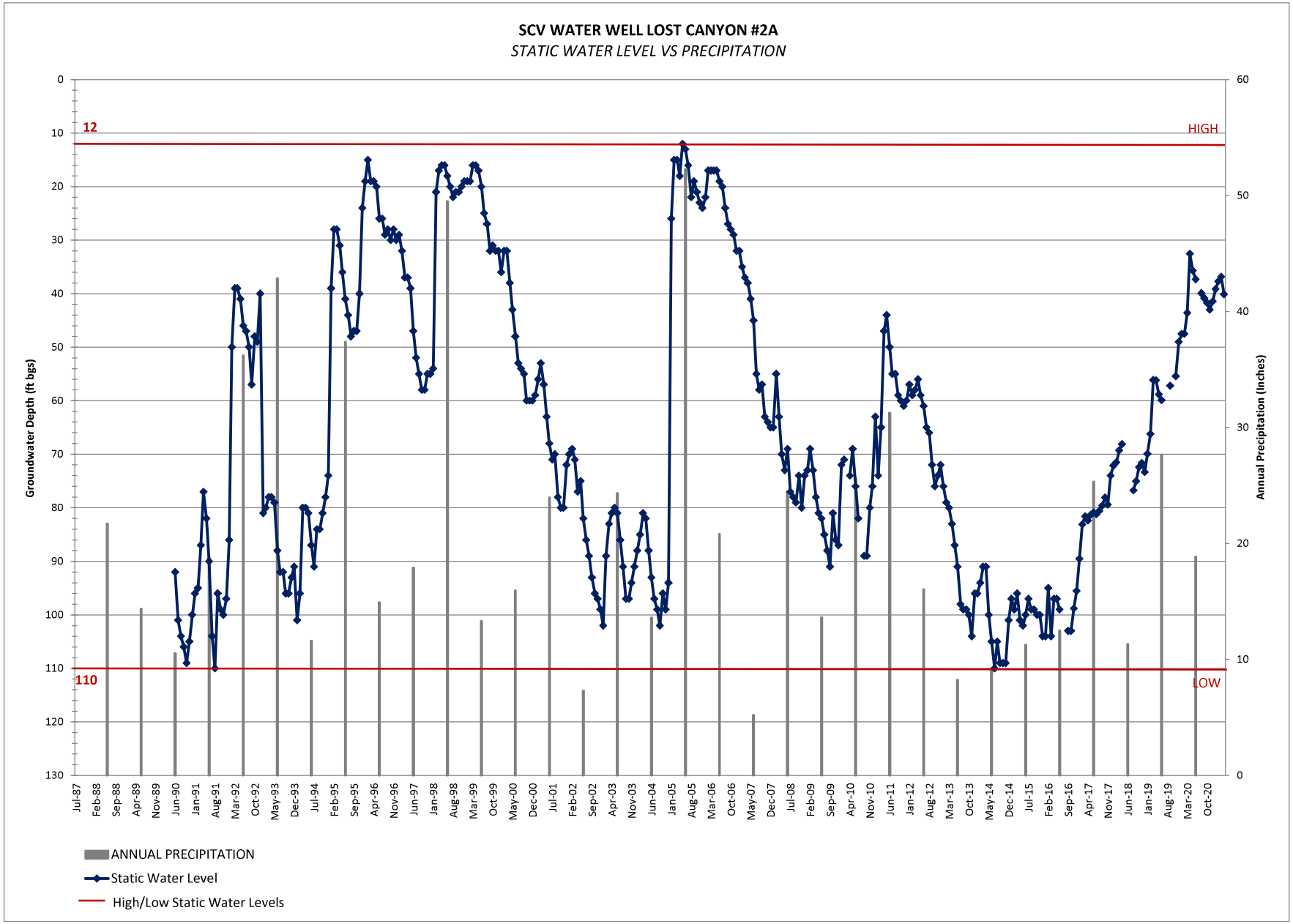

SCV WATER WELL MITCHELL #5A
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
10.0
HIGH
101.0
LOW
Static Water Level
High/Low Static Water Levels


SCV WATER WELL MITCHELL #5B
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
14.0
HIGH
97.0
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL MITCHELL #5B
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
14.0
HIGH
97.0
LOW
Static Water Level
High/Low Static Water Levels


SCV WATER WELL SAND CANYON #3
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
9.0
HIGH
106.0
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL SAND CANYON #3
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
9.0
HIGH
106.0
LOW
Static Water Level
High/Low Static Water Levels


