Appendix F

Preliminary Geotechnical Investigation

April 2024

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PRELIMINARY GEOTECHNICAL INVESTIGATION
PROPOSED JACUMBA FIRE STATION #43
APN: 660-150-18-00
JACUMBA HOT SPRINGS, CALIFORNIA

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1.0 INTRODUCTION AND SCOPE OF SERVICES

1.1 Introduction

This report presents the results of the geotechnical investigation performed by Universal Engineering Sciences (UES) and provides preliminary conclusions and recommendations for the proposed Jacumba Fire Station #43 located in Jacumba Hot Springs, California. The investigation was performed in general accordance with the terms of UES proposal 4830.0124.00001 dated January 10, 2024.

UES understands that proposed site improvements are to consist of an approximately 9,600-square-foot (footprint), fire station building, with a septic field, water well, and other associated improvements. Preliminary recommendations for excavations, fill placement, and foundation design for the proposed improvements are presented in this report. Reviewed references are provided in Appendix A.

1.2 Scope of Services

The scope of services provided included:

- Review of readily available geologic and geotechnical reports.
- Coordination of USA and private utility mark-out and location.
- Obtaining a boring permit from the San Diego County Department of Environmental Health (DEH).
- Exploration of subsurface conditions utilizing a truck-mounted drill rig.
- Installation of a temporary water well for testing and design.
- Conducting a Limited Environmental Site Assessment.
- Laboratory testing of selected soil samples.
- Description of site geology and evaluation of potential geologic hazards.
- Engineering and geologic analysis.
- Preparation of this geotechnical investigation report.

2.0 SITE DESCRIPTION

The project site is located at APN 660-150-18-00 in Jacumba Hot Springs, California (Figure 1). The vacant field site is currently bounded by residences to the west and Old Highway 80 to the south. The vacant field continues to the north and east beyond the subject site. The improvement area is relatively flat with approximate elevations ranging from 2,797 feet above mean sea level (msl) to 2,799 feet above msl. The proposed improvement area was formerly used for agriculture. The approximate area of the proposed improvements is shown on the attached Figure 2.

3.0 FIELD INVESTIGATION AND LABORATORY TESTING

3.1 Field Investigation

UES conducted a field investigation from February 19 to 23, 2024, which included visual reconnaissance and the excavation of seven exploratory geotechnical borings (B-1 to B-7), twelve infiltration test locations (P-1 to P-12), and one temporary water well (TW-1) within the proposed improvement area. The geotechnical borings were advanced to depths ranging from 11.5 feet to 50.5 feet below ground surface (bgs). Infiltration test locations were advanced to 1.0 feet and 3.0 feet bgs. The temporary water well evaluation boring was advanced to 100.0 feet bgs. In addition to the on-site field investigation, UES conducted a limited environmental site assessment that can be found in the attached Appendix F.

The borings were advanced with a CME-95 truck-mounted drill rig equipped with eight-inch-diameter, hollow-stem augers. Bulk samples were collected from the cuttings, and relatively undisturbed samples were collected by driving Standard Penetration Test (SPT) and Modified California (CAL) samplers. The approximate locations of the of the excavations are presented on the attached Figure 2.

The soils were logged in the field by a UES Geologist and were visually classified in general accordance with the Unified Soil Classification System. The field descriptions have been modified, where appropriate, to reflect laboratory test results. The boring logs, including descriptions of the soils encountered, are included in Appendix B.

3.2 Laboratory Testing

Laboratory tests were conducted on selected soil samples for classification purposes, and to evaluate physical properties and engineering characteristics. Laboratory tests included: In-Place Moisture and Density, Resistance "R-Value", Modified Proctor, Expansion Index, Gradation, Direct Shear, and Chemical Characteristics. Test descriptions and laboratory results for the selected soils are included in Appendix C.

4.0 GEOLOGY

4.1 General Setting

The site is located in the town of Jacumba Hot Springs, San Diego County, which is located in the Peninsular Ranges geomorphic province, an area characterized by northwest-trending mountain ranges, intervening valleys, and predominantly northwest-trending regional faults. The project site is located within the western portion of the Jacumba Mountains Wilderness of the Peninsular Ranges Batholith, generally containing younger Quaternary colluvium and alluvium deposits underlain by Cretaceous bedrock.

4.2 Geologic Conditions

The regional geologic map prepared by Dibblee Jr. T.W. (2008) shows the regional geologic near surface unit to be Quaternary Alluvium (Figure 3). Based on the site reconnaissance and subsurface explorations, investigated site areas were observed to consist of topsoil overlying the Quaternary Alluvium at the site. Descriptions of the encountered geologic units are presented below.

4.2.1 Topsoil

Topsoil with moderate vegetation was observed at the surface throughout the site. The topsoil was found to be approximately one foot in thickness across the site. Where observed, this material generally consists of loose, slightly moist, brown, fine- to medium-grained clayey sand with roots and burrows. Isolated areas with deeper topsoils may be encountered during grading and excavations.

4.2.2 Quaternary Alluvium

Quaternary Alluvium (alluvium) was observed at all excavation locations beneath the topsoil. Alluvium was observed to a depth of approximately 77.0 feet bgs at TW-1. Alluvium materials were found to consist of interbedded, very loose to medium dense, dry, brown, fine-grained silty and clayey sand to a depth of approximately 53.0 feet bgs, where groundwater was encountered. At depths greater than 53.0 feet bgs, within the underlying groundwater zone, alluvium materials were observed to alternate between well sorted coarse sand, and dark gray, fine-grained silty sand deposits.

4.2.3 Bedrock

The nearby mountains are mapped as Tertiary and older Jacumba Volcanics and Table Mountain Formation. Bedrock was encountered at location TW-1 at a depth of approximately 77.0 feet bgs. Where observed, the very dense bedrock unit was found to excavate as slightly moist, light reddish brown, fine-grained silty sand.

4.3 Groundwater Conditions

As indicated, groundwater was encountered at boring location TW-1 at a depth of approximately 53.0 feet bgs. Groundwater conditions are anticipated to vary, especially following periods of sustained precipitation or irrigation. Based on the noted conditions, groundwater is generally not expected to impact shallow construction activities.

4.4 Temporary Water Well

A temporary water well was constructed at location TW-1 to a depth of 100.0 feet bgs. Water and soil samples were collected at various depths below groundwater depth ranging from 53.0 feet bgs to 100.0 feet bgs. Samples were analyzed in order to provide recommendations and design information for a permanent water well at the site. The results of sampling and proposed well design information is included in Appendix H.

4.5 Percolation Testing

UES understands that a septic system and leech field are proposed for the northwest portion of the site. Twelve percolation tests were performed to depths ranging from approximately 1.0 to 3.0 feet bgs as requested by the project civil engineer. The attached Figure 2 shows the approximate percolation test locations. The evaluation was performed in general accordance with information provided in the County of San Diego Department of Environmental Health (Land and Water Quality Division) and methods approved by the San Diego Region BMP Design Manual with a presoak period of approximately 18 to 19 hours. Percolation test results are presented below in Table 4.5.2. Septic design, based on the percolation test data and site conditions, is being performed and will be submitted under separate cover.

4.5.1 Percolation Test Methods

As stated above, the evaluation was performed in general accordance with information provided in the County of San Diego Department of Environmental Health (Land and Water Quality Division) and methods approved by the San Diego Region BMP Design Manual with a presoak period of approximately 18 to 19 hours. Field data and percolation to infiltration calculations are included in Appendix E.

4.5.2 Calculated Infiltrated Rate

As per the County of San Diego Department of Environmental Health (Land and Water Quality Division), infiltration rates are to be evaluated using the Porchet Method. The County of San Diego Department of Environmental Health (Land and Water Quality Division) BMP design documents utilized the Porchet Method through guidance of the County of Riverside (2011). The intent of calculating the infiltration rate is to take into account bias inherent in percolation test borehole sidewall infiltration that would not occur at a basin bottom where such sidewalls are not present.

The infiltration rate (I_t) is derived by the equation:

$$I_t = \frac{\Delta H\ \pi r^2\ 60}{\Delta t(\pi r^2 + 2\pi r H_{avg})} = \frac{\Delta H\ 60\ r}{\Delta t(r + 2H_{avg})}$$

Where:

I_t = tested infiltration rate, inches/hour
ΔH = change in head over the time interval, inches
Δt = time interval, minutes
* r = effective radius of test hole
H_{avg} = average head over the time interval, inches

TABLE 4.5.2
RESULTS OF PERCOLATION TESTING AND CALCULATED INFILTRATION RATES

Test Location	Test Depth (inches)	Method (Borehole)	Soil Type* USCS Classification	Percolation Rate (minutes per inch)
P-1	13.0	Non-Sandy	SM/SC	13.714
P-2	36.0	Sandy	SM	4.211
P-3	19.5	Non-Sandy	SM/SC	11.163
P-4	36.0	Sandy	SM	4.571
P-5	12.0	Non-Sandy	SM/SC	18.461
P-6	36.0	Sandy	SM	3.333
P-7	18.5	Non-Sandy	SM/SC	11.707
P-8	38.0	Sandy	SM	2.623
P-9	13.0	Non-Sandy	SM/SC	8.421
P-10	36.5	Sandy	SM	2.857
P-11	18.5	Non-Sandy	SM/SC	6.667
P-12	36.0	Sandy	SM	2.807

Based on information from County of San Diego Department of Environmental Health (Land and Water Quality Division), the percolation rates range between 6.667 and 18.461 minutes per inch for the shallow percolation test holes (less than 19.5”); however, the percolation rates range between 2.623 and 4.571 minutes per inch for percolation tests on the order of 36-inches below grade. Therefore, based on UES’s percolation test results, the rates for all tests were below 120 minutes per inch, demonstrating permeable soils.

NOTES: Water level was measured from a fixed point at the top of the hole.
Weather was sunny during percolation testing.
The test holes were six inches in diameter.

4.6 Geologic Hazards

Geologic hazards that were considered to have potential impacts to site development were evaluated based on field observations, literature review, and laboratory test results. It appears that geologic hazards at the site are primarily limited to those caused by shaking from earthquake-generated ground motions. The following paragraphs discuss the geologic hazards considered and their potential risk to the site.

4.6.1 Surface Fault Rupture

In accordance with the Alquist-Priolo Earthquake Fault Zoning Act, (ACT), the State of California established Earthquake Fault Zones around known active faults. The purpose of the ACT is to regulate the development of structures intended for human occupancy near active fault traces in order to mitigate hazards associated with surface fault rupture. According to the California Geological Survey (Special Publication 42, Revised 2018), a fault that has had surface displacement within the last 11,700 years is defined as a Holocene-active fault and is either already zoned or is pending zonation in accordance with the ACT. There are several other definitions of fault activity that are used to regulate dams, power plants, and other critical facilities, and some agencies designate faults that are documented as older than Holocene (last 11,700 years) and younger than late Quaternary (1.6 million years) as potentially active faults that are subject to local jurisdictional regulations.

Based on reconnaissance and review of referenced literature, the site is not located within a State designated Earthquake Fault Zone, no known active fault traces underlie or project toward the site, and no known potentially active fault traces project toward the site.

4.6.2 Local and Regional Faulting

The United States Geological Survey (USGS), with support of State Geological Surveys, and reviewed published work by various researchers, have developed a Quaternary Fault and Fold Database of faults and associated folds that are believed to be sources of earthquakes with magnitudes greater than 6.0 that have occurred during the Quaternary (the past 1.6 million years). The faults and folds within the database have been categorized into four Classes (Class A-D) based on the level of evidence confirming that a Quaternary fault is of tectonic origin and whether the structure is exposed for mapping or inferred from fault related deformational features. Class A faults have been mapped and categorized based on age of documented activity ranging from Historical faults (activity within last 150 years), Latest Quaternary faults (activity within last 15,000 years), Late Quaternary (activity within last 130,000 years), to Middle to late Quaternary (activity within last 1.6 million years). Class A faults are considered to have the highest potential to generate earthquakes and/or surface rupture, and the earthquake and surface rupture potential generally increases from oldest to youngest. The evidence for Quaternary deformation and/or tectonic activity progressively decreases for Class B and Class C faults. When geologic evidence indicates that a fault is not of tectonic origin it is considered to be a Class D structure. Such evidence includes features such as joints, fractures, landslides, or erosional and fluvial scarps that resemble fault scarps, but demonstrate a non-tectonic origin.

The nearest known Class A fault is the Davies Valley Fault, which is approximately 11.3 miles east of the site. The attached Figure 4 shows regional faults and seismicity with respect to the site.

4.6.3 Liquefaction and Seismic Settlement Evaluation

Liquefaction occurs when saturated fine-grained sands or silts lose their physical strength during earthquake-induced shaking and behave like a liquid. This is due to loss of point-to-point grain contact and transfer of normal stress to the pore water. Liquefaction potential varies with water level, soil type, material gradation, relative density, and probable intensity and duration of ground shaking. Seismic settlement can occur with or without liquefaction; it results from densification of loose soils.

According to the County of San Diego Hazard Mitigation Planning Map, the site is within a mapped zone of potential liquefaction susceptibility. A quantitative evaluation of liquefaction and seismic settlement was performed as summarized herein.

Input parameters for the liquefaction evaluation were based on the Maximum Considered Earthquake (MCE, 2% probability of exceedance with a 50-year period). A code-based acceleration value (PGA_M) was obtained in accordance with ASCE 7-16 Equation 11.8-1. In order to quantify site liquefaction susceptibility, the computer program Geologismiki LiqSVs 2.3.1.5 was utilized. The following data were also utilized used for the analysis:

- Based on direct measurement during the recent subsurface exploration, groundwater was encountered at a depth of 53 feet bgs in the proposed improvement area. Given the available information and regional conditions, a conservative high groundwater depth of 40 feet bgs was modeled for the liquefaction analysis as indicated in Appendix G.
- As indicated, the PGA_M value (0.55g) obtained using ASCE 7-16 Section 11.8.3 was used for the liquefaction evaluation.
- Based on the area tectonic framework, a modal contributing magnitude of 7.2 was used for the analysis.

In addition to inputting the above-mentioned parameters into Geologismiki LiqSVs 2.3.1.5, the fine-grained soils were evaluated for their liquefaction potential in accordance with Bray and Sancio (2006) methodology. Previously accepted practice for liquefaction susceptibility confirmation of fine-grained soils was based on the Chinese criteria and procedures delineated in DMG Special Publication 117. These commonly used evaluation procedures assumed that soils with a clay content (particle size <0.005 mm) greater than 15% were considered to be non-liquefiable. More recent research, summarized by Bray and Sancio (2006), indicates that silty and clayey soils containing more than 15% clay-size particles may also be susceptible to liquefaction. Therefore, plasticity indices and water content/liquid limit ratios are considered to be more suitable as liquefaction susceptibility criteria and were used for the analysis. Specifically, soils with a plasticity index greater than 12 are generally less susceptible to liquefaction and soils with a water content/liquid limit ratio less than 0.8 are not likely to liquefy. Accordingly, site soils were evaluated based on plasticity and moisture content characteristics.

Liquefaction evaluation was performed for deep boring B-5 based on the PGA_m, magnitude, and groundwater levels previously provided in addition to the susceptibility criteria noted above. A summary of the criteria is provided below.

The results of the liquefaction evaluation indicate that total potential dynamic settlement at the site is anticipated to be up to approximately three inches based on SPT investigation methods. Based on regional uniformity, differential dynamic settlement is anticipated to be up to half of the total estimated value.

Surface effects associated with liquefaction-related settlement can consist of sand boils, soil strength loss, and associated phenomena. In general, the potential for surface manifestations is related to the continuity and thickness of liquefiable layers compared to depth of overlying non-liquefiable material (Ishihara, 1985). Based on the depth and distribution of the potential liquefiable layers, surface effects are generally not anticipated. Given the regional conditions and lack of free faces adjacent to the site, the potential hazard associated with lateral spreading is anticipated to be low.

It is understood that structural design will be performed to accommodate the settlement potential and that mitigation of the regional liquefaction and/or seismic settlement potential is generally not anticipated to be warranted or required. The liquefaction evaluation and results are provided in Appendix G.

4.6.4 Landsliding

According to geologic mapping and the County of San Diego Hazard Mitigation Plan (2023) no landslides are mapped in the project area, and landslides were not encountered during the recent field exploration at the relatively flat project site. Based on the investigation findings and relatively flat site conditions, landsliding is not considered to be a geologic hazard at the subject site.

4.6.5 Compressible and Expansive Soils

The Topsoil and Alluvium materials are not considered to be compressible soils. Based on laboratory results and the granular nature of the subgrade materials, near surface soils at the site are anticipated to exhibit low expansion potential (Expansion Index of 50 or less). The expansion potential of representative exposed soils should be further evaluated during grading and construction to verify that conditions are as anticipated.

4.6.6 Corrosive Soils

Testing of representative site soils was performed to evaluate the potential corrosive effects of site soil on concrete foundations and buried metallic utilities. Soil environments detrimental to concrete generally have elevated levels of soluble sulfates and/or pH levels less than 5.5. According to the American Concrete Institute (ACI) Table 318 4.3.1, specific guidelines have been provided for concrete where concentrations of soluble sulfate (SO_4) in soil exceed 0.10 percent by weight. These guidelines include low water: cement ratios, increased compressive strength, and specific cement type requirements. A minimum resistivity value less than approximately 5,000 ohm-cm and/or soluble chloride levels in excess of 200 ppm generally indicate a corrosive environment for buried metallic utilities and untreated conduits.

Based on laboratory test results, shown in Appendix C, near-surface soils at the site generally present a negligible corrosion potential for Portland cement concrete. It is also interpreted that the site soils will have a moderate to severe corrosive potential to buried metallic improvements. Therefore, it would likely be prudent for buried utilities to utilize plastic piping and/or conduits, where feasible. However, UES does not practice corrosion engineering. Therefore, if corrosion of improvements is of more significant concern, a qualified corrosion engineer could be consulted.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 General

UES concludes that the proposed improvements at the site are feasible from a geotechnical standpoint, provided the recommendations in this report are incorporated into the design and construction of the project. As indicated, site improvements are to consist of approximately 9,600-square-foot (footprint), fire station building and other associated improvements. Geotechnical design parameters and excavation recommendations for the proposed improvements are provided herein. Preliminary recommendations for the proposed earthwork and improvements are included in the following sections and Appendix D. However, recommendations in the text of this report supersede those presented in Appendix D should variations exist. These recommendations should either be evaluated as appropriate and/or updated based on conditions exposed during excavation and grading at the site.

5.2 Site Preparation

Prior to grading or excavation, the improvement area should be cleared of any existing building materials or improvements that are not to remain, as well as debris and deleterious materials. Objectionable materials, such as debris and vegetation, not suitable for structural backfill should be properly disposed of offsite.

For the proposed structures, existing soils should be overexcavated to a minimum depth of five feet below

existing or proposed subgrade elevations, three feet below the bottom of proposed footings, or to the depth of competent native materials, whichever is greater. Remedial overexcavation should extend at least five feet laterally beyond the limits of the proposed improvements. Suitability of the bottom of the overexcavations should be verified by the geotechnical representative during site grading. Exposed surfaces should be observed and proof rolled for compliance. Areas of excessive yielding should be further excavated to the depth of competent material or stabilized as recommended based on the exposed conditions. Following the recommended overexcavations and verification of suitable conditions, exposed subgrades should be scarified, moisture conditioned, and properly compacted as recommended herein prior to placement of compacted fill.

Non-building improvement areas such as pavements and flatwork should be overexcavated and recompacted to a depth of at least 24 inches below existing or proposed subgrade elevations, whichever is deeper. Overexcavation should extend at least two feet laterally beyond the limits of these proposed improvements.

5.3 Site Excavation

Generally, shallow excavation of site materials may be accomplished with heavy-duty construction equipment under normal conditions. However, excavations within the alluvium and other unconsolidated soils could encounter zones that are sensitive to caving and/or erosion and may not effectively remain standing vertical or near-vertical, even at shallow or minor heights and for short periods of time.

5.4 Fill Placement and Compaction

Following required overexcavations and recommended removals of loose or disturbed soils, areas to receive fills should be scarified a minimum of nine inches, moisture conditioned and properly compacted. Fill and backfill should be compacted to a minimum relative compaction of 90 percent (95 percent for upper 12" of subgrade beneath pavements and aggregate base) at a minimum two percent above optimum moisture (three percent above for clayey soils) as evaluated by ASTM D 1557. The optimum lift thickness for fill soil will depend on the type of compaction equipment used. Generally, backfill should be placed in uniform, horizontal lifts not exceeding eight inches in loose thickness. Fill placement and compaction should be conducted in conformance with local ordinances.

5.5 Fill Materials

Properly moisture-conditioned very low to low expansion potential soils derived from the on-site excavations are considered suitable for reuse on the site as compacted fill. If used, these materials should be screened of organics and materials generally greater than three inches in maximum dimension. Irreducible materials greater than three inches in maximum dimension should generally not be used in shallow fills (within three feet of proposed grades). In utility trenches, adequate bedding should surround pipes.

Imported fill beneath flatwork and pavements should have an Expansion Index of 20 or less (ASTM D 4829). Proposed imported fill soils for use in structural or slope areas should be evaluated by the geotechnical engineer before being transported to the site.

Although this geotechnical report is not intended to address environmental conditions at the subject site, it is anticipated that imported soils will be screened, sampled, and tested in accordance with the Department of Toxic Substances Control's suggested guidelines for clean imported fill soils. A limited evaluation of regional conditions and analyses of groundwater were performed, with summary and results presented in Appendices F and H.

5.6 Temporary Construction Slopes

Temporary construction slope recommendations have been provided below for trenches or other open excavations that may be excavated during site construction. The following recommended slopes should be relatively stable against deep-seated failure but may experience localized sloughing. Undisturbed native site soils are considered Type C soils with recommended slope ratio of 1.5:1 (or flatter) to a maximum height of 5 feet.

Actual field conditions and soil type designations must be verified by a "competent person" while excavations exist, according to Cal-OSHA regulations. In addition, the above sloping recommendations do not allow for seepage, or surcharge loading at the top of slopes by vehicular traffic, equipment or materials. Appropriate surcharge setbacks must be maintained from the top of all unshored slopes.

5.7 Foundations and Slab Recommendations

The following recommendations are for preliminary design purposes only. These foundation recommendations should be re-evaluated after review of the project grading and foundation plans, and after completion of rough grading of the building pad areas. Upon completion of rough pad grading, Expansion Index of near surface soils should be verified, and these recommendations should be updated, if necessary.

5.7.1 Foundations

Following the recommended preparatory grading, continuous and isolated spread footings are anticipated to be suitable for use at this site. Foundation dimensions and reinforcement should be based on allowable bearing values of 2,500 pounds per square foot (psf) for footings embedded a minimum of 24-inches below lowest adjacent subgrade elevation (if uplift due to wind forces are anticipated, footings should be deepened per the structural engineer). Isolated footings should be at least 24 inches in minimum dimension. The provided bearing value may be increased by 250 psf for each additional six inches of embedment up to a maximum static value of 3,000 psf. The allowable bearing value may be increased by one-third for short-duration loading, which includes the effects of wind or seismic forces. Based on the recommended preparatory grading, it is anticipated that all footings will be founded entirely in properly compacted fill materials. Footings should not span cut to fill interfaces.

Minimum reinforcement for continuous footings should consist of four No. 5 reinforcing bars; two placed near the top and two placed near the bottom, or as per the project structural engineer. The structural engineer should design isolated footing reinforcement. An uncorrected subgrade modulus of 120 pounds per cubic inch is considered suitable for elastic foundation design.

The structural engineer should provide recommendations for reinforcement of spread footings and footings with pipe penetrations. Footing excavations should generally be maintained above optimum moisture content until concrete placement. Exposed soils and potential expansion characteristics should be evaluated at the time of grading to verify that conditions are as anticipated by the preliminary findings.

5.7.2 Foundation Settlement

The maximum total static settlement is expected to be on the order of one inch and the maximum differential static settlement is expected to be on the order of 0.5 inch over a distance of 40 feet. Potential dynamic settlements provided in section 4.4.3 should also be incorporated into the design as appropriate.

5.7.3 Foundation Setback

Footings for structures should be designed such that the horizontal distance from the face of adjacent slopes to the outer edge of the footing is at least 10 feet. In addition, footings should bear beneath a 1:1 plane extended up from the nearest bottom edge of adjacent trenches and/or excavations. Deepening of affected footings may be a suitable means of attaining the prescribed setbacks.

5.7.4 Interior Concrete Slabs

Lightly loaded concrete slabs for non-traffic areas should be a minimum of 5.0 inches thick. Minimum slab reinforcement should consist of #4 reinforcing bars placed on maximum 18-inch centers, each way, at or above mid-slab height, but with proper cover. Where vehicular or heavy static loading is proposed for slab areas, additional recommendations should be obtained from the structural engineer, as applicable.

In moisture-sensitive floor areas, a suitable vapor retarder of at least 15-mil thickness (with all laps or penetrations sealed or taped) overlying a four-inch layer of consolidated aggregate base or gravel (with SE of 30 or more) should be installed. An optional maximum two-inch layer of similar material may be placed above the vapor retarder to help protect the membrane during steel and concrete

placement. This recommended protection is generally considered typical in the industry. If proposed floor areas or coverings are considered especially sensitive to moisture emissions, additional recommendations from a specialty consultant could be obtained. UES is not an expert at preventing moisture penetration through slabs. A qualified architect or other experienced professional should be contacted if moisture penetration is a more significant concern.

As indicated, slabs subjected to heavier loads may require thicker sections and/or increased reinforcement. A 110-pci subgrade modulus is considered suitable for elastic design of minimally embedded improvements such as slabs-on-grade. Subgrade materials should be maintained at a minimum of two percent or greater above optimum moisture content until slab underlayment and concrete are placed.

5.8 Seismic Design Criteria

The seismic ground motion values listed in the table below were derived in accordance with the ASCE 7-16 Standard that is incorporated into the 2022 California Building Code. This was accomplished by establishing the Site Class based on the soil properties at the site and calculating site coefficients and parameters using the using the SEAOC-OSHPD U.S. Seismic Design Maps application. Seismic ground motion values are based on the approximate site coordinates of 32.6181° latitude and –116.1817° longitude and the understanding that the fundamental period of proposed structure is no greater than 0.5 seconds. These values are intended for the design of structures to resist the effects of earthquake ground motions. It is anticipated that the project will meet the requirements provided in ASCE 7, 11.4.8, Exception 2, which permits the use of code-based ground motion values if the seismic response coefficient Cs is calculated as specified and $T < 1.5\ T_S$.

TABLE 5.8 SEISMIC GROUND MOTION VALUES (CODE-BASED) 2022CBC AND ASCE 7-16		
PARAMETER	VALUE	2022 CBC/ASCE 7-16 REFERENCE
Site Class	D	ASCE 16, Chapter 20
Mapped Spectral Response Acceleration Parameter, S_S	1.233	Figure 1613.2.1 (1)
Mapped Spectral Response Acceleration Parameter, S_1	0.394	Figure 1613.2.1 (2)
Seismic Coefficient, F_a	1.007	Table 1613.2.3 (1)
Seismic Coefficient, F_v	Null – See Section 11.4.8	Table 1613.2.3 (2)
MCE Spectral Response Acceleration Parameter, S_{MS}	1.242	Section 1613.2.3
MCE Spectral Response Acceleration Parameter, S_{M1}	Null – See Section 11.4.8	Section 1613.2.3
Design Spectral Response Acceleration, Parameter S_{DS}	0.828	Section 1613.2.5(1)
Design Spectral Response Acceleration, Parameter S_{D1}	Null – See Section 11.4.8	Section 1613.2.5 (2)
Peak Ground Acceleration PGA_M	0.55	ASCE 16, Section 11.8.3

5.9 Vehicular Pavement

The proposed improvements include paved vehicle drive and parking areas. Presented in Table 5.11 are preliminary pavement sections utilizing laboratory determined Resistance "R" Value. Actual traffic area slab sections to be provided by the structural designer. Beneath proposed pavement areas, the upper 12 inches of subgrade and all base materials should be compacted to 95% relative compaction in accordance with ASTM D1557, and at a minimum of two percent above optimum moisture content.

TABLE 5.9
RECOMMENDED PAVEMENT THICKNESS

Traffic Area	Assumed Traffic Index	Preliminary Subgrade "R"-Value	Asphalt Pavements		Portland Cement Concrete Pavements** on Subgrade Soils (inches)
			AC Thickness (inches)	Class II* Aggregate Base Thickness (inches)	
Frequent Heavy Fire Engine & Emergency Vehicle Access	8.0	20+	5.0	14.0	8.0
Moderate Fire Engine & Emergency Vehicle Access	7.0	20+	4.0	12.0	7.5
Light Auto Drive & Parking Areas	5.0	20+	3.0	8.0	7.0

* Caltrans Class 2 aggregate base
** Concrete should have a modulus of rupture of at least 600 psi

Following rough site grading, laboratory testing of representative subgrade soils for as-graded "R"-Value should be performed to verify suitability of pavement sections. Asphalt paved areas should be designed, constructed, and maintained in accordance with the recommendations of the Asphalt Institute, or other widely recognized authority. Concrete paved areas should be designed and constructed in accordance with the recommendations of the American Concrete Institute or other widely recognized authority, particularly with regard to thickened edges, joints, and drainage. The Standard Specifications for Public Works construction ("Greenbook") or Caltrans Standard Specifications may be referenced for pavement materials specifications.

5.10 Drainage

Surface runoff should be collected and directed away from improvements by means of appropriate erosion-reducing devices, and positive drainage should be established around proposed improvements. Positive drainage should be directed away from improvements and slope areas at a minimum gradient of two percent for a distance of at least five feet. In order to minimize moisture accumulation within subgrade areas, irrigation should be limited to the minimum necessary to maintain landscaping. However, the project civil engineer should evaluate the on-site drainage and make necessary provisions to keep surface water from affecting the site.

Generally, UES recommends against allowing water to infiltrate building pads or adjacent to slopes and improvements. However, it is understood that some agencies are encouraging the use of storm-water cleansing devices. Therefore, if storm water cleansing devices must be used, it is generally recommended that they be underlain by an impervious barrier and that the infiltrate be collected via subsurface piping and discharged off site. If infiltration must occur, water should infiltrate as far away from structural improvements as feasible. Additionally, any reconstructed slopes descending from infiltration basins should be equipped with subdrains to collect and discharge accumulated subsurface water.

5.11 Plan Review

UES should be authorized to review the project grading and foundation plans, prior to commencement of earthwork to identify potential conflicts with the intent of the geotechnical recommendations.

5.12 Construction Observation

The recommendations provided in this report are based on preliminary design information for the proposed construction and the subsurface conditions observed in the explorations performed. The interpolated subsurface conditions should be checked in the field during construction to verify that conditions are as anticipated. Foundation recommendations may be revised upon completion of grading and as-built laboratory test results.

Recommendations provided in this report are based on the understanding and assumption that UES will provide the observation and testing services for the project. All earthwork should be observed and tested to verify that grading activities have been performed according to the recommendations contained within this report. UES should evaluate all foundation excavations before reinforcing steel placement.

6.0 LIMITATIONS OF INVESTIGATION

The field evaluation, laboratory testing, and geotechnical analysis presented in this report have been conducted according to current engineering practice and the standard of care exercised by reputable geotechnical consultants performing similar tasks in this area. No other warranty, expressed or implied, is made regarding the conclusions, recommendations and opinions expressed in this report. Variations may exist and conditions not observed or described in this report may be encountered during construction. The recommendations presented herein have been developed in order to reduce the potential adverse effects of soil settlement. However, even with the design and construction precautions provided, some post-construction movement and associated distress may occur.

The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

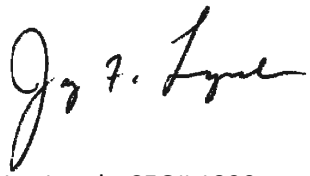
UES's conclusions and recommendations are based on an analysis of the observed conditions. If conditions different from those described in this report are encountered, this office should be notified and additional recommendations, if required, will be provided.

The opportunity to be of service on this project is appreciated. If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Respectfully,

UNIVERSAL ENGINEERING SCIENCES (UES)

Dan T. Math, GE #2665
Principal Engineer

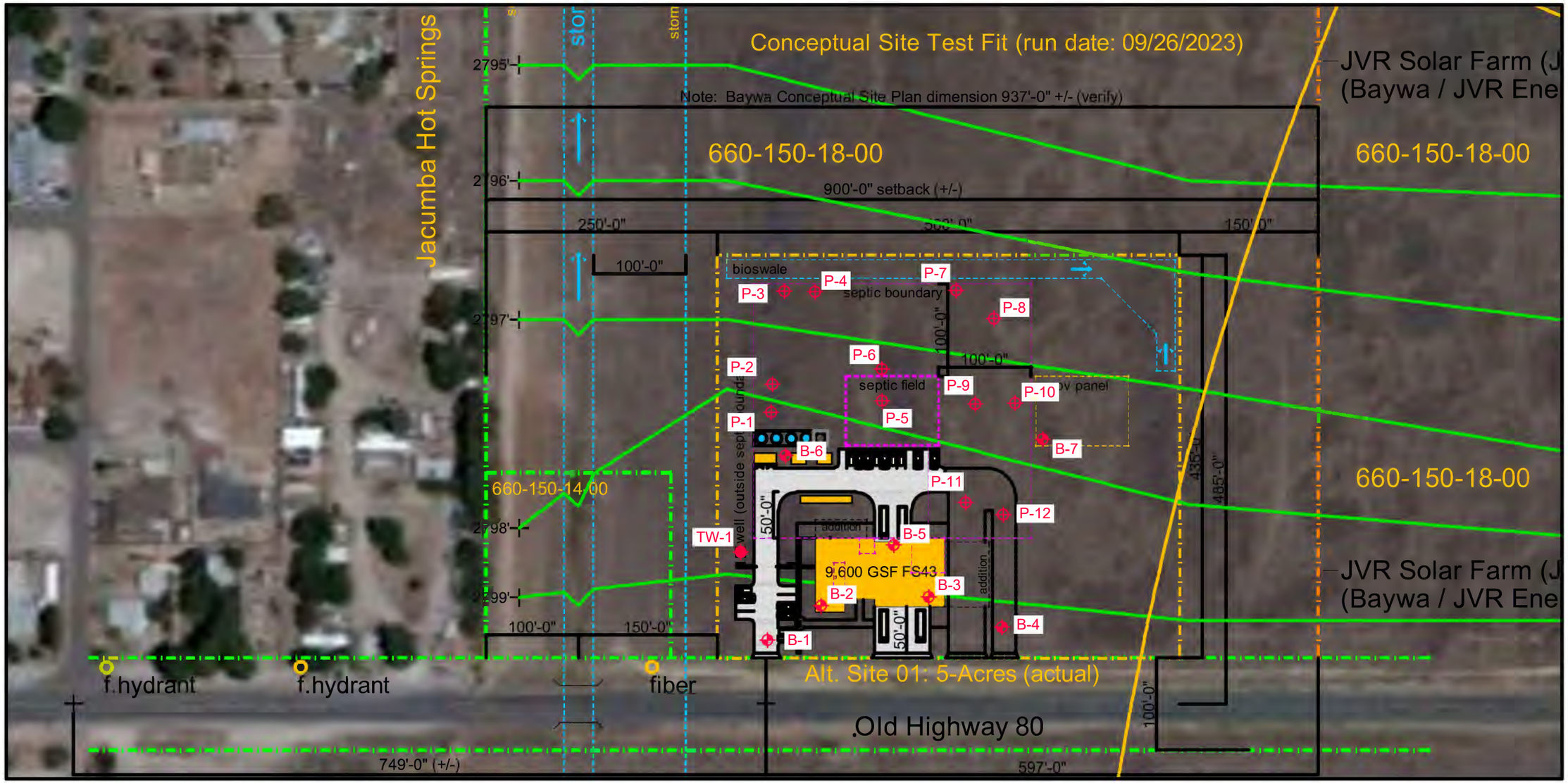


Jay Lynch, CEG# 1890
Principal Engineering Geologist

Dennis A. Kilian, CEG # 2672
Senior Geologist

DAK/JFL/DTM:ach

UES	**SITE INDEX MAP** PROPOSED JACUMBA FIRE STATION #43 – SAN DIEGO APN: 660-150-18-00 JACUMBA HOT SPRINGS, CALIFORNIA	SCALE: AS SHOWN	DATE: 2/24
		UES JOB NO.: 4830.2400003	FIGURE: 1



EXPLANATION

- B-7 ⊕ APPROXIMATE EXPLORATORY BORING LOCATION
- P-12 ⊕ APPROXIMATE PERCOLATION TEST LOCATION
- TW-1 ● APPROXIMATE TEMPORARY WELL LOCATION

120' 0 60' 120' 240'

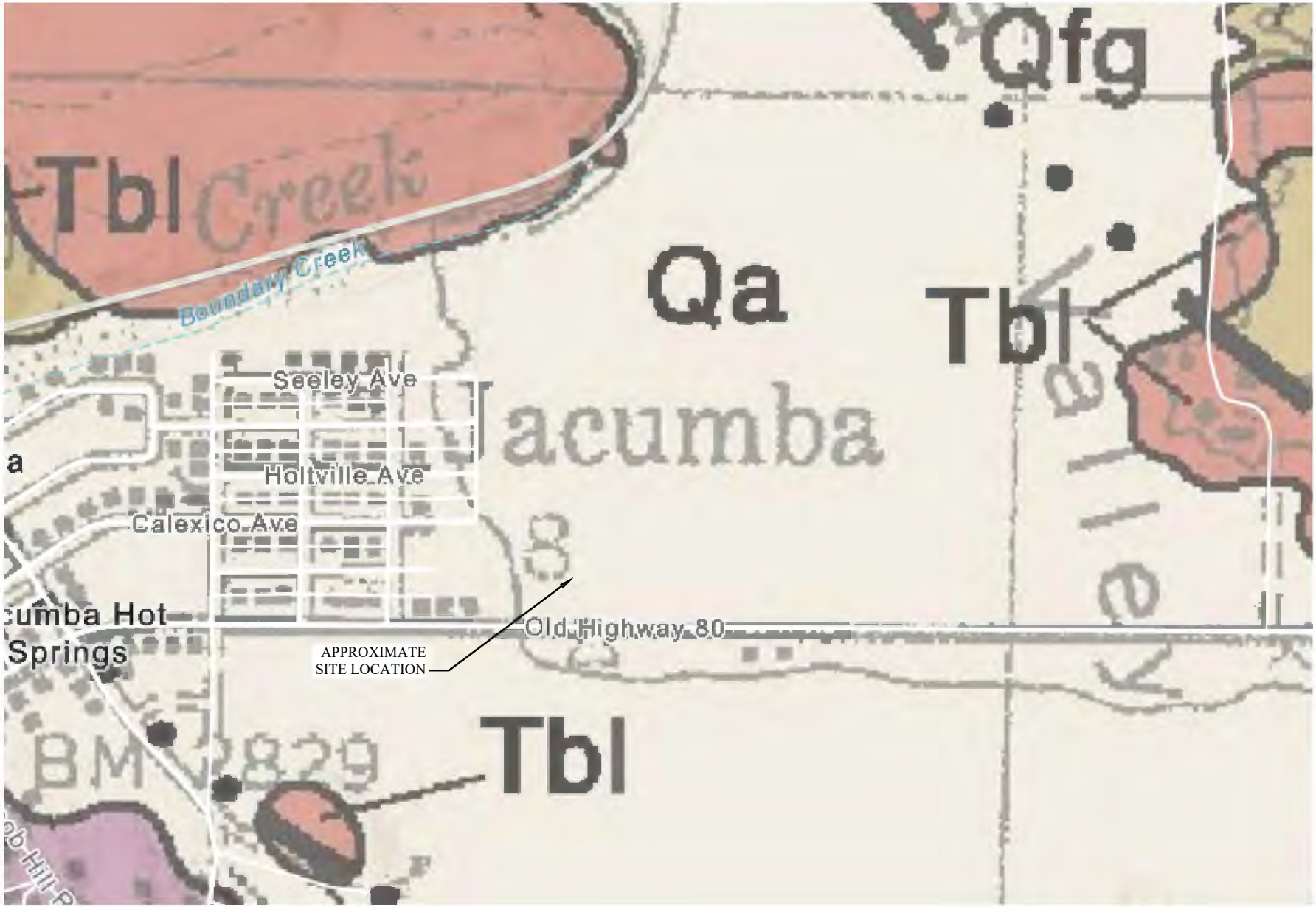
1 inch = 120 ft.