SCV WATER WELL LOST CANYON #2A
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
12
HIGH
110
LOW
0
10
20
30
40
50
60
70
80
90
100
110
120
130
0
10
20
30
40
50
60
Jul-87
Feb-88
Sep-88
Apr-89
Nov-89
Jun-90
Jan-91
Aug-91
Mar-92
Oct-92
May-93
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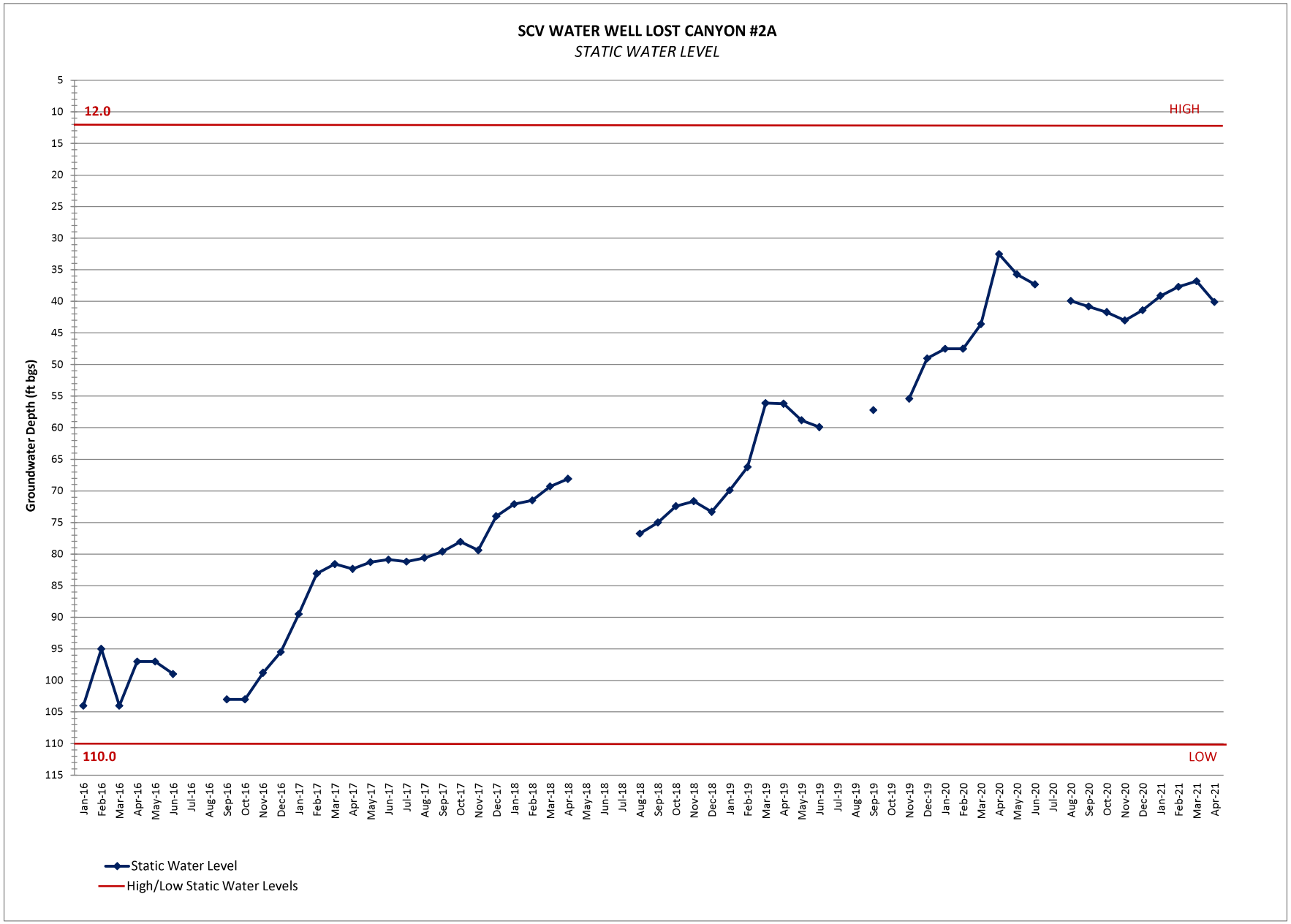
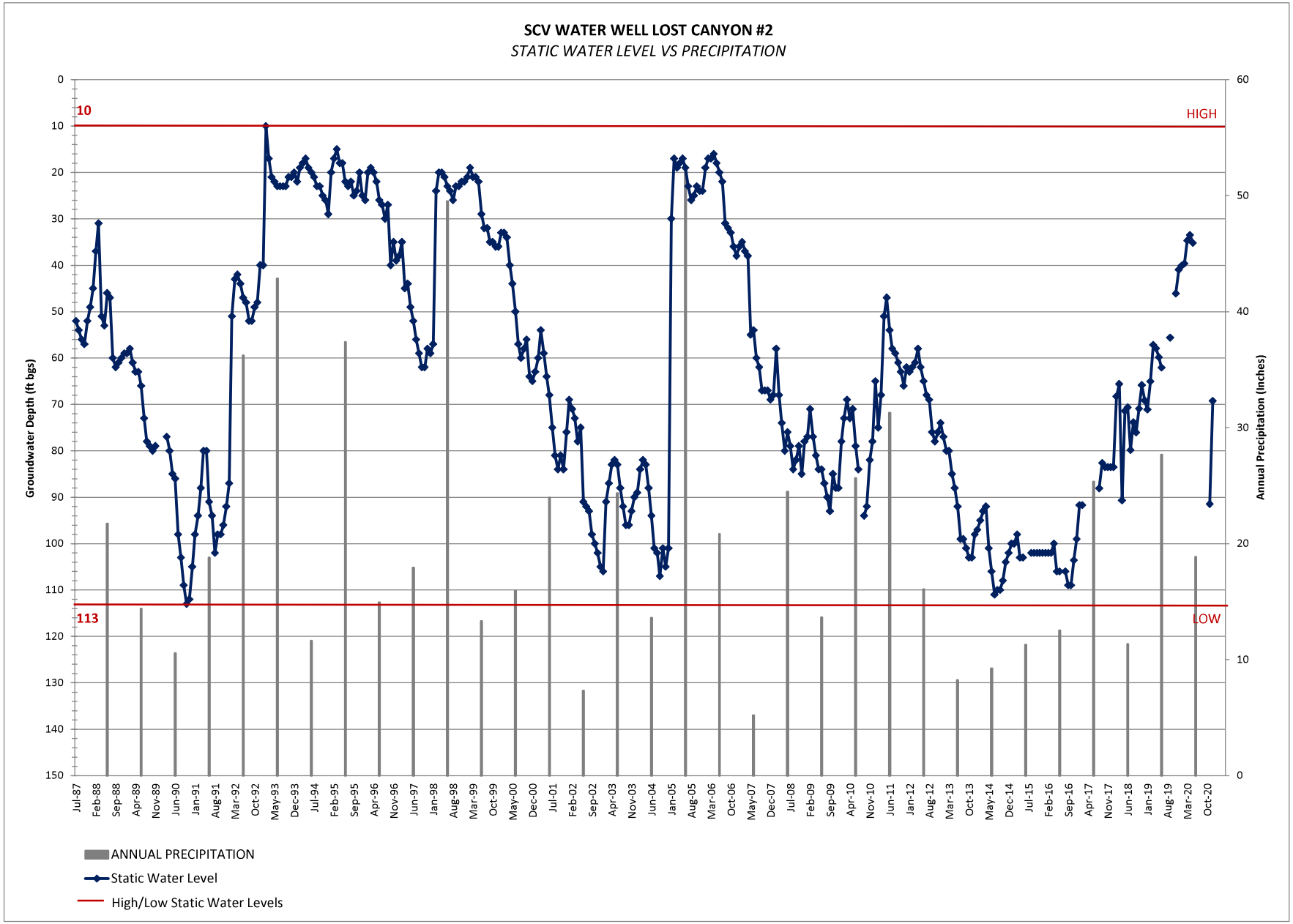
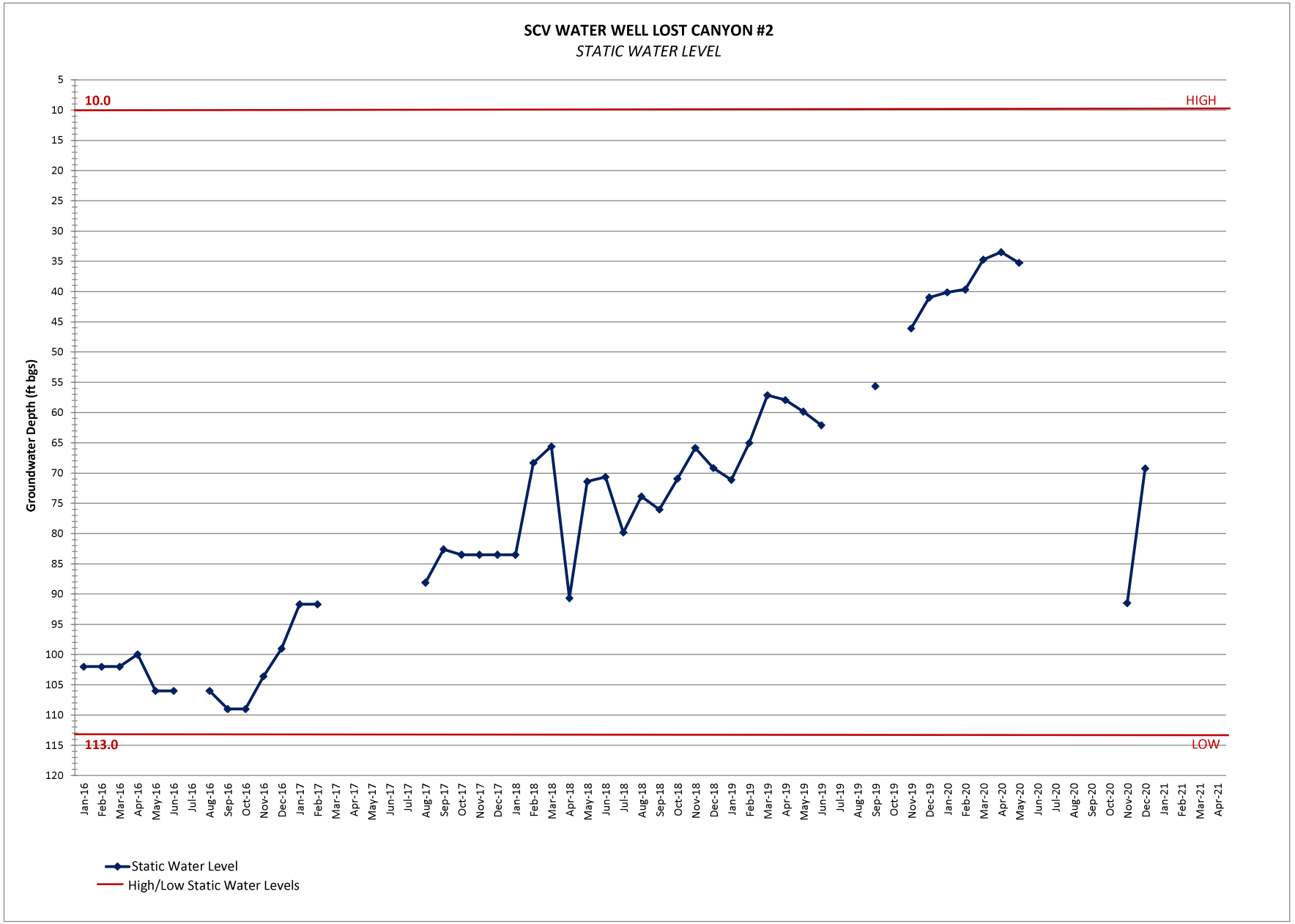
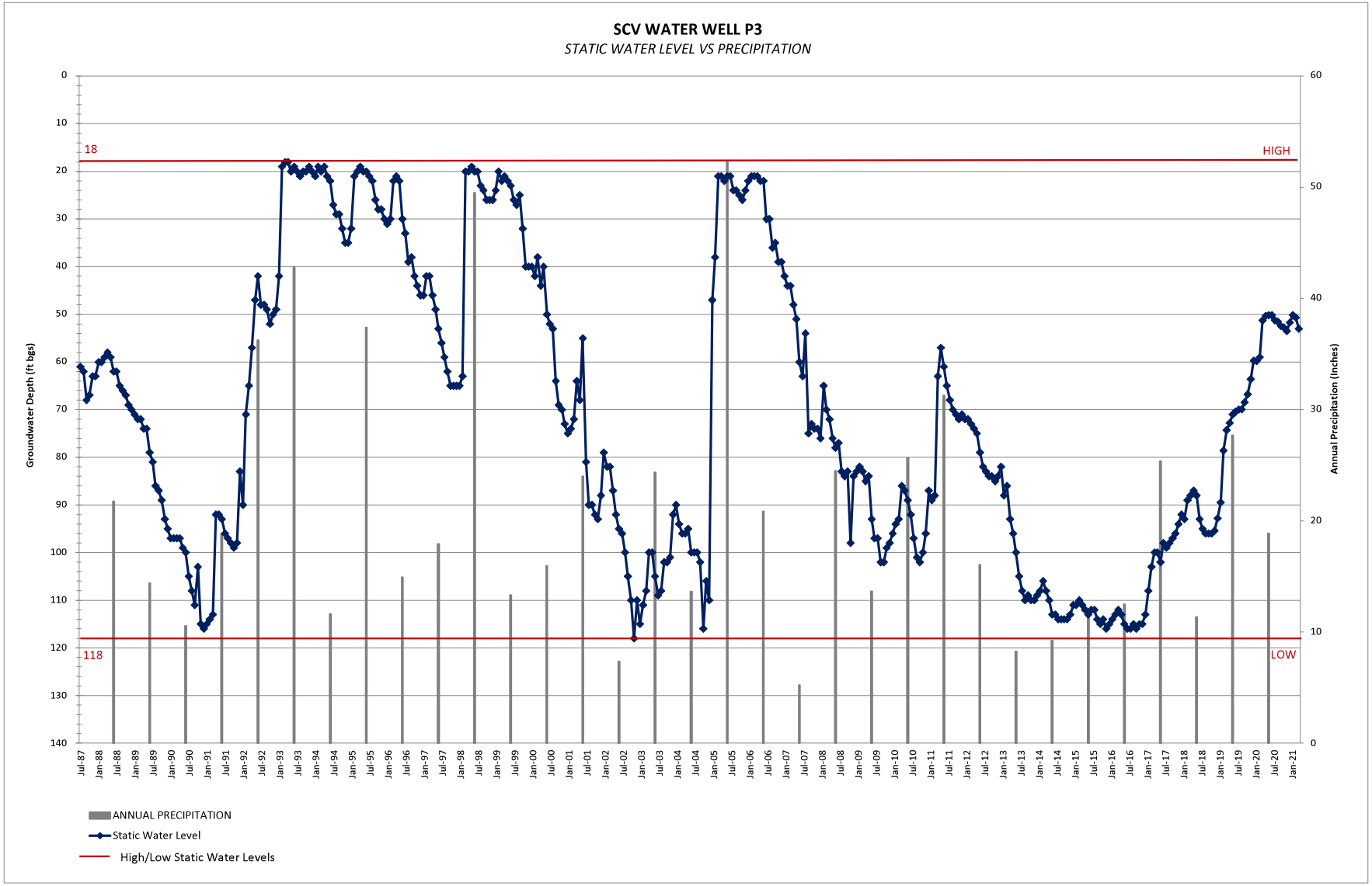
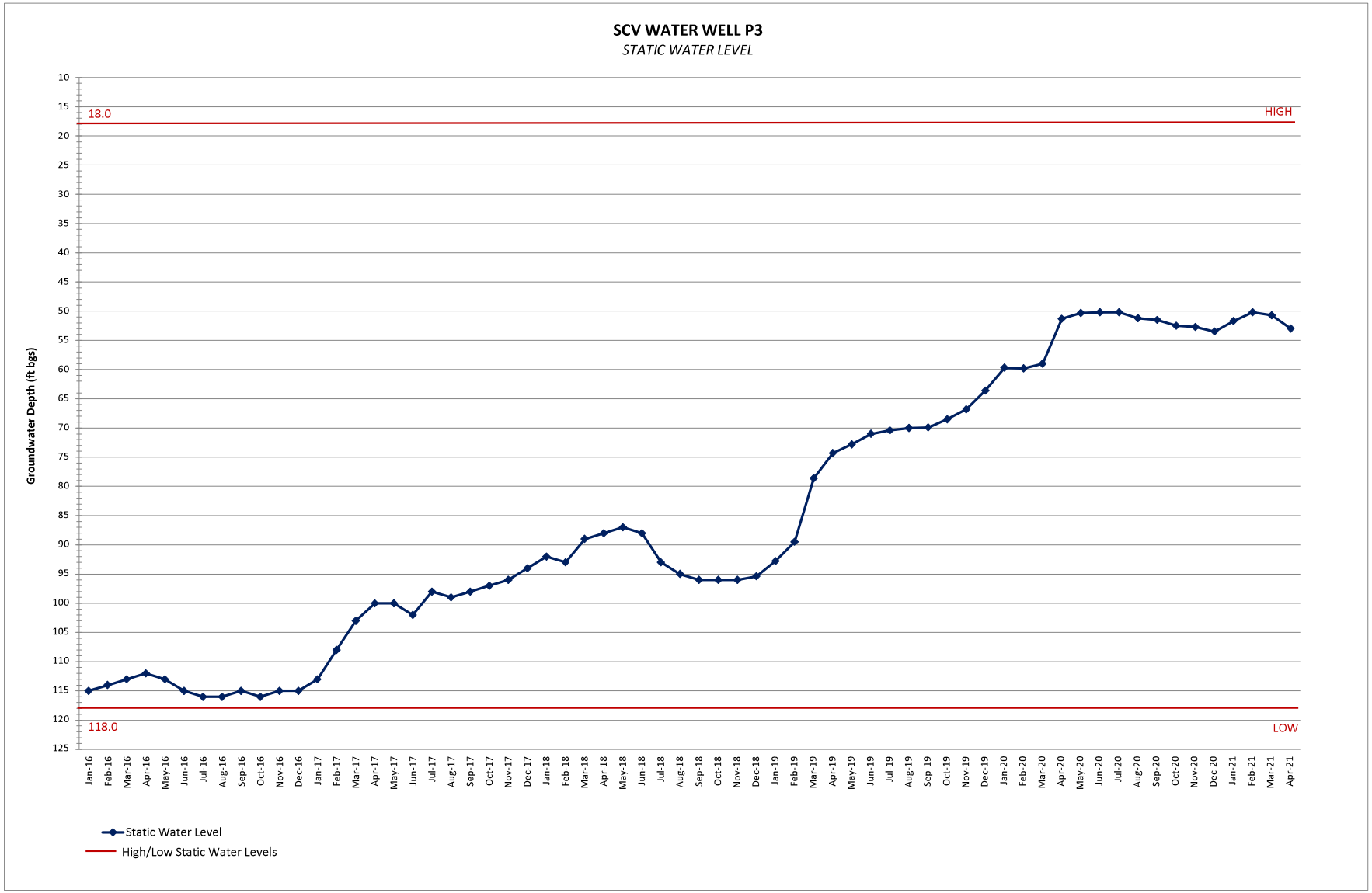
Aug-19
Mar-20
Oct-20
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels

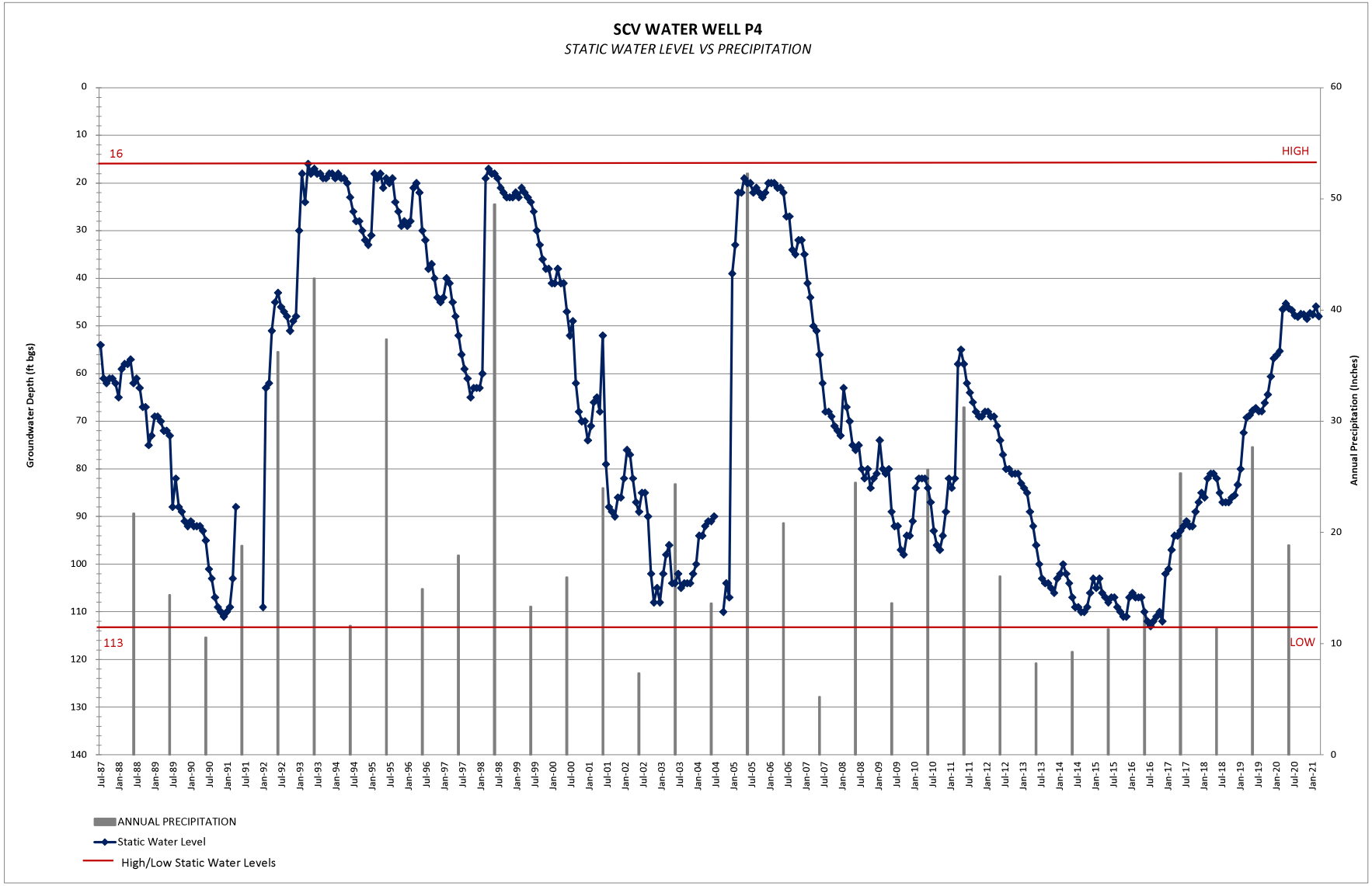

SCV WATER WELL LOST CANYON #2A
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
12.0
HIGH
110.0
LOW
Static Water Level
High/Low Static Water Levels

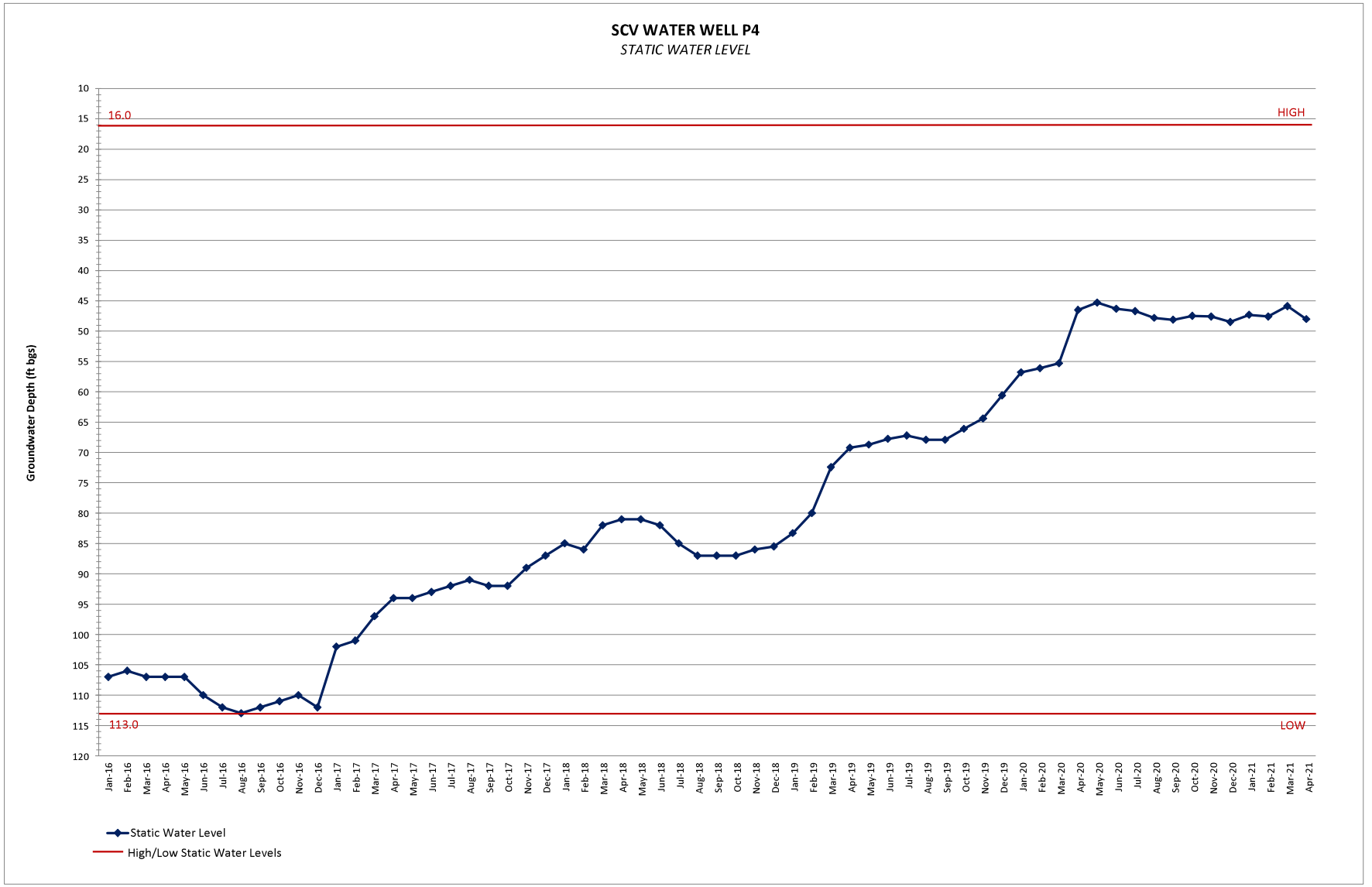

SCV WATER WELL LOST CANYON #2
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
10
HIGH
113
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels

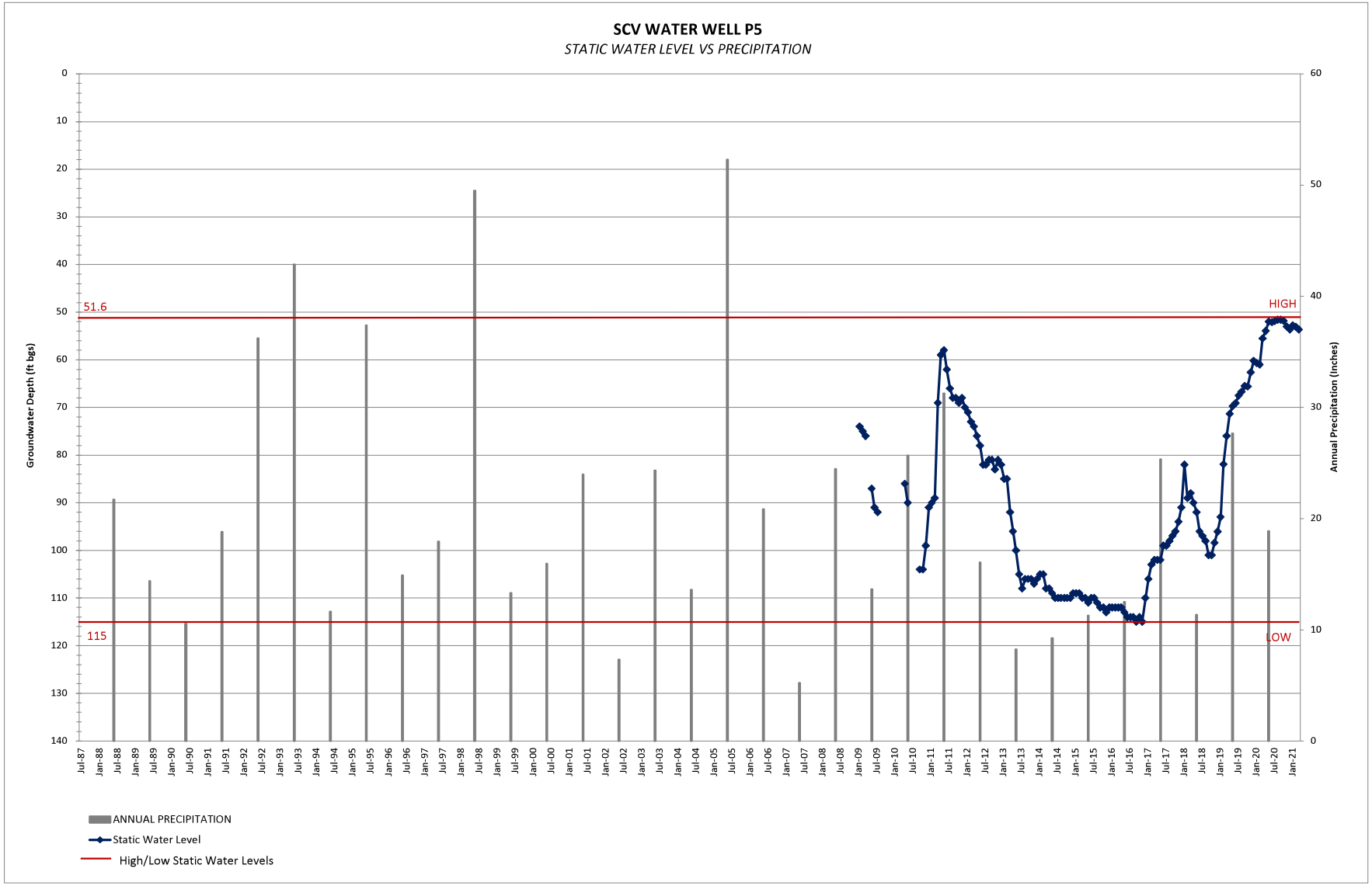

SCV WATER WELL LOST CANYON #2
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
10.0
HIGH
113.0
LOW
Static Water Level
High/Low Static Water Levels

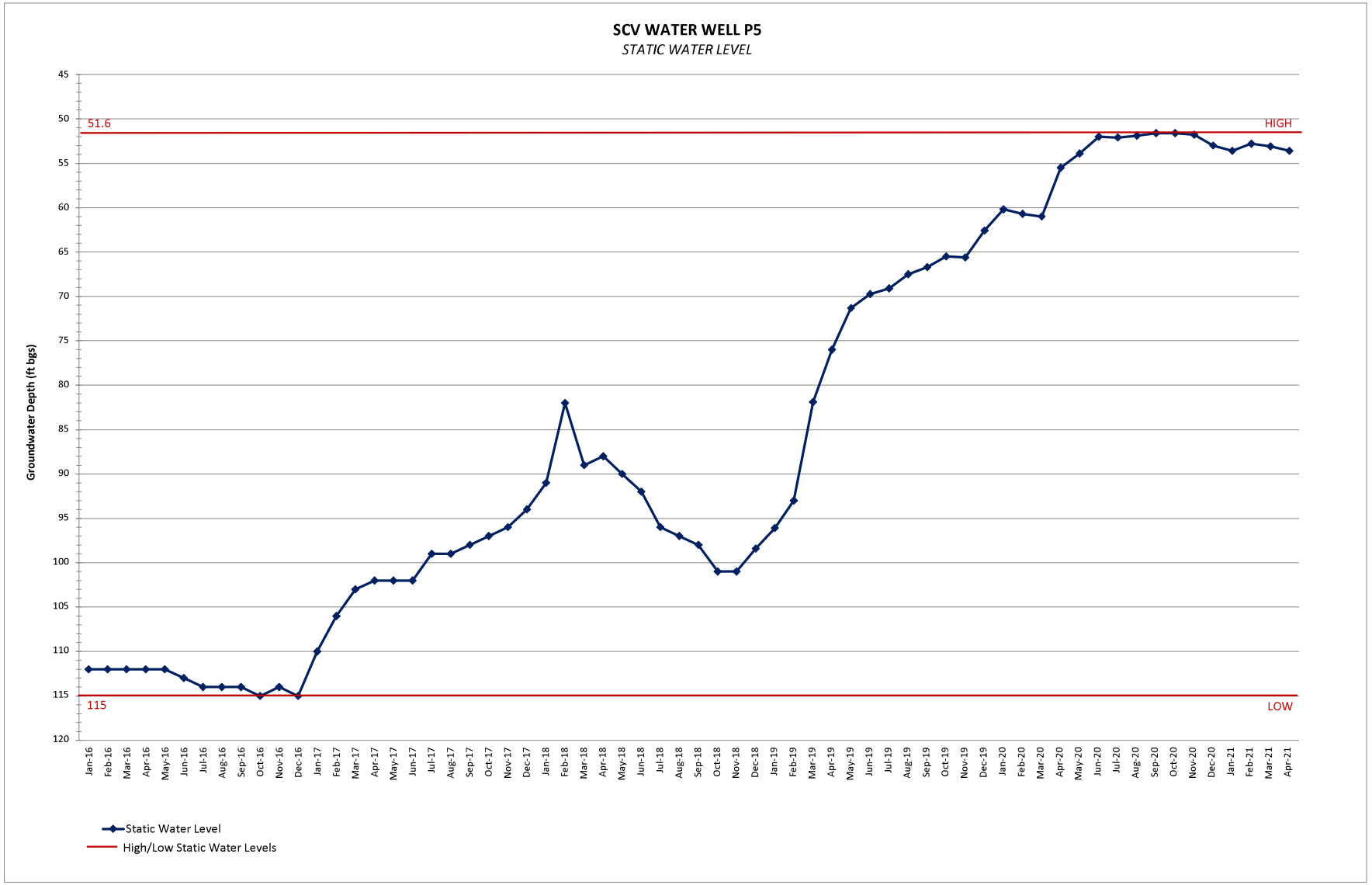

SCV WATER WELL P3
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (inches)
18
HIGH
118
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL P3
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
18.0
HIGH
118.0
LOW
Static Water Level
High/Low Static Water Levels


SCV WATER WELL P4
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
16
HIGH
113
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL P4
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
16.0
HIGH
113.0
LOW
Static Water Level
High/Low Static Water Levels