UES

GEOTECHNICAL EXPLORATION LOCATION MAP
PROPOSED JACUMBA FIRE STATION #43 – SAN DIEGO
APN 660-150-18-00
JACUMBA HOT SPRINGS, CALIFORNIA

UES JOB NO:	
4830.2400003	
SCALE:	
1" ~ 120'	
DATE: 3/24	FIGURE: 2

S:\Projects\4830 (GEO)\4830.2400003.0000 (Jacumba Fire Station #43 (PW7)\DWG\Figure 2 (Exploration Map) 11x17.dwg

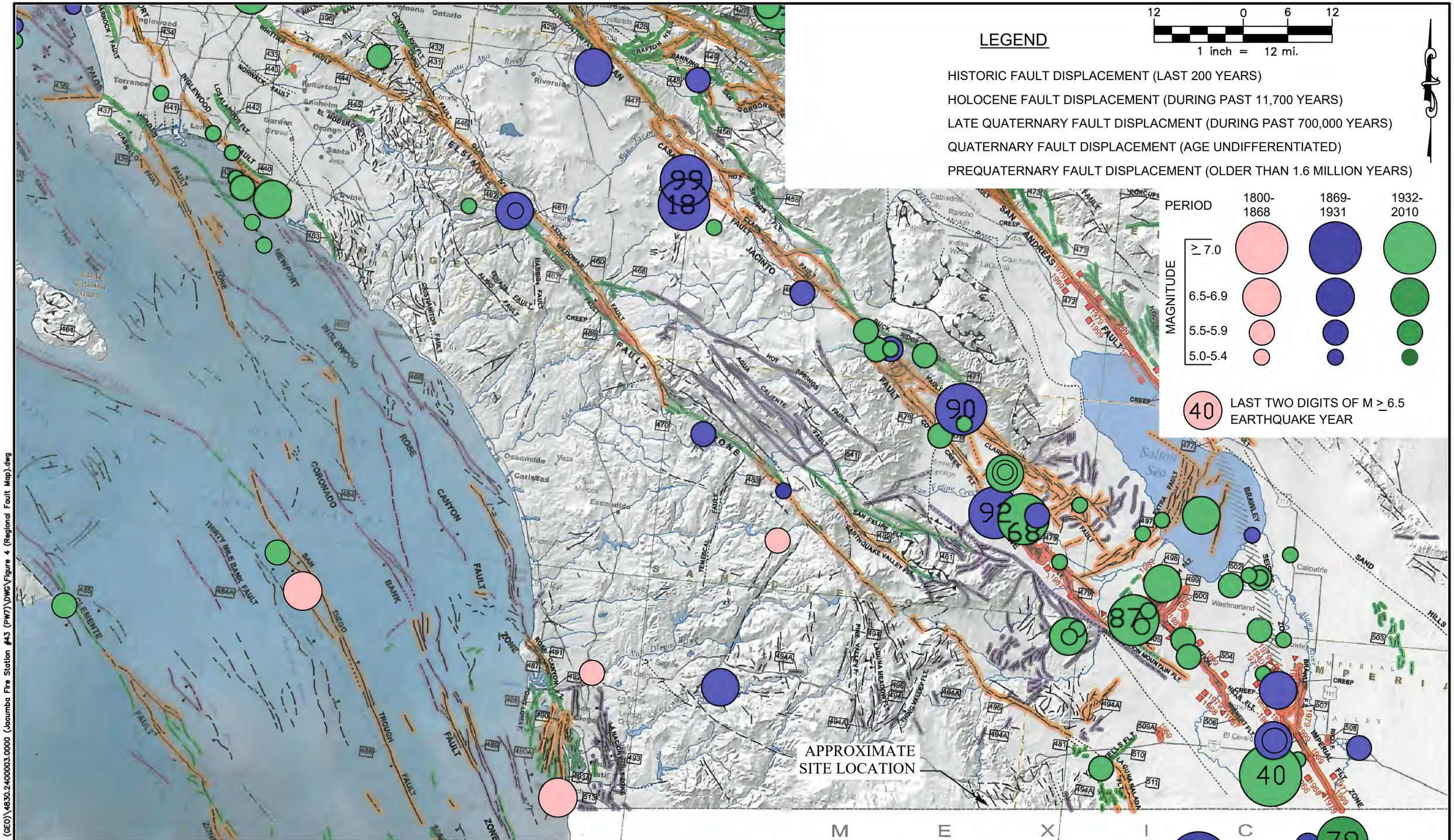


GEOLOGIC MAP

PROPOSED JACUMBA FIRE STATION #43-SAN DIEGO
APN: 660-150-18-00
JACUMBA HOT SPRINGS, CALIFORNIA

CTE JOB NO:	4830.2400003
SCALE:	No Scale
DATE:	3/24
FIGURE:	3

S: \Projects\4830 (GEO)\4830.2400003.0000 (Jacumba Fire Station #43 (PW7)\DWG\Figure 3 (Geologic Map).dwg



NOTES: FAULT ACTIVITY MAP OF CALIFORNIA, 2010, CALIFORNIA GEOLOGIC DATA MAP SERIES MAP NO. 6;
EPICENTERS OF AND AREAS DAMAGED BY M≥5 CALIFORNIA EARTHQUAKES, 1800–1999 ADAPTED AFTER TOPPOZADA, BRANUM, PETERSEN, HALLSTORM, CRAMER, AND REICHLE, 2000, CDMG MAP SHEET 49
REFERENCE FOR ADDITIONAL EXPLANATION; MODIFIED WITH CISN AND USGS SEISMIC MAPS

UES

REGIONAL FAULT AND SEISMICITY MAP

PROPOSED JACUMBA FIRE STATION #43–SAN DIEGO
APN: 660–150–18–00
JACUMBA HOT SPRINGS, CA

UES JOB NO:	4830.2400003
SCALE:	1 inch = 12 miles
DATE:	3/24
FIGURE:	4

S:\Projects\4830 (GEO)\4830.2400003.0000 (Jacumba Fire Station #43 (PW7)\DWG\Figure 4 (Regional Fault Map).dwg

APPENDIX A

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REFERENCES

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APPENDIX B

FIELD EXPLORATION METHODS LOGS

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DEFINITION OF TERMS

PRIMARY DIVISIONS			SYMBOLS	SECONDARY DIVISIONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS < 5% FINES	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS OR GRAVEL SAND MIXTURES, LITTLE OF NO FINES
		GRAVELS WITH FINES	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES, NON-PLASTIC FINES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES, PLASTIC FINES
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS < 5% FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES	SM	SILTY SANDS, SAND-SILT MIXTURES, NON-PLASTIC FINES
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES, PLASTIC FINES
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50		ML	INORGANIC SILTS, VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, SLIGHTLY PLASTIC CLAYEY SILTS
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY, SANDY, SILTS OR LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTY CLAYS
HIGHLY ORGANIC SOILS			PT	PEAT AND OTHER HIGHLY ORGANIC SOILS

GRAIN SIZES

BOULDERS	COBBLES	GRAVEL		SAND			SILTS AND CLAYS
		COARSE	FINE	COARSE	MEDIUM	FINE	
12"	3"	3/4"	4	10	40	200	

CLEAR SQUARE SIEVE OPENING — U.S. STANDARD SIEVE SIZE

ADDITIONAL TESTS

(OTHER THAN TEST PIT AND BORING LOG COLUMN HEADINGS)

MAX- Maximum Dry Density
GS- Grain Size Distribution
SE- Sand Equivalent
EI- Expansion Index
CHM- Sulfate and Chloride Content , pH, Resistivity
COR - Corrosivity
SD- Sample Disturbed
PM- Permeability
SG- Specific Gravity
HA- Hydrometer Analysis
AL- Atterberg Limits
RV- R-Value
CN- Consolidation
CP- Collapse Potential
HC- Hydrocollapse
REM- Remolded
PP- Pocket Penetrometer
WA- Wash Analysis
DS- Direct Shear
UC- Unconfined Compression
MD- Moisture/Density
M- Moisture
SC- Swell Compression
OI- Organic Impurities

FIGURE: BL1

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PROJECT: DRILLER: SHEET: of
UES JOB NO: DRILL METHOD: DRILLING DATE:
LOGGED BY: SAMPLE METHOD: ELEVATION:

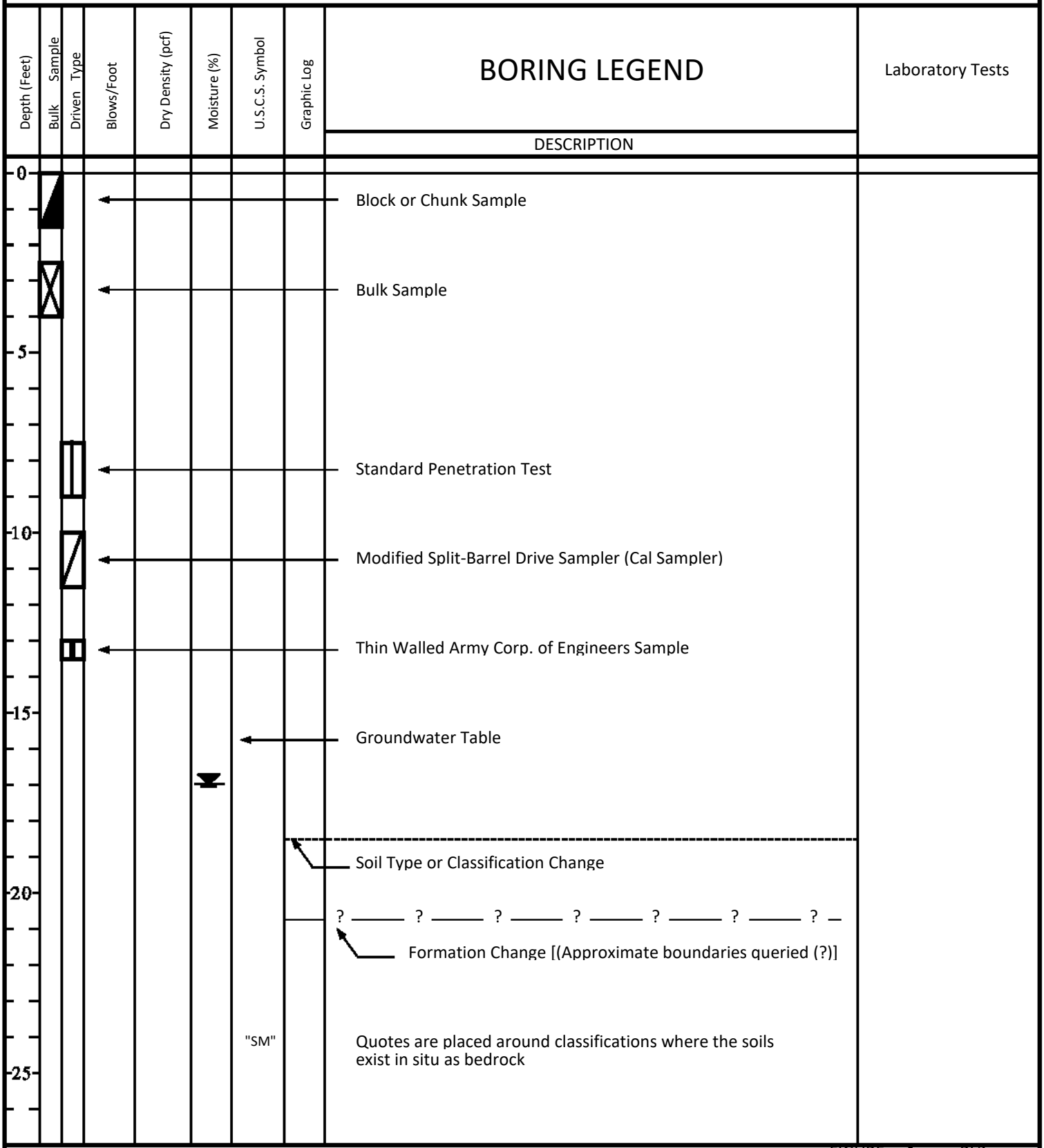

FIGURE: BL2

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PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	1 of 4
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/20/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~ 2798 ft msl

BORING: TW-1

Depth (Feet)	Sample Bulk	Sample Driven Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						SC		Vegetation at surface.	
						SC		**TOPSOIL:** Loose, dry, gray-brown, fine- to medium-grained clayey SAND with burrows and roots.	
								QUATERNARY YOUNG ALLUVIUM (Qya): Medium dense, dry, brown, fine-grained Clayey SAND.	
5									
						SM		Becomes loose to medium dense, dry, brown, fine-grained Silty SAND.	
10									
15									
20						SC		Medium dense, dry, brown, fine-grained Clayey SAND with increased clays.	
25									

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PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	2 of 4
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/20/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~ 2798 ft msl

BORING: TW-1

Depth (Feet)	Sample Bulk	Sample Driven Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
25		✓	7 20 21						DS, MD
30									
35						SM		Medium dense, dry, brown, fine-grained Silty SAND with gravels.	
40									
45									
50									

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PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	3 of 4
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/20/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~ 2798 ft msl

BORING: TW-1

Depth (Feet)	Sample: Bulk	Sample: Driven	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
50						SW		Medium dense, wet, gray-brown, fine- to coarse-grained SAND. Well graded.	
								-- Groundwater encountered at 53 feet bgs.	
55			3 5 8						GS
						SC		Loose, wet, dark gray-brown, fine-grained Clayey SAND.	
			2 3 5			ML		Stiff, moist, dark gray, fine-grained Clayey SILT.	GS
60			4 5 5						GS
						SM		Medium dense, wet, dark gray, fine- to medium-grained Silty SAND.	
65			8 9 12						GS
						SW		Medium dense, wet, gray, fine- to coarse-grained SAND. Well graded.	
			3 4 9						GS
						SM		Medium dense, wet, dark gray, fine- to coarse-grained Silty SAND.	
70			5 7 10						GS
			5 6 9						GS
75									

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PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	4 of 4
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/20/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~ 2798 ft msl

BORING: TW-1

Depth (Feet)	Sample: Bulk	Sample: Driven Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
75									
						SM		**BEDROCK:** Excavates as very dense, slightly moist, light reddish-brown, fine-grained Silty SAND.	
80			50/6"						
85			50/6"						
90									
95			50/6"						
100								Total Depth = 100.0 feet bgs. Groundwater encountered at 53 feet bgs. Temporary Well Constructed.	

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UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/19/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~2799 ft msl

BORING: B-1

Depth (Feet)	Sample Bulk	Sample Driven Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						SC SC		Vegetation at surface. **TOPSOIL:** Loose, dry, gray-brown, fine- to medium-grained clayey SAND with burrows and roots.	
								QUATERNARY YOUNG ALLUVIUM (Qya): Medium dense, dry, brown, fine-grained Clayey SAND.	
5			6 7 8						EI
10			3 4 5						
15			3 6 7						
			5 5 5					Becomes more clayey.	
20								Total Depth: 20.0ft bgs. No Groundwater Encountered Backfilled 2/19/24	
25									

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UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/19/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~2799 ft msl

BORING: B-2

Depth (Feet)	Sample: Bulk	Sample: Driven Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						SC		Vegetation at surface.	
						SC		**TOPSOIL:** Loose, dry, gray-brown, fine- to medium-grained clayey SAND with burrows and roots.	
								QUATERNARY YOUNG ALLUVIUM (Qya): Medium dense, dry, brown, fine-grained Clayey SAND.	
5			4 8 9						GS
						SM		Loose, dry, brown, fine-grained Silty SAND.	
10			2 2 3						
						SC		Loose, dry, brown, fine-grained Clayey SAND.	
15			3 4 5						
								Total Depth = 16.5 feet bgs No groundwater encountered Backfilled 2/19/24	
20									
25									

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UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/19/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~2799 ft msl

BORING: B-3

Depth (Feet)	Sample: Bulk	Sample: Driven Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						SC		Vegetation at surface.	
						SC		**TOPSOIL:** Loose, dry, gray-brown, fine- to medium-grained clayey SAND with burrows and roots.	
								QUATERNARY YOUNG ALLUVIUM (Qya): Medium dense, dry, brown, fine-grained Clayey SAND.	
5		■	4 7 8						
						SM		Loose, dry, brown, fine-grained Silty SAND.	
10		■	2 3 5						
								Total Depth = 11.5 feet bgs No groundwater encountered Backfilled 2/19/24	
15									
20									
25									

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PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	1 of 1
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/19/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~2799 ft msl

BORING: B-4

Depth (Feet)	Sample: Bulk	Sample: Driven	Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0							SC		Vegetation at surface.	
							SC		**TOPSOIL:** Loose, dry, gray-brown, fine- to medium-grained clayey SAND with burrows and roots.	EI, RV
									QUATERNARY YOUNG ALLUVIUM (Qya): Medium dense, dry, brown, fine-grained Clayey SAND.	
5				6 6 5						
									Becomes loose.	
10				4 6 7						
15				3 3 3						
							SM		Medium dense, dry, brown, fine-grained Silty SAND.	
				4 6 7						
20									Total Depth = 20.0 feet bgs No groundwater encountered Backfilled 2/19/24	
25										

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PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	1 of 3
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/19/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~2799 ft msl

BORING: B-5

Depth (Feet)	Sample: Bulk	Sample: Driven Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						SC		Vegetation at surface.	
						SC		**TOPSOIL:** Loose, dry, gray-brown, fine- to medium-grained clayey SAND with burrows and roots.	
								QUATERNARY YOUNG ALLUVIUM (Qya): Medium dense, dry, light-brown, fine-grained Clayey SAND.	
5		■	5 6 10						CHM
						SM		Medium dense, dry, brown, fine-grained Silty SAND.	
10		■	3 3 6						
15		■	3 4 5						
						SC		Medium dense, dry, brown, fine-grained Clayey SAND.	
20		■	7 8 12						DS, MD
25									

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PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	2 of 3
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/19/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~ 2798 ft msl

BORING: B-5

Depth (Feet)	Sample: Bulk	Sample: Driven Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
25									
						CL		Soft to medium stiff, slightly moist, brown, fine grained Sandy CLAY.	
30			2 2 2						GS
						SM		Dense, dry, brown, fine-grained Silty SAND with gravels.	
35									
40			11 50/3"						
45									
50									

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PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	3 of 3
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/20/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~ 2798 ft msl

BORING: B-5

Depth (Feet)	Sample Bulk	Sample Driven Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
50			50/4"						
								Total Depth = 50.5 feet bgs No groundwater encountered Backfilled 2/19/24	
55									
60									
65									
70									
75									

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PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	1 of 2
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/19/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~2799 ft msl

BORING: B-6

Depth (Feet)	Sample: Bulk	Sample: Driven	Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0							SC		Vegetation at surface.	
							SC		**TOPSOIL:** Loose, dry, gray-brown, fine- to medium-grained clayey SAND with burrows and roots.	
					115.5	13.2			**QUATERNARY YOUNG ALLUVIUM (Qya):** Medium dense, dry, brown, fine-grained Clayey SAND.	MAX
5				6 10 16						CN
							SM		Medium dense, dry, light-brown, fine-grained Silty SAND.	
10				3 4 6					Becomes loose.	
15				3 3 5						GS
							SC		Loose, dry, brown, fine-grained Clayey SAND.	
20				2 4 4						
25										

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PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	2 of 2
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/19/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~ 2798 ft msl

BORING: B-6

Depth (Feet)	Sample: Bulk	Sample: Driven Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
25			3 5 5						
						SM		Medium dense, dry, brown, fine-grained Silty SAND.	
30			5 6 11						
								Total Depth = 31.5 feet bgs. No groundwater encountered. Backfilled 2/19/24	
35									
40									
45									
50									

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PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	1 of 1
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/19/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~2799 ft msl

BORING: B-7

Depth (Feet)	Sample Bulk	Sample Driven Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
0						SC		Vegetation at surface.	
						SC		**TOPSOIL:** Loose, dry, gray-brown, fine- to medium-grained clayey SAND with burrows and roots.	
								QUATERNARY YOUNG ALLUVIUM (Qya): Medium dense, dry, brown, fine-grained Clayey SAND.	
5			7 9 12						
								Becomes loose.	
10			2 2 3						
15			2 3 4						
						SM		Medium dense, dry, brown, fine-grained Silty SAND.	
			4 5 6						
20								Total Depth = 20.0 feet bgs. No groundwater encountered. Backfilled 2/19/24	
25									

APPENDIX C

LABORATORY METHODS AND RESULTS

LABORATORY TEST METHODS

In-situ Moisture Content and Dry Density Tests (ASTM D2216 and D2937)

The in-situ moisture content and dry density of selected samples obtained during the subsurface investigations were evaluated in general accordance with the latest versions of the ASTM D2216 and D2937 test methods. The methods involve obtaining the moist weight of the sample and then drying the sample to obtain its dry weight. The moisture content is calculated by taking the difference between the wet and dry weights, dividing it by the dry weight of the sample and expressing the result as a percentage. The dry weight and the measured volume of the tested sample are then used to calculate the samples dry density. The results of the in-situ moisture content and dry density tests are presented in the following section of this appendix and on the logs of the exploratory excavations presented in Appendix B.

Classification (ASTM D2487)

Earth materials encountered were visually and texturally classified in accordance with the Unified Soil Classification System (USCS/ASTM D2487) and ASTM D2488. Material classifications are indicated on the logs of the exploratory borings presented in Appendix B.

Particle-size Distribution Tests (ASTM D6913)

Particle-size distribution (gradation) testing was performed on selected samples of the materials encountered in general accordance with the latest version of the ASTM D6913 test method. The test results were utilized in evaluating the soil classifications in accordance with the Unified Soil Classification System and to evaluate the geotechnical engineering characteristics of the tested material. The test results are plotted on grain-size distribution graphs and are presented in the following section of this appendix.

Expansion Index Test (ASTM D4829)

Expansion index testing was performed on selected samples of the earth materials encountered in general accordance with the ASTM D4829 test method. The test determines the expansion potential of the materials encountered. The test results are presented in the following section of this appendix.

Laboratory Compaction Characteristics Test (ASTM D1557)

Laboratory compaction characteristics testing was performed on selected samples of the earth materials encountered in general accordance with the ASTM D1557 test method. The test establishes the laboratory maximum dry density and optimum moisture content of the tested materials and are also used to aid in evaluating the strength characteristics of the materials.

Resistance “R” Value Test (CTM 301/ ASTM D2844)

R-Value testing was performed on selected samples of the earth materials encountered in general accordance with the California Test Method 301/ ASTM D2844. The test results are presented in the following section of this appendix.

Direct Shear Test (ASTM D3080)

Direct Shear testing was performed in general accordance with the ASTM D3080 test method to aid in evaluating the soil strength characteristics of the on-site earth materials encountered. Testing is performed on undisturbed specimens obtained from drive-samples and/or on specimens remolded in the laboratory to a specific moisture content and density. The test consists of placing the specimen in a direct shearing device, applying a specified normal stress, and then shearing the sample at a constant rate under drained conditions. This is repeated under a series of specified normal stresses. The shearing resistance and horizontal displacements are measured and recorded as the soil specimen is sheared. The shearing is continued well beyond the point of maximum resistance (peak strength) to determine a constant or residual value (ultimate strength). The test results are presented in the following section of this appendix.

Soil Corrosivity Tests

The water-soluble sulfate and chloride content, the resistivity, and pH of selected samples were performed by a third-party laboratory in general accordance with California Test Methods. The tests results are useful in the assessment of the degree of corrosivity of the earth materials encountered with regard to concrete and normal grade steel.

Consolidation

To assess their compressibility and volume change behavior when loaded and wetted, relatively undisturbed samples of representative samples from the investigation were subject to consolidation tests in accordance with ASTM D 2435.

IN SITU DRY DENSITY & MOISTURE CONTENT
(ASTM D2937 and D2216)

Sample Location / Depth (feet)	Moisture Content (percent)	Dry Density (pounds per cubic foot)
B-5 @ 20	13.0	102.6
B-6 @ 5	3.1	97.8
TW-1 @ 25	28	95

EXPANSION INDEX
(ASTM D4829)

Sample Location / Depth (feet)	Expansion Index	Expansion Potential
B-1 @ 10	9	VERY LOW
B-4 @ 0 – 5	1	VERY LOW

LABORATORY COMPACTION CHARACTERISTICS
(ASTM D1557)

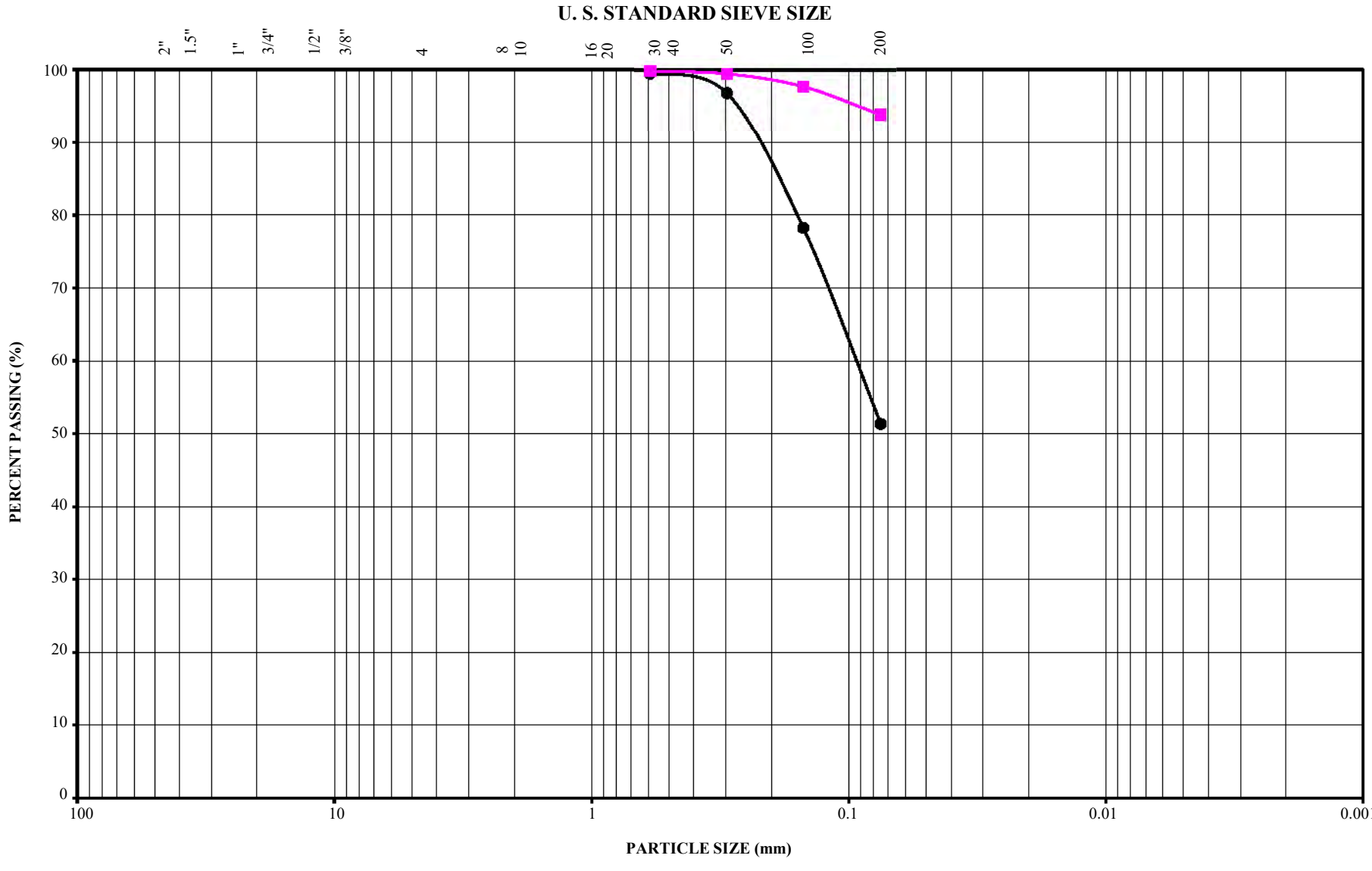
Sample Location / Depth (feet)	Maximum Dry Density (pounds per cubic foot)	Optimum Moisture (percent)
B-6 @ 0 – 5	115.5	13.2

R-VALUE
(CTM 301/ASTM D2844)

Sample Location / Depth (feet)	Material Type (USCS)	R-Value
B-4 @ 0 – 5	Clayey Sand	49

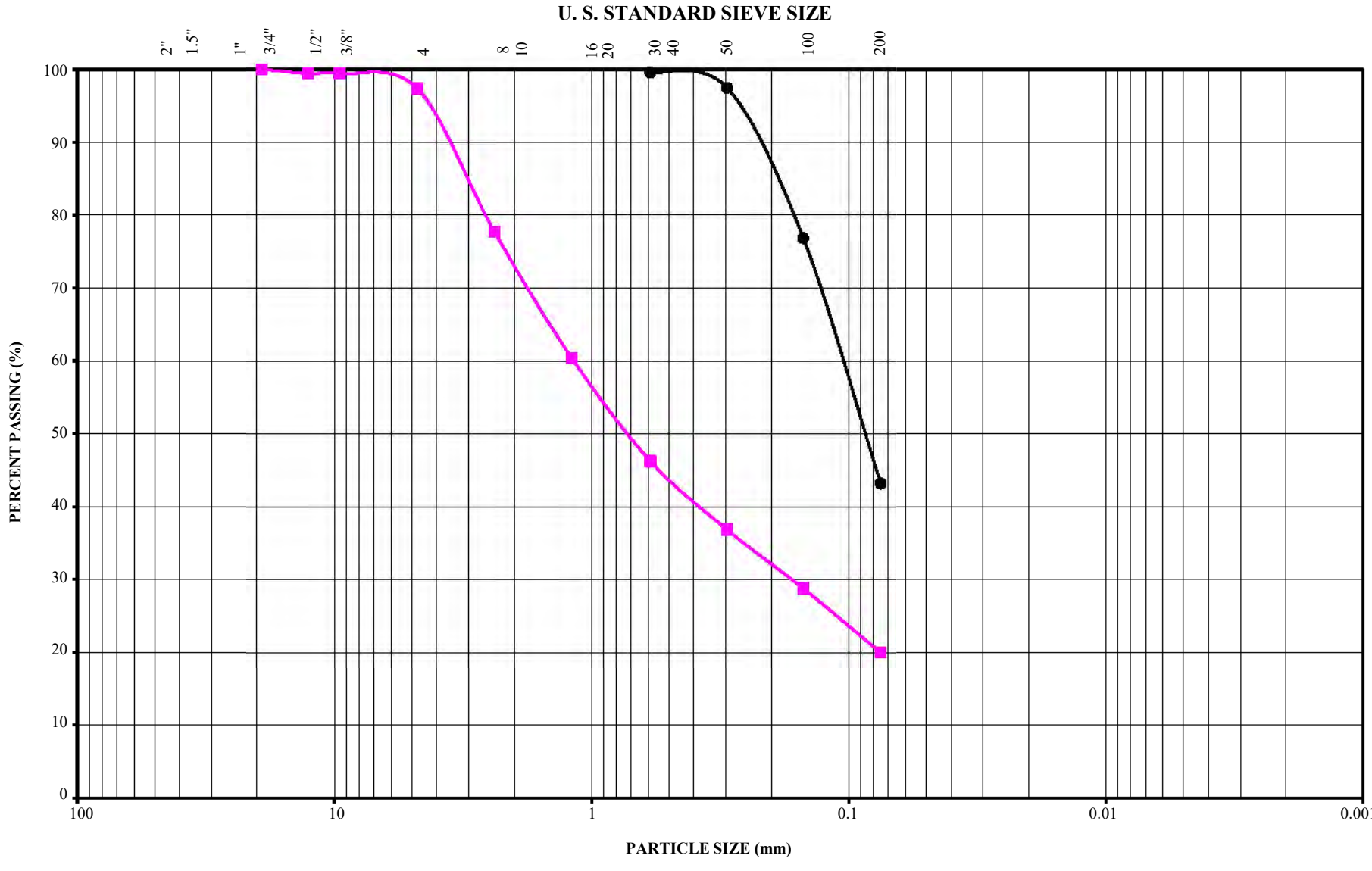
CORROSIVITY
(CTM 417, CTM 422 and CTM 643)

Sample Location / Depth	Material Type (USCS)	pH	Minimum Resistivity (Ohm-cm)	Water Soluble Sulfates (ppm)	Water Soluble Chlorides (ppm)
B-5 @ 5	Silty Sand (SM)	8.10	1840	445.5	93.7



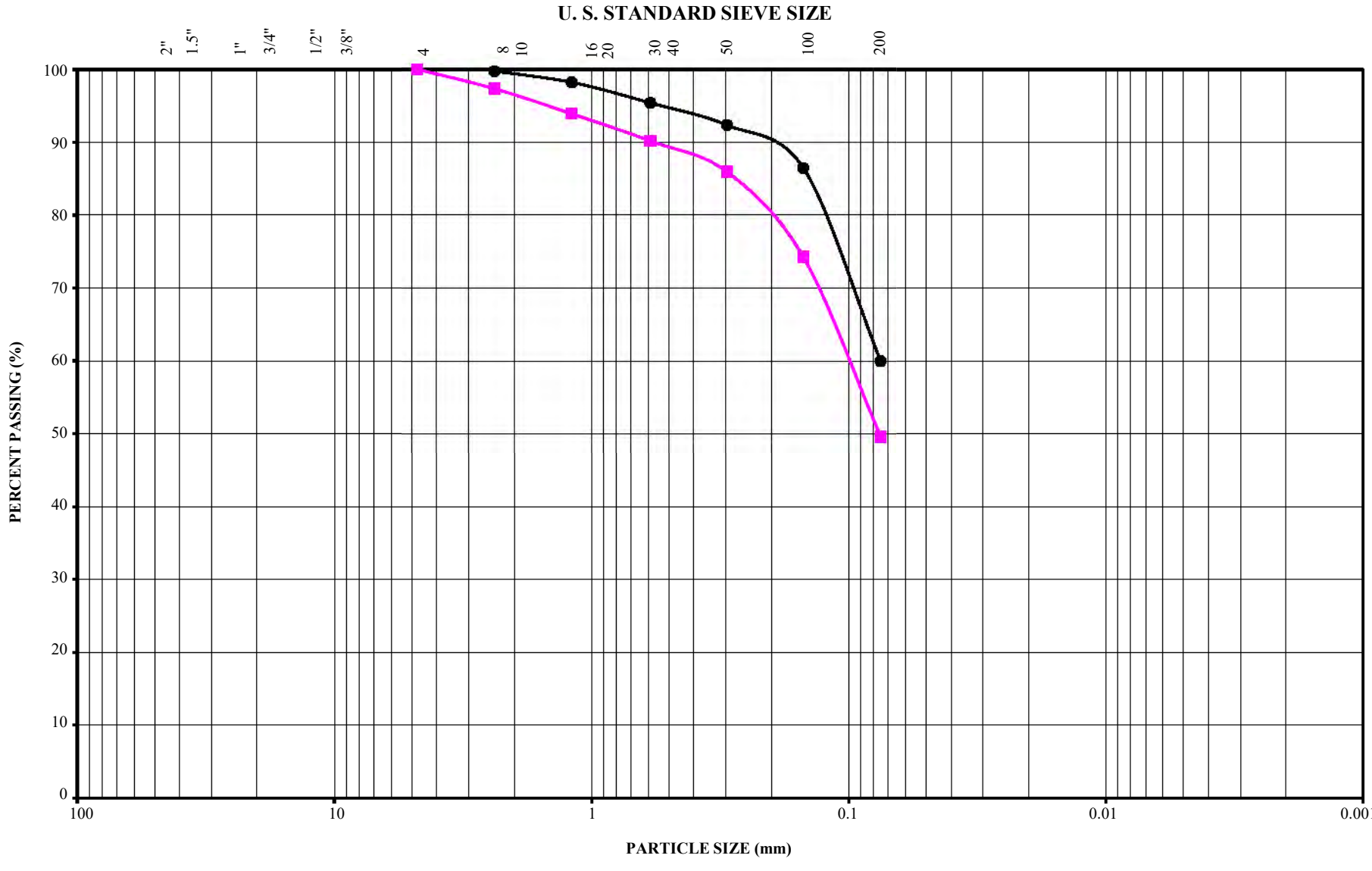
PARTICLE SIZE ANALYSIS

Sample Designation	Sample Depth (feet)	Symbol	Liquid Limit (%)	Plasticity Index	Classification
B-2	5	●	--	--	SC/CL
B-5	30	■	--	--	CL
UES JOB NUMBER:		4830.2400003		FIGURE:	C-1



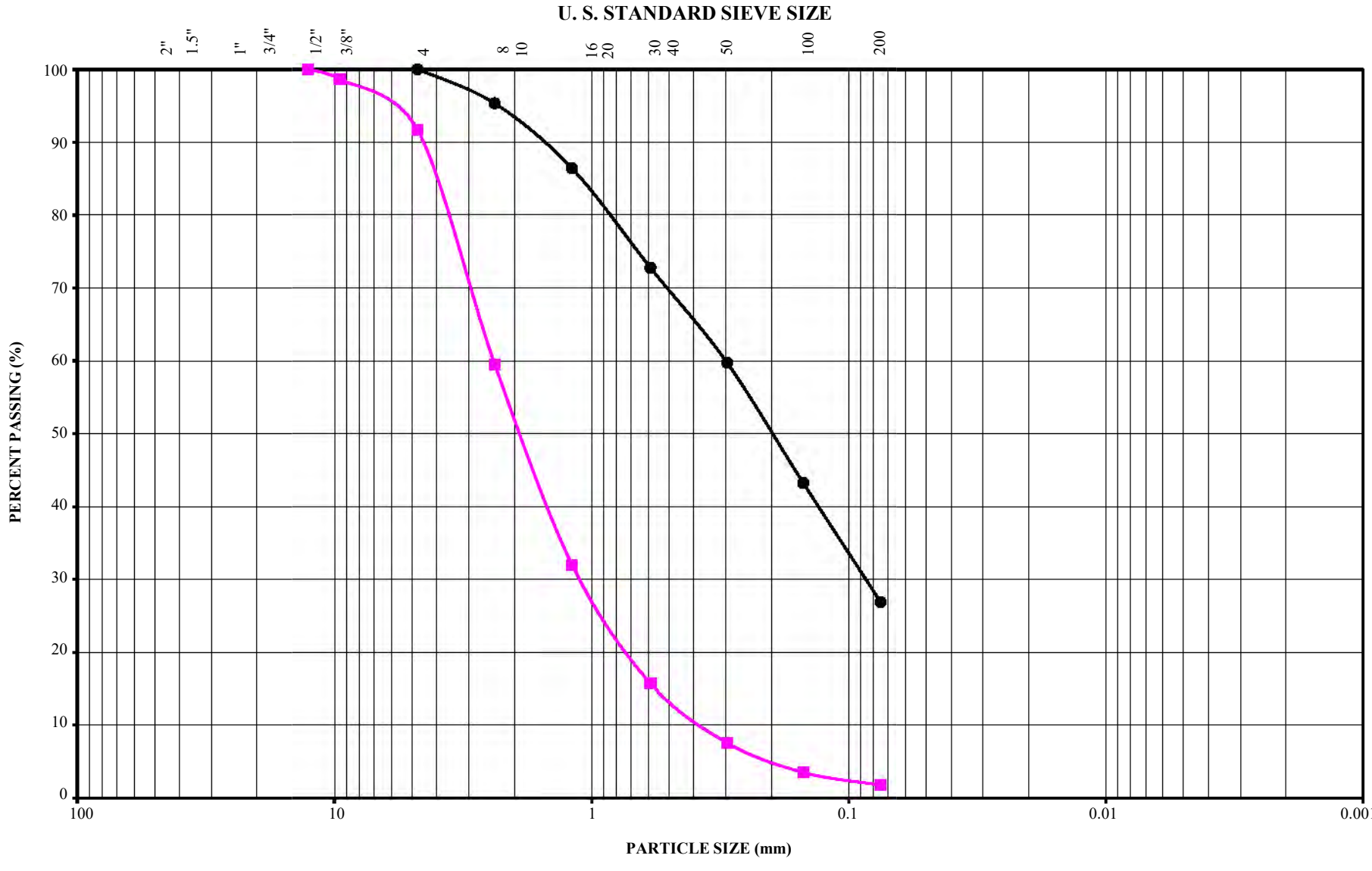
PARTICLE SIZE ANALYSIS

Sample Designation	Sample Depth (feet)	Symbol	Liquid Limit (%)	Plasticity Index	Classification
B-6	15	●	--	--	SC
TW-1	55	■	--	--	SM
UES JOB NUMBER:		4830.2400003		FIGURE:	C-2



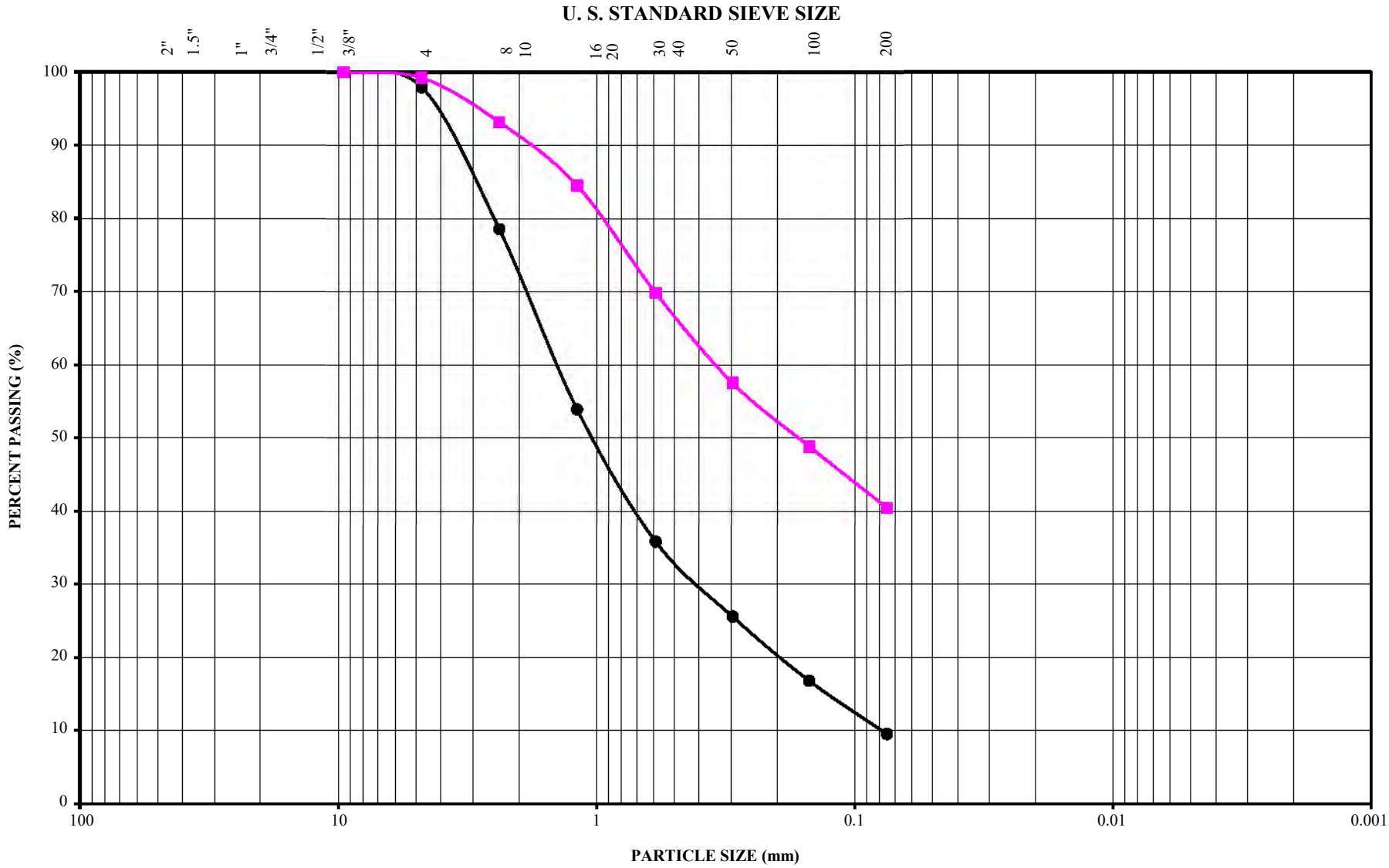
PARTICLE SIZE ANALYSIS

Sample Designation	Sample Depth (feet)	Symbol	Liquid Limit (%)	Plasticity Index	Classification
TW-1	58	●	--	--	CL
TW-1	61	■	--	--	SC/CL
UES JOB NUMBER:		4830.2400003		FIGURE:	C-3



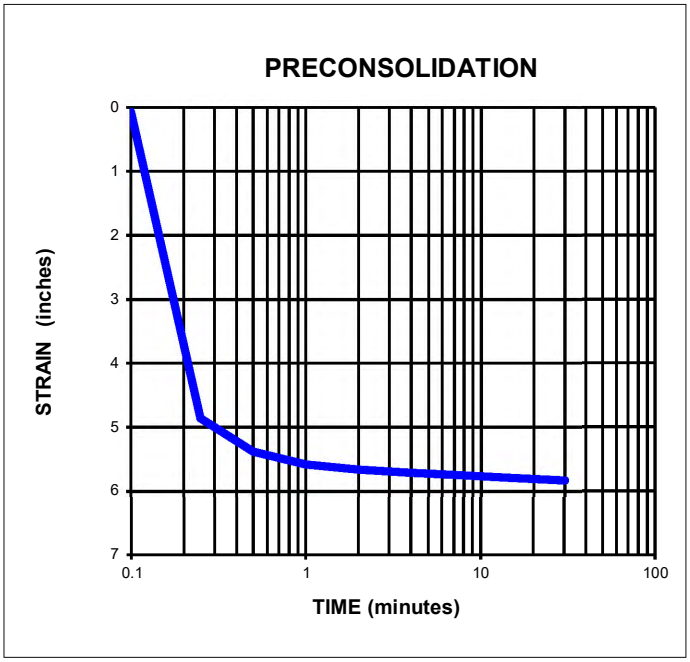
PARTICLE SIZE ANALYSIS

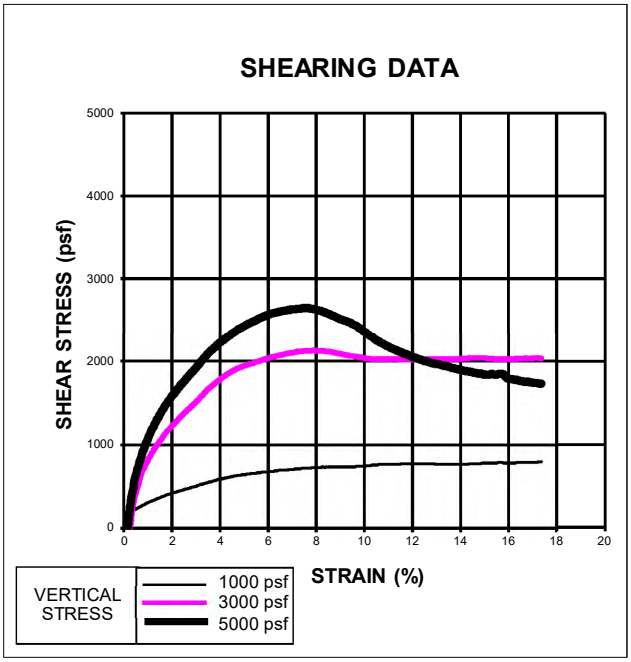
Sample Designation	Sample Depth (feet)	Symbol	Liquid Limit (%)	Plasticity Index	Classification
TW-1	64	●	--	--	SM
TW-1	67	■	--	--	SW
UES JOB NUMBER:		4830.2400003		FIGURE:	C-4

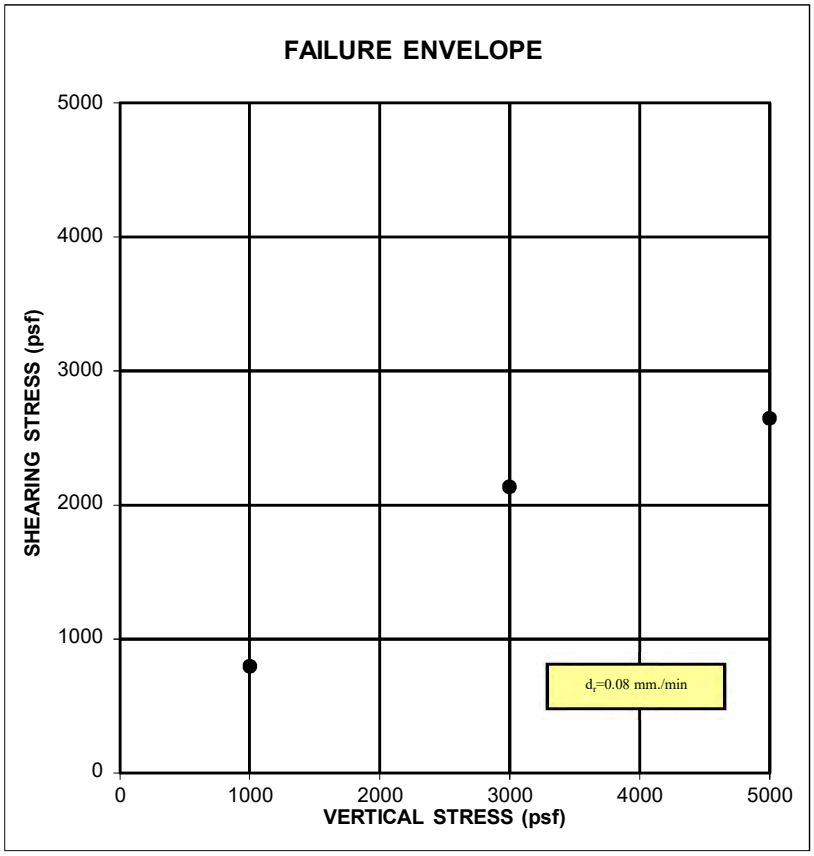


PARTICLE SIZE ANALYSIS

Sample Designation	Sample Depth (feet)	Symbol	Liquid Limit (%)	Plasticity Index	Classification
TW-1	70	●	--	--	SM
TW-1	73	■	--	--	SM
UES JOB NUMBER:		4830.2400003		FIGURE:	C-5







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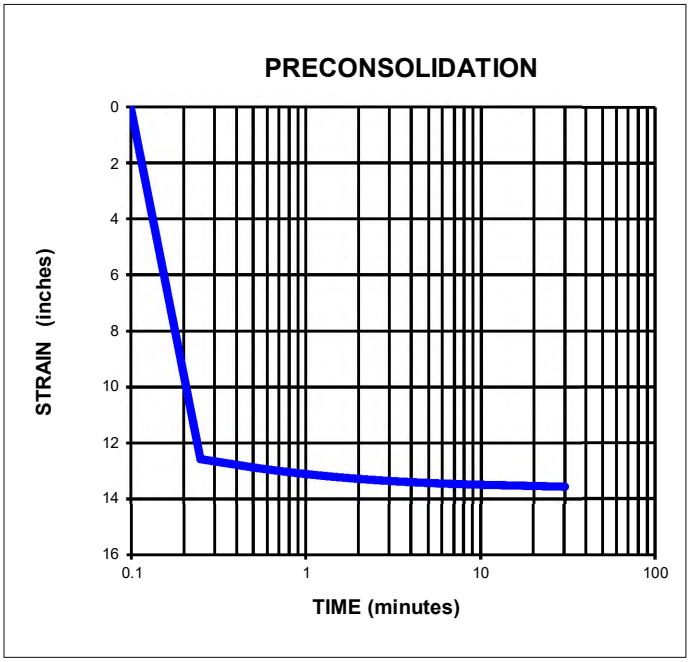
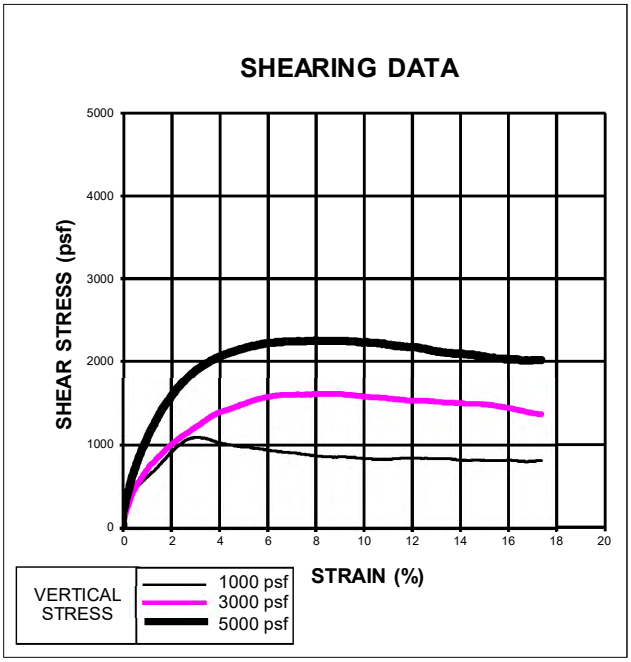
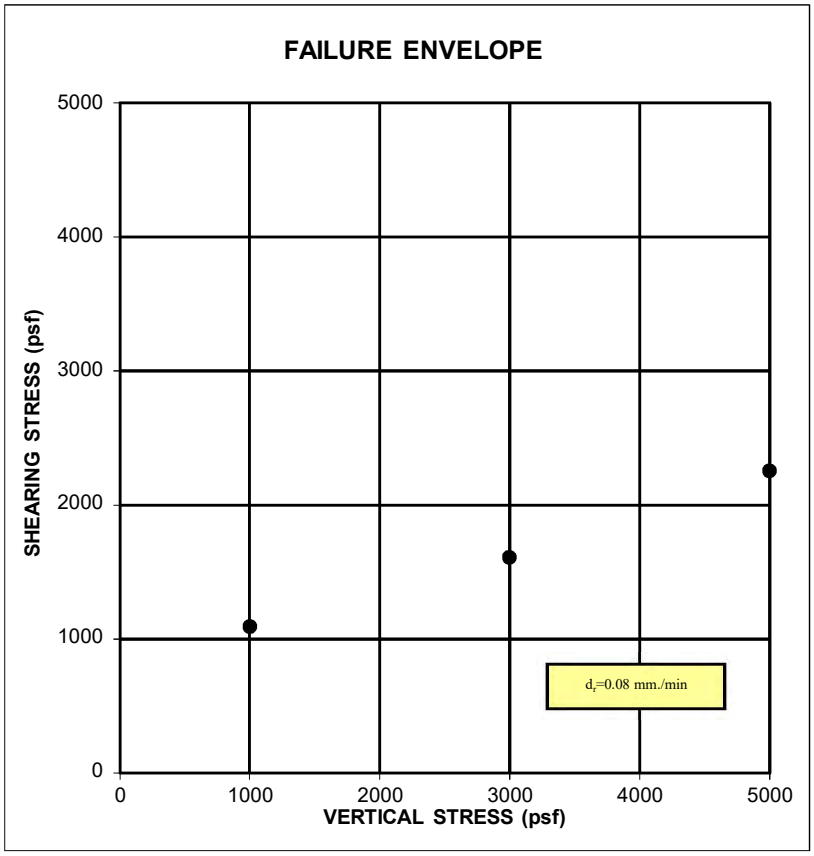
SHEAR STRENGTH TEST - ASTM D3080

Job Name:	Jacumba Fire Station #43			Initial Dry Density (pcf):	102.6
Project Number:	4830.2400003.0000	Sample Date:	2/20/2024	Initial Moisture (%):	13.0
Lab Number:	35558	Test Date:	3/29/2024	Final Moisture (%):	33.9
Sample Location:	B-5 @ 20'	Tested By:	L.N.	Cohesion:	470 psf
Sample Description:	Brown (CL)			Angle Of Friction:	24.9







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SHEAR STRENGTH TEST - ASTM D3080

Job Name:	Jacumba Fire Station #43			Initial Dry Density (pcf):	95.0
Project Number:	4830.2400003.0000	Sample Date:	2/20/2024	Initial Moisture (%):	28.0
Lab Number:	35558	Test Date:	4/1/2024	Final Moisture (%):	31.7
Sample Location:	TW-1 @ 25'	Tested By:	L.N.	Cohesion:	770 psf
Sample Description:	Brown (CL)			Angle Of Friction:	16.2

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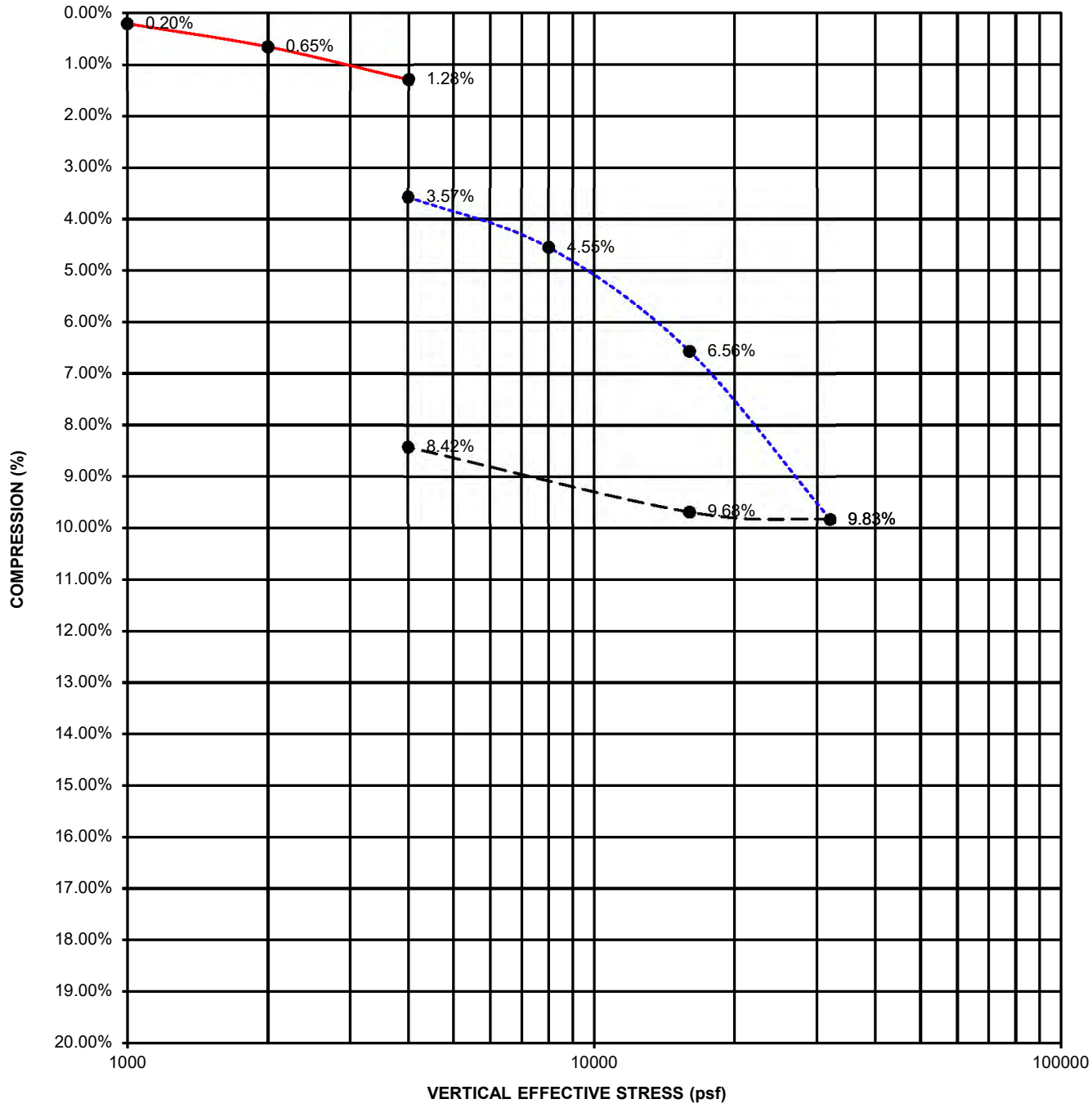


Consolidation Test ASTM D2435

Project Name:	Jacumba Fire Station #43				
Project Number:	4830.24000(	Sample Date:	2/20/2024	Initial Moisture (%):	3.1
Lab Number:	35558	Test Date:	3/29/2024	Final Moisture (%):	10.0
Sample Location:	B-6 @ 5')	Tested By:	L.N.	Initial Dry Density (PCF):	97.8
Sample Description:	Brown (SC)			Final Dry Density (PCF):	N.A

APPENDIX D

STANDARD SPECIFICATIONS FOR GRADING

Section 1 - General

Construction Testing & Engineering, Inc. presents the following standard recommendations for grading and other associated operations on construction projects. These guidelines should be considered a portion of the project specifications. Recommendations contained in the body of the previously presented soils report shall supersede the recommendations and or requirements as specified herein. The project geotechnical consultant shall interpret disputes arising out of interpretation of the recommendations contained in the soils report or specifications contained herein.

Section 2 - Responsibilities of Project Personnel

The geotechnical consultant should provide observation and testing services sufficient to general conformance with project specifications and standard grading practices. The geotechnical consultant should report any deviations to the client or his authorized representative.

The Client should be chiefly responsible for all aspects of the project. He or his authorized representative has the responsibility of reviewing the findings and recommendations of the geotechnical consultant. He shall authorize or cause to have authorized the Contractor and/or other consultants to perform work and/or provide services. During grading the Client or his authorized representative should remain on-site or should remain reasonably accessible to all concerned parties in order to make decisions necessary to maintain the flow of the project.

The Contractor is responsible for the safety of the project and satisfactory completion of all grading and other associated operations on construction projects, including, but not limited to, earth work in accordance with the project plans, specifications and controlling agency requirements.

Section 3 - Preconstruction Meeting

A preconstruction site meeting should be arranged by the owner and/or client and should include the grading contractor, design engineer, geotechnical consultant, owner’s representative and representatives of the appropriate governing authorities.

Section 4 - Site Preparation

The client or contractor should obtain the required approvals from the controlling authorities for the project prior, during and/or after demolition, site preparation and removals, etc. The appropriate approvals should be obtained prior to proceeding with grading operations.

Clearing and grubbing should consist of the removal of vegetation such as brush, grass, woods, stumps, trees, root of trees and otherwise deleterious natural materials from the areas to be graded. Clearing and grubbing should extend to the outside of all proposed excavation and fill areas.

Demolition should include removal of buildings, structures, foundations, reservoirs, utilities (including underground pipelines, septic tanks, leach fields, seepage pits, cisterns, mining shafts, tunnels, etc.) and other man-made surface and subsurface improvements from the areas to be graded. Demolition of utilities should include proper capping and/or rerouting pipelines at the project perimeter and cutoff and capping of wells in accordance with the requirements of the governing authorities and the recommendations of the geotechnical consultant at the time of demolition.

Trees, plants or man-made improvements not planned to be removed or demolished should be protected by the contractor from damage or injury.

Debris generated during clearing, grubbing and/or demolition operations should be wasted from areas to be graded and disposed off-site. Clearing, grubbing and demolition operations should be performed under the observation of the geotechnical consultant.

Section 5 - Site Protection

Protection of the site during the period of grading should be the responsibility of the contractor. Unless other provisions are made in writing and agreed upon among the concerned parties, completion of a portion of the project should not be considered to preclude that portion or adjacent areas from the requirements for site protection until such time as the entire project is complete as identified by the geotechnical consultant, the client and the regulating agencies.

Precautions should be taken during the performance of site clearing, excavations and grading to protect the work site from flooding, ponding or inundation by poor or improper surface drainage. Temporary provisions should be made during the rainy season to adequately direct surface drainage away from and off the work site. Where low areas cannot be avoided, pumps should be kept on hand to continually remove water during periods of rainfall.

Rain related damage should be considered to include, but may not be limited to, erosion, silting, saturation, swelling, structural distress and other adverse conditions as determined by the geotechnical consultant. Soil adversely affected should be classified as unsuitable materials and should be subject to overexcavation and replacement with compacted fill or other remedial grading as recommended by the geotechnical consultant.

The contractor should be responsible for the stability of all temporary excavations. Recommendations by the geotechnical consultant pertaining to temporary excavations (e.g., backcuts) are made in consideration of stability of the completed project and, therefore, should not be considered to preclude the responsibilities of the contractor. Recommendations by the geotechnical consultant should not be considered to preclude requirements that are more restrictive by the regulating agencies. The contractor should provide during periods of extensive rainfall plastic sheeting to prevent unprotected slopes from becoming saturated and unstable. When deemed appropriate by the geotechnical consultant or governing agencies the contractor shall install checkdams, desilting basins, sand bags or other drainage control measures.

In relatively level areas and/or slope areas, where saturated soil and/or erosion gullies exist to depths of greater than 1.0 foot; they should be overexcavated and replaced as compacted fill in accordance with the applicable specifications. Where affected materials exist to depths of 1.0 foot or less below proposed finished grade, remedial grading by moisture conditioning in-place, followed by thorough recompaction in accordance with the applicable grading guidelines herein may be attempted. If the desired results are not achieved, all affected materials should be overexcavated and replaced as compacted fill in accordance with the slope repair recommendations herein. If field conditions dictate, the geotechnical consultant may recommend other slope repair procedures.

Section 6 - Excavations

6.1 Unsuitable Materials

Materials that are unsuitable should be excavated under observation and recommendations of the geotechnical consultant. Unsuitable materials include, but may not be limited to, dry, loose, soft, wet, organic compressible natural soils and fractured, weathered, soft bedrock and nonengineered or otherwise deleterious fill materials.

Material identified by the geotechnical consultant as unsatisfactory due to its moisture conditions should be overexcavated; moisture conditioned as needed, to a uniform at or above optimum moisture condition before placement as compacted fill.

If during the course of grading adverse geotechnical conditions are exposed which were not anticipated in the preliminary soil report as determined by the geotechnical consultant additional exploration, analysis, and treatment of these problems may be recommended.

6.2 Cut Slopes

Unless otherwise recommended by the geotechnical consultant and approved by the regulating agencies, permanent cut slopes should not be steeper than 2:1 (horizontal: vertical).

The geotechnical consultant should observe cut slope excavation and if these excavations expose loose cohesionless, significantly fractured or otherwise unsuitable material, the materials should be overexcavated and replaced with a compacted stabilization fill. If encountered specific cross section details should be obtained from the Geotechnical Consultant.

When extensive cut slopes are excavated or these cut slopes are made in the direction of the prevailing drainage, a non-erodible diversion swale (brow ditch) should be provided at the top of the slope.

6.3 Pad Areas

All lot pad areas, including side yard terrace containing both cut and fill materials, transitions, located less than 3 feet deep should be overexcavated to a depth of 3 feet and replaced with a uniform compacted fill blanket of 3 feet. Actual depth of overexcavation may vary and should be delineated by the geotechnical consultant during grading, especially where deep or drastic transitions are present.

For pad areas created above cut or natural slopes, positive drainage should be established away from the top-of-slope. This may be accomplished utilizing a berm drainage swale and/or an appropriate pad gradient. A gradient in soil areas away from the top-of-slopes of 2 percent or greater is recommended.

Section 7 - Compacted Fill

All fill materials should have fill quality, placement, conditioning and compaction as specified below or as approved by the geotechnical consultant.

7.1 Fill Material Quality

Excavated on-site or import materials which are acceptable to the geotechnical consultant may be utilized as compacted fill, provided trash, vegetation and other deleterious materials are removed prior to placement. All import materials anticipated for use on-site should be sampled tested and approved prior to and placement is in conformance with the requirements outlined.

Rocks 12 inches in maximum and smaller may be utilized within compacted fill provided sufficient fill material is placed and thoroughly compacted over and around all rock to effectively fill rock voids. The amount of rock should not exceed 40 percent by dry weight passing the 3/4-inch sieve. The geotechnical consultant may vary those requirements as field conditions dictate.

Where rocks greater than 12 inches but less than four feet of maximum dimension are generated during grading, or otherwise desired to be placed within an engineered fill, special handling in accordance with the recommendations below. Rocks greater than four feet should be broken down or disposed off-site.

7.2 Placement of Fill

Prior to placement of fill material, the geotechnical consultant should observe and approve the area to receive fill. After observation and approval, the exposed ground surface should be scarified to a depth of 6 to 8 inches. The scarified material should be conditioned (i.e. moisture added or air dried by continued discing) to achieve a moisture content at or slightly above optimum moisture conditions and compacted to a minimum of 90 percent of the maximum density or as otherwise recommended in the soils report or by appropriate government agencies.

Compacted fill should then be placed in thin horizontal lifts not exceeding eight inches in loose thickness prior to compaction. Each lift should be moisture conditioned as needed, thoroughly blended to achieve a consistent moisture content at or slightly above optimum and thoroughly compacted by mechanical methods to a minimum of 90 percent of laboratory maximum dry density. Each lift should be treated in a like manner until the desired finished grades are achieved.

The contractor should have suitable and sufficient mechanical compaction equipment and watering apparatus on the job site to handle the amount of fill being placed in consideration of moisture retention properties of the materials and weather conditions.

When placing fill in horizontal lifts adjacent to areas sloping steeper than 5:1 (horizontal: vertical), horizontal keys and vertical benches should be excavated into the adjacent slope area. Keying and benching should be sufficient to provide at least six-foot wide benches and a minimum of four feet of vertical bench height within the firm natural ground, firm bedrock or engineered compacted fill. No compacted fill should be placed in an area after keying and benching until the geotechnical consultant has reviewed the area. Material generated by the benching operation should be moved sufficiently away from

the bench area to allow for the recommended review of the horizontal bench prior to placement of fill.

Within a single fill area where grading procedures dictate two or more separate fills, temporary slopes (false slopes) may be created. When placing fill adjacent to a false slope, benching should be conducted in the same manner as above described. At least a 3-foot vertical bench should be established within the firm core of adjacent approved compacted fill prior to placement of additional fill. Benching should proceed in at least 3-foot vertical increments until the desired finished grades are achieved.

Prior to placement of additional compacted fill following an overnight or other grading delay, the exposed surface or previously compacted fill should be processed by scarification, moisture conditioning as needed to at or slightly above optimum moisture content, thoroughly blended and recompacted to a minimum of 90 percent of laboratory maximum dry density. Where unsuitable materials exist to depths of greater than one foot, the unsuitable materials should be over-excavated.

Following a period of flooding, rainfall or overwatering by other means, no additional fill should be placed until damage assessments have been made and remedial grading performed as described herein.

Rocks 12 inch in maximum dimension and smaller may be utilized in the compacted fill provided the fill is placed and thoroughly compacted over and around all rock. No oversize material should be used within 3 feet of finished pad grade and within 1 foot of other compacted fill areas. Rocks 12 inches up to four feet maximum dimension should be placed below the upper 10 feet of any fill and should not be closer than 15 feet to any slope face. These recommendations could vary as locations of improvements dictate. Where practical, oversized material should not be placed below areas where structures or deep utilities are proposed. Oversized material should be placed in windrows on a clean, overexcavated or unyielding compacted fill or firm natural ground surface. Select native or imported granular soil (S.E. 30 or higher) should be placed and thoroughly flooded over and around all windrowed rock, such that voids are filled. Windrows of oversized material should be staggered so those successive strata of oversized material are not in the same vertical plane.

It may be possible to dispose of individual larger rock as field conditions dictate and as recommended by the geotechnical consultant at the time of placement.

The contractor should assist the geotechnical consultant and/or his representative by digging test pits for removal determinations and/or for testing compacted fill. The contractor should provide this work at no additional cost to the owner or contractor's client.

Fill should be tested by the geotechnical consultant for compliance with the recommended relative compaction and moisture conditions. Field density testing should conform to ASTM Method of Test D 1556-00, D 2922-04. Tests should be conducted at a minimum of approximately two vertical feet or approximately 1,000 to 2,000 cubic yards of fill placed. Actual test intervals may vary as field conditions dictate. Fill found not to be in conformance with the grading recommendations should be removed or otherwise handled as recommended by the geotechnical consultant.

7.3 Fill Slopes

Unless otherwise recommended by the geotechnical consultant and approved by the regulating agencies, permanent fill slopes should not be steeper than 2:1 (horizontal: vertical).

Except as specifically recommended in these grading guidelines compacted fill slopes should be over-built two to five feet and cut back to grade, exposing the firm, compacted fill inner core. The actual amount of overbuilding may vary as field conditions dictate. If the desired results are not achieved, the existing slopes should be overexcavated and reconstructed under the guidelines of the geotechnical consultant. The degree of overbuilding shall be increased until the desired compacted slope surface condition is achieved. Care should be taken by the contractor to provide thorough mechanical compaction to the outer edge of the overbuilt slope surface.

At the discretion of the geotechnical consultant, slope face compaction may be attempted by conventional construction procedures including backrolling. The procedure must create a firmly compacted material throughout the entire depth of the slope face to the surface of the previously compacted firm fill intercore.

During grading operations, care should be taken to extend compactive effort to the outer edge of the slope. Each lift should extend horizontally to the desired finished slope surface or more as needed to ultimately established desired grades. Grade during construction should not be allowed to roll off at the edge of the slope. It may be helpful to elevate slightly the outer edge of the slope. Slough resulting from the placement of individual lifts should not be allowed to drift down over previous lifts. At intervals not

exceeding four feet in vertical slope height or the capability of available equipment, whichever is less, fill slopes should be thoroughly dozer trackrolled.

For pad areas above fill slopes, positive drainage should be established away from the top-of-slope. This may be accomplished using a berm and pad gradient of at least two percent.

Section 8 - Trench Backfill

Utility and/or other excavation of trench backfill should, unless otherwise recommended, be compacted by mechanical means. Unless otherwise recommended, the degree of compaction should be a minimum of 90 percent of the laboratory maximum density.

Within slab areas, but outside the influence of foundations, trenches up to one foot wide and two feet deep may be backfilled with sand and consolidated by jetting, flooding or by mechanical means. If on-site materials are utilized, they should be wheel-rolled, tamped or otherwise compacted to a firm condition. For minor interior trenches, density testing may be deleted or spot testing may be elected if deemed necessary, based on review of backfill operations during construction.

If utility contractors indicate that it is undesirable to use compaction equipment in close proximity to a buried conduit, the contractor may elect the utilization of light weight mechanical compaction equipment and/or shading of the conduit with clean, granular material, which should be thoroughly jetted in-place above the conduit, prior to initiating mechanical compaction procedures. Other methods of utility trench compaction may also be appropriate, upon review of the geotechnical consultant at the time of construction.

In cases where clean granular materials are proposed for use in lieu of native materials or where flooding or jetting is proposed, the procedures should be considered subject to review by the geotechnical consultant. Clean granular backfill and/or bedding are not recommended in slope areas.

Section 9 - Drainage

Where deemed appropriate by the geotechnical consultant, canyon subdrain systems should be installed in accordance with CTE's recommendations during grading.

Typical subdrains for compacted fill buttresses, slope stabilization or sidehill masses, should be installed in accordance with the specifications.

Roof, pad and slope drainage should be directed away from slopes and areas of structures to suitable disposal areas via non-erodible devices (i.e., gutters, downspouts, and concrete swales).

For drainage in extensively landscaped areas near structures, (i.e., within four feet) a minimum of 5 percent gradient away from the structure should be maintained. Pad drainage of at least 2 percent should be maintained over the remainder of the site.

Drainage patterns established at the time of fine grading should be maintained throughout the life of the project. Property owners should be made aware that altering drainage patterns could be detrimental to slope stability and foundation performance.