SCV WATER WELL P5
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
51.6
HIGH
115
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL P5
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
45
50
55
60
65
70
75
80
85
90
95
100
105
110
115
120
51.6
HIGH
115
LOW
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17
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Sep-17
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Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
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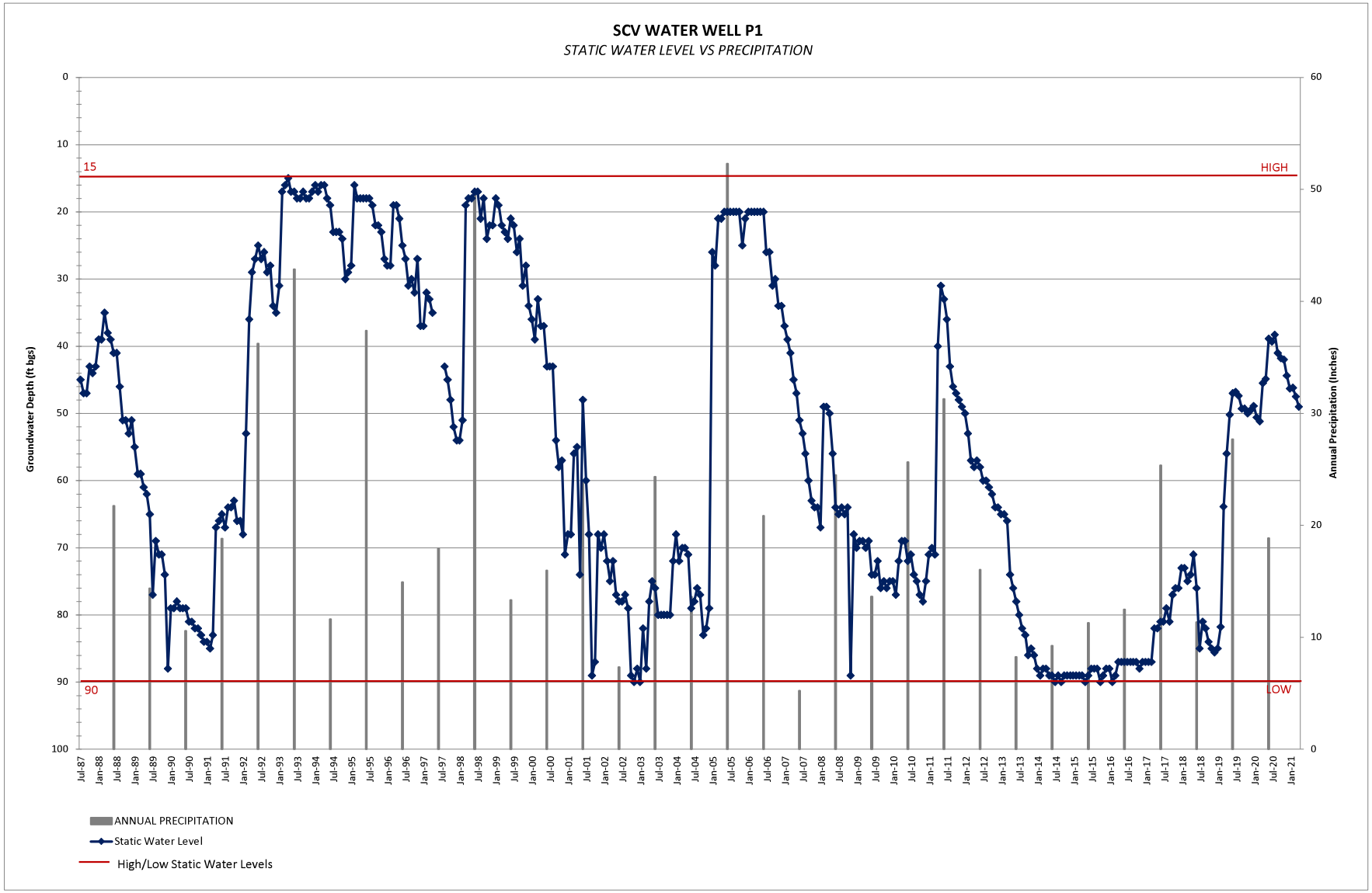
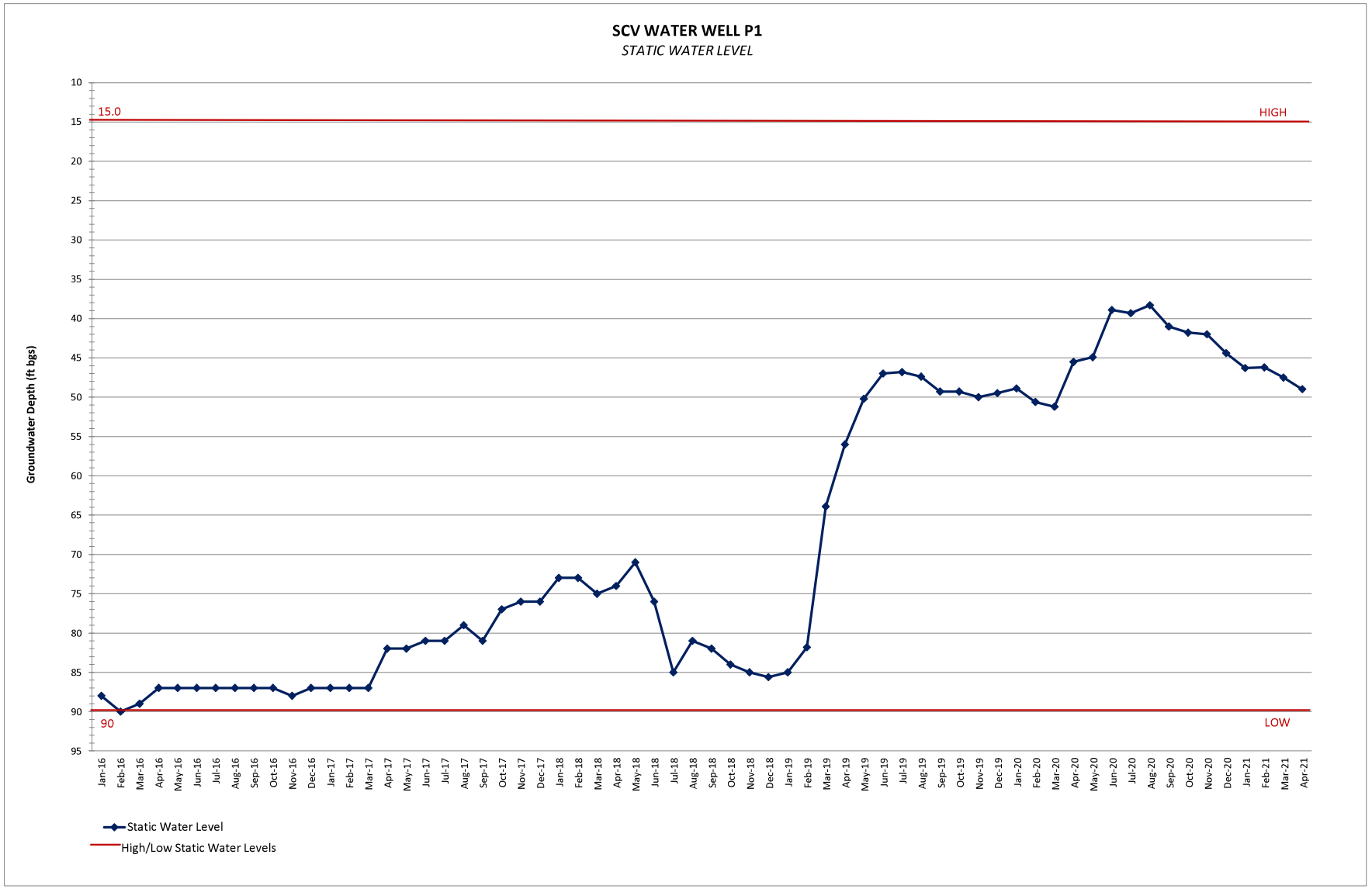
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
Static Water Level
High/Low Static Water Levels


SCV WATER WELL P1
STATIC WATER LEVEL VS PRECIPITATION
Groundwater Depth (ft bgs)
Annual Precipitation (Inches)
15
HIGH
90
LOW
ANNUAL PRECIPITATION
Static Water Level
High/Low Static Water Levels


SCV WATER WELL P1
STATIC WATER LEVEL
Groundwater Depth (ft bgs)
15.0
HIGH
90
LOW
Static Water Level
High/Low Static Water Levels

ITEM NO. 5

Santa Clarita Valley Water Agency
Capital Improvement Projects (CIP) Construction Status Report
As of May 15, 2021

Project	Contractor	Original Contract Amount	Change Orders to Date	% Change Orders	Current Contract Amount	Scheduled Completion	Estimated % of Work Completed	Status
West Ranch Recycled Water Main Extension (Phase 2D)	Cedro Construction Inc.	$3,112,332	$126,950.53	4.1%	$3,239,282.53	June 1, 2021	98%	Construction close-out is in progress.
Westridge Recycled Tank Upgrades Potable Make-up Above Ground Piping	W.A. Rasic Construction Company, Inc.	$475,810	$18,035.33	3.8%	$493,845.33	June 1, 2021	98%	Construction is in progress.
Commerce Center Drive Pipeline	FivePoint / Blois Construction, Inc.	$891,139.70	$0	0%	$891,139.70	June 30, 2021	70%	Construction is in progress.
Vista Canyon Recycled Water Main Extension (Phase 2B)	Ferreira Construction Co, Inc.	$2,752,982	($168,872)	(6.1%)	$2,584,110	July 22, 2021	60%	Construction is in progress.
Magic Mountain Pipeline Phase 4	FivePoint / Toro Enterprises	$3,084,725	$307,520.07	9.97%	$3,392,245.07	July 31, 2021	90%	Construction is in progress.
Magic Mountain Pipeline Phase 5	FivePoint / Toro Enterprises	$3,269,978.85	$0	0%	$3,269,978.85	July 31, 2021	90%	Construction is in progress.
Magic Mountain Pipeline Phase 6A	FivePoint / Toro Enterprises	$7,168,844.85	$0	0%	$7,168,844.85	October 31, 2021	25%	Construction is in progress.

Project	Contractor	Original Contract Amount	Change Orders to Date	% Change Orders	Current Contract Amount	Scheduled Completion	Estimated % of Work Completed	Status
Vista Canyon (Phase 2B) Recycled Water Tanks	Pacific Tank and Construction, Inc.	$3,906,870	$0	$0	$3,906,870	November 19, 2021	5%	Construction is in progress.
Magic Mountain Pipeline Phase 6B	FivePoint / Leatherwood Construction	$4,568,687.07	$0	0%	$4,568,687.07	December 31, 2021	20%	Construction is in progress.
Valley Center Well PFAS Groundwater Treatment Improvements Material Purchase	Evoqua Water Technologies, LLC.	$512,802	$0	0%	$512,802	February 1, 2022	20%	Material fabrication is in progress.
Valley Center Well PFAS Groundwater Treatment Improvements Site Construction	GSE Construction Company, Inc.	$2,996,800	$0	0%	$2,996,800	February 1, 2022	10%	Construction is in progress.
Replacement (Saugus 3 & 4) Wells	Best Drilling & Pump, Inc.	$5,615,052	$0	0%	$5,615,052	TBD	5%	Construction activities are on hold.

ITEM NO. 6

Engineering and Operations Committee
Planning Calendar
FY 2020/21

	Item	PowerPoint Presentation (Y/N/Length)	Jul 1 Comm	Jul 7 Board	Aug 4 Board	Aug 6 Comm	Aug 18 Board	Sep 1 Board	Sep 3 Comm	Sep 15 Board	Oct 1 Comm	Oct 6 Board	Oct 20 Board	Nov 4 Board	Nov 5 Comm	Nov 17 Board	Dec 1 Board	Dec 3 Comm - CANCELLED	Jan 5 Board	Jan 7 Comm	Feb 2 Board	Feb 4 Comm	Feb 16 Board	Mar 2 Board	Mar 4 Comm	Mar 16 Board	Apr 1 Comm	Apr 6 Board	May 4 Board	May 6 Comm	Jun 1 Board	Jun 3 Comm	Jul 6 Board
1	Monthly Committee Planning Calendar	None	C			C			C		C				C					C		C			C		C			C		P	
2	CIP Construction Status Report	None	C			C			C		C				C					C		C			C		C			C		P	
3	Monthly Operations and Production Report	None	C			C			C		C				C					C		C			C		C			C		P	
4	Third Party Funded Agreements Quarterly Report	None				C									C							C								C			
5	Quarterly Safety Program Presentation	Yes 15 min				C									C							C								C			
6	Annual Safety Program Update (FY 19-20)	Yes 15 min						C																									
7	Recommend Approval of a Resolution Awarding a Construction Contract, a Purchase Order for Construction Management and Inspection Services, and a Purchase Order for Consultant Services for Replacement Wells Construction	Yes 10 min	C		C																												
8	Recommend Approval of a Resolution Awarding a Purchase Order for Design Services for the Replacement Wells On-Site Pipeline/Infrastructure	Yes 10 min	C		C																												
9	Recommend Approval of a Resolution Awarding a Construction Contract for the Recycled Water Tank Aboveground Piping Potable Make-Up Line Project	Yes 10 min	C		C																												
10	Recommend Approval of a Purchase Order for Final Design Services for Valley Center Well PFAS Groundwater Treatment	Yes 10 min	C		C																												
11	Recommend Approval of Purchase of Replacement Clarifier Media at Earl Schmidt Filtration Plant	Yes 10 min				C	C																										
12	Laboratory PFAS Analytical Equipment Purchase	None				C	C																										
13	Recommend Approval of a Purchase Order for Final Design Services for Recycled Water Tank at an Alternate Site for Recycled Water Vista Canyon (Phase 2B) Project	Yes 10 min				C	C																										
14	Recommend that the Board of Directors Reject all Bids Associated with the Santa Clarita Valley Water Agency Slurry Seal and Asphalt Installation Project for the Rio Vista Treatment Plant Location	None							C	C																							
15	Recommend Approval of the Installation of Approximately 400 feet of 30" Diameter Pipeline Along Ridge Route Road	None							C	C																							
16	Recommend Approval of the installation of Approximately 1,500 feet of 14" Diameter Pipeline Along Decoro Drive	None							C	C																							
17	Recommend Approval of the Installation of Approximately 1,500 feet of 12" Diameter Pipeline Along The Old Road	None							C	C																							
18	Recommend Approval of the Installation of Approximately 130 feet of 18" Diameter Pipeline Along Honby Avenue	None							C	C																							
19	Recommend Approval of a Purchase Order for Final Design Services for Santa Clara and Honby Wells PFAS Groundwater Treatment Improvements	Yes 10 min							C	C																							