Section 10 - Slope Maintenance

10.1 - Landscape Plants

To enhance surficial slope stability, slope planting should be accomplished at the completion of grading. Slope planting should consist of deep-rooting vegetation requiring little watering. Plants native to the southern California area and plants relative to native plants are generally desirable. Plants native to other semi-arid and arid areas may also be appropriate. A Landscape Architect should be the best party to consult regarding actual types of plants and planting configuration.

10.2 - Irrigation

Irrigation pipes should be anchored to slope faces, not placed in trenches excavated into slope faces.

Slope irrigation should be minimized. If automatic timing devices are utilized on irrigation systems, provisions should be made for interrupting normal irrigation during periods of rainfall.

10.3 - Repair

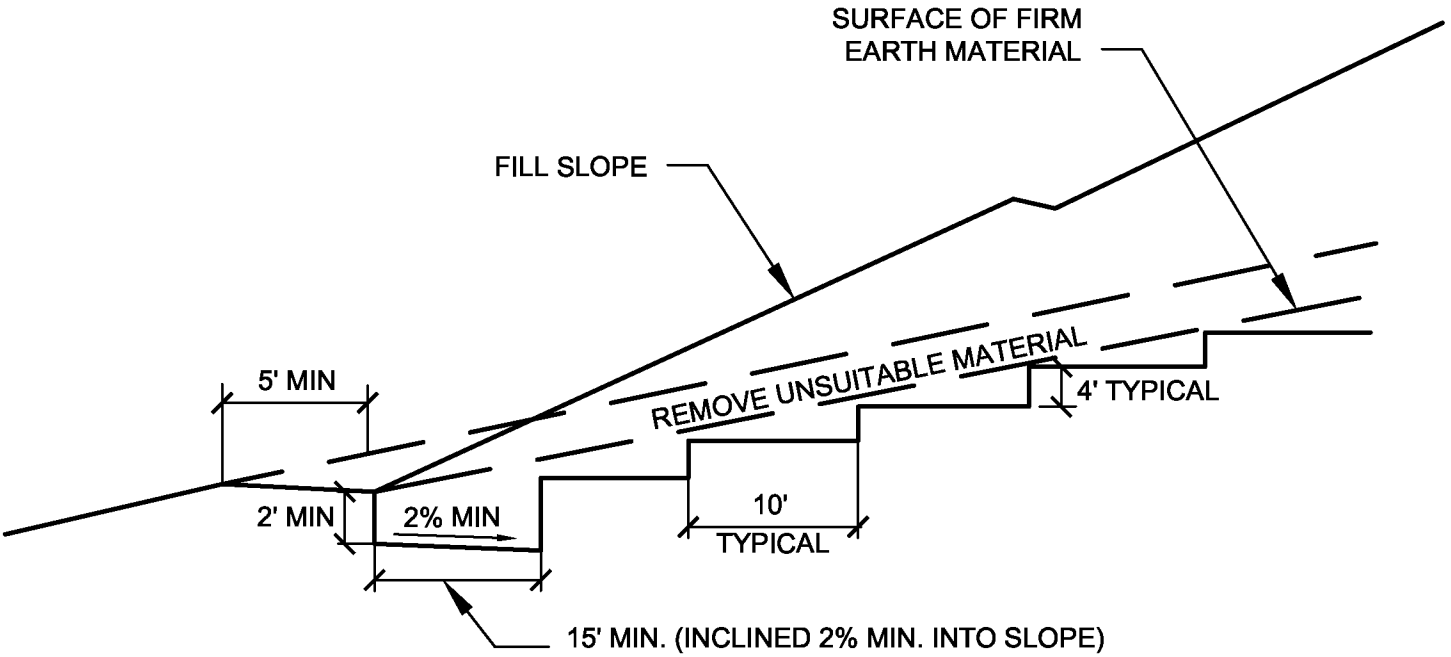
As a precautionary measure, plastic sheeting should be readily available, or kept on hand, to protect all slope areas from saturation by periods of heavy or prolonged rainfall. This measure is strongly recommended, beginning with the period prior to landscape planting.

If slope failures occur, the geotechnical consultant should be contacted for a field review of site conditions and development of recommendations for evaluation and repair.

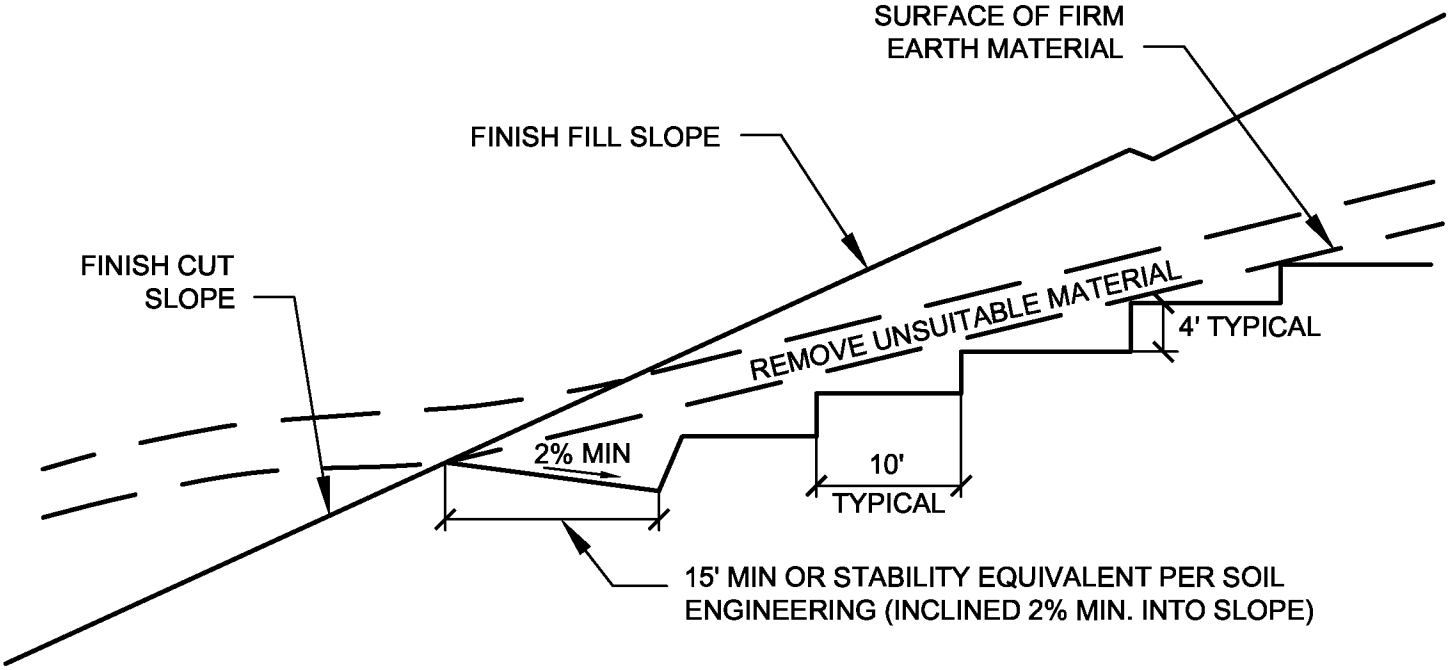
If slope failures occur as a result of exposure to period of heavy rainfall, the failure areas and currently unaffected areas should be covered with plastic sheeting to protect against additional saturation.

In the accompanying Standard Details, appropriate repair procedures are illustrated for superficial slope failures (i.e., occurring typically within the outer one foot to three feet of a slope face).

BENCHING FILL OVER NATURAL

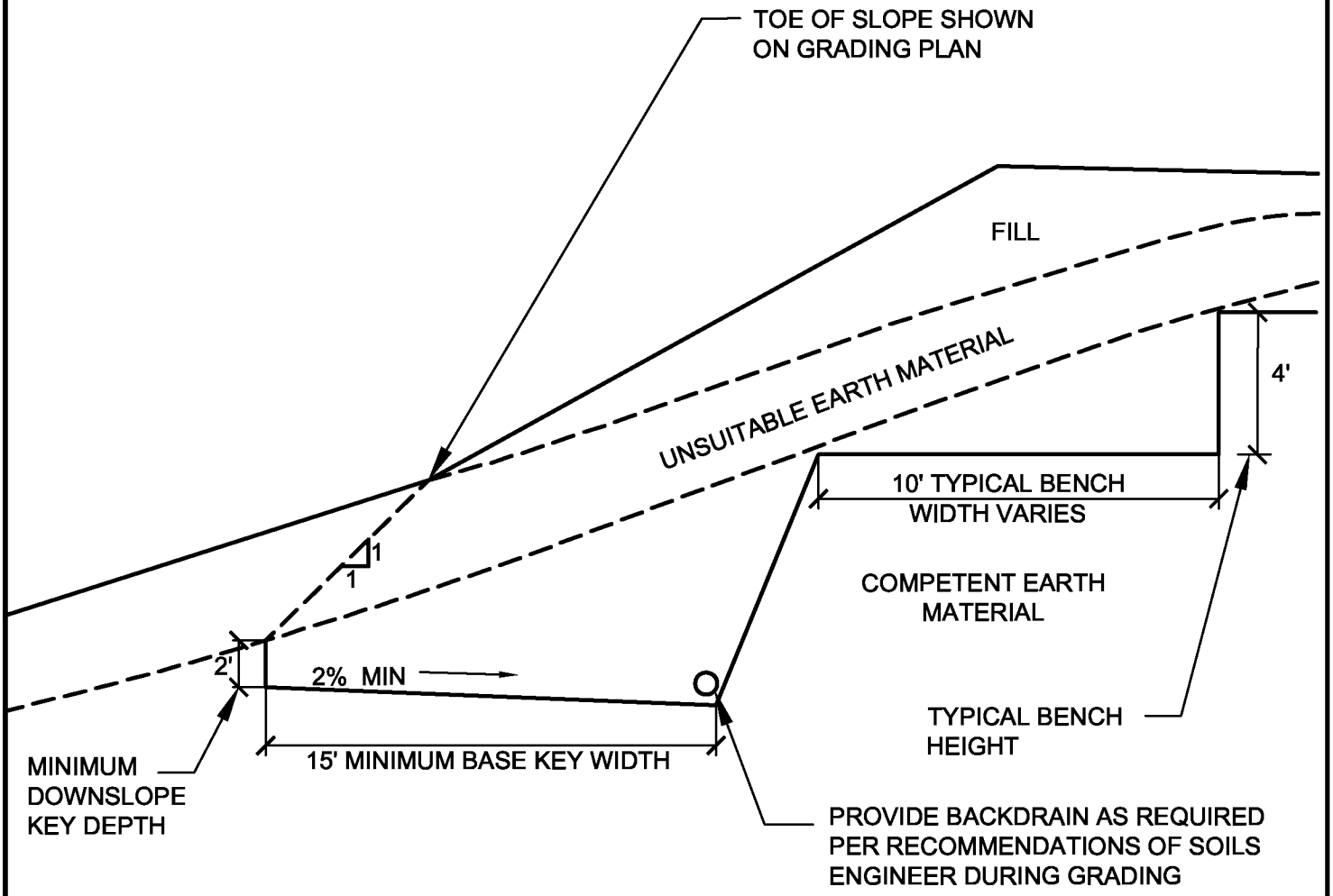


BENCHING FILL OVER CUT



NOT TO SCALE

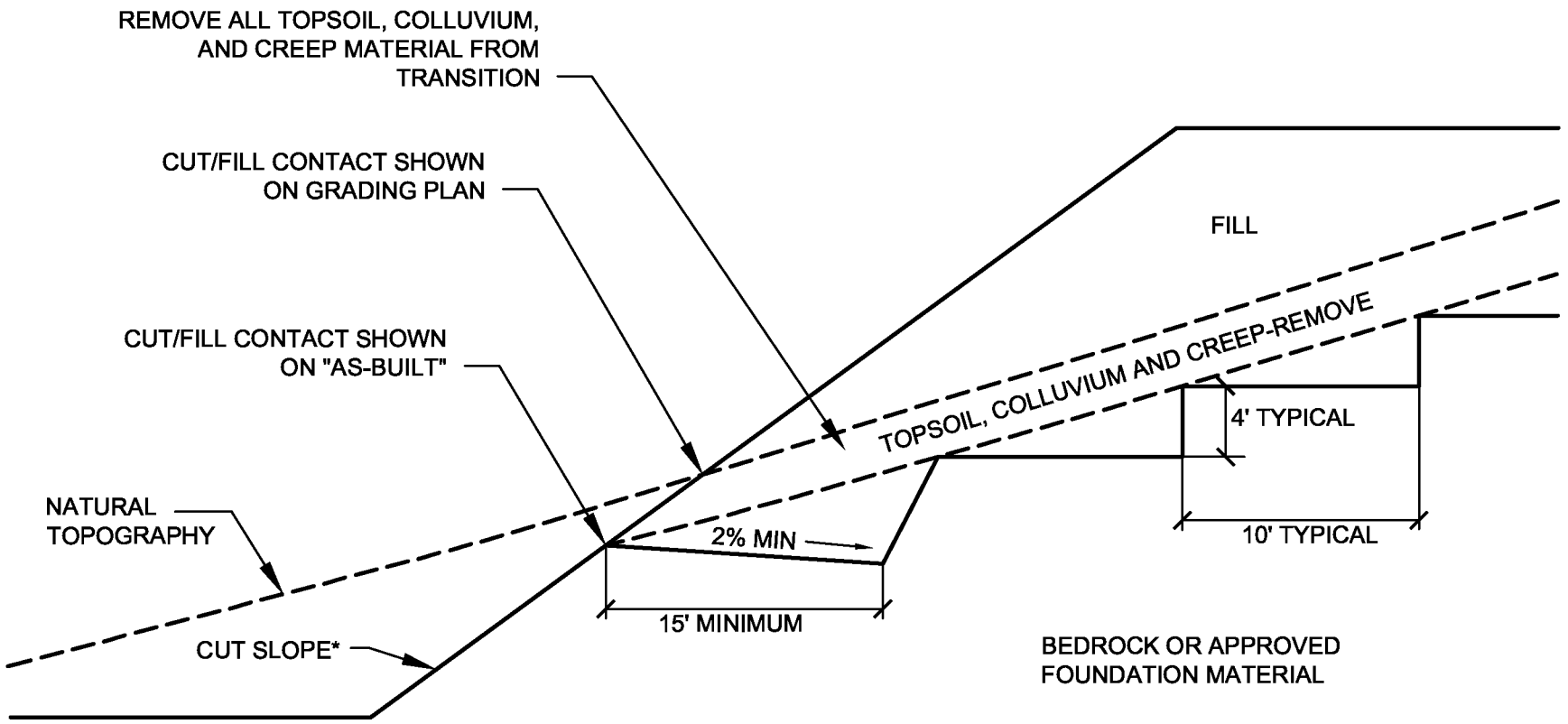
BENCHING FOR COMPACTED FILL DETAIL



WHERE NATURAL SLOPE GRADIENT IS 5:1 OR LESS, BENCHING IS NOT NECESSARY. FILL IS NOT TO BE PLACED ON COMPRESSIBLE OR UNSUITABLE MATERIAL.

NOT TO SCALE

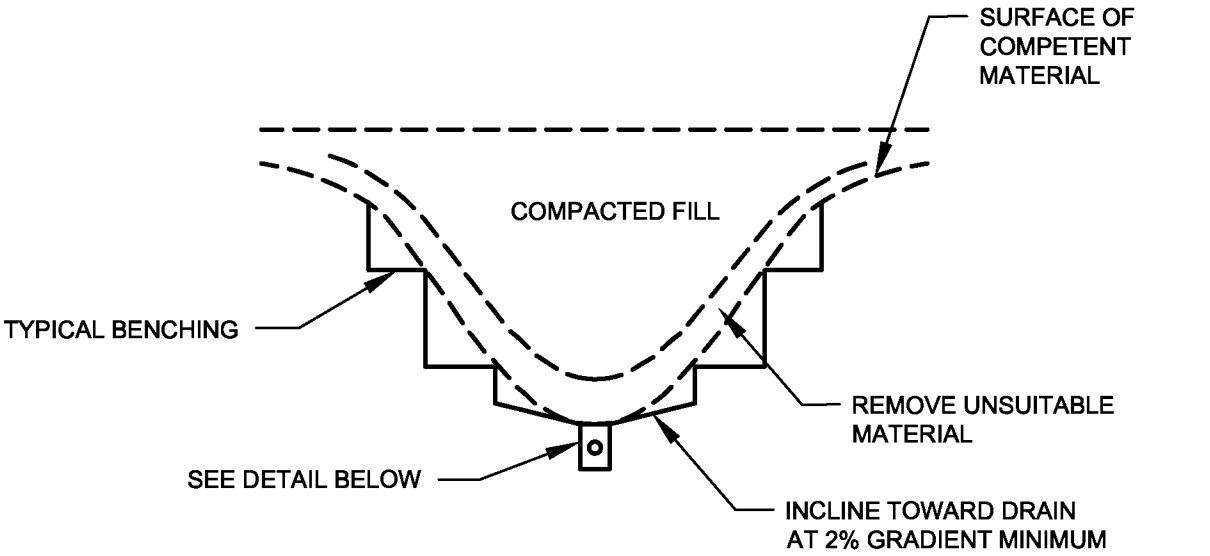
FILL SLOPE ABOVE NATURAL GROUND DETAIL



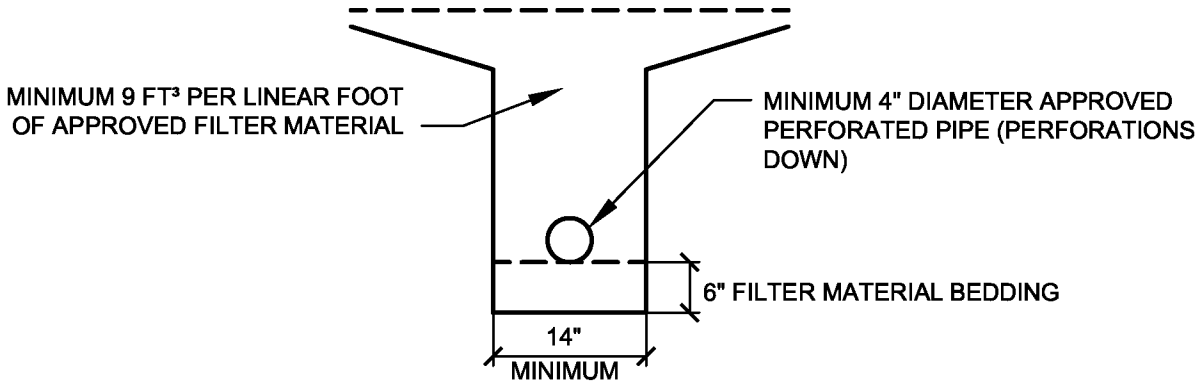
*NOTE: CUT SLOPE PORTION SHOULD BE MADE PRIOR TO PLACEMENT OF FILL

NOT TO SCALE

FILL SLOPE ABOVE CUT SLOPE DETAIL



DETAIL



CALTRANS CLASS 2 PERMEABLE MATERIAL FILTER MATERIAL TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUAL:

SIEVE SIZE	PERCENTAGE PASSING
1"	100
¾"	90-100
⅜"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

APPROVED PIPE TO BE SCHEDULE 40 POLY-VINYL-CHLORIDE (P.V.C.) OR APPROVED EQUAL. MINIMUM CRUSH STRENGTH 1000 psi

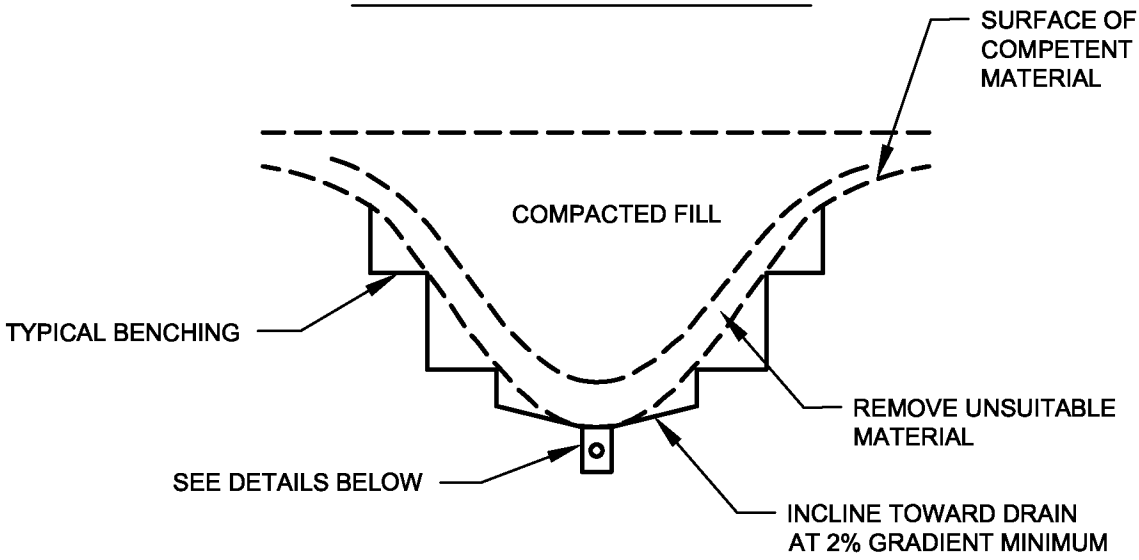
PIPE DIAMETER TO MEET THE FOLLOWING CRITERIA, SUBJECT TO FIELD REVIEW BASED ON ACTUAL GEOTECHNICAL CONDITIONS ENCOUNTERED DURING GRADING

LENGTH OF RUN	PIPE DIAMETER
INITIAL 500'	4"
500' TO 1500'	6"
> 1500'	8"

NOT TO SCALE

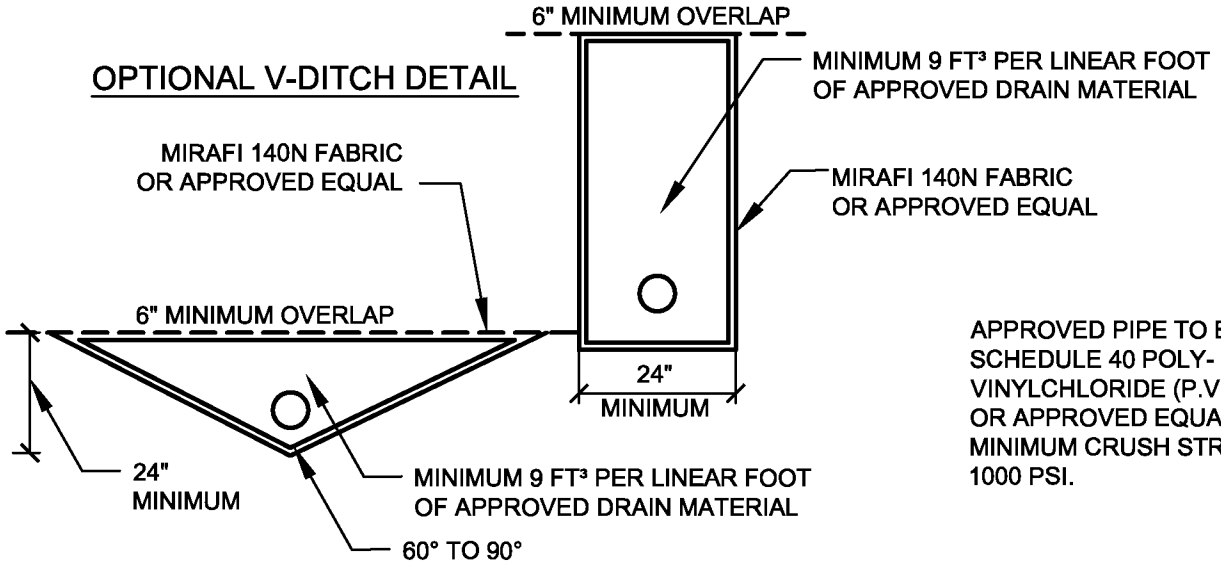
TYPICAL CANYON SUBDRAIN DETAIL

CANYON SUBDRAIN DETAILS



TRENCH DETAILS

OPTIONAL V-DITCH DETAIL



APPROVED PIPE TO BE SCHEDULE 40 POLY-VINYLCHLORIDE (P.V.C.) OR APPROVED EQUAL. MINIMUM CRUSH STRENGTH 1000 PSI.

DRAIN MATERIAL TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUAL:

SIEVE SIZE	PERCENTAGE PASSING
1 ½"	88-100
1"	5-40
¾"	0-17
⅜"	0-7
NO. 200	0-3

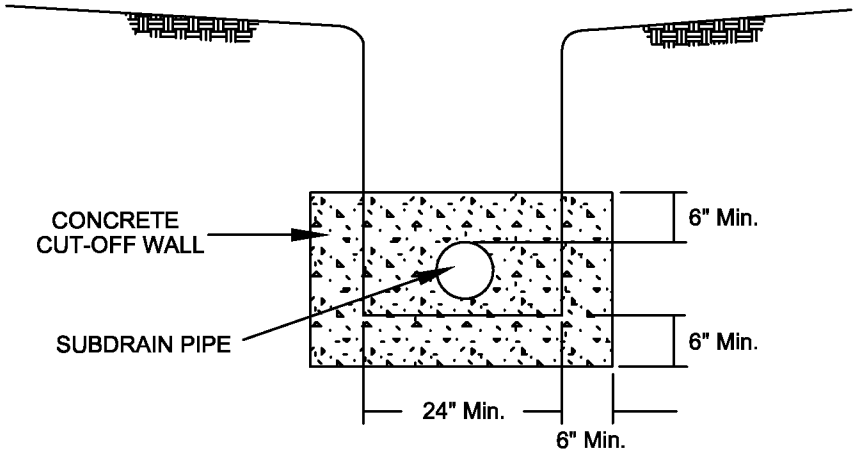
PIPE DIAMETER TO MEET THE FOLLOWING CRITERIA, SUBJECT TO FIELD REVIEW BASED ON ACTUAL GEOTECHNICAL CONDITIONS ENCOUNTERED DURING GRADING

LENGTH OF RUN	PIPE DIAMETER
INITIAL 500'	4"
500' TO 1500'	6"
> 1500'	8"

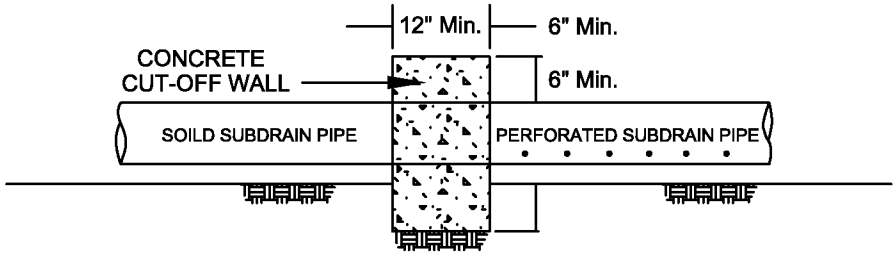
NOT TO SCALE

GEOFABRIC SUBDRAIN

FRONT VIEW



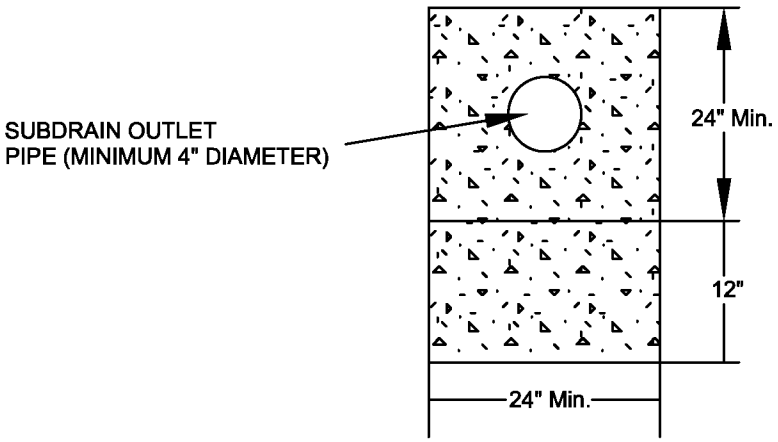
SIDE VIEW



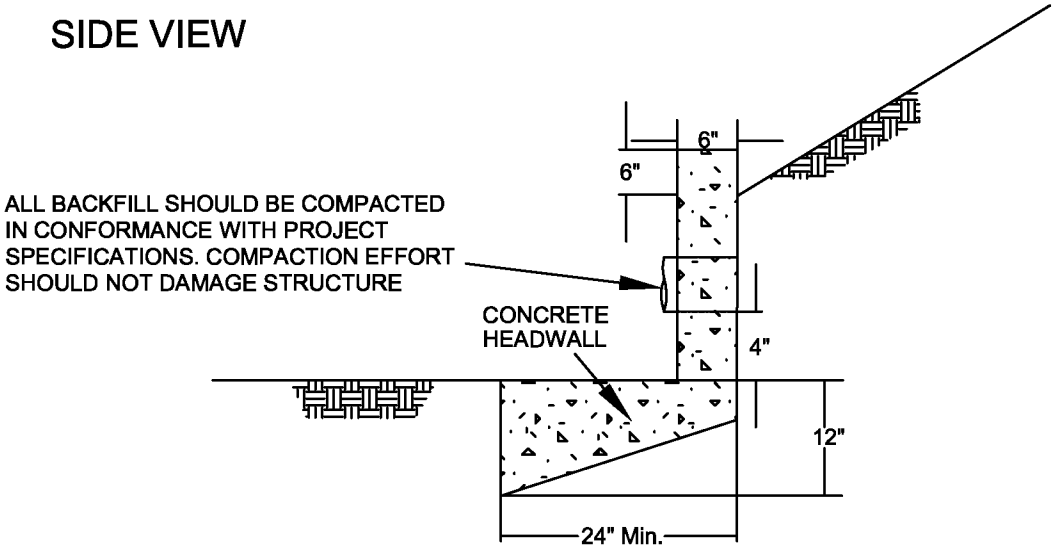
NOT TO SCALE

RECOMMENDED SUBDRAIN CUT-OFF WALL

FRONT VIEW



SIDE VIEW



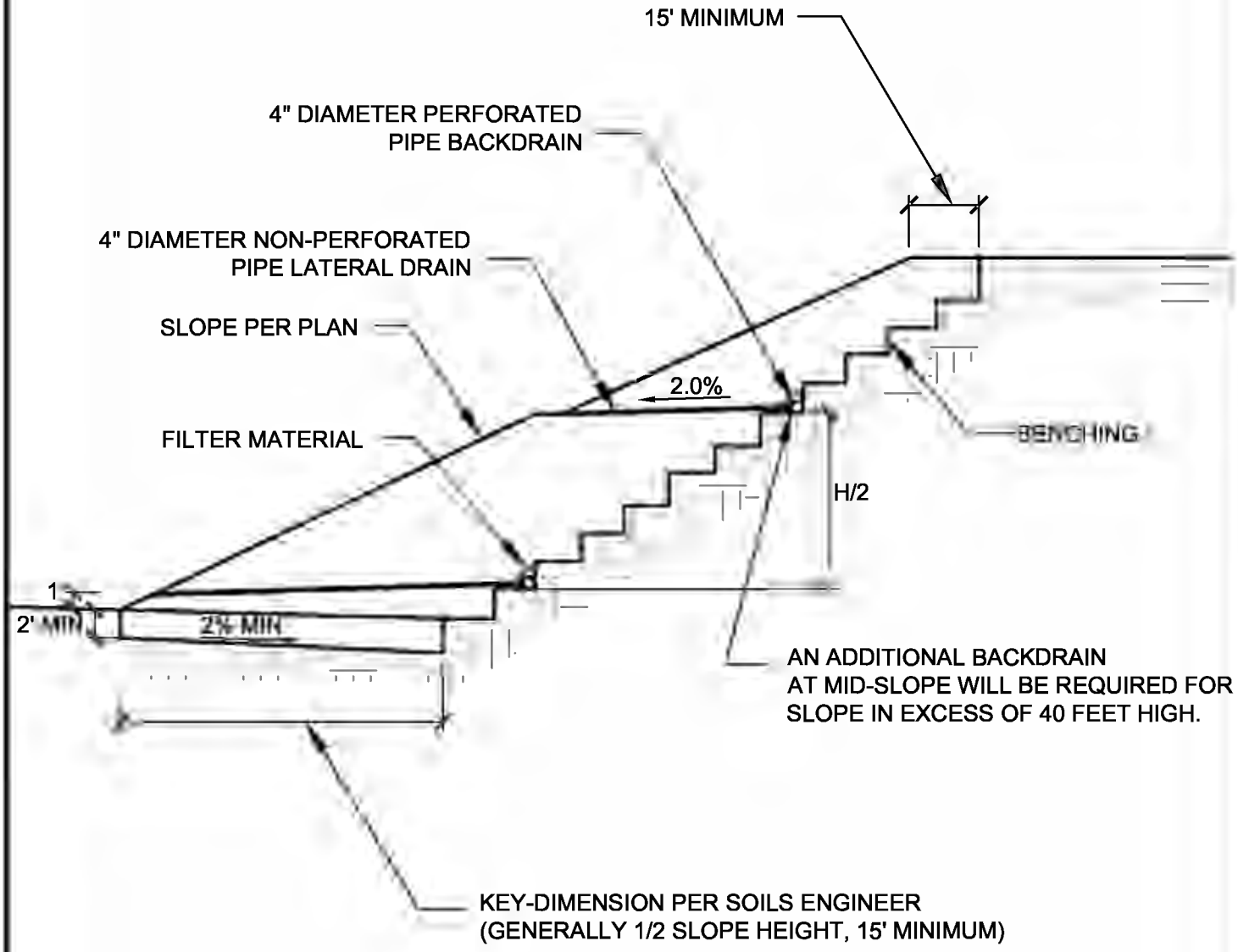
NOTE: HEADWALL SHOULD OUTLET AT TOE OF SLOPE
OR INTO CONTROLLED SURFACE DRAINAGE DEVICE

ALL DISCHARGE SHOULD BE CONTROLLED

THIS DETAIL IS A MINIMUM DESIGN AND MAY BE
MODIFIED DEPENDING UPON ENCOUNTERED
CONDITIONS AND LOCAL REQUIREMENTS

NOT TO SCALE

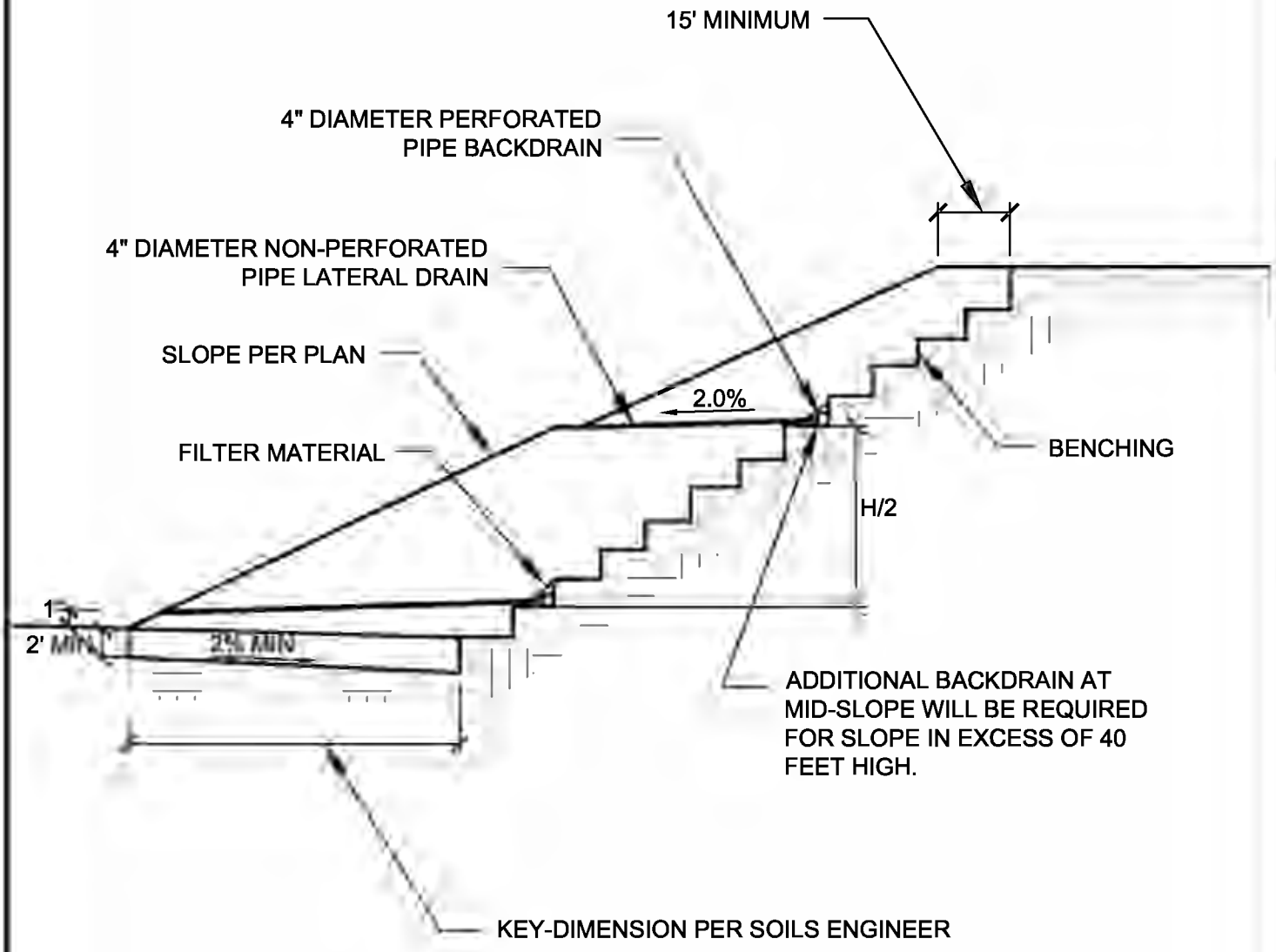
TYPICAL SUBDRAIN OUTLET HEADWALL DETAIL



DIMENSIONS ARE MINIMUM RECOMMENDED

NOT TO SCALE

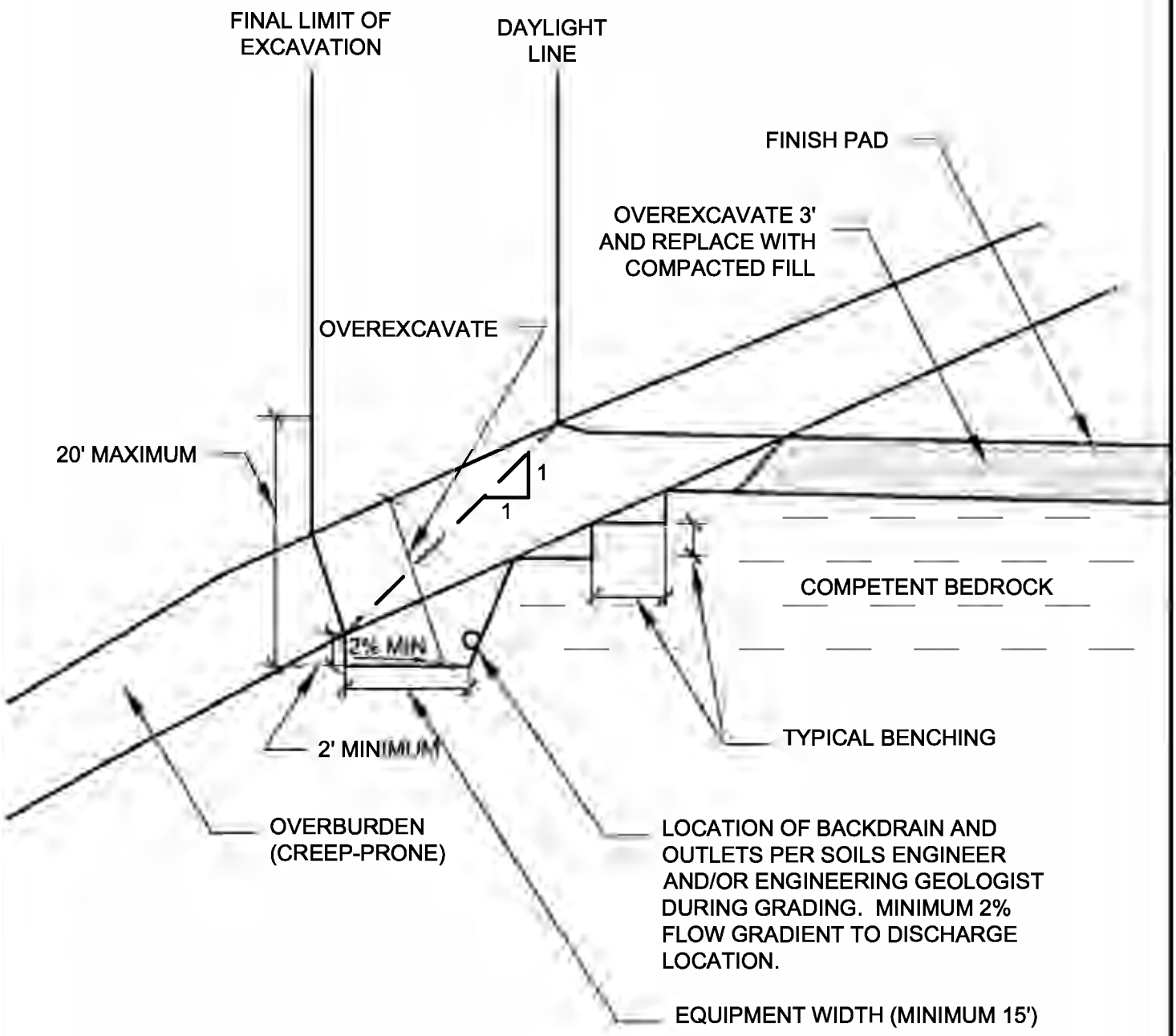
TYPICAL SLOPE STABILIZATION FILL DETAIL



DIMENSIONS ARE MINIMUM RECOMMENDED

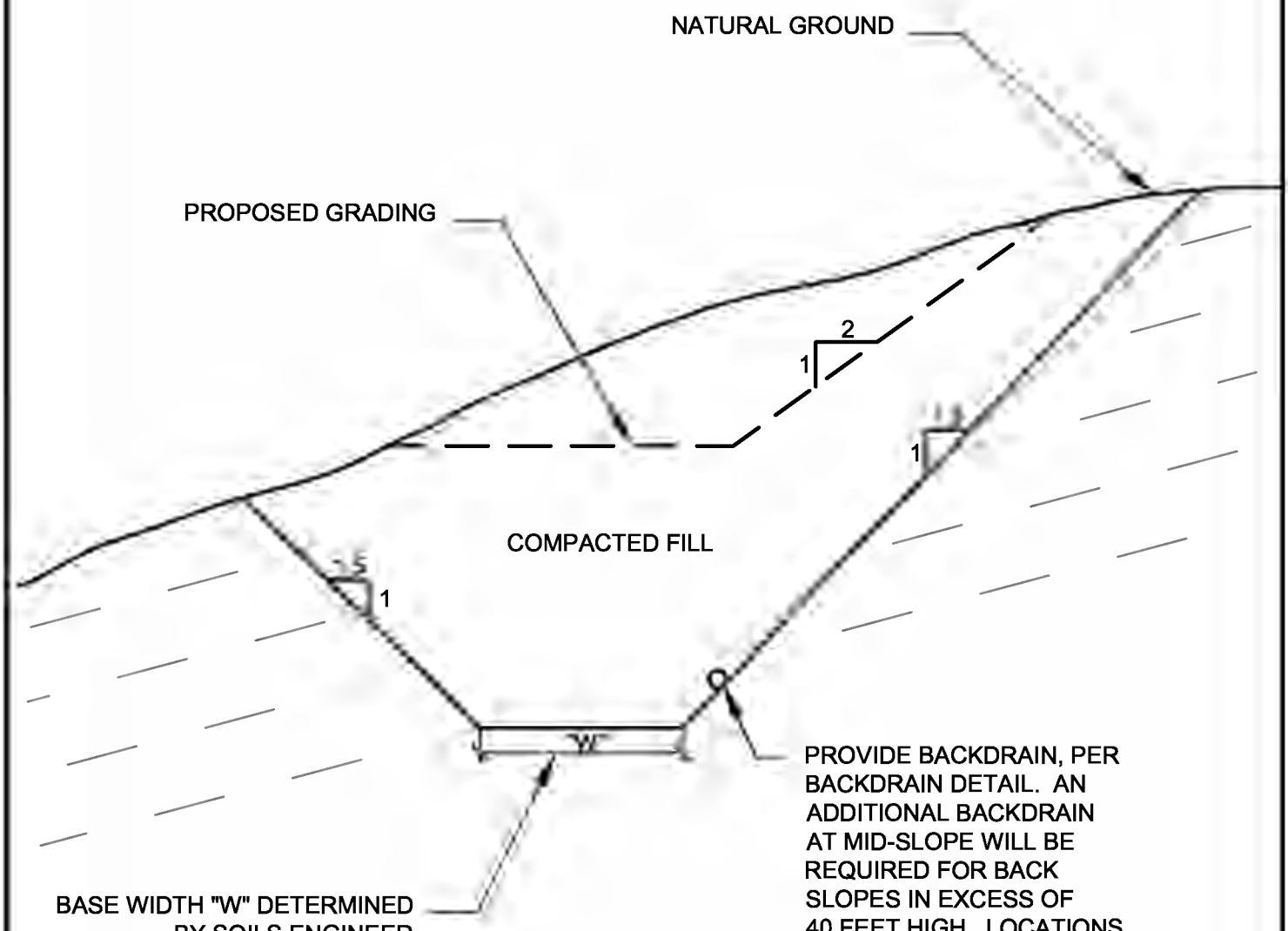
NOT TO SCALE

TYPICAL BUTTRESS FILL DETAIL



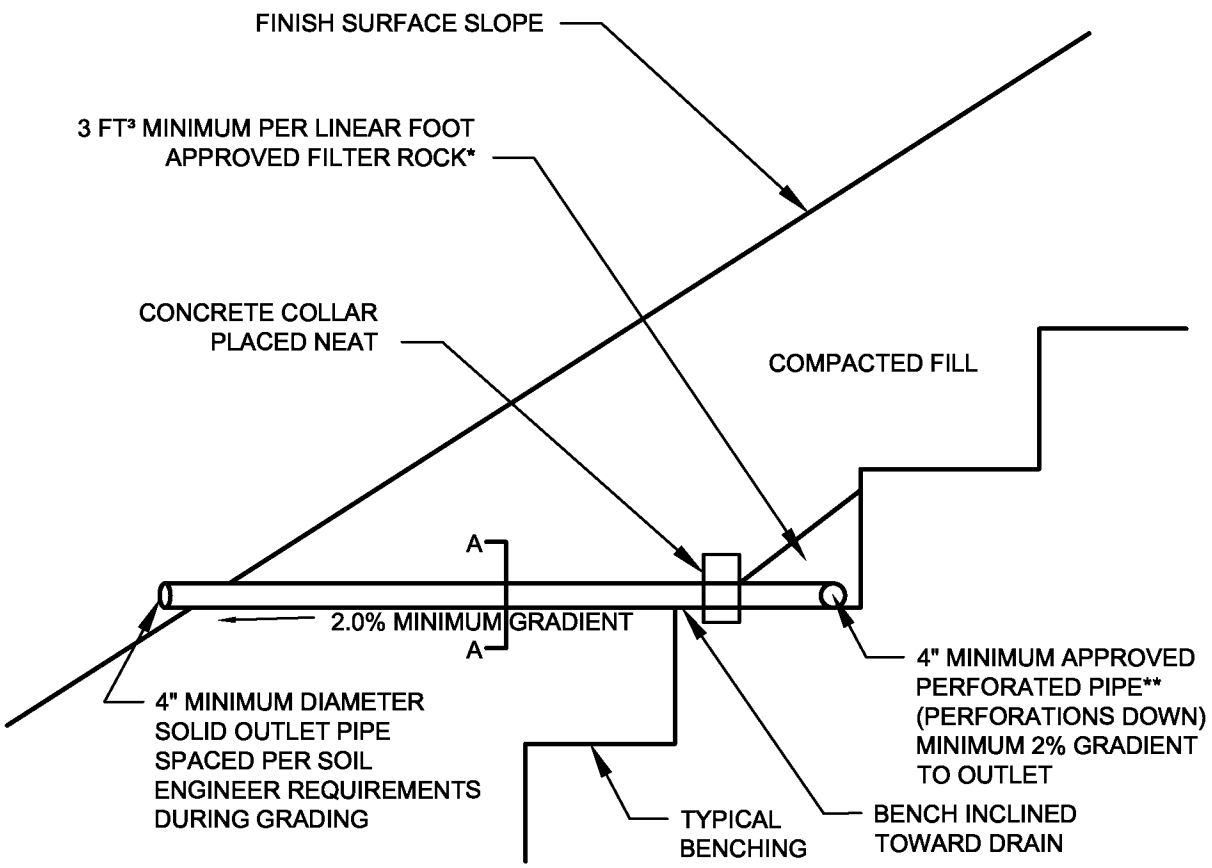
NOT TO SCALE

DAYLIGHT SHEAR KEY DETAIL

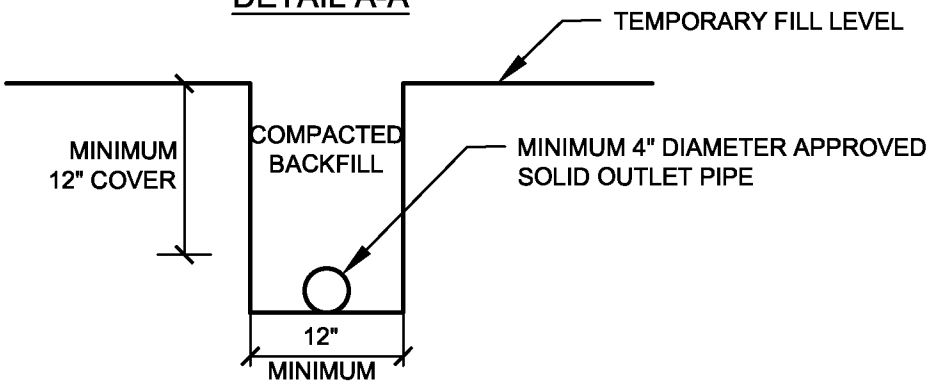


NOT TO SCALE

TYPICAL SHEAR KEY DETAIL



DETAIL A-A



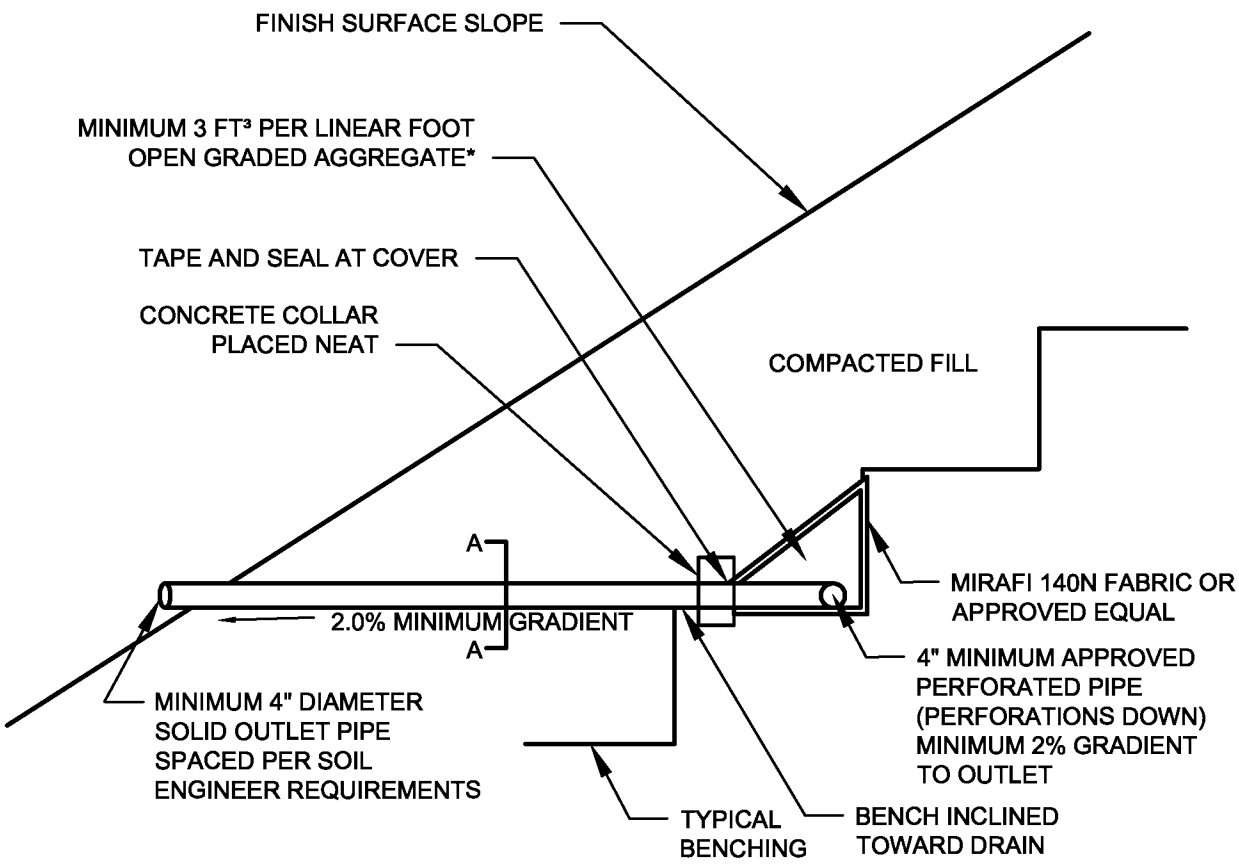
**APPROVED PIPE TYPE:
SCHEDULE 40 POLYVINYL CHLORIDE
(P.V.C.) OR APPROVED EQUAL.
MINIMUM CRUSH STRENGTH 1000 PSI

*FILTER ROCK TO MEET FOLLOWING
SPECIFICATIONS OR APPROVED EQUAL:

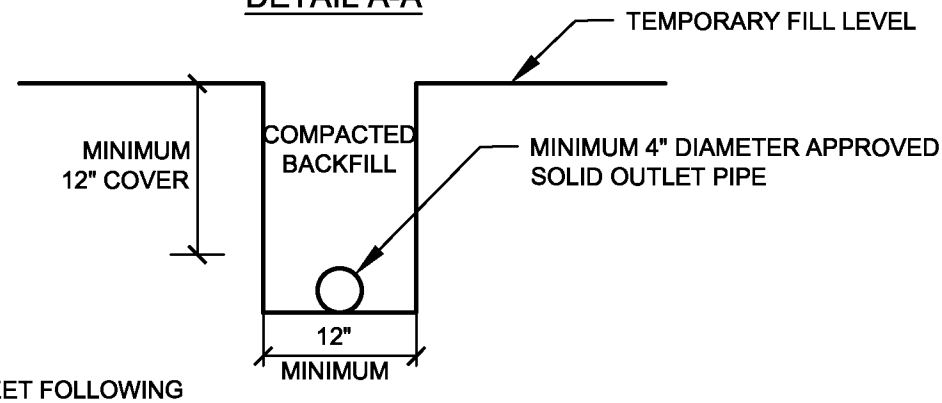
SIEVE SIZE	PERCENTAGE PASSING
1"	100
¾"	90-100
⅜"	40-100
NO. 4	25-40
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

NOT TO SCALE

TYPICAL BACKDRAIN DETAIL



DETAIL A-A

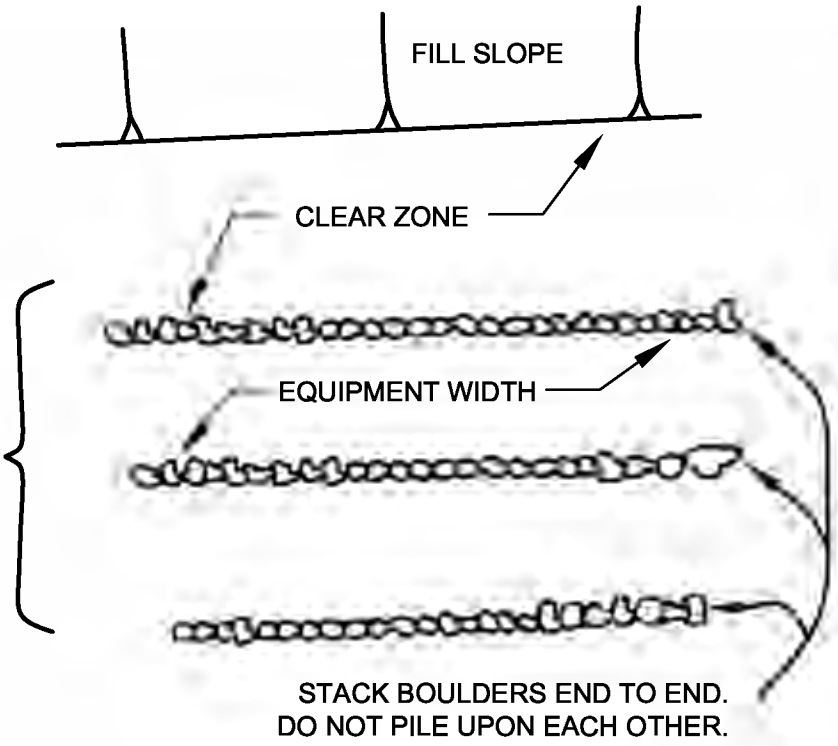


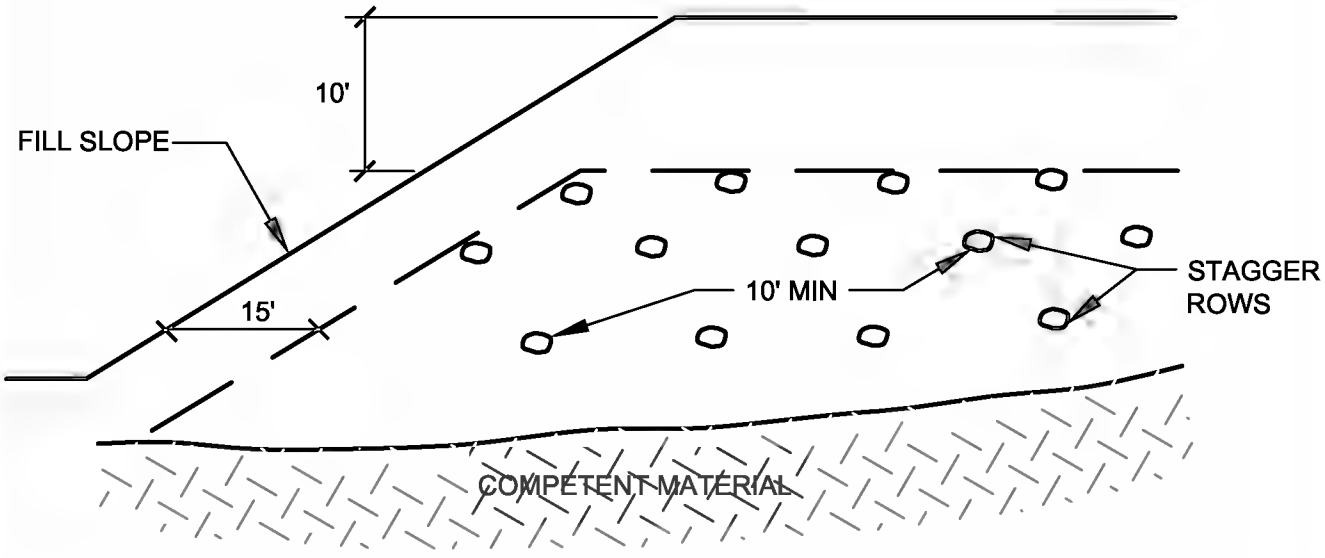
*NOTE: AGGREGATE TO MEET FOLLOWING SPECIFICATIONS OR APPROVED EQUAL:

SIEVE SIZE	PERCENTAGE PASSING
1 ½"	100
1"	5-40
¾"	0-17
⅜"	0-7
NO. 200	0-3

NOT TO SCALE

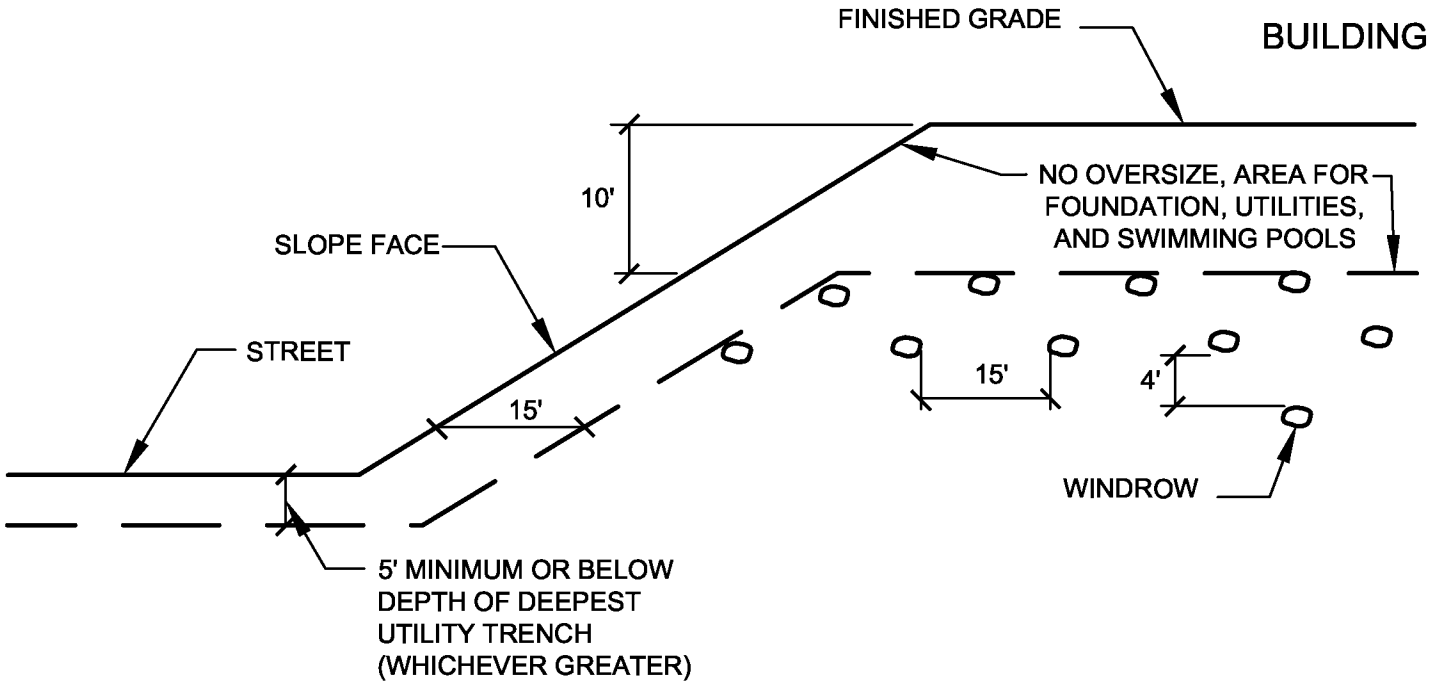
BACKDRAIN DETAIL (GEOFRABIC)



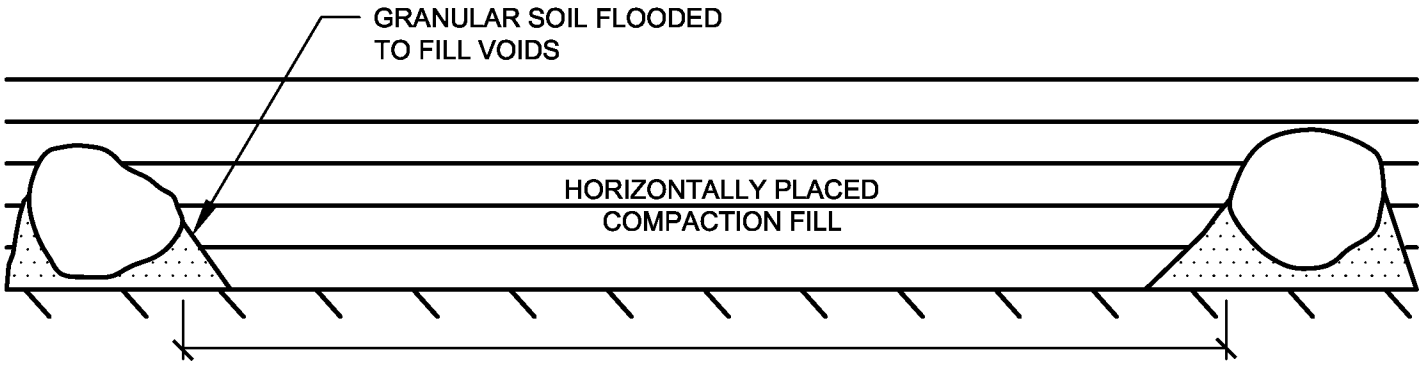


NOT TO SCALE

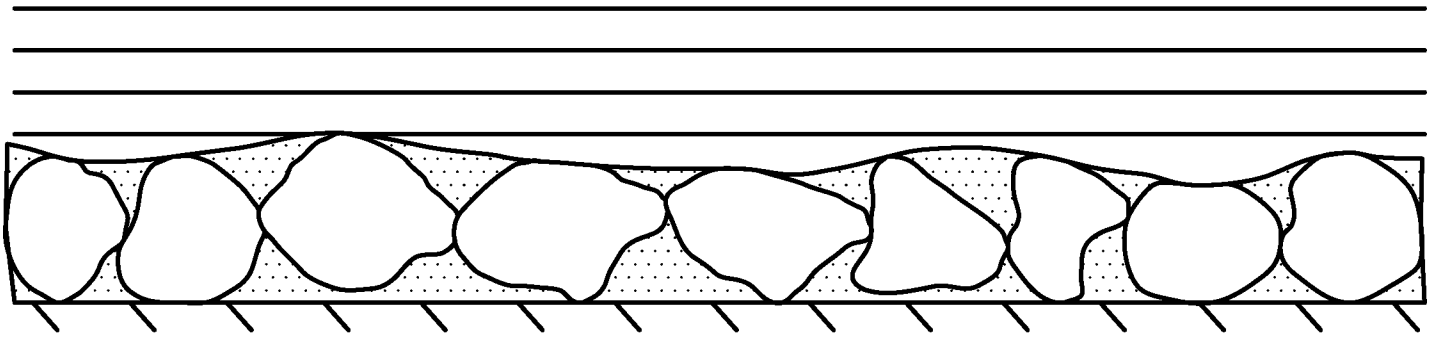
ROCK DISPOSAL DETAIL



TYPICAL WINDROW DETAIL (EDGE VIEW)



PROFILE VIEW

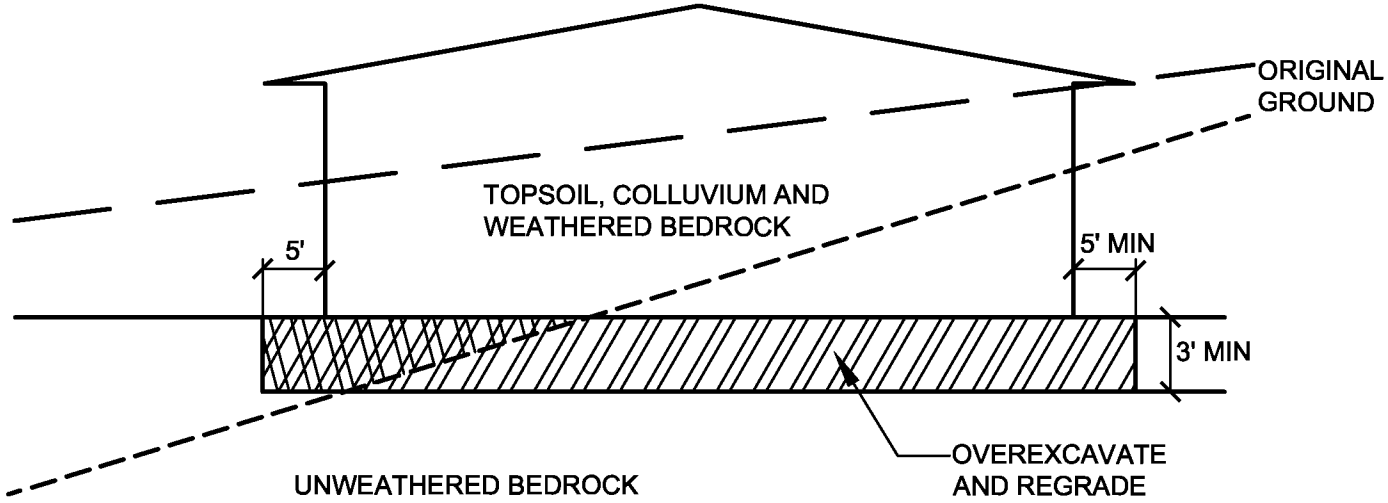


NOT TO SCALE

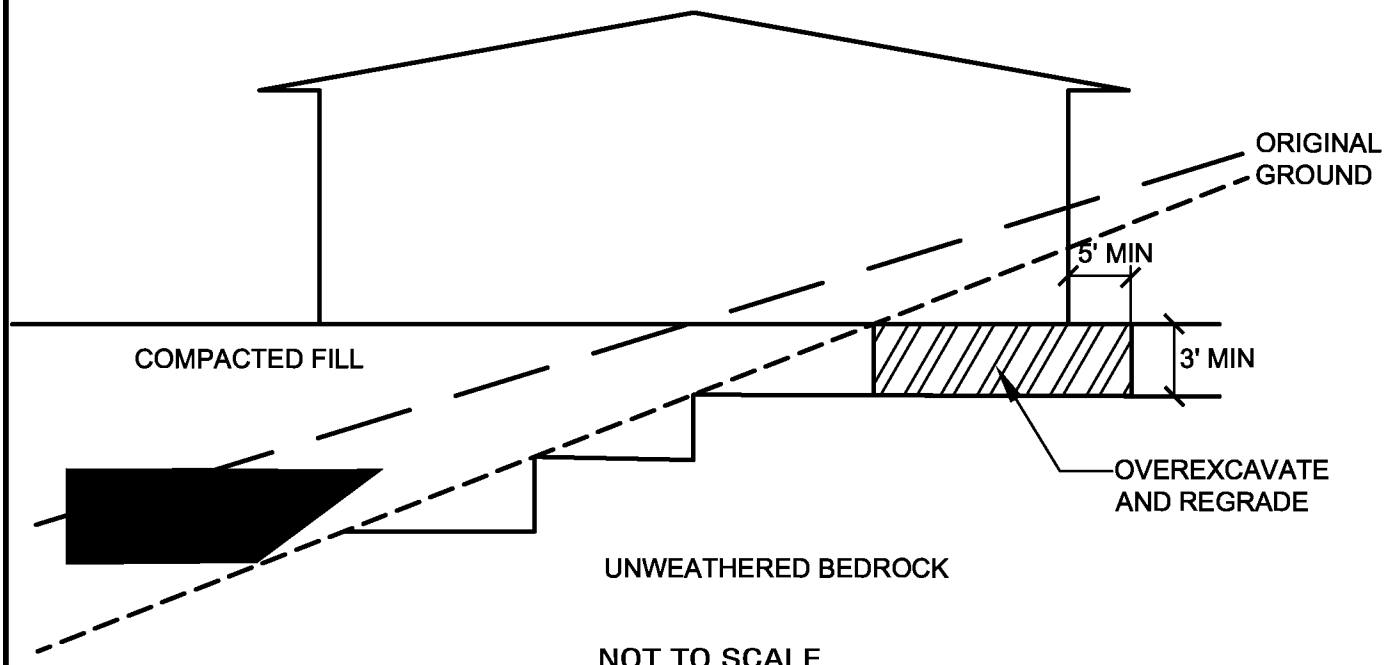
ROCK DISPOSAL DETAIL

GENERAL GRADING RECOMMENDATIONS

CUT LOT



CUT/FILL LOT (TRANSITION)



NOT TO SCALE

TRANSITION LOT DETAIL

APPENDIX E

PERCOLATION FIELD DATA AND CALCULATED RATES

Project:	**Jacumba Fire Station #43 - San Diego, San Diego (PW7)**	
Project No.:	**4830.2400003.0000**	Tables P-1 to P-12

Percolation Field Data and Calculated Rates

P-1 — **Total Depth: 13 inches**

Time	Test Interval Time (minutes)	Test Refill Depth/Inches	Water Level Initial/Start Depth/Inches	Water Level End/Final Depth/Inches	Incremental Water Level Change (inches)	Percolation Rate inches/minute	Percolation Rate inches/hour
11:00:00	Initial	None	1.69	initial	-		
11:30:00	30	1.4375	1.69	4.44	2.75	0.092	5.500
12:00:00	30	2.0625	1.44	3.94	2.50	0.083	5.000
12:30:00	30	2.375	2.06	4.31	2.25	0.075	4.500
13:00:00	30	2.6875	2.38	4.63	2.25	0.075	4.500
13:30:00	30	2.6875	2.69	5.00	2.31	0.077	4.625
14:00:00	30	2.75	2.69	4.94	2.25	0.075	4.500
14:30:00	30	2.625	2.75	4.94	2.19	0.073	4.375
15:00:00	30	2.3125	2.63	4.81	2.19	0.073	4.375
15:30:00	30	2.6875	2.31	4.56	2.25	0.075	4.500
16:00:00	30	2.625	2.69	4.88	2.19	0.073	4.375
16:30:00	30	2.3125	2.63	4.81	2.19	0.073	4.375
17:00:00	30	NO	2.31	4.50	2.19	0.073	4.375

P-2 — **Total Depth: 36 inches**

Time	Test Interval Time (minutes)	Test Refill Depth /Inches	Water Level Initial/Start Depth /Inches	Water Level End/Final Depth /Inches	Incremental Water Level Change (inches)	Percolation Rate inches/minute	Percolation Rate inches/hour
8:55:00	Initial	None	14.69	initial	-		
9:05:00	10	13	14.69	18.44	3.750	0.375	22.500
9:15:00	10	12.9375	13.00	15.81	2.813	0.281	16.875
9:25:00	10	13.5625	12.94	15.31	2.375	0.238	14.250
9:35:00	10	13.625	13.56	15.88	2.313	0.231	13.875
9:45:00	10	13.0625	13.63	16.00	2.375	0.238	14.250
9:55:00	10	NO	13.06	15.44	2.375	0.238	14.250

P-3 — **Total Depth: 19.5 inches**

Time	Test Interval Time (minutes)	Test Refill Depth /Inches	Water Level Initial/Start Depth /Inches	Water Level End/Final Depth /Inches	Incremental Water Level Change (inches)	Percolation Rate inches/minute	Percolation Rate inches/hour
11:05:00	Initial	None	3.00	initial	-		
11:35:00	30	2.75	3.00	5.25	2.25	0.075	4.500
12:05:00	30	2.125	2.75	5.44	2.69	0.090	5.375
12:35:00	30	2.4375	2.13	5.00	2.88	0.096	5.750
13:05:00	30	2.375	2.44	5.19	2.75	0.092	5.500
13:35:00	30	2.5	2.38	5.31	2.94	0.098	5.875
14:05:00	30	1.875	2.50	5.19	2.69	0.090	5.375
14:35:00	30	2.375	1.88	4.63	2.75	0.092	5.500
15:05:00	30	2.125	2.38	4.94	2.56	0.085	5.125
15:35:00	30	2.6875	2.13	4.81	2.69	0.090	5.375
16:05:00	30	2.9375	2.69	5.38	2.69	0.090	5.375
16:35:00	30	2.6875	2.94	5.63	2.69	0.090	5.375
17:05:00	30	NO	2.69	5.38	2.69	0.090	5.375

P-4 — **Total Depth: 36 inches**

Time	Test Interval Time (minutes)	Test Refill Depth /Inches	Water Level Initial/Start Depth /Inches	Water Level End/Final Depth /Inches	Incremental Water Level Change (inches)	Percolation Rate inches/minute	Percolation Rate inches/hour
8:57:00	Initial	None	14.75	initial	-		
9:07:00	10	13.25	14.75	18.50	3.75	0.375	22.500
9:17:00	10	12.9375	13.25	15.44	2.19	0.219	13.125
9:27:00	10	13.375	12.94	15.25	2.31	0.231	13.875
9:37:00	10	13.3125	13.38	15.56	2.19	0.219	13.125
9:47:00	10	13.125	13.31	15.50	2.19	0.219	13.125
9:57:00	10	NO	13.13	15.31	2.19	0.219	13.125

P-5					Total Depth:	12 inches	
Time	Test Interval Time	Test Refill	Water Level Initial/Start	Water Level End/Final	Incremental Water Level Change	Percolation Rate	Percolation Rate
	(minutes)	Depth /Inches	Depth /Inches	Depth /Inches	(inches)	inches/minute	inches/hour
11:10:00	Initial	None	1.00	initial	-		
11:40:00	30	1.625	1.00	3.00	2.00	0.067	4.000
12:10:00	30	1.875	1.63	3.38	1.75	0.058	3.500
12:40:00	30	1.8125	1.88	3.50	1.63	0.054	3.250
13:10:00	30	1.25	1.81	3.44	1.63	0.054	3.250
13:40:00	30	1.25	1.25	3.13	1.88	0.063	3.750
14:10:00	30	1.75	1.25	2.94	1.69	0.056	3.375
14:40:00	30	1.8125	1.75	3.38	1.63	0.054	3.250
15:10:00	30	1.625	1.81	3.44	1.63	0.054	3.250
15:40:00	30	1.8125	1.63	3.25	1.63	0.054	3.250
16:10:00	30	1.3125	1.81	3.44	1.63	0.054	3.250
16:40:00	30	1.4375	1.31	3.00	1.69	0.056	3.375
17:10:00	30	NO	1.44	3.06	1.63	0.054	3.250