Engineering and Operations Committee
Planning Calendar
FY 2020/21

	Item	PowerPoint Presentation (Y/N/Length)	Jul 1 Comm	Jul 7 Board	Aug 4 Board	Aug 6 Comm	Aug 18 Board	Sep 1 Board	Sep 3 Comm	Sep 15 Board	Oct 1 Comm	Oct 6 Board	Oct 20 Board	Nov 4 Board	Nov 5 Comm	Nov 17 Board	Dec 1 Board	Dec 3 Comm - CANCELLED	Jan 5 Board	Jan 7 Comm	Feb 2 Board	Feb 4 Comm	Feb 16 Board	Mar 2 Board	Mar 4 Comm	Mar 16 Board	Apr 1 Comm	Apr 6 Board	May 4 Board	May 6 Comm	Jun 1 Board	Jun 3 Comm	Jul 6 Board
20	Recommend Approval of the General Manager to execute construction change orders up to seven percent (7%) of the original construction contract for the West Ranch Recycled Water Main Extension (Phase 2D)	Yes 10 min							C	C																							
21	Recommend Approval of Construction Contract Funding and a Purchase Order for Inspection Services for Replacement Wells Commerce Center Drive Pipeline	Yes 10 min										C																					
22	Recommend Approval of a Resolution Awarding a Material Purchase Contract for Valley Center Well	Yes 10 min									C		C																				
23	Recommend Approval of a Resolution Awarding a Construction Contract to GSE Construction Company, Inc., for the Rio Vista Water Treatment Plant Chlorine Scrubber Replacement Project	Yes 10 min													C	C																	
24	Recommend Approval of a Resolution Awarding a Contract for Newhall Tank No. 2 Interior Recoat and Repair	Yes 10 min													C		C																
25	Approve the General Manager to execute a construction change order to the original construction contract for the N Wells PFAS Groundwater Treatment and Well Q2 Perchlorate Removal Facility Project	Yes 10 Min																	C														
26	Recommend Approval of a Purchase Order for Final Design Services for the new Deane Zone Tank, Disinfection Facility, Pump Station and Cost Sharing Agreement at Skyline Ranch	Yes 10 Min																		C	C												
27	Recommend Approval of the Interconnection between the NWD and SCWD systems and the VWD and SCWD systems in the area referred to as West Newhall	Yes 10 Min																				C	C										
28	Recommend Approval of a Resolution Adopting the Final Supplemental Initial Study- Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program Under the California Environmental Quality Act for the Vista Canyon Recycled Water (Phase 2B) Project	Yes 10 Min																				C		C										
29	Vista Canyon (Phase 2B) Recycled Water Tank Site: Authorize the General Manager to (1) Execute Agreement to Purchase Property (A portion of Lot 90 of Tract 52833, APN 2841-016-071) for the Phase 2B Recycled Water Tank Location for up to $65,000, and (2) Execute Agreement to Transfer Property (A portion of Lot 94 of Tract 52833, APN 2841-080-901) to the City of Santa Clarita.	Yes 10 min																						C										
30	Recommend Approval of Resolution Awarding Construction Contract and Purchase Orders for Construction Management and Inspection Services and Engineering Services During Construction for Valley Center Well PFAS Groundwater Treatment Project	Yes 10 min																							C	C							

Engineering and Operations Committee
Planning Calendar
FY 2020/21

	Item	PowerPoint Presentation (Y/N/Length)	Jul 1 Comm	Jul 7 Board	Aug 4 Board	Aug 6 Comm	Aug 18 Board	Sep 1 Board	Sep 3 Comm	Sep 15 Board	Oct 1 Comm	Oct 6 Board	Oct 20 Board	Nov 4 Board	Nov 5 Comm	Nov 17 Board	Dec 1 Board	Dec 3 Comm - CANCELLED	Jan 5 Board	Jan 7 Comm	Feb 2 Board	Feb 4 Comm	Feb 16 Board	Mar 2 Board	Mar 4 Comm	Mar 16 Board	Apr 1 Comm	Apr 6 Board	May 4 Board	May 6 Comm	Jun 1 Board	Jun 3 Comm	Jul 6 Board
31	Recommend Approval of a Change Order to the Contract for Newhall Tank 2 Interior Recoat and Repair	None																							C	C							
32	Recommend Approval of (1) Resolution Approving Funding for the Construction Contract to Pacific Tank and Construction, Inc, (2) Work Authorization to Cannon Corporation for Construction Management and Inspection Services, (3) Work Authorization to Kennedy Jenks for Engineering Construction Support Services, and 4) Work Authorization to Geolabs Westlake Village for Geotechnical Observation and Testing Services for the Construction of the Vista Canyon (Phase 2B) Recycled Water Tank Project	Yes 10 min																							C	C							
33	Recommend Adopting a Resolution Authorizing SCV Water to Apply for Funding from the Drinking Water State Revolving Fund on Behalf of "Royce Lily of the Valley LLC" dba Lily of the Valley Mobile Village for Connection to the Proposed Pipeline in Bouquet Canyon Road	Yes 10 min																									C		C				
34	Review Proposed FY 2021/22 Major Capital Projects	Yes 15 min																									C						
35	Recommend Approval of a Resolution Adopting the Addendum to the Final Supplemental Initial Study-Mitigated Negative Declaration Under the California Environmental Quality Act for the South End Recycled Water Main Extension (Phase 2C) Project	Yes 10 min																												C	C		
36	Recommend Approval of a Resolution Adopting the Addendum to the previously certified 2005 Final Environmental Impact Report (EIR) for the Honby Pipeline Project	Yes 10 min																												C	C		
37	Recommend Approval of a Resolution to Adopt the Final Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program Under the California Environmental Quality Act and a Work Authorization to Civiltec Engineering, Inc. for Final Design Services for the new 1.7 MG Deane Tank Expansion at the Existing Deane Zone Tank Site	Yes 10 min																														P	P
38	Recommend Approval of the Procurement of a Generator for the Earl Schmidt Filtration Plant	None																														P	P
39	Recommend Approval of a Purchase Order for the Final Design of the T7, U4 and U6 PFAS Treatment System, Saugus 1 and Saugus 2 VOC Treatment System and Disinfection Facility at the Rio Vista Intake Pump Station.	Yes 10 min																															Moved to FY 2021/22
40	Recommend Approval of Resolution Authorizing SCV Water to Execute Water Service Agreement with State Water Resources Control Board and Los Angeles Residential Community	Yes 10 min																															Moved to FY 2021/22

Engineering and Operations Committee
Planning Calendar
FY 2020/21

	Item	PowerPoint Presentation (Y/N/Length)	Jul 1 Comm	Jul 7 Board	Aug 4 Board	Aug 6 Comm	Aug 18 Board	Sep 1 Board	Sep 3 Comm	Sep 15 Board	Oct 1 Comm	Oct 6 Board	Oct 20 Board	Nov 4 Board	Nov 5 Comm	Nov 17 Board	Dec 1 Board	Dec 3 Comm - CANCELLED	Jan 5 Board	Jan 7 Comm	Feb 2 Board	Feb 4 Comm	Feb 16 Board	Mar 2 Board	Mar 4 Comm	Mar 16 Board	Apr 1 Comm	Apr 6 Board	May 4 Board	May 6 Comm	Jun 1 Board	Jun 3 Comm	Jul 6 Board
41	Recommend Approval of Resolution Awarding Construction Contract for Pipeline to the Los Angeles Residential Community	Yes 10 min																														Moved to FY 2021/22
42	Recommend Approval of Construction of Pipeline in Sierra Highway from Dockweiler to Newhall Avenue	TBD																														Moved to FY 2021/22
43	Recommend Approval of Construction of a New Skyline Ranch (Deane Zone) Pump Station and Cost Sharing Agreement with Developer	TBD																														Moved to FY 2021/22
44	Recommend Approval of Construction of New Skyline Ranch 2.1 MG Tanks (Deane Zone) and Cost Sharing Agreement with Developer	TBD																														Moved to FY 2021/22
45	Recommend Approval of Construction of New Sand Canyon Plaza 1.5 MG Tank (Deane Zone) and Cost Sharing Agreement with Developer	TBD																														Moved to FY 2021/22
46	Recommend Approval of Construction of New Sand Canyon Plaza (Deane Zone) Pump Station and Cost Sharing Agreement with Developer	TBD																														Moved to FY 2021/22

Engineering and Operations Committee
Planning Calendar
FY 2021/22

	Item	PowerPoint Presentation (Y/N/Length)	Jul 1 Comm	Aug 3 Board	Aug 5 Comm	Sep 2 Comm	Sep 7 Board	Oct 5 Board	Oct 7 Comm	Nov 2 Board	Nov 4 Comm	Dec 7 Board	Dec 9 Comm	Jan 4 Board	Jan 6 Comm	Feb 1 Board	Feb 3 Comm	Mar 1 Board	Mar 3 Comm	Apr 5 Board	Apr 7 Comm	May 3 Board	May 12 Comm	Jun 2 Comm	Jun 7 Board	Jul 5 Board
1	Monthly Committee Planning Calendar	None	P		P	P			P		P		P		P		P		P		P		P	P		
2	CIP Construction Status Report	None	P		P	P			P		P		P		P		P		P		P		P	P		
3	Monthly Operations and Production Report	None	P		P	P			P		P		P		P		P		P		P		P	P		
4	Third Party Funded Agreements Quarterly Report	None			P						P						P						P			
5	Quarterly Safety Program Presentation	Yes 15 min			P						P						P						P			
6	Annual Safety Program Update (FY 20-21)	Yes 15 min					P																			
7	Recommend Approval of a Resolution Awarding a Purchase Order for Additional Final Design Services for Phase 2C South End Recycled Water Main Extension	Yes, 10 min	P	P																						
8	Recommend Approval of a Purchase Order for the Final Design of the T7, U4 and U6 PFAS Treatment System, Saugus 1 and Saugus 2 VOC Treatment System and Disinfection Facility at the Rio Vista Intake Pump Station.	Yes 10 min	P	P																						
9	Recommend Approval of Resolution Authorizing SCV Water to Execute Financing and Water Service Agreements for Los Angeles Residential Community and Lily of the Valley	Yes, 10 min			P		P																			
10	Recommend Approval of Resolution Awarding Construction Contract and Purchase Order for Construction Management and Inspection Services for Newhall Tanks 1 and 1A Stair Retrofit	Yes, 10 min				P		P																		
11	Recommend Approval of Resolution Awarding Construction Contract and Purchase Orders for Construction Management and Inspection Services and Engineering Services During Construction for ESFP Washwater Return and Sludge Systems Project	Yes, 10 min				P		P																		
12	Recommend Approval of Resolution Awarding Construction Contract for Pipeline to Los Angeles Residential Community	Yes, 10 min				P		P																		
13	Recommend Approval of Resolution Awarding Construction Contract and Purchase Orders for Construction Management and Inspection Services and Engineering Services During Construction for Santa Clara and Honby Wells PFAS Groundwater Treatment Improvements	Yes, 10 min							P	P																
14	Recommend Approval of a Resolution Awarding a Purchase Order for Final Design Services for Well 205 Groundwater Treatment Improvements	Yes, 10 min							P	P																
15	Recommend Approval of a Resolution Awarding Construction Contract to TBD for the Earl Schmidt Filtration Plant Tank No. 1 Improvements Project	Yes, 10 min							P	P																