P-6					Total Depth:	36 inches	
Time	Test Interval Time	Test Refill	Water Level Initial/Start	Water Level End/Final	Incremental Water Level Change	Percolation Rate	Percolation Rate
	(minutes)	Depth /Inches	Depth /Inches	Depth /Inches	(inches)	inches/minute	inches/hour
9:00:00	Initial	None	14.25	initial	-		
9:10:00	10	13.6875	14.25	18.81	4.563	0.456	27.375
9:20:00	10	13.75	13.69	16.25	2.563	0.256	15.375
9:30:00	10	13.875	13.75	16.50	2.750	0.275	16.500
9:40:00	10	13.875	13.88	17.00	3.125	0.313	18.750
9:50:00	10	12.5	13.88	16.88	3.000	0.300	18.000
10:00:00	10	NO	12.50	15.50	3.000	0.300	18.000

P-7					Total Depth:	18.5 inches	
Time	Test Interval Time	Test Refill	Water Level Initial/Start	Water Level End/Final	Incremental Water Level Change	Percolation Rate	Percolation Rate
	(minutes)	Depth /Inches	Depth /Inches	Depth /Inches	(inches)	inches/minute	inches/hour
11:15:00	Initial	None	2.69	initial	-		
11:45:00	30	2.25	2.69	5.50	2.81	0.094	5.625
12:15:00	30	2.375	2.25	5.13	2.88	0.096	5.750
12:45:00	30	2.75	2.38	7.13	4.75	0.158	9.500
13:15:00	30	2.375	2.75	5.19	2.44	0.081	4.875
13:45:00	30	2.5	2.38	5.25	2.88	0.096	5.750
14:15:00	30	2.25	2.50	5.06	2.56	0.085	5.125
14:45:00	30	2.75	2.25	4.88	2.63	0.088	5.250
15:15:00	30	2.3125	2.75	5.31	2.56	0.085	5.125
15:45:00	30	2.6875	2.31	4.88	2.56	0.085	5.125
16:15:00	30	2.3125	2.69	5.31	2.63	0.088	5.250
16:45:00	30	2.6875	2.31	4.88	2.56	0.085	5.125
17:15:00	30	NO	2.69	5.25	2.56	0.085	5.125

P-8					Total Depth:	38 inches	
Time	Test Interval Time	Test Refill	Water Level Initial/Start	Water Level End/Final	Incremental Water Level Change	Percolation Rate	Percolation Rate
	(minutes)	Depth /Inches	Depth /Inches	Depth /Inches	(inches)	inches/minute	inches/hour
9:03:00	Initial	None	13.69	initial	-		
9:13:00	10	14	13.69	18.63	4.94	0.494	29.625
9:23:00	10	13.9375	14.00	17.69	3.69	0.369	22.125
9:33:00	10	13.6875	13.94	17.94	4.00	0.400	24.000
9:43:00	10	13.5625	13.69	17.44	3.75	0.375	22.500
9:53:00	10	13.875	13.56	17.38	3.81	0.381	22.875
10:03:00	10	NO	13.88	17.69	3.81	0.381	22.875
P-9					**Total Depth:**	**13 inches**	
Time	Test Interval Time	Test Refill	Water Level Initial/Start	Water Level End/Final	Incremental Water Level Change	Percolation Rate	Percolation Rate
	(minutes)	Depth /Inches	Depth /Inches	Depth /Inches	(inches)	inches/minute	inches/hour
11:20:00	Initial	None	1.38	initial	-		
11:50:00	30	1.75	1.38	5.13	3.75	0.125	7.500
12:20:00	30	1.5625	1.75	5.31	3.56	0.119	7.125
12:50:00	30	1.5625	1.56	5.25	3.69	0.123	7.375
13:20:00	30	1.5625	1.56	5.13	3.56	0.119	7.125
13:50:00	30	1.625	1.56	5.38	3.81	0.127	7.625
14:20:00	30	1.3125	1.63	5.19	3.56	0.119	7.125
14:50:00	30	1.5625	1.31	5.00	3.69	0.123	7.375
15:20:00	30	1.875	1.56	5.19	3.63	0.121	7.250
15:50:00	30	1.3125	1.88	5.38	3.50	0.117	7.000
16:20:00	30	1.25	1.31	4.88	3.56	0.119	7.125
16:50:00	30	1.4375	1.25	4.81	3.56	0.119	7.125
17:20:00	30	NO	1.44	5.00	3.56	0.119	7.125
P-10					**Total Depth:**	**36.5 inches**	
Time	Test Interval Time	Test Refill	Water Level Initial/Start	Water Level End/Final	Incremental Water Level Change	Percolation Rate	Percolation Rate
	(minutes)	Depth /Inches	Depth /Inches	Depth /Inches	(inches)	inches/minute	inches/hour
9:05:00	Initial	None	14.81	initial	-		
9:15:00	10	14.375	14.81	20.00	5.188	0.519	31.125
9:25:00	10	14.1875	14.38	18.25	3.875	0.388	23.250
9:35:00	10	14.0625	14.19	17.50	3.313	0.331	19.875
9:45:00	10	14.125	14.06	17.56	3.500	0.350	21.000
9:55:00	10	13.75	14.13	17.63	3.500	0.350	21.000
10:05:00	10	NO	13.75	17.25	3.500	0.350	21.000
P-11					**Total Depth:**	**18.5 inches**	
Time	Test Interval Time	Test Refill	Water Level Initial/Start	Water Level End/Final	Incremental Water Level Change	Percolation Rate	Percolation Rate
	(minutes)	Depth /Inches	Depth /Inches	Depth /Inches	(inches)	inches/minute	inches/hour
11:25:00	Initial	None	2.50	initial	-		
11:55:00	30	2.875	2.50	7.31	4.81	0.160	9.625
12:25:00	30	2.9375	2.88	7.25	4.38	0.146	8.750
12:55:00	30	2.8125	2.94	7.75	4.81	0.160	9.625
13:25:00	30	2.625	2.81	7.13	4.31	0.144	8.625
13:55:00	30	2.125	2.63	7.38	4.75	0.158	9.500
14:25:00	30	2.625	2.13	6.63	4.50	0.150	9.000
14:55:00	30	2.875	2.63	7.13	4.50	0.150	9.000
15:25:00	30	2.625	2.88	7.44	4.56	0.152	9.125
15:55:00	30	2.9375	2.63	7.06	4.44	0.148	8.875
16:25:00	30	2.125	2.94	7.44	4.50	0.150	9.000
16:55:00	30	2.625	2.13	6.63	4.50	0.150	9.000
17:25:00	30	NO	2.63	7.13	4.50	0.150	9.000

P-12					Total Depth:		36 inches
Time	Test Interval Time	Test Refill	Water Level Initial/Start	Water Level End/Final	Incremental Water Level Change	Percolation Rate	Percolation Rate
	(minutes)	Depth /Inches	Depth /Inches	Depth /Inches	(inches)	inches/minute	inches/hour
9:07:00	Initial	None	14.75	initial	-		
9:17:00	10	14.9375	14.75	19.69	4.94	0.494	29.625
9:27:00	10	14.125	14.94	18.56	3.63	0.363	21.750
9:37:00	10	14.25	14.13	17.50	3.38	0.338	20.250
9:47:00	10	13.6875	14.25	17.75	3.50	0.350	21.000
9:57:00	10	14	13.69	17.25	3.56	0.356	21.375
10:07:00	10	NO	14.00	17.56	3.56	0.356	21.375

Percolation Rate Conversion P-1

		Inches
Time Interval,	Δt =	30
Final Depth of Water,	D_f =	4.50
Test Hole Radius,	r =	3
Initial Depth to Water,	D_0 =	2.31
Total Depth of Test Hole,	D_T =	13

H_o =	10.6875	in
H_f =	8.5	in
$\Delta H = \Delta D$ =	2.1875	in
H_{avg} =	9.59375	in
I_t =	0.592	in/hr

Percolation Rate Conversion P-2

		Inches
Time Interval,	Δt =	10
Final Depth of Water,	D_f =	15.44
Test Hole Radius,	r =	3
Initial Depth to Water,	D_0 =	13.06
Total Depth of Test Hole,	D_T =	36

H_o =	22.9375	in
H_f =	20.5625	in
$\Delta H = \Delta D$ =	2.375	in
H_{avg} =	21.75	in
I_t =	0.919	in/hr

Percolation Rate Conversion P-3

		Inches
Time Interval,	Δt =	30
Final Depth of Water,	D_f =	5.38
Test Hole Radius,	r =	3
Initial Depth to Water,	D_0 =	2.69
Total Depth of Test Hole,	D_T =	19.5

H_o =	16.8125	in
H_f =	14.125	in
$\Delta H = \Delta D$ =	2.6875	in
H_{avg} =	15.46875	in
I_t =	0.475	in/hr

Percolation Rate Conversion P-4

		Inches
Time Interval,	Δt =	10
Final Depth of Water,	D_f =	15.31
Test Hole Radius,	r =	3
Initial Depth to Water,	D_0 =	13.13
Total Depth of Test Hole,	D_T =	36

H_o =	22.875	in
H_f =	20.6875	in
$\Delta H = \Delta D$ =	2.1875	in
H_{avg} =	21.78125	in
I_t =	0.846	in/hr

Percolation Rate Conversion P-5

		Inches
Time Interval,	Δt =	30
Final Depth of Water,	D_f =	3.06
Test Hole Radius,	r =	3
Initial Depth to Water,	D_0 =	1.44
Total Depth of Test Hole,	D_T =	12

H_o =	10.5625	in
H_f =	8.9375	in
$\Delta H = \Delta D$ =	1.625	in
H_{avg} =	9.75	in
I_t =	0.433	in/hr

Percolation Rate Conversion P-6

		Inches
Time Interval,	Δt =	10
Final Depth of Water,	D_f =	15.50
Test Hole Radius,	r =	3
Initial Depth to Water,	D_0 =	12.50
Total Depth of Test Hole,	D_T =	36

H_o =	23.5	in
H_f =	20.5	in
$\Delta H = \Delta D$ =	3	in
H_{avg} =	22	in
I_t =	1.149	in/hr

Percolation Rate Conversion P-7

		Inches
Time Interval,	Δt =	30
Final Depth of Water,	D_f =	5.25
Test Hole Radius,	r =	3
Initial Depth to Water,	D_0 =	2.69
Total Depth of Test Hole,	D_T =	18.5

H_o =	15.8125	in
H_f =	13.25	in
$\Delta H = \Delta D$ =	2.5625	in
H_{avg} =	14.53125	in
I_t =	0.480	in/hr

Percolation Rate Conversion P-8

		Inches
Time Interval,	Δt =	10
Final Depth of Water,	D_f =	17.69
Test Hole Radius,	r =	3
Initial Depth to Water,	D_0 =	13.88
Total Depth of Test Hole,	D_T =	38

H_o =	24.125	in
H_f =	20.3125	in
$\Delta H = \Delta D$ =	3.8125	in
H_{avg} =	22.21875	in
I_t =	1.447	in/hr

Percolation Rate Conversion P-9

		Inches
Time Interval,	Δt =	30
Final Depth of Water,	D_f =	5.00
Test Hole Radius,	r =	3
Initial Depth to Water,	D_0 =	1.44
Total Depth of Test Hole,	D_T =	13

H_o =	11.5625	in
H_f =	8	in
$\Delta H = \Delta D$ =	3.5625	in
H_{avg} =	9.78125	in
I_t =	0.947	in/hr

Percolation Rate Conversion P-10

		Inches
Time Interval,	Δt =	10
Final Depth of Water,	D_f =	17.25
Test Hole Radius,	r =	3
Initial Depth to Water,	D_0 =	13.75
Total Depth of Test Hole,	D_T =	36.5

H_o =	22.75	in
H_f =	19.25	in
$\Delta H = \Delta D$ =	3.5	in
H_{avg} =	21	in
I_t =	1.400	in/hr

Percolation Rate Conversion P-11

		Inches
Time Interval,	Δt =	30
Final Depth of Water,	D_f =	7.13
Test Hole Radius,	r =	3
Initial Depth to Water,	D_0 =	2.63
Total Depth of Test Hole,	D_T =	18.5

H_o =	15.875	in
H_f =	11.375	in
$\Delta H = \Delta D$ =	4.5	in
H_{avg} =	13.625	in
I_t =	0.893	in/hr

Percolation Rate Conversion P-12

		Inches
Time Interval,	Δt =	10
Final Depth of Water,	D_f =	17.56
Test Hole Radius,	r =	3
Initial Depth to Water,	D_0 =	14.00
Total Depth of Test Hole,	D_T =	36

H_o =	22	in
H_f =	18.4375	in
$\Delta H = \Delta D$ =	3.5625	in
H_{avg} =	20.21875	in
I_t =	1.476	in/hr

TABLE

RESULTS OF PERCOLATION TESTING WITH 2.0 FACTOR OF SAFETY APPLIED

Test Location	Test Depth (inches)	Method Borehole	Soil Type* (USCS Classification)	Percolation Rate (inches per hour)	Infiltration Rate (inches per hour)	Infiltration Rate with FOS of 2 Applied (inches per hour)
P-1	13.0	I	SM/SC (Qa)	4.375	0.592	0.296
P-2	36.0	Sandy	SM (Qa)	14.250	0.919	0.460
P-3	19.5	I	SM/SC (Qa)	5.375	0.475	0.238
P-4	36.0	Sandy	SM (Qa)	13.125	0.846	0.423
P-5	12.0	I	SM/SC (Qa)	3.250	0.433	0.217
P-6	36.0	Sandy	SM (Qa)	18.000	1.149	0.574
P-7	18.5	I	SM/SC (Qa)	5.125	0.480	0.240
P-8	38.0	Sandy	SM (Qa)	22.875	1.447	0.723
P-9	13.0	I	SM/SC (Qa)	7.125	0.947	0.474
P-10	36.5	Sandy	SM (Qa)	21.000	1.400	0.700
P-11	18.5	I	SM/SC (Qa)	9.000	0.893	0.446
P-12	36.0	Sandy	SM (Qa)	21.375	1.476	0.738

APPENDIX F

LIMITED ENVIRONMENTAL SITE ASSESSMENT

Universal Engineering Sciences (UES)
1441 Montiel Road, Suite 115
Escondido, CA 92026
p. 760.746.4955 | TeamUES.com

APPENDIX F
ENVIRONMENTAL RECORDS REVIEW

Regulatory Database Review

UES reviewed federal, state, and local environmental databases for information regarding documented and suspected releases of regulated materials at the subject property and vicinity. The databases reviewed includes Environmental Data Resources (EDR), a commercial environmental review resource, GeoTracker, a publicly available environmental database maintained by the State Water Resource Control Board (SWRCB), and the CalEPA Regulated Site Portal (nSITE). The following is a summary of the findings.

EDR Radius Report

The EDR Radius Report maps sites on regulatory databases within ASTM E1527-21-recommended distances to the subject property. The radius map report did not find any open cases within 0.5 miles of the subject property. The Radius Report is included as attachment G-1 for further review.

GeoTracker Database

GeoTracker is the California State Water Resources Control Boards' data management system for sites that impact, or have the potential to impact, water quality in California. GeoTracker includes soil-, soil vapor-, and groundwater-impacted properties. GeoTracker contains records for sites that require assessment and potential cleanup, such as Leaking Underground Storage Tank (LUST) Sites, Department of Defense Sites, and Cleanup Program Sites. No open cases were found for the subject property or the properties in the vicinity within 0.5 miles of the subject property.

CalEPA Regulated Site Portal (nSITE)

According to CalEPA, “The CalEPA Regulated Site Portal combines data about environmentally regulated facilities and sites throughout California into a single, searchable database and interactive map. Created to provide a more transparent, comprehensive view of regulated activities statewide, the portal includes data on hazardous waste and materials, state and federal cleanups, impacted ground and surface waters, and toxic releases.” The subject property was not found on any regulatory databases. No open regulatory cases were found for the subject property or the properties in the vicinity within 0.5 miles of the subject property.

Historical Topographic Maps

Historical Topographic Maps were obtained by EDR for the years 2021, 2018, 2015, 2012, 1997, 1975, 1959, 1947, 1942, and 1939. General location of the subject property is shown on the topographic maps. The subject property appears at its current elevation of approximately 2800 feet above mean sea level (MSL) on maps dating to 1939. The topographic maps do not depict development of the subject property dating back to 1939. The historical topographic map report is included as attachment G-2 for further review.

City Directory Report

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist in evaluating potential environmental concerns on a target property resulting from past activities. EDR's City Directory Report includes a search and abstract of available city directory data. Business directories including city, cross reference, and telephone directories, were reviewed, if available, at approximately five-year intervals for the years spanning 1971 through current. The report compiles information gathered in the review by geocoding the latitude and longitude of properties identified and gathering information about properties within 660 feet of the target property. The EDR City Directory Report accesses a variety of business directory sources, including Cole Information and Haines Criss-Cross Directory. The City Directory Report did not find listings for the subject property. Listings for nearby properties were for residential properties. The City Directory Report is included as attachment G-3 for further review.

Aerial Photographs Review

Aerial photographs dated 2020, 2016, 2012, 2009, 2005, 2002, 1996, 1994, 1989, 1985, 1975, and 1953 were reviewed. The subject property and Old Highway 80 appear in their current configuration in aerial photographs dated back to 1953. The subject property appears to have contained agricultural activities intermittently in photographs back 1953. No roads or structures were observed on the subject property back to 1953. Residential development appears to the west of the subject property on the photograph dated 1953 with increasing housing density through 2020. Old Highway 80 is south of the subject property with vacant land further south. The US-Mexico International border is approximately 0.25 miles to the south. The adjacent property to the east and north appears to contain agricultural activities of which the subject property is a portion. The aerial photograph report is included as attachment G-4 for further review. The following table presents a summary of the reviewed information.

SUMMARY OBSERVATIONS OF AERIAL PHOTOGRAPHS		
Photo Dates	SUMMARY OBSERVATIONS	
	Subject Property	Subject Property Vicinity
2020-1953	Subject property and Old Highway 80 appear similar to its current configuration as agricultural land.	Residential development to the west. Old Hwy 80 to the south with vacant land further south. US-Mexico border ~0.25 mile south. Agricultural land to the east and north.

Sanborn Maps

A Certified Sanborn Map Report dated February 28, 2024, was provided by EDR. According to EDR, "the Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others." The subject property was not listed in the Sanborn library. The Certified Sanborn Map Report is included as attachment G-5 for further review.

ATTACHMENT F-1 EDR RADIUS REPORT

Jamucba Fire Station #43
Old Highway 80
Jacumba, CA 91934

Inquiry Number: 7580420.2s
February 28, 2024

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E2247 - 16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E1528 - 22) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

OLD HIGHWAY 80
JACUMBA, CA 91934

COORDINATES

Latitude (North):	32.6181400 - 32° 37' 5.30''
Longitude (West):	116.1822200 - 116° 10' 55.99''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	576723.8
UTM Y (Meters):	3609060.5
Elevation:	2801 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	50004023 JACUMBA OE S, CA
Version Date:	2021
North Map:	50005569 JACUMBA, CA
Version Date:	2021

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20200420, 20200415
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
OLD HIGHWAY 80
JACUMBA, CA 91934

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	JACUMBA I & II	1000 OLD HY 80	SAN DIEGO CO. SAM, CPS-SLIC, CERS	Higher	1268, 0.240, ESE
A2	JOSEPHINE NOLTZ	44535 OLD HY 80	LUST, CERS	Higher	2052, 0.389, West
A3	NOLTA APN#660-040-11	44535 OLD HY 80	SAN DIEGO CO. SAM, UST, Cortese	Higher	2052, 0.389, West
A4	JOSEPHINE NOLTZ	44535 OLD HY 80	UST FINDER RELEASE	Higher	2052, 0.389, West
B5	E-M-H REALTY AND INV	RAILROAD ST & HWY 80	LUST, HIST CORTESE	Higher	2310, 0.438, West
B6	E HAEGELE-APN#660-11	OLD HY 80 & RAILROAD	SAN DIEGO CO. SAM	Higher	2314, 0.438, West
B7	E HAEGELE-APN#660-11	NONE OLD HY 80 & RAI	LUST, Cortese, CERS	Higher	2331, 0.441, West
B8	RODGERS AUTO REPAIR	44490 OLD HY 80	UST FINDER RELEASE	Higher	2399, 0.454, West
B9	RODGERS AUTO REPAIR	44490 OLD HY 80	LUST, HIST CORTESE	Higher	2399, 0.454, West
B10	RODGERS AUTO REPAIR	44490 OLD HY 80	LUST, SAN DIEGO CO. SAM, Cortese, SAN DIEGO CO...	Higher	2399, 0.454, West
B11	E HAEGELE-APN#660-11	44485 OLD HY 80	UST FINDER RELEASE	Higher	2413, 0.457, West
B12	E HAEGELE-APN#660-11	44485 OLD HY 80	LUST, Cortese, CERS	Higher	2413, 0.457, West
C13	JACUMBA AIRPORT- NAV		FUDS	Higher	4722, 0.894, East
C14	JACUMBA AIRPORT		ENVIROSTOR, EMI	Higher	4735, 0.897, East

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL ---------- National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS ---------- Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System

US ENG CONTROLS---------- Engineering Controls Sites List
US INST CONTROLS---------- Institutional Controls Sites List

Federal ERNS list

ERNS---------- Emergency Response Notification System

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE---------- State Response Sites

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF---------- Solid Waste Information System

Lists of state and tribal leaking storage tanks

INDIAN LUST---------- Leaking Underground Storage Tanks on Indian Land

Lists of state and tribal registered storage tanks

FEMA UST---------- Underground Storage Tank Listing
UST---------- Active UST Facilities
AST---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST---------- Underground Storage Tanks on Indian Land

Lists of state and tribal voluntary cleanup sites

VCP---------- Voluntary Cleanup Program Properties
INDIAN VCP---------- Voluntary Cleanup Priority Listing

Lists of state and tribal brownfield sites

BROWNFIELDS---------- Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT---------- Waste Management Unit Database
SWRCY---------- Recycler Database
HAULERS---------- Registered Waste Tire Haulers Listing
INDIAN ODI---------- Report on the Status of Open Dumps on Indian Lands
ODI---------- Open Dump Inventory
DEBRIS REGION 9---------- Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL---------- Delisted National Clandestine Laboratory Register

HIST Cal-Sites	Historical Calsites Database
SCH	School Property Evaluation Program
CDL	Clandestine Drug Labs
San Diego Co. HMMD	Hazardous Materials Management Division Database
Toxic Pits	Toxic Pits Cleanup Act Sites
CERS HAZ WASTE	California Environmental Reporting System Hazardous Waste
US CDL	National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

SWEEPS UST	SWEEPS UST Listing
HIST UST	Hazardous Substance Storage Container Database
CA FID UST	Facility Inventory Database
CERS TANKS	California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS	Environmental Liens Listing
LIENS 2	CERCLA Lien Information
DEED	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data

EXECUTIVE SUMMARY

CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
MINES MRDS	Mineral Resources Data System
FINDS	Facility Index System/Facility Registry System
DOCKET HWC	Hazardous Waste Compliance Docket Listing
ECHO	Enforcement & Compliance History Information
UXO	Unexploded Ordnance Sites
FUELS PROGRAM	EPA Fuels Program Registered Listing
PFAS NPL	Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES	Federal Sites PFAS Information
PFAS TSCA	PFAS Manufacture and Imports Information
PFAS TRIS	List of PFAS Added to the TRI
PFAS RCRA MANIFEST	PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR	PFAS Contamination Site Location Listing
PFAS WQP	Ambient Environmental Sampling for PFAS
PFAS NPDES	Clean Water Act Discharge Monitoring Information
PFAS ECHO	Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAINING	Facilities in Industries that May Be Handling PFAS Listing
PFAS PART 139 AIRPORT	All Certified Part 139 Airports PFAS Information Listing
AQUEOUS FOAM NRC	Aqueous Foam Related Incidents Listing
BIOSOLIDS	ICIS-NPDES Biosolids Facility Data
PFAS	PFAS Contamination Site Location Listing
AQUEOUS FOAM	Former Fire Training Facility Assessments Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
CHROME PLATING	Chrome Plating Facilities Listing
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
ICE	Inspection, Compliance and Enforcement
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
HWTS	Hazardous Waste Tracking System
HAZNET	Facility and Manifest Data
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
HAZMAT	Hazardous Material Facilities
UIC	UIC Listing
UIC GEO	UIC GEO (GEOTRACKER)
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List
MILITARY PRIV SITES	MILITARY PRIV SITES (GEOTRACKER)
PROJECT	PROJECT (GEOTRACKER)

EXECUTIVE SUMMARY

WDR ---------- Waste Discharge Requirements Listing
SAN DIEGO CO LOP ---------- Local Oversight Program Listing
CIWQS ---------- California Integrated Water Quality System
CERS ---------- CERS
NON-CASE INFO ---------- NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS ---------- OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS ---------- PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT ---------- SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ ---------- Well Stimulation Project (GEOTRACKER)
UST FINDER ---------- UST Finder Database

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP ---------- EDR Proprietary Manufactured Gas Plants
EDR Hist Auto ---------- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner ---------- EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF ---------- Recovered Government Archive Solid Waste Facilities List
RGA LUST ---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where

environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 10/23/2023 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JACUMBA AIRPORT		***E 1/2 - 1 (0.897 mi.)***	***C14***	***32***
Status: Inactive - Needs Evaluation				
Facility Id: 80000921				

Lists of state and tribal leaking storage tanks

SAN DIEGO CO. SAM: The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

A review of the SAN DIEGO CO. SAM list, as provided by EDR, and dated 03/23/2010 has revealed that there are 4 SAN DIEGO CO. SAM sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JACUMBA I & II	***1000 OLD HY 80***	***ESE 1/8 - 1/4 (0.240 mi.)***	***1***	***9***
Case Number: H86936-001				
Facility Status: Preliminary Assessment				
NOLTA APN#660-040-11	***44535 OLD HY 80***	***W 1/4 - 1/2 (0.389 mi.)***	***A3***	***12***
Case Number: H29835-001				
Facility Status: Closed Case				
E HAEGELE-APN#660-11	OLD HY 80 & RAILROAD	W 1/4 - 1/2 (0.438 mi.)	B6	16
Case Number: H29832-001				
Case Number: H29832-002				
Facility Status: Remedial Investigation				
Facility Status: Closed Case				
RODGERS AUTO REPAIR	***44490 OLD HY 80***	***W 1/4 - 1/2 (0.454 mi.)***	***B10***	***27***
Case Number: H29712-001				
Facility Status: Closed Case				

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 6 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JOSEPHINE NOLTZ	***44535 OLD HY 80***	***W 1/4 - 1/2 (0.389 mi.)***	***A2***	***10***
Database: LUST, Date of Government Version: 09/05/2023				
Status: Completed - Case Closed				
Global Id: T06019724295				
E-M-H REALTY AND INV	***RAILROAD ST & HWY 80***	***W 1/4 - 1/2 (0.438 mi.)***	***B5***	***15***
Database: LUST REG 9, Date of Government Version: 03/01/2001				

Case Number: 9UT1622
Case Number: 9UT2308
Status: Preliminary site assessment underway

E HAEGELE-APN#660-11	***NONE OLD HY 80 & RAI***	***W 1/4 - 1/2 (0.441 mi.)***	***B7***	***17***

Database: LUST, Date of Government Version: 09/05/2023
Status: Completed - Case Closed
Global Id: T0607301076

RODGERS AUTO REPAIR	***44490 OLD HY 80***	***W 1/4 - 1/2 (0.454 mi.)***	***B9***	***25***

Database: LUST, Date of Government Version: 09/05/2023
Status: Completed - Case Closed
Global Id: T0607300005

RODGERS AUTO REPAIR	***44490 OLD HY 80***	***W 1/4 - 1/2 (0.454 mi.)***	***B10***	***27***

Database: LUST REG 7, Date of Government Version: 02/26/2004
Global ID: T0607300005
Status: 9 - Case Closed

E HAEGELE-APN#660-11	***44485 OLD HY 80***	***W 1/4 - 1/2 (0.457 mi.)***	***B12***	***29***

Database: LUST, Date of Government Version: 09/05/2023
Status: Completed - Case Closed
Global Id: T0607300444

CPS-SLIC: Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the CPS-SLIC list, as provided by EDR, has revealed that there is 1 CPS-SLIC site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JACUMBA I & II	***1000 OLD HY 80***	***ESE 1/8 - 1/4 (0.240 mi.)***	***1***	***9***

Database: CPS-SLIC, Date of Government Version: 12/04/2023
Facility Status: Completed - Case Closed
Global Id: T10000001087

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

FUDS: The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

A review of the FUDS list, as provided by EDR, and dated 09/28/2023 has revealed that there is 1 FUDS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JACUMBA AIRPORT- NAV		E 1/2 - 1 (0.894 mi.)	C13	31

EXECUTIVE SUMMARY

Cortese: The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

A review of the Cortese list, as provided by EDR, and dated 09/19/2023 has revealed that there are 4 Cortese sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NOLTA APN#660-040-11	***44535 OLD HY 80***	***W 1/4 - 1/2 (0.389 mi.)***	***A3***	***12***
Cleanup Status: COMPLETED - CASE CLOSED				
E HAEGELE-APN#660-11	***NONE OLD HY 80 & RAI***	***W 1/4 - 1/2 (0.441 mi.)***	***B7***	***17***
Cleanup Status: COMPLETED - CASE CLOSED				
RODGERS AUTO REPAIR	***44490 OLD HY 80***	***W 1/4 - 1/2 (0.454 mi.)***	***B10***	***27***
Cleanup Status: COMPLETED - CASE CLOSED				
E HAEGELE-APN#660-11	***44485 OLD HY 80***	***W 1/4 - 1/2 (0.457 mi.)***	***B12***	***29***
Cleanup Status: COMPLETED - CASE CLOSED				

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 2 HIST CORTESE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
E-M-H REALTY AND INV	***RAILROAD ST & HWY 80***	***W 1/4 - 1/2 (0.438 mi.)***	***B5***	***15***
Reg Id: 9UT1622				
Reg Id: 9UT2308				
RODGERS AUTO REPAIR	***44490 OLD HY 80***	***W 1/4 - 1/2 (0.454 mi.)***	***B9***	***25***
Reg Id: 7T1934002				

UST FINDER RELEASE: US EPA's UST Finder data is a national composite of leaking underground storage tanks. This data contains information about, and locations of, leaking underground storage tanks. Data was collected from state sources and standardized into a national profile by EPA's Office of Underground Storage Tanks, Office of Research and Development, and the Association of State and Territorial Solid Waste Management Officials.

A review of the UST FINDER RELEASE list, as provided by EDR, and dated 06/08/2023 has revealed that there are 3 UST FINDER RELEASE sites within approximately 0.5 miles of the target property.

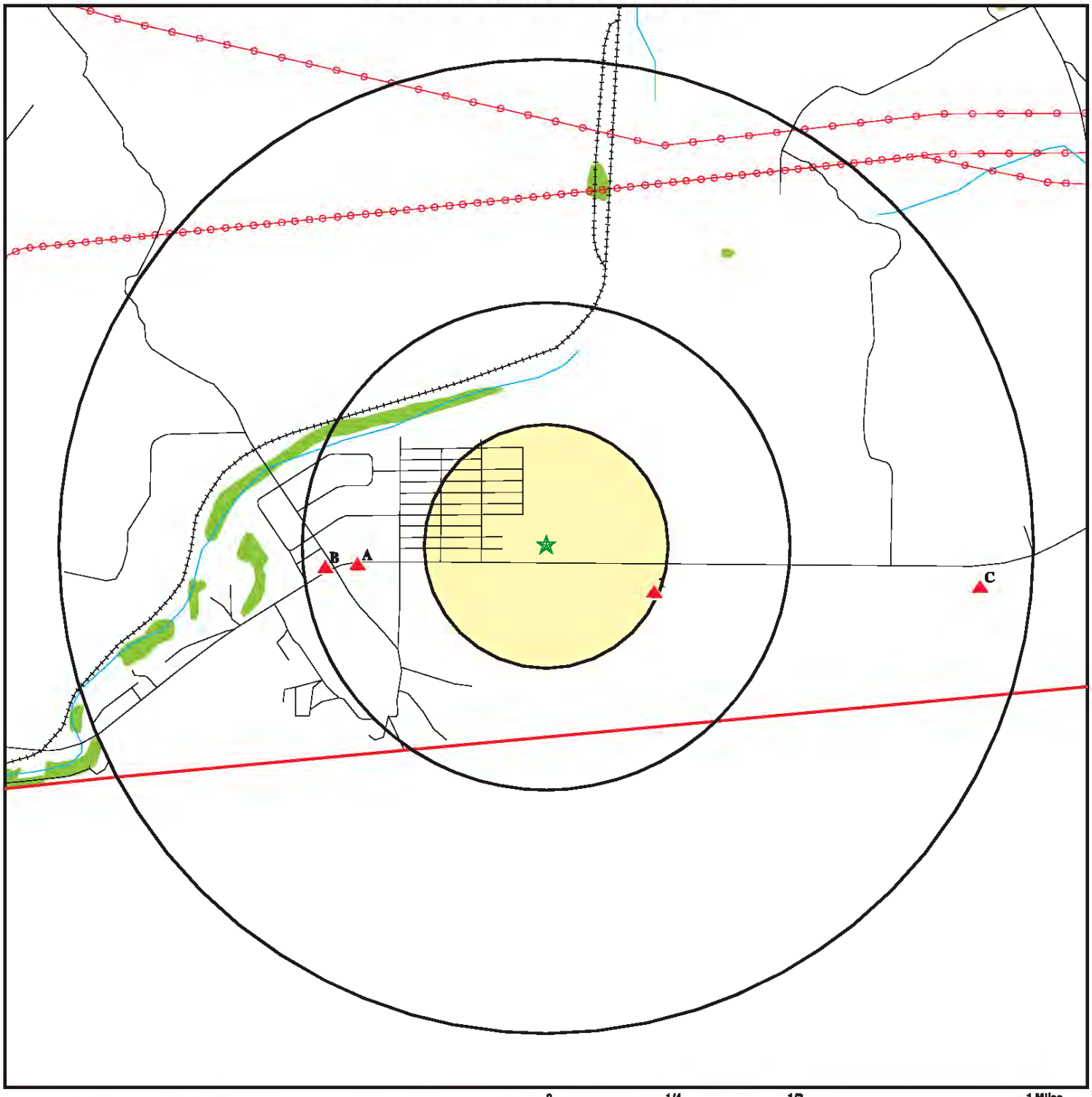
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JOSEPHINE NOLTZ	44535 OLD HY 80	W 1/4 - 1/2 (0.389 mi.)	A4	14
RODGERS AUTO REPAIR	44490 OLD HY 80	W 1/4 - 1/2 (0.454 mi.)	B8	24
E HAEGELE-APN#660-11	44485 OLD HY 80	W 1/4 - 1/2 (0.457 mi.)	B11	28

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 9 records.

Site Name	Database(s)
JACUMBA BURNSITE 2	SWF/LF
JACUMBA BURNSITE 1	SWF/LF
HAEGLE/E-M-H REALTY&INVESTMENT	LUST
HAEGELE/E-M-H REALTY & INVEST.	LUST
HIGH DESERT FAMILY MEDICINE	San Diego Co. HMMD
FEASERS GARAGE	San Diego Co. HMMD
E HAEGELE-APN#660-110-7	San Diego Co. HMMD
RODGERS AUTO REPAIR	San Diego Co. HMMD
JACUMBA BURNSITE 2	San Diego Co. HMMD

OVERVIEW MAP - 7580420.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

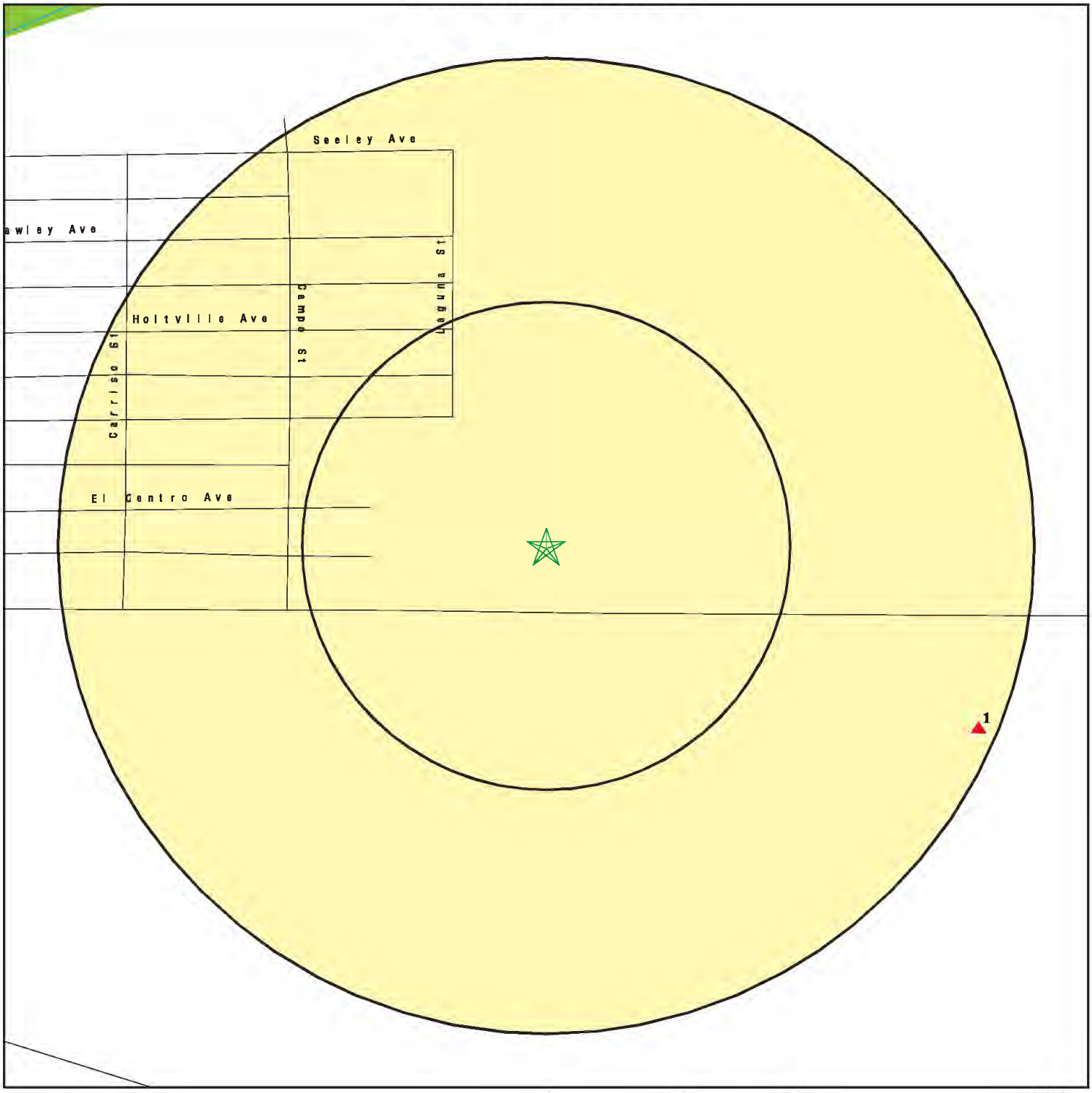
0 1/4 1/2 1 Miles

- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Jamucba Fire Station #43	CLIENT:	Universal Engineering Sciences
ADDRESS:	Old Highway 80 Jacumba CA 91934	CONTACT:	Adam Canfield
LAT/LONG:	32.61814 / 116.18222	INQUIRY #:	7580420.2s
		DATE:	February 28, 2024 7:38 am

DETAIL MAP - 7580420.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Jamucba Fire Station #43	CLIENT: Universal Engineering Sciences
ADDRESS: Old Highway 80	CONTACT: Adam Canfield
Jacumba CA 91934	INQUIRY #: 7580420.2s
LAT/LONG: 32.61814 / 116.18222	DATE: February 28, 2024 7:39 am

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
Lists of state- and tribal (Superfund) equivalent sites								
RESPONSE	1.000		0	0	0	0	NR	0
Lists of state- and tribal hazardous waste facilities								
ENVIROSTOR	1.000		0	0	0	1	NR	1
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Lists of state and tribal leaking storage tanks								
SAN DIEGO CO. SAM	0.500		0	1	3	NR	NR	4
LUST	0.500		0	0	6	NR	NR	6
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	1	0	NR	NR	1
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
San Diego Co. HMMD	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	1	NR	1
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
MINES MRDS	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS TRIS	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAINING	0.250		0	0	NR	NR	NR	0
PFAS PART 139 AIRPORT	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
BIOSOLIDS	TP		NR	NR	NR	NR	NR	0
PFAS	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
CHROME PLATING	0.500		0	0	0	NR	NR	0
Cortese	0.500		0	0	4	NR	NR	4
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
ICE	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	2	NR	NR	2
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HWTS	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
HAZMAT	0.250		0	0	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
UIC GEO	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	TP		NR	NR	NR	NR	NR	0
PROJECT	TP		NR	NR	NR	NR	NR	0
WDR	TP		NR	NR	NR	NR	NR	0
SAN DIEGO CO LOP	TP		NR	NR	NR	NR	NR	0
CIWQS	TP		NR	NR	NR	NR	NR	0
CERS	TP		NR	NR	NR	NR	NR	0
NON-CASE INFO	TP		NR	NR	NR	NR	NR	0
OTHER OIL GAS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PROD WATER PONDS	TP		NR	NR	NR	NR	NR	0
SAMPLING POINT	TP		NR	NR	NR	NR	NR	0
WELL STIM PROJ	TP		NR	NR	NR	NR	NR	0
UST FINDER	0.250		0	0	NR	NR	NR	0
UST FINDER RELEASE	0.500		0	0	3	NR	NR	3
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	2	18	2	0	22

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1
ESE
1/8-1/4
0.240 mi.
1268 ft.

JACUMBA I & II
1000 OLD HY 80
JACUMBA, CA 91934

SAN DIEGO CO. SAM
CPS-SLIC
CERS

S109599090
N/A

Relative:
Higher

Actual:
2803 ft.

SAN DIEGO CO. SAM:

Name:	JACUMBA I & II
Address:	1000 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Case Number:	H86936-001
Agency:	DEH Site Assessment & Mitigation
Funding:	**Private - VAP**
Facility Type:	OX
Facility Status:	Preliminary Assessment
Date:	2/23/2009
Date Began:	2/23/2009

CPS-SLIC:

Name:	JACUMBA I & II
Address:	1000 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	08/24/2010
Global Id:	T10000001087
Lead Agency:	SAN DIEGO COUNTY LOP
Lead Agency Case Number:	H86936-001
Latitude:	32.6167905
Longitude:	-116.178422
Case Type:	Cleanup Program Site
Case Worker:	JC
Local Agency:	SAN DIEGO COUNTY LOP
RB Case Number:	Not reported
File Location:	Not reported
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
EPA Region:	9
Coordinate Source:	Not reported
Cuf Case:	NO
Quantity Released Gallons:	Not reported
Begin Date:	05/06/2009
Leak Reported Date:	Not reported
How Discovered:	Not reported
How Discovered Description:	Not reported
Discharge Source:	Not reported
Discharge Cause:	Not reported
Stop Method:	Not reported
Stop Description:	Not reported
No Further Action Date:	08/24/2010
CA Water Watershed Name:	Anza Borrego - Jacumba - Jacumba Valley (722.72)
Dwr Groundwater Subbasin Name:	Jacumba Valley (7-047)
Disadvantaged Community:	Not reported
CA Enviroscreen 3 Score:	46-50%
CA Enviroscreen 4 Score:	60-65%
Military DOD Site:	No
Facility Project Subtype:	Not reported
RWQCB Region:	COLORADO RIVER BASIN RWQCB (REGION 7)
Site History:	Voluntary Assistance Program case

JACUMBA I & II (Continued) **S109599090**

Click here to access the California GeoTracker records for this facility:

CERS:

Name:	JACUMBA I & II
Address:	1000 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Site ID:	662047
CERS ID:	T10000001087
CERS Description:	Cleanup Program Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	JAMES CLAY - SAN DIEGO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	P.O. Box 129261
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

A2 **JOSEPHINE NOLTZ** **LUST S108210645**
West **44535 OLD HY 80** **CERS N/A**
1/4-1/2 **JACUMBA, CA 91934**
0.389 mi.
2052 ft. **Site 1 of 3 in cluster A**

Relative:
Higher

Actual:
2821 ft.

LUST:

Name:	JOSEPHINE NOLTZ
Address:	44535 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Lead Agency:	SAN DIEGO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T06019724295
Global Id:	T06019724295
Latitude:	32.6152797364842
Longitude:	-116.194424607852
Status:	Completed - Case Closed
Status Date:	11/20/2008
Case Worker:	EM
RB Case Number:	Not reported
Local Agency:	SAN DIEGO COUNTY LOP
File Location:	Local Agency
Local Case Number:	H29835-001
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
EPA Region:	9
Coordinate Source:	Google Map Move
Cuf Case:	NO
Quantity Released Gallons:	Not reported
Begin Date:	07/29/2004
Leak Reported Date:	08/04/2004
How Discovered:	Not reported
How Discovered Description:	Not reported
Discharge Source:	Tank
Discharge Cause:	Other

JOSEPHINE NOLTZ (Continued) **S108210645**

Stop Method:	Close and Remove Tank
Stop Description:	CLOSE AND REMOVE TANK
No Further Action Date:	11/20/2008
CA Water Watershed Name:	Anza Borrego - Jacumba - Jacumba Valley (722.72)
Dwr Groundwater Subbasin Name:	Not reported
Disadvantaged Community:	Not reported
CA Enviroscreen 3 Score:	46-50%
CA Enviroscreen 4 Score:	60-65%
Military DOD Site:	No
Facility Project Subtype:	Not reported
RWQCB Region:	COLORADO RIVER BASIN RWQCB (REGION 7)
Site History:	Not reported

LUST:

Global Id:	T06019724295
Contact Type:	Local Agency Caseworker - Primary Caseworker
Contact Name:	EWAN MOFFAT
Organization Name:	SAN DIEGO COUNTY LOP
Address:	P.O. Box 129261
City:	San Diego
Email:	ewan.moffat@sdcounty.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	T06019724295
Action Type:	Other
Date:	07/29/2004
Action:	Leak Discovery

Global Id:	T06019724295
Action Type:	Other
Date:	08/04/2004
Action:	Leak Stopped

Global Id:	T06019724295
Action Type:	ENFORCEMENT
Date:	08/11/2004
Action:	Notice of Responsibility

Global Id:	T06019724295
Action Type:	Other
Date:	07/29/2004
Action:	Leak Began

Global Id:	T06019724295
Action Type:	ENFORCEMENT
Date:	09/19/2008
Action:	Closure/No Further Action Letter

Global Id:	T06019724295
Action Type:	Other
Date:	08/04/2004
Action:	Leak Reported

LUST:

Global Id:	T06019724295
Status:	Open - Case Begin Date

JOSEPHINE NOLTZ (Continued) **S108210645**

Status Date: 07/29/2004

Global Id: T06019724295
Status: Open - Site Assessment
Status Date: 08/11/2004

Global Id: T06019724295
Status: Completed - Case Closed
Status Date: 11/20/2008

CERS:
Name: JOSEPHINE NOLTZ
Address: 44535 OLD HY 80
City,State,Zip: JACUMBA, CA 91934
Site ID: 662724
CERS ID: T06019724295
CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:
Affiliation Type Desc: Local Agency Caseworker
Entity Name: EWAN MOFFAT - SAN DIEGO COUNTY LOP
Entity Title: Not reported
Affiliation Address: P.O. Box 129261
Affiliation City: San Diego
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

A3 **NOLTA APN#660-040-11** **SAN DIEGO CO. SAM** **U003940878**
West **44535 OLD HY 80** **UST** **N/A**
1/4-1/2 **JACUMBA, CA 91934** **Cortese**
0.389 mi.
2052 ft. **Site 2 of 3 in cluster A**

Relative:
Higher

Actual:
2821 ft.

SAN DIEGO CO. SAM:
Name: JOSEPHINE NOLTZ
Address: 44535 OLD HY 80
City,State,Zip: JACUMBA, CA 91934
Case Number: H29835-001
Agency: DEH Site Assessment & Mitigation
Funding: **LOP - State Fund**
Facility Type: Drinking Water Aquifer Impacted
Facility Status: Closed Case
Date: 9/18/2008
Date Began: 7/29/2004

UST:
Name: NOLTA APN#660-040-11
Address: 44535 OLD HY 80
City,State,Zip: JACUMBA, CA 91934
Facility ID: H29835
Permitting Agency: SAN DIEGO COUNTY
CERSID: Not reported
Latitude: 32.61766

NOLTA APN#660-040-11 (Continued) **U003940878**

Longitude:	-116.18884
Owner type:	Not reported
Facility type:	Not reported
Num of inuse ust:	Not reported
Num of closed ust:	Not reported
Num of oos ust:	Not reported
Epa region:	Not reported
Tribal lands:	Not reported
Tank owner name:	Not reported
Tank owner mailing address:	Not reported
Tank owner mailing city:	Not reported
Tank owner mailing zip:	Not reported
Tank owner mailing state:	Not reported
Tank operator name:	Not reported
Tank operator mailing address:	Not reported
Tank operator mailing city:	Not reported
Tank operator mailing zip:	Not reported
Tank operator mailing state:	Not reported
Tankidnumber:	Not reported
Tank status:	Not reported
Tank configuration:	Not reported
Tank closure date:	Not reported
Tank installation date:	Not reported
Tank num of compartments:	Not reported
Tank contents:	Not reported
Tank capacity gallons:	Not reported
Tank type:	Not reported
Tank pc construction:	Not reported
Tank pwpiping construction:	Not reported
Tank piping type:	Not reported
Tank piping construction:	Not reported
Tank sacrificial anode:	Not reported
Tank cp impressed current:	Not reported
Tank cp shutoff:	Not reported
Tank alarms:	Not reported
Tank ball float:	Not reported
Tank spill bucket:	Not reported

CORTESE:

Name:	JOSEPHINE NOLTZ
Address:	44535 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T06019724295
Site/Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED
Status Date:	Not reported
Site Code:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	active
Order No:	Not reported
Waste Discharge System No:	Not reported

NOLTA APN#660-040-11 (Continued) **U003940878**

Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported
File Name:	Active Open

A4 **JOSEPHINE NOLTZ** **UST FINDER RELEASE** **1029006689**
West **44535 OLD HY 80** **N/A**
1/4-1/2 **JACUMBA, CA 91934**
0.389 mi.
2052 ft. **Site 3 of 3 in cluster A**

Relative: **Higher**

Actual: **2821 ft.**

UST FINDER RELEASE:

Object ID:	74650
Facility ID:	Not reported
Lust ID:	CAT06019724295
Name:	JOSEPHINE NOLTZ
Address:	44535 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Address Match Type:	StreetAddress
Reported Date:	Not reported
Status:	No Further Action
Substance:	Not reported
Population within 1500ft:	226
Domestic Wells within 1500ft:	37
Land Use:	Developed, Open Space
Within SPA:	No
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	Yes
WHPA PWS Facility ID:	CA3701588_CA3701588001
WHPA Water Type:	GW - Ground water
WHPA Facility Type:	WL - Well
WHPA HUC12:	181002020203
Within 100yr Floodplain:	No
Tribe:	Not reported
EPA Region:	9
NFA Letter 1:	Not reported
NFA Letter 2:	Not reported
NFA Letter 3:	Not reported
NFA Letter 4:	Not reported
Closed With Residual Contaminate:	Not reported
Coordinate Source:	Geocode
X Coord:	-116.19066
Y Coord:	32.61695
Latitude:	32.61695
Longitude:	-116.190659999999

B5 **E-M-H REALTY AND INVEST. CORP** **LUST** **S102429036**
West **RAILROAD ST & HWY 80** **HIST CORTESE** **N/A**
1/4-1/2 **JACUMBA, CA 91934**
0.438 mi.
2310 ft. **Site 1 of 8 in cluster B**

Relative:
Higher

Actual:
2822 ft.

LUST REG 9:

Region:	9
Status:	Preliminary site assessment underway
Case Number:	9UT1622
Local Case:	H29832-001
Substance:	Gasoline
Qty Leaked:	0
Abate Method:	Not reported
Local Agency:	San Diego
How Found:	Other Means
How Stopped:	Not reported
Source:	Not reported
Cause:	Not reported
Lead Agency:	Local Agency
Case Type:	Soil only
Date Found:	12/20/1989
Date Stopped:	01/30/1990
Confirm Date:	12/20/1989
Submit Workplan:	Not reported
Prelim Assess:	02/08/1990
Desc Pollution:	Not reported
Remed Plan:	/ /
Remed Action:	Not reported
Began Monitor:	Not reported
Release Date:	12/20/1989
Enforce Date:	6/15/92
Closed Date:	Not reported
Enforce Type:	SEL
Pilot Program:	LOP
Basin Number:	911.85
GW Depth:	Not reported
Beneficial Use:	Municipal groundwater use
NPDES Number:	Not reported
Priority:	2A
File Dispn:	File discarded, case closed
Interim Remedial Actions:	No
Cleanup and Abatement order Number:	Not reported
Waste Discharge Requirement Number:	Not reported

Region:	9
Status:	Preliminary site assessment underway
Case Number:	9UT2308
Local Case:	H29832-002
Substance:	Gasoline
Qty Leaked:	0
Abate Method:	Not reported
Local Agency:	San Diego
How Found:	Tank Closure
How Stopped:	Close Tank
Source:	Unknown
Cause:	Unknown
Lead Agency:	Local Agency
Case Type:	Soil only

E-M-H REALTY AND INVEST. CORP (Continued) **S102429036**

Date Found: 09/09/1992
Date Stopped: 09/09/1992
Confirm Date: 10/22/1992
Submit Workplan: 11/23/92
Prelim Assess: 11/23/1992
Desc Pollution: Not reported
Remed Plan: / /
Remed Action: Not reported
Began Monitor: Not reported
Release Date: 09/09/1992
Enforce Date: 12/8/92
Closed Date: Not reported
Enforce Type: SEL
Pilot Program: LOP
Basin Number: 911.85
GW Depth: >14'
Beneficial Use: Municipal groundwater use
NPDES Number: Not reported
Priority: 2B
File Dispn: File discarded, case closed
Interim Remedial Actions: Yes
Cleanup and Abatement order Number: Not reported
Waste Discharge Requirement Number: Not reported

HIST CORTESE:
edr_fname: E-M-H REALTY AND INVEST
edr_fadd1: RAILROAD ST & HWY 80
City,State,Zip: JACUMBA, CA 91934
Region: CORTESE
Facility County Code: 37
Reg By: LTNKA
Reg Id: 9UT1622

edr_fname: E-M-H REALTY AND INVEST
edr_fadd1: RAILROAD ST & HWY 80
City,State,Zip: JACUMBA, CA 91934
Region: CORTESE
Facility County Code: 37
Reg By: LTNKA
Reg Id: 9UT2308

B6 **E HAEGELE-APN#660-110-7** **SAN DIEGO CO. SAM** **S108407031**
West **OLD HY 80 & RAILROAD** **N/A**
1/4-1/2 **JACUMBA, CA 91934**
0.438 mi.
2314 ft. **Site 2 of 8 in cluster B**

Relative:
Higher

Actual:
2822 ft.

SAN DIEGO CO. SAM:
Name: E HAEGELE-APN#660-110-7
Address: OLD HY 80 & RAILROAD
City,State,Zip: JACUMBA, CA 91934
Case Number: H29832-001
Agency: DEH Site Assessment & Mitigation
Funding: **LOP - Federal Fund**
Facility Type: Soils Only
Facility Status: Closed Case
Date: 11/28/2001

E HAEGELE-APN#660-110-7 (Continued) **S108407031**

Date Began: 1/30/1990

Name: E HAEGELE-APN#660-110-7
Address: OLD HY 80 & RAILROAD
City,State,Zip: JACUMBA, CA 91934
Case Number: H29832-002
Agency: DEH Site Assessment & Mitigation
Funding: **LOP - State Fund**
Facility Type: Drinking Water Aquifer Impacted
Facility Status: Remedial Investigation
Date: 1/30/2002
Date Began: 9/9/1992

B7 **E HAEGELE-APN#660-110-7** **LUST** **S106915927**
West **NONE OLD HY 80 & RAILROAD** **Cortese** **N/A**
1/4-1/2 **JACUMBA, CA 91934** **CERS**
0.441 mi.
2331 ft. **Site 3 of 8 in cluster B**

Relative: **Higher**

Actual: **2824 ft.**

LUST:

Name: E HAEGELE-APN#660-110-7
Address: NONE OLD HY 80 & RAILROAD
City,State,Zip: JACUMBA, CA 91934
Lead Agency: SAN DIEGO COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607301076
Global Id: T0607301076
Latitude: 32.6170928767851
Longitude: -116.18968963623
Status: Completed - Case Closed
Status Date: 05/17/2017
Case Worker: EM
RB Case Number: Not reported
Local Agency: SAN DIEGO COUNTY LOP
File Location: Local Agency
Local Case Number: H29832-002
Potential Media Affect: Aquifer used for drinking water supply
Potential Contaminants of Concern: Diesel
EPA Region: 9
Coordinate Source: Google Map Move
Cuf Case: NO
Quantity Released Gallons: Not reported
Begin Date: 09/09/1992
Leak Reported Date: 09/09/1992
How Discovered: UST System Modification
How Discovered Description: Not reported
Discharge Source: Tank
Discharge Cause: Spill
Stop Method: Close and Remove Tank
Stop Description: CLOSE AND REMOVE TANK
No Further Action Date: 05/17/2017
CA Water Watershed Name: Anza Borrego - Jacumba - Jacumba Valley (722.72)
Dwr Groundwater Subbasin Name: Jacumba Valley (7-047)
Disadvantaged Community: Disadvantaged Community
CA Enviroscreen 3 Score: 56-60%
CA Enviroscreen 4 Score: 60-65%
Military DOD Site: No
Facility Project Subtype: Not reported

E HAEGELE-APN#660-110-7 (Continued) **S106915927**

RWQCB Region: COLORADO RIVER BASIN RWQCB (REGION 7)
Site History: This site is currently a vacant lot that was a former gas station that operated until 1953 when the station was demolished. The Underground Storage Tanks (USTs) were not removed. Release H29832-001 was opened in December 1989 when an individual spilled the contents of the USTs while they were pumping them out. The tanks likely contained gasoline, diesel and aviation fuel. That release was closed in November 2001 due to low impacts associated with the spill. The current release (H29832-002), was opened in 1992 due to elevated soil samples noted during a tank removal. Between 1994 and 2012, 12 monitoring wells (including two dual nested wells) were installed to delineate and monitor the groundwater plume. The site is underlain by alluvium up to 80 Below Ground Surface (bgs). Weathered granite was also noted in some borings as shallow as 24 bgs. Groundwater was initially encountered at approximately 27 bgs in 1994, but has since dropped about 22 feet, most likely a result of drought and pumping by off-site supply wells. Groundwater monitoring has taken place between January 1994 and October 2015. Figures 2, 3 and 4 (August 2016 Stantec Response to CAP Comments) show the groundwater flow direction and distribution of contaminants. An October 2015 Corrective Action Plan (CAP) was submitted proposing case closure by natural attenuation by the Low Threat Closure Policy, and was approved by DEH. The public comment period ended on May 27, 2016. The only comment was received was by DUDEK on behalf of the Jacumba Community Services District. Their concerns were addressed sufficiently in an August 26, 2016 memo from the consultant for this case. The consultant proposed natural attenuation because: The plume is stable and shrinking. No Liquid Phase Hydrocarbons (LPH) has been observed in the monitoring wells at any time There are several supply wells within + mile of the site. Those include wells about 600 cross-gradient of site. The closest downgradient well is about + mile from the site. These supply wells would not be affected by hydrocarbon-impacted groundwater from the release due to the distance of the supply wells, low dissolved groundwater plume concentrations and attenuation and stability of the plume Utilities trenches are 1.5 feet to 8 feet deep are unlikely to serve as conduits for contamination migration since the depth to groundwater is about 55 to 69 feet bgs There are no health risks based on soil concentrations of contaminants. Benzene is currently below the Maximum Contaminant Level of 1 ug/l. MtBE was never detected in the groundwater. DEH concurs with the consultant s conclusions and approves case closure. The consultant states that approximately 2,437 cubic yards of soil remains on site with over 100 mg/kg Total Petroleum Hydrocarbons (TPH). This soil is located in two general areas. The first area is at the northern part of the site, including the former tank area (12 feet bgs) and B-11, B-12 & MW-9 (35-55 feet bgs). The second area is in the southern portion of the site with borings SRRB-1, SCB-2, MW-5A & MW-12 (30 55 feet bgs) as shown on the Figure 2 of the CAP. Permit # DEH2017-LMWP-002869 was issued by DEH for destruction of the 12 wells associated with the site. ANY CONTAMINATED SOIL EXCAVATED AS PART OF SUBSURFACE CONSTRUCTION WORK MUST BE MANAGED IN ACCORDANCE WITH THE LEGAL REQUIREMENTS AT THAT TIME. .

LUST:
Global Id: T0607301076
Contact Type: Local Agency Caseworker - Primary Caseworker
Contact Name: EWAN MOFFAT
Organization Name: SAN DIEGO COUNTY LOP

E HAEGELE-APN#660-110-7 (Continued) **S106915927**

Address: P.O. Box 129261
City: San Diego
Email: ewan.moffat@sdcounty.ca.gov
Phone Number: Not reported

LUST:
Global Id: T0607301076
Action Type: ENFORCEMENT
Date: 05/15/2012
Action: Technical Correspondence / Assistance / Other

Global Id: T0607301076
Action Type: ENFORCEMENT
Date: 07/21/2015
Action: Technical Correspondence / Assistance / Other

Global Id: T0607301076
Action Type: ENFORCEMENT
Date: 05/17/2017
Action: Closure/No Further Action Letter

Global Id: T0607301076
Action Type: RESPONSE
Date: 11/29/2009
Action: Well Installation Workplan

Global Id: T0607301076
Action Type: RESPONSE
Date: 02/11/2011
Action: Correspondence - Regulator Responded

Global Id: T0607301076
Action Type: RESPONSE
Date: 10/07/2011
Action: Well Installation Workplan - Regulator Responded

Global Id: T0607301076
Action Type: RESPONSE
Date: 04/25/2011
Action: Well Installation Workplan - Regulator Responded

Global Id: T0607301076
Action Type: RESPONSE
Date: 07/30/2011
Action: Monitoring Report - Semi-Annually - Regulator Responded

Global Id: T0607301076
Action Type: RESPONSE
Date: 01/31/2014
Action: Monitoring Report - Semi-Annually - Regulator Responded

Global Id: T0607301076
Action Type: RESPONSE
Date: 01/30/2015
Action: Monitoring Report - Semi-Annually - Regulator Responded

Global Id: T0607301076

E HAEGELE-APN#660-110-7 (Continued) **S106915927**

Action Type:	RESPONSE
Date:	07/30/2014
Action:	Monitoring Report - Semi-Annually - Regulator Responded
Global Id:	T0607301076
Action Type:	RESPONSE
Date:	07/29/2015
Action:	Monitoring Report - Semi-Annually - Regulator Responded
Global Id:	T0607301076
Action Type:	RESPONSE
Date:	10/02/2015
Action:	CAP/RAP - Feasibility Study Report - Regulator Responded
Global Id:	T0607301076
Action Type:	RESPONSE
Date:	08/26/2016
Action:	Other Report / Document - Regulator Responded
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	12/08/1992
Action:	Notice of Responsibility
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	10/22/2009
Action:	Letter - Notice
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	12/29/2009
Action:	Technical Correspondence / Assistance / Other
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	03/25/2015
Action:	Technical Correspondence / Assistance / Other
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	08/11/2015
Action:	Technical Correspondence / Assistance / Other
Global Id:	T0607301076
Action Type:	Other
Date:	09/09/1992
Action:	Leak Discovery
Global Id:	T0607301076
Action Type:	RESPONSE
Date:	01/30/2011
Action:	Monitoring Report - Semi-Annually
Global Id:	T0607301076
Action Type:	RESPONSE
Date:	05/03/2012

E HAEGELE-APN#660-110-7 (Continued) **S106915927**

Action:	Well Installation Report
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	12/08/1992
Action:	* Historical Enforcement
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	07/08/2009
Action:	Letter - Notice
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	02/15/2011
Action:	Technical Correspondence / Assistance / Other
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	08/17/2011
Action:	Technical Correspondence / Assistance / Other
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	08/20/2014
Action:	Technical Correspondence / Assistance / Other
Global Id:	T0607301076
Action Type:	Other
Date:	09/09/1992
Action:	Leak Began
Global Id:	T0607301076
Action Type:	Other
Date:	09/09/1992
Action:	Leak Reported
Global Id:	T0607301076
Action Type:	RESPONSE
Date:	07/03/2015
Action:	Correspondence
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	05/04/2011
Action:	Technical Correspondence / Assistance / Other
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	07/25/2012
Action:	Technical Correspondence / Assistance / Other
Global Id:	T0607301076
Action Type:	ENFORCEMENT
Date:	08/25/2015
Action:	Technical Correspondence / Assistance / Other

E HAEGELE-APN#660-110-7 (Continued) **S106915927**

Global Id: T0607301076
Action Type: ENFORCEMENT
Date: 12/02/2013
Action: Technical Correspondence / Assistance / Other

Global Id: T0607301076
Action Type: ENFORCEMENT
Date: 09/09/2016
Action: Technical Correspondence / Assistance / Other

Global Id: T0607301076
Action Type: RESPONSE
Date: 01/30/2010
Action: Monitoring Report - Semi-Annually

Global Id: T0607301076
Action Type: RESPONSE
Date: 07/30/2009
Action: Monitoring Report - Semi-Annually

Global Id: T0607301076
Action Type: RESPONSE
Date: 10/16/2012
Action: Correspondence

Global Id: T0607301076
Action Type: RESPONSE
Date: 01/30/2013
Action: Monitoring Report - Semi-Annually

Global Id: T0607301076
Action Type: RESPONSE
Date: 07/30/2013
Action: Monitoring Report - Semi-Annually

Global Id: T0607301076
Action Type: RESPONSE
Date: 01/30/2016
Action: Monitoring Report - Semi-Annually

Global Id: T0607301076
Action Type: RESPONSE
Date: 03/11/2016
Action: Other Report / Document

Global Id: T0607301076
Action Type: ENFORCEMENT
Date: 08/10/2010
Action: Staff Letter

Global Id: T0607301076
Action Type: ENFORCEMENT
Date: 10/27/2011
Action: Technical Correspondence / Assistance / Other

Global Id: T0607301076
Action Type: ENFORCEMENT

E HAEGELE-APN#660-110-7 (Continued) **S106915927**

Date: 04/10/2015
Action: Technical Correspondence / Assistance / Other

Global Id: T0607301076
Action Type: ENFORCEMENT
Date: 03/05/2014
Action: Technical Correspondence / Assistance / Other

Global Id: T0607301076
Action Type: ENFORCEMENT
Date: 06/30/2015
Action: Referral to Regional Board

Global Id: T0607301076
Action Type: Other
Date: 09/09/1992
Action: Leak Stopped

Global Id: T0607301076
Action Type: RESPONSE
Date: 07/30/2010
Action: Monitoring Report - Semi-Annually

Global Id: T0607301076
Action Type: RESPONSE
Date: 04/30/2012
Action: Monitoring Report - Semi-Annually

Global Id: T0607301076
Action Type: RESPONSE
Date: 06/12/2012
Action: Correspondence

Global Id: T0607301076
Action Type: RESPONSE
Date: 05/23/2012
Action: Correspondence

Global Id: T0607301076
Action Type: RESPONSE
Date: 07/30/2012
Action: Monitoring Report - Semi-Annually

LUST:
Global Id: T0607301076
Status: Open - Case Begin Date
Status Date: 09/09/1992

Global Id: T0607301076
Status: Open - Remediation
Status Date: 07/24/1998

Global Id: T0607301076
Status: Completed - Case Closed
Status Date: 05/17/2017

E HAEGELE-APN#660-110-7 (Continued) **S106915927**

CORTESE:

Name:	E HAEGELE-APN#660-110-7
Address:	NONE OLD HY 80 & RAILROAD
City,State,Zip:	JACUMBA, CA 91934
Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T0607301076
Site/Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED
Status Date:	Not reported
Site Code:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	active
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported
File Name:	Active Open

CERS:

Name:	E HAEGELE-APN#660-110-7
Address:	NONE OLD HY 80 & RAILROAD
City,State,Zip:	JACUMBA, CA 91934
Site ID:	650683
CERS ID:	T0607301076
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	EWAN MOFFAT - SAN DIEGO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	P.O. Box 129261
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

B8 **RODGERS AUTO REPAIR** **UST FINDER RELEASE** **1029099378**
West **44490 OLD HY 80** **N/A**
1/4-1/2 **JACUMBA, CA 91934**
0.454 mi.
2399 ft. **Site 4 of 8 in cluster B**

Relative:
Higher

Actual:
2824 ft.

UST FINDER RELEASE:

Object ID:	74651
Facility ID:	Not reported
Lust ID:	CAT0607300005
Name:	RODGERS AUTO REPAIR

RODGERS AUTO REPAIR (Continued) **1029099378**

Address:	44490 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Address Match Type:	StreetAddress
Reported Date:	Not reported
Status:	No Further Action
Substance:	Not reported
Population within 1500ft:	317
Domestic Wells within 1500ft:	49
Land Use:	Developed, Low Intensity
Within SPA:	No
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	Yes
WHPA PWS Facility ID:	CA3701588_CA3701588001
WHPA Water Type:	GW - Ground water
WHPA Facility Type:	WL - Well
WHPA HUC12:	181002020203
Within 100yr Floodplain:	No
Tribe:	Not reported
EPA Region:	9
NFA Letter 1:	Not reported
NFA Letter 2:	Not reported
NFA Letter 3:	Not reported
NFA Letter 4:	Not reported
Closed With Residual Contaminate:	Not reported
Coordinate Source:	Geocode
X Coord:	-116.18995
Y Coord:	32.6174600000001
Latitude:	32.61746
Longitude:	-116.189949999999

B9 **RODGERS AUTO REPAIR** **LUST** **S102532319**
West **44490 OLD HY 80** **HIST CORTESE** **N/A**
1/4-1/2 **JACUMBA, CA 91934**
0.454 mi.
2399 ft. **Site 5 of 8 in cluster B**

Relative: LUST:
Higher

Name:	RODGERS AUTO REPAIR
Address:	44490 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Lead Agency:	SAN DIEGO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607300005
Global Id:	T0607300005
Latitude:	32.6175158
Longitude:	-116.189829
Status:	Completed - Case Closed
Status Date:	08/11/1998
Case Worker:	Not reported
RB Case Number:	Not reported
Local Agency:	Not reported
File Location:	Local Agency
Local Case Number:	H29712-001
Potential Media Affect:	Not reported
Potential Contaminants of Concern:	Not reported

Actual:
2824 ft.

RODGERS AUTO REPAIR (Continued) **S102532319**

EPA Region:	9
Coordinate Source:	Google Geocode
Cuf Case:	NO
Quantity Released Gallons:	Not reported
Begin Date:	10/21/1992
Leak Reported Date:	Not reported
How Discovered:	Not reported
How Discovered Description:	Not reported
Discharge Source:	Not reported
Discharge Cause:	Not reported
Stop Method:	Not reported
Stop Description:	Not reported
No Further Action Date:	08/11/1998
CA Water Watershed Name:	Anza Borrego - Jacumba - Jacumba Valley (722.72)
Dwr Groundwater Subbasin Name:	Jacumba Valley (7-047)
Disadvantaged Community:	Not reported
CA Enviroscreen 3 Score:	46-50%
CA Enviroscreen 4 Score:	60-65%
Military DOD Site:	No
Facility Project Subtype:	Not reported
RWQCB Region:	COLORADO RIVER BASIN RWQCB (REGION 7)
Site History:	Not reported

LUST:

Global Id:	T0607300005
Action Type:	ENFORCEMENT
Date:	08/07/1998
Action:	Clean Up Fund - Case Closure Review Summary Report (RSR)
Global Id:	T0607300005
Action Type:	ENFORCEMENT
Date:	08/11/1998
Action:	Closure/No Further Action Letter
Global Id:	T0607300005
Action Type:	ENFORCEMENT
Date:	04/26/1996
Action:	Notice of Responsibility

LUST:

Global Id:	T0607300005
Status:	Open - Case Begin Date
Status Date:	10/21/1992
Global Id:	T0607300005
Status:	Completed - Case Closed
Status Date:	08/11/1998

HIST CORTESE:

edr_fname:	ROGERS AUTO
edr_fadd1:	44490 OLD 80
City,State,Zip:	JACUMBA, CA
Region:	CORTESE
Facility County Code:	37
Reg By:	LTNKA
Reg Id:	7T1934002

B10 **RODGERS AUTO REPAIR** **LUST** **S106152973**
West **44490 OLD HY 80** **SAN DIEGO CO. SAM** **N/A**
1/4-1/2 **JACUMBA, CA 91934** **Cortese**
0.454 mi. **SAN DIEGO CO LOP**
2399 ft. **Site 6 of 8 in cluster B** **CERS**

Relative:
Higher

Actual:
2824 ft.

LUST REG 7:

Region:	7
Status:	9 - Case Closed
Case Num:	n/a
Substance:	unk
ID:	1116
Global ID:	T0607300005
Lead Agency:	Local Agency
Case Worker:	Not reported

SAN DIEGO CO. SAM:

Name:	RODGERS AUTO REPAIR
Address:	44490 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Case Number:	H29712-001
Agency:	DEH Site Assessment & Mitigation
Funding:	**LOP - Federal Fund**
Facility Type:	Soils Only
Facility Status:	Closed Case
Date:	8/11/1998
Date Began:	10/21/1992

CORTESE:

Name:	RODGERS AUTO REPAIR
Address:	44490 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T0607300005
Site/Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED
Status Date:	Not reported
Site Code:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	active
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported
File Name:	Active Open

SAN DIEGO CO LOP:

Name:	RODGERS AUTO REPAIR
Address:	44490 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934

RODGERS AUTO REPAIR (Continued) **S106152973**

Record ID:	DEH1992-LSAM-H29712-001
Record Status:	Completed
Opened Date:	10/21/1992
Parcel Number:	660-072-10-00
Case Type:	LOP - Local Oversight Program
Historical Name:	ROGERS AUTO
SWRCB Global ID:	T0607300005
Funding:	F - LOP Federal Fund
Lead Agency:	DEH/SAM
Lead Agency Date:	10/21/1992
Census Tract:	211.00
Community:	Jacumba
Jurisdiction:	UNINCORPORATED
Watershed Basin Number:	722.72
Water Purveyor:	UNINCORPORATED
Fire Agency:	RURAL FIRE PROT DIST
Latitude:	32.6178231
Longitude:	-116.1895331
X MapCoord:	6580291.558
Y MapCoord:	1804560.500

CERS:

Name:	RODGERS AUTO REPAIR
Address:	44490 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Site ID:	680826
CERS ID:	T0607300005
CERS Description:	Leaking Underground Storage Tank Cleanup Site

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B11 **E HAEGELE-APN#660-110-7** **UST FINDER RELEASE** **1028951019**
West **44485 OLD HY 80** **N/A**
1/4-1/2 **JACUMBA, CA 91934**
0.457 mi.
2413 ft. **Site 7 of 8 in cluster B**

Relative:
Higher

Actual:
2825 ft.

UST FINDER RELEASE:

Object ID:	74647
Facility ID:	Not reported
Lust ID:	CAT0607300444
Name:	E HAEGELE-APN#660-110-7
Address:	44485 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Address Match Type:	StreetAddress
Reported Date:	Not reported
Status:	No Further Action
Substance:	Not reported
Population within 1500ft:	136
Domestic Wells within 1500ft:	22
Land Use:	Developed, Open Space
Within SPA:	No
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	Yes
WHPA PWS Facility ID:	CA3701588_CA3701588001
WHPA Water Type:	GW - Ground water

E HAEGELE-APN#660-110-7 (Continued) **1028951019**

WHPA Facility Type:	WL - Well
WHPA HUC12:	181002020203
Within 100yr Floodplain:	No
Tribe:	Not reported
EPA Region:	9
NFA Letter 1:	Not reported
NFA Letter 2:	Not reported
NFA Letter 3:	Not reported
NFA Letter 4:	Not reported
Closed With Residual Contaminate:	Not reported
Coordinate Source:	Geocode
X Coord:	-116.19213
Y Coord:	32.6161700000001
Latitude:	32.6161699999999
Longitude:	-116.19213

B12 **E HAEGELE-APN#660-110-7** **LUST** **S118821894**
West **44485 OLD HY 80** **Cortese** **N/A**
1/4-1/2 **JACUMBA, CA 91934** **CERS**
0.457 mi.
2413 ft. **Site 8 of 8 in cluster B**

Relative:
Higher

Actual:
2825 ft.