Engineering and Operations Committee
Planning Calendar
FY 2021/22

	Item	PowerPoint Presentation (Y/N/Length)	Jul 1 Comm	Aug 3 Board	Aug 5 Comm	Sep 2 Comm	Sep 7 Board	Oct 5 Board	Oct 7 Comm	Nov 2 Board	Nov 4 Comm	Dec 7 Board	Dec 9 Comm	Jan 4 Board	Jan 6 Comm	Feb 1 Board	Feb 3 Comm	Mar 1 Board	Mar 3 Comm	Apr 5 Board	Apr 7 Comm	May 3 Board	May 12 Comm	Jun 2 Comm	Jun 7 Board	Jul 5 Board
16	Recommend Approval of Design of Pipeline in Sierra Highway from Dockweiler to Newhall Avenue	Yes, 10 min							P	P																
17	Recommend Approval of Construction of a New Skyline Ranch (Deane Zone) Pump Station and Cost Sharing Agreement with Developer	Yes, 10 min															P	P								
18	Recommend Approval of Construction of New Skyline Ranch 2.1 MG Tanks (Deane Zone) and Cost Sharing Agreement with Developer	Yes, 10 min															P	P								
19	Recommend Approval of Construction of New Sand Canyon Plaza (Deane Zone) Pump Station and Cost Sharing Agreement with Developer	Yes, 10 min															P	P								
20	Review Proposed FY 2021/22 Major Capital Projects	Yes 15 min																			P					
21	Recommend Approval of Construction of New Sand Canyon Plaza 1.5 MG Tank (Deane Zone) and Cost Sharing Agreement with Developer	Yes, 10 min																					P		P	

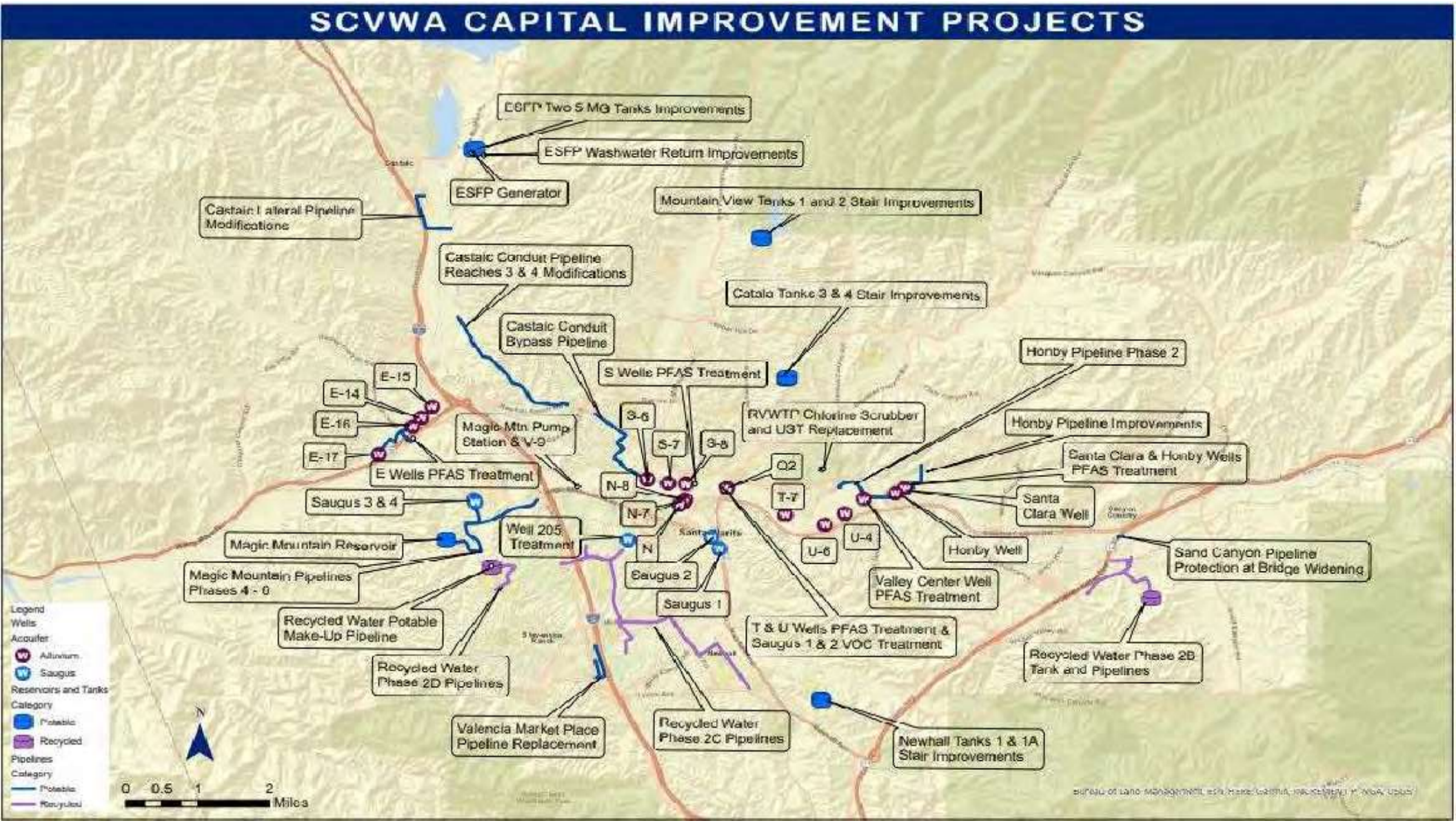
ITEM NO.
8

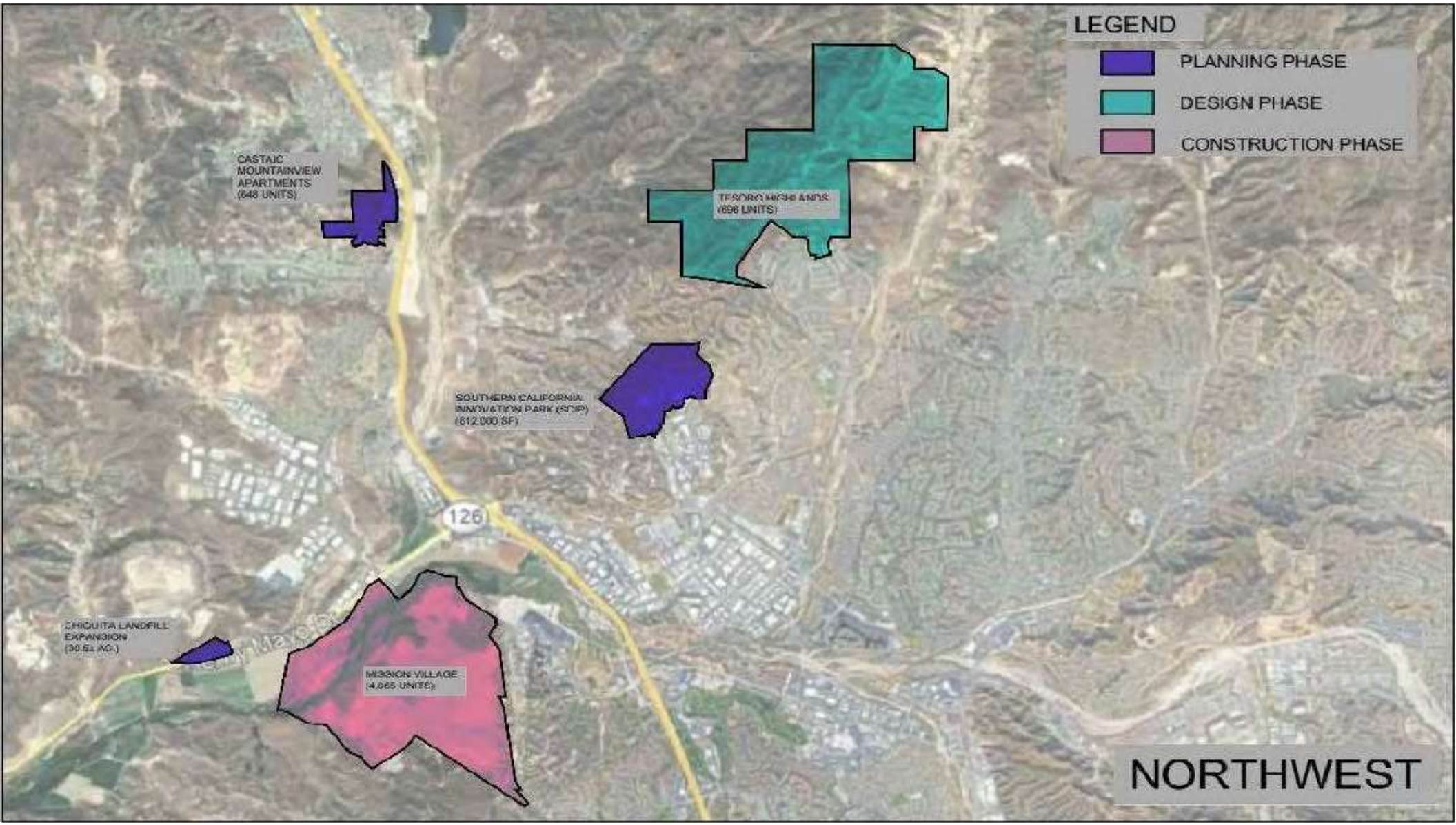
June 3, 2021

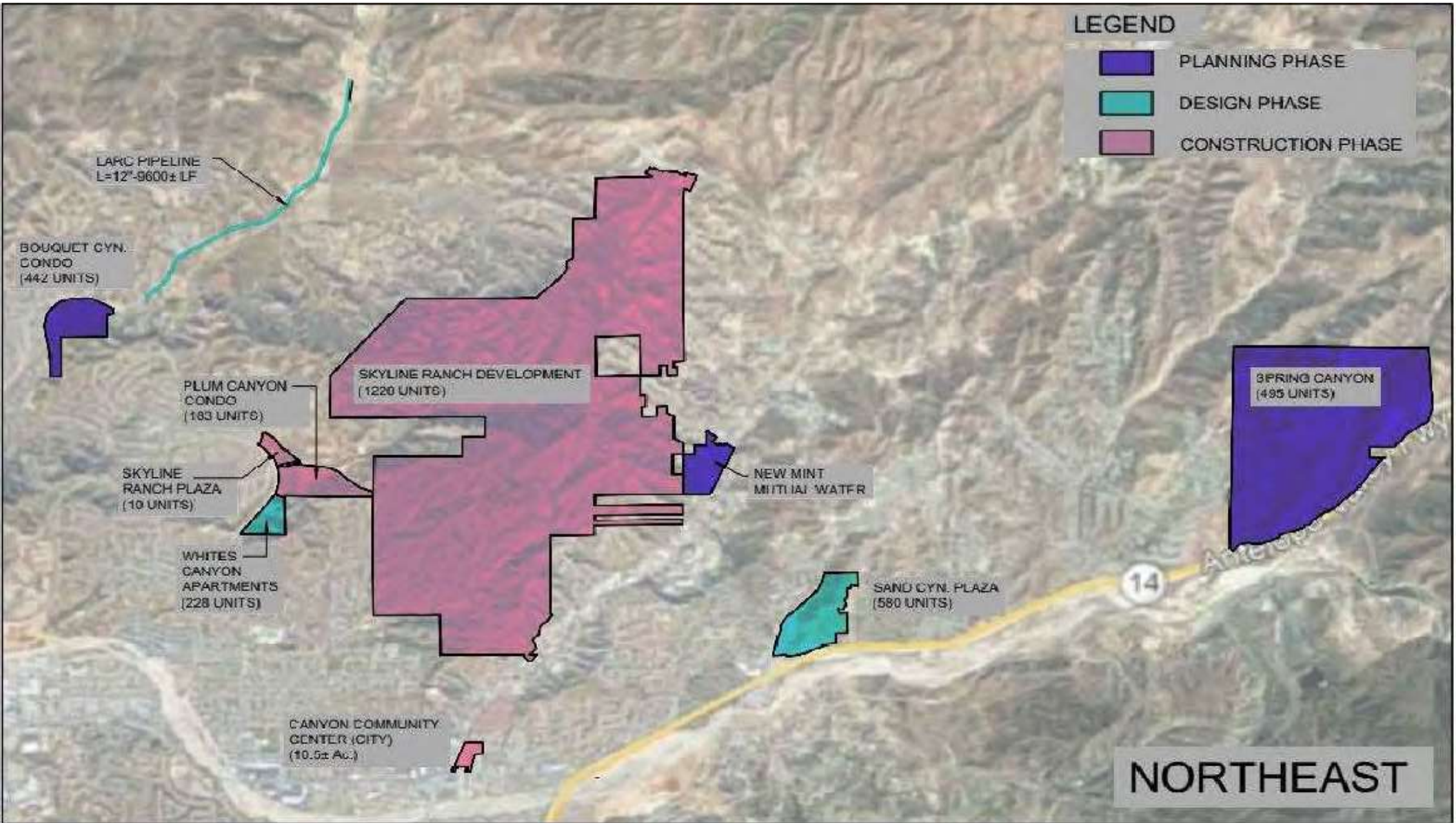
Santa Clarita Valley Water Agency

Engineering Services Section Update

SCVWA CAPITAL IMPROVEMENT PROJECTS




LEGEND
PLANNING PHASE
DESIGN PHASE
CONSTRUCTION PHASE
CASTAIC MOUNTAINVIEW APARTMENTS (648 UNITS)
(696 UNITS)
SOUTHERN CALIFORNIA (612,000 SF)
126
(4,065 UNITS)
NORTHWEST


LEGEND
PLANNING PHASE
DESIGN PHASE
CONSTRUCTION PHASE
LARC PIPELINE
L=12"-9600± LF
BOUQUET CYN.
CONDO
(442 UNITS)
PLUM CANYON
CONDO
(183 UNITS)
SKYLINE RANCH DEVELOPMENT
(1220 UNITS)
SKYLINE
RANCH PLAZA
(10 UNITS)
NEW MINT
MILITIAI WATER
WHITES
CANYON
APARTMENTS
(228 UNITS)
SAND CYN. PLAZA
(580 UNITS)
SPRING CANYON
(495 UNITS)
14
CANYON COMMUNITY
CENTER (CITY)
(10.5± Ac.)
NORTHEAST


LEGEND
PLANNING PHASE
DESIGN PHASE
CONSTRUCTION PHASE
AIDLIN
HILLS
(102 UNITS)
LYONS
CANYON
(517 UNITS)
WILEY CANYON
(561 UNITS)
ETERNAL VALLEY
CONVERSION
(61.1 AC.)
NEEDHAM RANCH
INDUSTRIAL
(99± AC.)
5
SOUTHWEST


VISTA CANYON &
METROLINK
STATION
(1,100 UNITS)
CROSSROADS AT
GOLDEN VALLEY
(710 UNITS)
METRO WALK
(408 UNITS)
IMC PROPERTIES
(23.5 AC.)
BLACKHALL STUDIOS
(1,922,764 SF)
DOCKWEILER EXTENSION
(CITY)
(5,070± LF)
DOCKWEILER
(93 UNITS)
LEGEND
PLANNING PHASE
DESIGN PHASE
CONSTRUCTION PHASE
SOUTHEAST

VISTA CANYON (PHASE 2B) RECYCLED WATER TANKS
SECTION OF OVER-EXCAVATION LOOKING NORTH

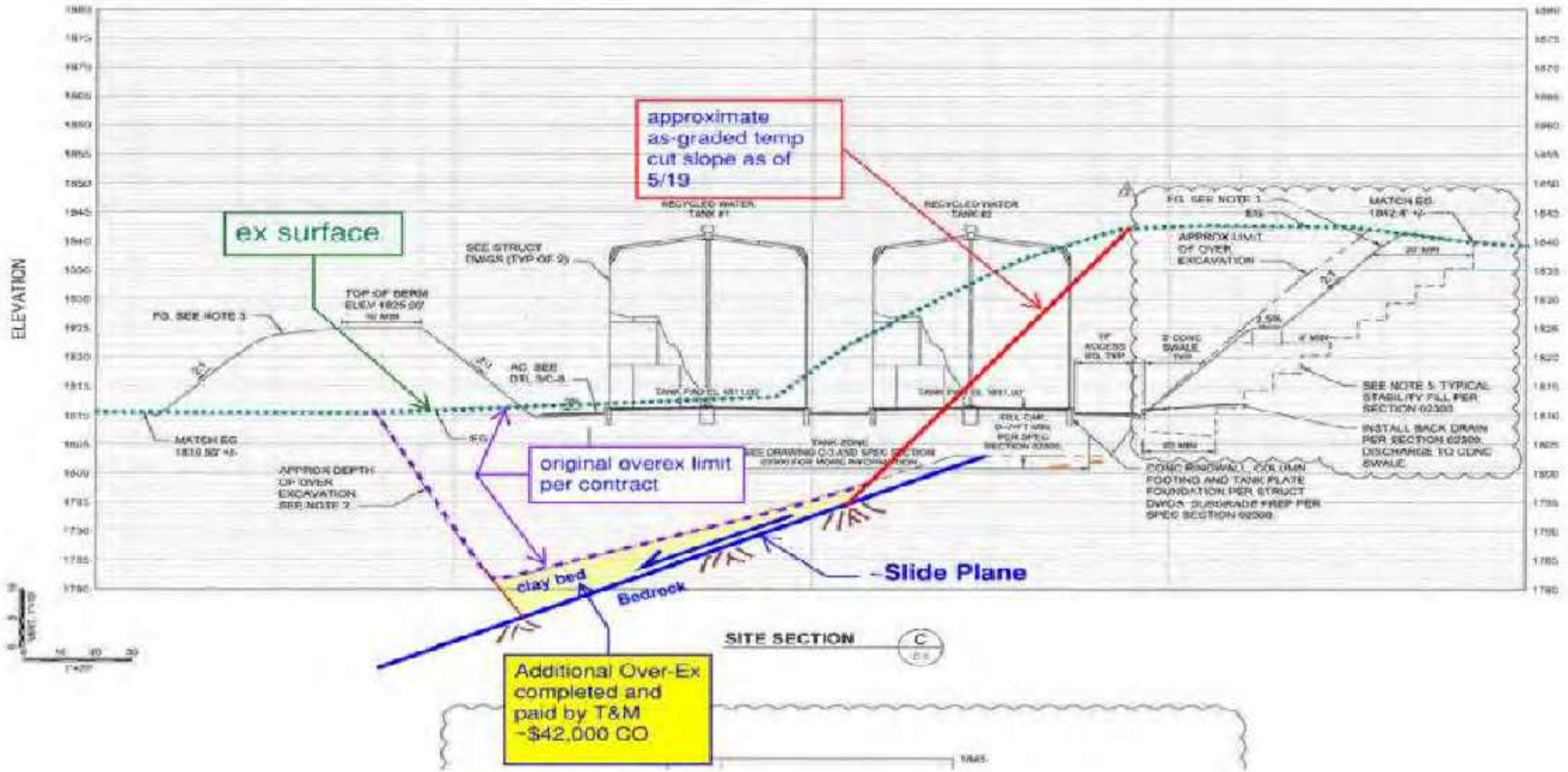


Photo of Over-excavation and Backfill on 5/14/21

VISTA CANYON (PHASE 2B) RECYCLED WATER TANK
CHANGE ORDER STATUS

Change Order Description		Estimated Amount	Cause	Cost Reduction Mitigation
Excess Earth Export	$	191,000.00	Actual export quantities higher than specified on plans	Temporary stockpiling of soil at original tank site
Additional Site Clearing	$	52,000.00	Actual Clear/Grub area higher than specified on plans	Reduction in unit price per area from unit bid price
9' Overexcavation of Clay layer	$	42,000.00	2nd landslide plane found under tank site	Work done on T&M basis with Agency CM onsite, full time, to monitor work
Total Change Orders to date:	**$**	**285,000.00**		
10% Change Order Amount* (As authorized by Board)	$	390,687.00		
Remaining Contingency Amount	***$***	***105,687.00***	3% remaining	
**Total Contract Amount*	*$*	*3,906,870.00*		

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