LUST:

Name:	E HAEGELE-APN#660-110-7
Address:	44485 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Lead Agency:	SAN DIEGO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607300444
Global Id:	T0607300444
Latitude:	32.6171622267744
Longitude:	-116.18980938765
Status:	Completed - Case Closed
Status Date:	11/28/2001
Case Worker:	EM
RB Case Number:	7T1934003
Local Agency:	SAN DIEGO COUNTY LOP
File Location:	Local Agency
Local Case Number:	H29832-001
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
EPA Region:	9
Coordinate Source:	Google Map Move
Cuf Case:	NO
Quantity Released Gallons:	Not reported
Begin Date:	01/30/1990
Leak Reported Date:	01/30/1990
How Discovered:	Not reported
How Discovered Description:	Not reported
Discharge Source:	Not reported
Discharge Cause:	Not reported
Stop Method:	Not reported
Stop Description:	Not reported
No Further Action Date:	11/28/2001
CA Water Watershed Name:	Anza Borrego - Jacumba - Jacumba Valley (722.72)
Dwr Groundwater Subbasin Name:	Jacumba Valley (7-047)
Disadvantaged Community:	Not reported
CA Enviroscreen 3 Score:	46-50%

E HAEGELE-APN#660-110-7 (Continued) **S118821894**

CA Enviroscreen 4 Score: 60-65%
Military DOD Site: No
Facility Project Subtype: Not reported
RWQCB Region: COLORADO RIVER BASIN RWQCB (REGION 7)
Site History: Not reported

LUST:
Global Id: T0607300444
Contact Type: Local Agency Caseworker - Primary Caseworker
Contact Name: EWAN MOFFAT
Organization Name: SAN DIEGO COUNTY LOP
Address: P.O. Box 129261
City: San Diego
Email: ewan.moffat@sdcounty.ca.gov
Phone Number: Not reported

LUST:
Global Id: T0607300444
Action Type: Other
Date: 01/30/1990
Action: Leak Discovery

Global Id: T0607300444
Action Type: ENFORCEMENT
Date: 06/15/1992
Action: * Historical Enforcement

Global Id: T0607300444
Action Type: Other
Date: 01/30/1990
Action: Leak Began

Global Id: T0607300444
Action Type: Other
Date: 01/30/1990
Action: Leak Reported

Global Id: T0607300444
Action Type: ENFORCEMENT
Date: 11/28/2001
Action: Closure/No Further Action Letter

Global Id: T0607300444
Action Type: Other
Date: 01/30/1990
Action: Leak Stopped

LUST:
Global Id: T0607300444
Status: Open - Case Begin Date
Status Date: 01/30/1990

Global Id: T0607300444
Status: Completed - Case Closed
Status Date: 11/28/2001

E HAEGELE-APN#660-110-7 (Continued) **S118821894**

CORTESE:

Name:	E HAEGELE-APN#660-110-7
Address:	44485 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T0607300444
Site/Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED
Status Date:	Not reported
Site Code:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	active
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported
File Name:	Active Open

CERS:

Name:	E HAEGELE-APN#660-110-7
Address:	44485 OLD HY 80
City,State,Zip:	JACUMBA, CA 91934
Site ID:	650682
CERS ID:	T0607300444
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	EWAN MOFFAT - SAN DIEGO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	P.O. Box 129261
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

C13 **JACUMBA AIRPORT- NAVY** **FUDS** **1024903963**
East **N/A**
1/2-1 **SE OF EL CAJON, CA**
0.894 mi.
4722 ft. **Site 1 of 2 in cluster C**

Relative:
Higher

Actual:
2814 ft.

FUDS:

EPA Region:	09
Installation ID:	CA99799FA06400
Congressional District Number:	48
Name:	JACUMBA AIRPORT- NAVY

JACUMBA AIRPORT- NAVY (Continued) **1024903963**

FUDS Number:	J09CA7241
City:	SE OF EL CAJON
State:	CA
County:	SAN DIEGO
Object ID:	8549
USACE Division:	SPD
USACE District:	Los Angeles District (SPL)
Status:	Properties without projects
Current Owner:	LOCAL: COUNTY Department of General Services, Real Property Division. Mr. Paul Tanguillig, Engineering Section.
EMS Map Link:	https://fudsportal.usace.army.mil/ems/inventory/map?id=54211
Eligibility:	Eligible
Has Projects:	No
NPL Status:	Not reported
Project Required:	No
Feature Description:	The U.S. Navy acquired this site through condemnation on 15 July 1941. The Navy constructed a dirt airstrip and a windsock on the site. The airstrip was used by the Navy as an emergency landing field for military aircraft until 1947. The airstrip and property were declared excess to the immediate needs of the Eleventh Naval District, San Diego, by letter of 13 February 1947 from the Chief of the Bureau of Aeronautics to the Chief of Naval Operations. It was recommended that the airstrip be made available for leasing, subject to the joint use of the Navy for landing purposes in common with the lessee. The Navy subsequently entered into a lease agreement with the County of San Diego for their use of the airstrip on 25 August 1947. The County of San Diego leased the airstrip on a yearly basis until 1953. The U.S. General Services Administration declared the Jacumba Airport property surplus on 16 June 1953. On 7 July 1953, the County of San Diego applied to transfer the property from the Navy to the County. The General Services Administration executed a Quitclaim Deed on 14 August 1953 transferring the 113.2 acres of property to the County of San Diego. The airport property is still owned and operated by the County.
Latitude:	32.61694444
Longitude:	-116.16694444

C14 **JACUMBA AIRPORT** **ENVIROSTOR** **S107621209**
East **EMI** **N/A**
1/2-1 **JACUMBA, CA 92034**
0.897 mi.
4735 ft. **Site 2 of 2 in cluster C**

Relative:
Higher

Actual:
2814 ft.

ENVIROSTOR:

Name:	JACUMBA AIRPORT
Address:	Not reported
City,State,Zip:	JACUMBA, CA
Facility ID:	80000921
Status:	Inactive - Needs Evaluation
Status Date:	07/01/2005
Site Code:	Not reported
Site Type:	Military Evaluation
Site Type Detailed:	FUDS
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Eileen Mananian

JACUMBA AIRPORT (Continued) **S107621209**

Division Branch: Cleanup Cypress
Assembly: 75
Senate: 18
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: DERA
Latitude: 32.61694
Longitude: -116.1669
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CA99799FA06400
Alias Type: Federal Facility ID
Alias Name: J09CA7241
Alias Type: INPR
Alias Name: 80000921
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Inventory Project Report (INPR)
Completed Date: 09/21/1999
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

EMI:
Name: JACUMBA AIRPORT
Address: Not reported
City,State,Zip: JACUMBA, CA 92034
Year: 1987
County Code: 37
Air Basin: SD
Facility ID: 100009
Air District Name: SD
SIC Code: 4582
Air District Name: SAN DIEGO COUNTY APCD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 8
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0

JACUMBA AIRPORT (Continued) **S107621209**

Part. Matter 10 Micrometers and Smllr Tons/Yr:0

Name:	JACUMBA AIRPORT
Address:	Not reported
City,State,Zip:	JACUMBA, CA 92034
Year:	1990
County Code:	37
Air Basin:	SD
Facility ID:	100009
Air District Name:	SD
SIC Code:	4582
Air District Name:	SAN DIEGO COUNTY APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	9
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	JACUMBA AIRPORT
Address:	Not reported
City,State,Zip:	JACUMBA, CA 92034
Year:	1993
County Code:	37
Air Basin:	SD
Facility ID:	100009
Air District Name:	SD
SIC Code:	4581
Air District Name:	SAN DIEGO COUNTY APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	9
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	JACUMBA AIRPORT
Address:	Not reported
City,State,Zip:	JACUMBA, CA 92034
Year:	1996
County Code:	37
Air Basin:	SD
Facility ID:	100009
Air District Name:	SD
SIC Code:	4581
Air District Name:	SAN DIEGO COUNTY APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	9

JACUMBA AIRPORT (Continued) **S107621209**

NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	JACUMBA AIRPORT
Address:	Not reported
City,State,Zip:	JACUMBA, CA 92034
Year:	1997
County Code:	37
Air Basin:	SD
Facility ID:	100009
Air District Name:	SD
SIC Code:	4581
Air District Name:	SAN DIEGO COUNTY APCD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	9
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Count: 9 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
JACUMBA	S106152921	HAEGLE/E-M-H REALTY&INVESTMENT	OLD HY 80 & RAILROAD		LUST
JACUMBA	S106152920	HAEGELE/E-M-H REALTY & INVEST.	OLD HY 80 & RAILROAD		LUST
JACUMBA	S106068455	HIGH DESERT FAMILY MEDICINE	44460 OLD	91934	San Diego Co. HMMD
JACUMBA	S106064532	FEASERS GARAGE	44535 OLD	91934	San Diego Co. HMMD
JACUMBA	S106063073	E HAEGELE-APN#660-110-7	OLD	91934	San Diego Co. HMMD
JACUMBA	S106063032	RODGERS AUTO REPAIR	44490 OLD	91934	San Diego Co. HMMD
JACUMBA	S106070072	JACUMBA BURNSITE 2	N OLD	91934	San Diego Co. HMMD
JACUMBA	S126984211	JACUMBA BURNSITE 2	100 YARDS NORTH OF OLD HWY 80	91934	SWF/LF
JACUMBA	S126984210	JACUMBA BURNSITE 1	100 YARDS SOUTH OF OLD HWY 80	91934	SWF/LF

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/26/2023
Date Data Arrived at EDR: 01/02/2024
Date Made Active in Reports: 01/24/2024
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 02/01/2024
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/26/2023
Date Data Arrived at EDR: 01/02/2024
Date Made Active in Reports: 01/24/2024
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 02/01/2024
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/26/2023
Date Data Arrived at EDR: 01/02/2024
Date Made Active in Reports: 01/24/2024
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 02/01/2024
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/20/2023
Date Data Arrived at EDR: 12/20/2023
Date Made Active in Reports: 01/24/2024
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 12/20/2023
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 01/29/2024
Date Data Arrived at EDR: 02/01/2024
Date Made Active in Reports: 02/22/2024
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/01/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 01/29/2024
Date Data Arrived at EDR: 02/01/2024
Date Made Active in Reports: 02/22/2024
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/01/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 08/03/2023
Date Data Arrived at EDR: 08/07/2023
Date Made Active in Reports: 10/10/2023
Number of Days to Update: 64

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/02/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 10/26/2023
Date Data Arrived at EDR: 11/17/2023
Date Made Active in Reports: 02/13/2024
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/21/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 10/26/2023
Date Data Arrived at EDR: 11/17/2023
Date Made Active in Reports: 02/13/2024
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/21/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/18/2023
Date Data Arrived at EDR: 09/20/2023
Date Made Active in Reports: 12/11/2023
Number of Days to Update: 82

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/13/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 10/23/2023
Date Data Arrived at EDR: 10/24/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 79

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/23/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 10/23/2023
Date Data Arrived at EDR: 10/24/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 79

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/23/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Quarterly

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/06/2023
Date Data Arrived at EDR: 11/07/2023
Date Made Active in Reports: 02/05/2024
Number of Days to Update: 90

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/06/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Quarterly

Lists of state and tribal leaking storage tanks

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/05/2023
Date Data Arrived at EDR: 09/06/2023
Date Made Active in Reports: 11/22/2023
Number of Days to Update: 77

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Quarterly

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/14/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/19/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/25/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/19/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/27/2024
Number of Days to Update: 84
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 11/16/2023
Date Data Arrived at EDR: 11/16/2023
Date Made Active in Reports: 02/13/2024
Number of Days to Update: 89
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 09/05/2023
Date Data Arrived at EDR: 09/06/2023
Date Made Active in Reports: 11/28/2023
Number of Days to Update: 83
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Semi-Annually

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 11/28/2023
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 02/27/2024
Number of Days to Update: 89

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 11/30/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 09/05/2023
Date Data Arrived at EDR: 09/06/2023
Date Made Active in Reports: 11/27/2023
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/14/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/19/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/25/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

Lists of state and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/12/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 10/23/2023
Date Data Arrived at EDR: 10/24/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 79

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/23/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Quarterly

Lists of state and tribal brownfield sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 09/20/2023
Date Made Active in Reports: 12/08/2023
Number of Days to Update: 79

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 12/13/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 08/15/2023
Date Data Arrived at EDR: 08/30/2023
Date Made Active in Reports: 12/01/2023
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/14/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 11/29/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 02/23/2024
Number of Days to Update: 86

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 11/29/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/16/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 02/13/2023
Number of Days to Update: 83

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/20/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/26/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 11/17/2023
Date Data Arrived at EDR: 11/17/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/21/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/23/2023
Date Data Arrived at EDR: 10/24/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 79

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/23/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 09/28/2023
Date Made Active in Reports: 12/18/2023
Number of Days to Update: 81

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 02/26/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CERS HAZ WASTE: California Environmental Reporting System Hazardous Waste

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 10/16/2023
Date Data Arrived at EDR: 10/17/2023
Date Made Active in Reports: 01/09/2024
Number of Days to Update: 84

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 01/16/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 11/17/2023
Date Data Arrived at EDR: 11/17/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/21/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 10/30/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 10/16/2023
Date Data Arrived at EDR: 10/17/2023
Date Made Active in Reports: 01/09/2024
Number of Days to Update: 84

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/16/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 11/21/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 86

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/26/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 11/14/2023
Date Data Arrived at EDR: 12/22/2023
Date Made Active in Reports: 01/24/2024
Number of Days to Update: 33

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/01/2024
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 11/22/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/15/2024
Number of Days to Update: 85

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 02/27/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/18/2023
Date Data Arrived at EDR: 09/20/2023
Date Made Active in Reports: 11/14/2023
Number of Days to Update: 55

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 12/13/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 06/01/2023
Date Data Arrived at EDR: 07/18/2023
Date Made Active in Reports: 10/05/2023
Number of Days to Update: 79

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/18/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/27/2024
Number of Days to Update: 84

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/05/2023
Date Data Arrived at EDR: 09/06/2023
Date Made Active in Reports: 11/22/2023
Number of Days to Update: 77

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 09/28/2023
Date Data Arrived at EDR: 11/10/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 89

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/13/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 07/13/2021
Date Made Active in Reports: 03/09/2022
Number of Days to Update: 239

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/10/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/05/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 02/03/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/06/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/18/2023
Date Data Arrived at EDR: 09/20/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 12/13/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/02/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 06/14/2022
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 283

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/14/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 11/13/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 86

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/15/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 10/19/2023
Date Data Arrived at EDR: 10/20/2023
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 88

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/26/2023
Date Data Arrived at EDR: 01/02/2024
Date Made Active in Reports: 01/24/2024
Number of Days to Update: 22

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 02/01/2024
Next Scheduled EDR Contact: 03/11/2024
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 09/01/2023
Date Data Arrived at EDR: 09/27/2023
Date Made Active in Reports: 12/21/2023
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/12/2024
Next Scheduled EDR Contact: 04/19/2024
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/01/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/20/2023
Date Data Arrived at EDR: 04/04/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 66

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/05/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/26/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/20/2023
Date Data Arrived at EDR: 09/01/2023
Date Made Active in Reports: 09/20/2023
Number of Days to Update: 19
Source: Nuclear Regulatory Commission
Telephone: 301-415-0717
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 11/27/2023
Date Made Active in Reports: 02/22/2024
Number of Days to Update: 87
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 02/23/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 02/23/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 02/02/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 12/19/2023
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/05/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 01/11/2024
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 5

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/02/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 03/03/2023
Date Data Arrived at EDR: 03/03/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 98

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/15/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 12/26/2024
Date Data Arrived at EDR: 01/02/2024
Date Made Active in Reports: 01/24/2024
Number of Days to Update: 22

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 02/01/2024
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

MINES VIOLATIONS: MSHA Violation Assessment Data
Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 01/02/2024
Date Data Arrived at EDR: 01/03/2024
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 1

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Quarterly

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/01/2023
Date Data Arrived at EDR: 11/17/2023
Date Made Active in Reports: 02/13/2024
Number of Days to Update: 88

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/21/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 01/07/2022
Date Data Arrived at EDR: 02/24/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 82

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 02/22/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing
Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 02/22/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines
An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 11/28/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 12/11/2023
Number of Days to Update: 12

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 11/28/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Quarterly

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 08/23/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 98

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 02/22/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 11/03/2023
Date Data Arrived at EDR: 11/08/2023
Date Made Active in Reports: 11/20/2023
Number of Days to Update: 12

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 02/27/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 09/06/2023
Date Data Arrived at EDR: 09/13/2023
Date Made Active in Reports: 12/11/2023
Number of Days to Update: 89

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/05/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/23/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 02/20/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/10/2023
Date Data Arrived at EDR: 11/10/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 89

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/13/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Quarterly

PFAS NPL: Superfund Sites with PFAS Detections Information

EPA's Office of Land and Emergency Management and EPA Regional Offices maintain data describing what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment.

Date of Government Version: 09/23/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 12/21/2023
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 703-603-8895
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS FEDERAL SITES: Federal Sites PFAS Information

Several federal entities, such as the federal Superfund program, Department of Defense, National Aeronautics and Space Administration, Department of Transportation, and Department of Energy provided information for sites with known or suspected detections at federal facilities.

Date of Government Version: 09/23/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 12/21/2023
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS TRIS: List of PFAS Added to the TRI

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) immediately added certain per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by the Toxics Release Inventory (TRI) under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) and provided a framework for additional PFAS to be added to TRI on an annual basis.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-566-0250
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS TSCA: PFAS Manufacture and Imports Information

EPA issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. EPA publishes non-confidential business information (non-CBI) and includes descriptive information about each site, corporate parent, production volume, other manufacturing information, and processing and use information.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS RCRA MANIFEST: PFAS Transfers Identified In the RCRA Database Listing

To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: PFAS, PFOA, PFOS, PERFL, AFFF, GENX, GEN-X (plus the VT waste codes). These keywords were searched for in the following text fields: Manifest handling instructions (MANIFEST_HANDLING_INSTR), Non-hazardous waste description (NON_HAZ_WASTE_DESCRIPTION), DOT printed information (DOT_PRINTED_INFORMATION), Waste line handling instructions (WASTE_LINE_HANDLING_INSTR), Waste residue comments (WASTE_RESIDUE_COMMENTS).

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS ATSDR: PFAS Contamination Site Location Listing

PFAS contamination site locations from the Department of Health & Human Services, Center for Disease Control & Prevention. ATSDR is involved at a number of PFAS-related sites, either directly or through assisting state and federal partners. As of now, most sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film-forming firefighting foam (AFFF) was regularly used.

Date of Government Version: 06/24/2020
Date Data Arrived at EDR: 03/17/2021
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 601

Source: Department of Health & Human Services
Telephone: 202-741-5770
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

PFAS WQP: Ambient Environmental Sampling for PFAS

The Water Quality Portal (WQP) is a part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations and individuals submit project details and sampling results to this public repository. The information is commonly used for research and assessments of environmental quality.

Date of Government Version: 09/23/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS NPDES: Clean Water Act Discharge Monitoring Information

Any discharger of pollutants to waters of the United States from a point source must have a National Pollutant Discharge Elimination System (NPDES) permit. The process for obtaining limits involves the regulated entity (permittee) disclosing releases in a NPDES permit application and the permitting authority (typically the state but sometimes EPA) deciding whether to require monitoring or monitoring with limits. Caveats and Limitations: Less than half of states have required PFAS monitoring for at least one of their permittees and fewer states have established PFAS effluent limits for permittees. New rulemakings have been initiated that may increase the number of facilities monitoring for PFAS in the future.

Date of Government Version: 09/23/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS ECHO: Facilities in Industries that May Be Handling PFAS Listing

Regulators and the public have expressed interest in knowing which regulated entities may be using PFAS. EPA has developed a dataset from various sources that show which industries may be handling PFAS. Approximately 120,000 facilities subject to federal environmental programs have operated or currently operate in industry sectors with processes that may involve handling and/or release of PFAS.

Date of Government Version: 09/23/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 12/21/2023
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS ECHO FIRE TRAINING: Facilities in Industries that May Be Handling PFAS Listing

A list of fire training sites was added to the Industry Sectors dataset using a keyword search on the permitted facilitys name to identify sites where fire-fighting foam may have been used in training exercises. Additionally, you may view an example spreadsheet of the subset of fire training facility data, as well as the keywords used in selecting or deselecting a facility for the subset. as well as the keywords used in selecting or deselecting a facility for the subset. These keywords were tested to maximize accuracy in selecting facilities that may use fire-fighting foam in training exercises, however, due to the lack of a required reporting field in the data systems for designating fire training sites, this methodology may not identify all fire training sites or may potentially misidentify them.

Date of Government Version: 09/23/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 12/21/2023
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS PART 139 AIRPORT: All Certified Part 139 Airports PFAS Information Listing

Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration?s document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

Date of Government Version: 09/23/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 12/21/2023
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

AQUEOUS FOAM NRC: Aqueous Foam Related Incidents Listing

The National Response Center (NRC) serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. The spreadsheets posted to the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the ?Material Involved? or ?Incident Description? fields.

Date of Government Version: 09/23/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 12/21/2023
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-267-2675
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 12/27/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 12/16/2016
Date Data Arrived at EDR: 01/06/2017
Date Made Active in Reports: 03/10/2017
Number of Days to Update: 63

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 12/27/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: No Update Planned

BIOSOLIDS: ICIS-NPDES Biosolids Facility Data

The data reflects compliance information about facilities in the biosolids program.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 01/03/2024
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-564-4700
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

PFAS: PFAS Contamination Site Location Listing
A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 11/30/2023
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 02/26/2024
Number of Days to Update: 88
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 11/30/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

AQUEOUS FOAM: Former Fire Training Facility Assessments Listing
Airports shown on this list are those believed to use Aqueous Film Forming Foam (AFFF), and certified by the Federal Aviation Administration (FAA) under Title 14, Code of Federal Regulations (CFR), Part 139 (14 CFR Part 139). This list was created by SWRCB using information available from the FAA. Location points shown are from the latitude and longitude listed on the FAA airport master record.

Date of Government Version: 11/30/2023
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 02/23/2024
Number of Days to Update: 85
Source: State Water Resources Control Board
Telephone: 916-341-5455
Last EDR Contact: 11/30/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CHROME PLATING: Chrome Plating Facilities Listing
This listing represents chrome plating facilities the California State Water Resources Control Board staff identified as possibly being a source of Per- and polyfluoroalkyl substance (PFAS) contamination. Sites and locations were identified by staff with the Division of Water Quality in the California State Water Board. Data was collected from the CA Air Resources Board 2013 and 2018 - Cr VI emission survey, CA Emission Inventory, CA HAZ Waste discharge database and by reviewing storm water permits. Former chrome plating sites are also included that are open site investigation or remediation cases with the Regional Water Quality Control Boards and the Department of Toxic Substances Control.

Date of Government Version: 11/30/2023
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 02/23/2024
Number of Days to Update: 85
Source: State Water Resources Control Board
Telephone: 916-341-5455
Last EDR Contact: 11/30/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 09/20/2023
Date Made Active in Reports: 12/08/2023
Number of Days to Update: 79
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 12/13/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 03/31/2023
Date Data Arrived at EDR: 05/08/2023
Date Made Active in Reports: 07/31/2023
Number of Days to Update: 84

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Varies

DRYCLEAN NO SIERRA DIST: Northern Sierra Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Northern Sierra Air Quality Management District,

Date of Government Version: 05/07/2019
Date Data Arrived at EDR: 05/07/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1455

Source: Northern Sierra Air Quality Management District
Telephone: 530-274-9350
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN NO SONOMA CO DIST: Norther Sonoma County County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Northern Sonoma County Air Pollution Control District.,

Date of Government Version: 04/17/2019
Date Data Arrived at EDR: 04/17/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1475

Source: Santa Barbara County Air Pollution Control District
Telephone: 707-433-5911
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SANTA BARB CO DIST: Santa Barbara County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Santa Barbara County Air Pollution Control District.

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 04/17/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1475

Source: Santa Barbara County Air Pollution Control District
Telephone: 805-961-8867
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN TEHAMA CO DIST: Tehama County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Tehama County Air Pollution Control District.

Date of Government Version: 04/24/2019
Date Data Arrived at EDR: 04/24/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1468

Source: Tehama County Air Pollution Control District
Telephone: 530-527-3717
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SACRAMENTO METO DIST: Sacramento Metropolitan Air Quality Management DistrictDrycleaner Facility Listing
A listing of drycleaner facility locations, for the Sacramento Metropolitan Air Quality Management District.

Date of Government Version: 08/15/2023
Date Data Arrived at EDR: 08/17/2023
Date Made Active in Reports: 10/31/2023
Number of Days to Update: 75

Source: Sacramento Metropolitan Air Quality Management District
Telephone: 916-874-3958
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SAN LUIS OB CO DIST: San Luis Obispo County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the San Luis Obispo County Air Pollution Control District.

Date of Government Version: 07/26/2023
Date Data Arrived at EDR: 07/27/2023
Date Made Active in Reports: 10/13/2023
Number of Days to Update: 78

Source: San Luis Obispo County Air Pollution Control District
Telephone: 805-781-5756
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN BUTTE CO DIST: Butte County Air Quality Management DistrictDrycleaner Facility Listing
Butte County Air Quality Management DistrictDrycleaner Facility Listing.

Date of Government Version: 04/25/2023
Date Data Arrived at EDR: 10/18/2023
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 90
Source: Butte County Air Quality Management District
Telephone: 530-332-9400
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN FEATHER RIVER DIST: Feather River Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Feather River Air Quality Management District.

Date of Government Version: 03/08/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 06/05/2023
Number of Days to Update: 88
Source: Feather River Air Quality Management District
Telephone: 530-634-7659
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SAN JOAQ VAL DIST: San Joaquin Valley Air Pollution Control District District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the San Joaquin Valley Air Pollution Control District.

Date of Government Version: 05/24/2023
Date Data Arrived at EDR: 05/30/2023
Date Made Active in Reports: 08/21/2023
Number of Days to Update: 83
Source: San Joaquin Valley Air Pollution Control District
Telephone: 559-230-6001
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN EAST KERN DIST: Eastern Kern Air Pollution Control District District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Eastern Kern Air Pollution Control District.

Date of Government Version: 01/12/2023
Date Data Arrived at EDR: 04/26/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 79
Source: Eastern Kern Air Pollution Control District
Telephone: 661-862-9684
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN IMPERIAL CO DIST: Imperial County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Imperial County Air Pollution Control District

Date of Government Version: 04/25/2023
Date Data Arrived at EDR: 04/26/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 79
Source: Imperial County Air Pollution Control District
Telephone: 442-265-1800
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN MENDO CO DIST: Mendocino County Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Mendocino County Air Quality Management District.

Date of Government Version: 04/27/2023
Date Data Arrived at EDR: 04/28/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 77
Source: Mendocino County Air Quality Management District
Telephone: 707-463-4354
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN MOJAVE DESERT DIST: Mojave Desert Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Mojave Desert Air Quality Management District.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 78
Source: Mojave Desert Air Quality Management District
Telephone: 760-245-1661
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN MONTEREY BAY DIST: Monterey Bay Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Monterey Bay Air Quality Management District.

Date of Government Version: 04/25/2023
Date Data Arrived at EDR: 04/26/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 79
Source: Monterey Bay Air Quality Management District
Telephone: 831-647-9411
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SHASTA CO DIST: Shasta County Air Quality Management District District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Shasta County Air Quality Management District.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 78
Source: Shasta County Air Quality Management District
Telephone: 530-225-5674
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN YOLO-SOLANO DIST: Yolo-Solano Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Yolo-Solano Air Quality Management District.

Date of Government Version: 04/25/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 78
Source: Yolo-Solano Air Quality Management District
Telephone: 530-757-3650
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN PLACER CO DIST: Placer County Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Placer County Air Quality Management District.

Date of Government Version: 05/15/2023
Date Data Arrived at EDR: 05/17/2023
Date Made Active in Reports: 08/14/2023
Number of Days to Update: 89
Source: Placer County Air Quality Management District
Telephone: 530-745-2335
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN BAY AREA DIST: Bay Area Air Quality Management District Drycleaner Facility Listing
Bay Area Air Quality Management District Drycleaner Facility Listing.

Date of Government Version: 02/20/2019
Date Data Arrived at EDR: 05/30/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1432
Source: Bay Area Air Quality Management District
Telephone: 415-516-1916
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN CALAVERAS CO DIST: Calaveras County Environmental Management Agency Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Calaveras County Environmental Management Agency.

Date of Government Version: 06/17/2019
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1412
Source: Calaveras County Environmental Management Agency
Telephone: 209-754-6399
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Varies

DRYCLEAN GRANT: Grant Recipients List
Assembly Bill 998 (AB 998) established the Non-Toxic Dry Cleaning Incentive Program to provide financial assistance to the dry cleaning industry to switch from systems using perchloroethylene (Perc), an identified toxic air contaminant and potential human carcinogen, to non-toxic and non-smog forming alternatives.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 02/04/2021
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 816
Source: California Air Resources Board
Telephone: 916-323-0006
Last EDR Contact: 01/26/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

DRYCLEAN LAKE CO DIST: Lake County Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Lake County Air Quality Management District,

Date of Government Version: 04/29/2019
Date Data Arrived at EDR: 05/07/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1455
Source: Lake County Air Quality Management District
Telephone: 707-263-7000
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN NO COAST UNIFIED DIST: North Coast Unified Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the North Coast Unified Air Quality Management District.

Date of Government Version: 11/30/2016
Date Data Arrived at EDR: 04/19/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1473
Source: North Coast Unified Air Quality Management District
Telephone: 707-443-3093
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 11/14/2023
Date Data Arrived at EDR: 11/16/2023
Date Made Active in Reports: 02/12/2024
Number of Days to Update: 88
Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 02/20/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

DRYCLEAN VENTURA CO DIST: Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Ventura County Air Pollution Control District.

Date of Government Version: 01/04/2024
Date Data Arrived at EDR: 01/16/2024
Date Made Active in Reports: 02/08/2024
Number of Days to Update: 23
Source: Ventura County Air Pollution Control District
Telephone: 805-645-1421
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 11/21/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 86
Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 02/26/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Varies

DRYCLEAN AMADOR: Amador Air District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Amador Air Quality Management District

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 07/13/2023
Number of Days to Update: 77
Source: Amador Air Quality Management District
Telephone: 209-257-0112
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/31/2023
Date Data Arrived at EDR: 09/08/2023
Date Made Active in Reports: 11/27/2023
Number of Days to Update: 80

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/26/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Annually

DRYCLEAN GLENN CO DIST: Glenn County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Glenn County Air Pollution Control District.

Date of Government Version: 05/02/2023
Date Data Arrived at EDR: 05/03/2023
Date Made Active in Reports: 07/25/2023
Number of Days to Update: 83

Source: Glenn County Air Pollution Control District
Telephone: 530-934-6500
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SAN DIEGO CO DIST: San Diego County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the San Diego County Air Pollution Control District.

Date of Government Version: 08/08/2023
Date Data Arrived at EDR: 08/09/2023
Date Made Active in Reports: 10/26/2023
Number of Days to Update: 78

Source: San Diego County Air Pollution Control District
Telephone: 858-586-2616
Last EDR Contact: 08/08/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 06/09/2023
Date Made Active in Reports: 08/30/2023
Number of Days to Update: 82

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/14/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 10/16/2023
Date Data Arrived at EDR: 10/17/2023
Date Made Active in Reports: 01/09/2024
Number of Days to Update: 84

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/16/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 09/13/2023
Date Data Arrived at EDR: 09/14/2023
Date Made Active in Reports: 09/21/2023
Number of Days to Update: 7

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/08/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 86

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/20/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Varies

ICE: Inspection, Compliance and Enforcement
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 02/07/2024
Date Data Arrived at EDR: 02/07/2024
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 0
Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 02/07/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/07/2024
Date Data Arrived at EDR: 02/07/2024
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 0
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/07/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/02/2023
Date Data Arrived at EDR: 10/04/2023
Date Made Active in Reports: 12/27/2023
Number of Days to Update: 84
Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Quarterly

HWTS: Hazardous Waste Tracking System
DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 10/26/2023
Date Data Arrived at EDR: 10/27/2023
Date Made Active in Reports: 01/29/2024
Number of Days to Update: 94
Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 12/26/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 07/05/2022
Date Made Active in Reports: 09/19/2022
Number of Days to Update: 76
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Annually

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 11/29/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 02/23/2024
Number of Days to Update: 86
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 11/29/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 11/08/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 86
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 02/27/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 11/06/2023
Date Data Arrived at EDR: 11/07/2023
Date Made Active in Reports: 02/05/2024
Number of Days to Update: 90
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/06/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 11/22/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 86
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 02/27/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 11/29/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 02/23/2024
Number of Days to Update: 86
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 11/29/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 09/07/2023
Date Data Arrived at EDR: 09/08/2023
Date Made Active in Reports: 11/28/2023
Number of Days to Update: 81
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82
Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Annually

SANTA CRUZ CO SITE MITI: Site Mitigation Listing
Sites may become contaminated with toxic chemicals through illegal dumping or disposal, from leaking underground storage tanks, or through industrial or commercial activities.The goal of the site mitigation program is to protect the public health and the environment while facilitating completion of contaminated site clean-up projects in a timely manner.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 06/23/2023
Date Made Active in Reports: 07/13/2023
Number of Days to Update: 20
Source: Santa Cruz Environmental Health Services
Telephone: 831-454-2761
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 11/29/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 02/27/2024
Number of Days to Update: 90
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 11/29/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 09/05/2023
Date Data Arrived at EDR: 09/06/2023
Date Made Active in Reports: 11/27/2023
Number of Days to Update: 82
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region’s active disposal pits are operating without permission.

Date of Government Version: 02/11/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 90
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/05/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/12/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 09/05/2023
Date Data Arrived at EDR: 09/06/2023
Date Made Active in Reports: 11/27/2023
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 09/05/2023
Date Data Arrived at EDR: 09/06/2023
Date Made Active in Reports: 11/27/2023
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing
In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 11/29/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 02/22/2024
Number of Days to Update: 85
Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 11/29/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System
The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 11/22/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 86
Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 02/27/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data
The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 10/16/2023
Date Data Arrived at EDR: 10/17/2023
Date Made Active in Reports: 01/09/2024
Number of Days to Update: 84

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/16/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)
Non-Case Information sites

Date of Government Version: 09/05/2023
Date Data Arrived at EDR: 09/06/2023
Date Made Active in Reports: 11/27/2023
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)
Other Oil & Gas Projects sites

Date of Government Version: 09/05/2023
Date Data Arrived at EDR: 09/06/2023
Date Made Active in Reports: 11/27/2023
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 09/05/2023
Date Data Arrived at EDR: 09/06/2023
Date Made Active in Reports: 11/27/2023
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 09/05/2023
Date Data Arrived at EDR: 09/06/2023
Date Made Active in Reports: 11/27/2023
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 09/05/2023
Date Data Arrived at EDR: 09/06/2023
Date Made Active in Reports: 11/27/2023
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Varies

UST FINDER: UST Finder Database
EPA developed UST Finder, a web map application containing a comprehensive, state-sourced national map of underground storage tank (UST) and leaking UST (LUST) data. It provides the attributes and locations of active and closed USTs, UST facilities, and LUST sites from states and from Tribal lands and US territories . UST Finder contains information about proximity of UST facilities and LUST sites to: surface and groundwater public drinking water protection areas; estimated number of private domestic wells and number of people living nearby; and flooding and wildfires.

Date of Government Version: 06/08/2023
Date Data Arrived at EDR: 10/04/2023
Date Made Active in Reports: 01/18/2024
Number of Days to Update: 106

Source: Environmental Protection Agency
Telephone: 202-564-0394
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Varies

UST FINDER RELEASE: UST Finder Releases Database

US EPA's UST Finder data is a national composite of leaking underground storage tanks. This data contains information about, and locations of, leaking underground storage tanks. Data was collected from state sources and standardized into a national profile by EPA's Office of Underground Storage Tanks, Office of Research and Development, and the Association of State and Territorial Solid Waste Management Officials.

Date of Government Version: 06/08/2023
Date Data Arrived at EDR: 10/31/2023
Date Made Active in Reports: 01/18/2024
Number of Days to Update: 79

Source: Environmental Protecton Agency
Telephone: 202-564-0394
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Semi-Annually

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/26/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 09/27/2023
Date Data Arrived at EDR: 09/28/2023
Date Made Active in Reports: 12/18/2023
Number of Days to Update: 81

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/26/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 04/27/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 07/13/2023
Number of Days to Update: 77

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 12/26/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 09/12/2023
Date Data Arrived at EDR: 09/13/2023
Date Made Active in Reports: 12/04/2023
Number of Days to Update: 82

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/12/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 10/20/2023
Date Data Arrived at EDR: 10/24/2023
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 84

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 10/25/2023
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 83

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 02/05/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/08/2022
Date Data Arrived at EDR: 08/09/2022
Date Made Active in Reports: 09/01/2022
Number of Days to Update: 23

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 06/28/2021
Date Data Arrived at EDR: 12/21/2021
Date Made Active in Reports: 03/03/2022
Number of Days to Update: 72

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 12/26/2023
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/12/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 10/10/2023
Date Data Arrived at EDR: 10/11/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 85

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List
A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 10/30/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 02/12/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 10/30/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/12/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 10/27/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 11/21/2023
Number of Days to Update: 20

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/09/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 10/01/2023
Date Data Arrived at EDR: 10/06/2023
Date Made Active in Reports: 12/27/2023
Number of Days to Update: 82

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/09/2023
Date Data Arrived at EDR: 10/09/2023
Date Made Active in Reports: 12/27/2023
Number of Days to Update: 79

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/10/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 01/12/2023
Date Made Active in Reports: 03/29/2023
Number of Days to Update: 76

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/04/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58
Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 12/13/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills
This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 04/13/2023
Date Data Arrived at EDR: 07/13/2023
Date Made Active in Reports: 09/27/2023
Number of Days to Update: 76
Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory
A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 12/01/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 12/14/2023
Number of Days to Update: 1
Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 12/13/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory
A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 09/01/2023
Date Data Arrived at EDR: 09/20/2023
Date Made Active in Reports: 12/08/2023
Number of Days to Update: 79
Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 12/13/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 07/11/2023
Date Data Arrived at EDR: 10/17/2023
Date Made Active in Reports: 01/09/2024
Number of Days to Update: 84
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/19/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21
Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/04/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 04/12/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 06/13/2023
Number of Days to Update: 42

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/10/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 12/18/2023
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Semi-Annually

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/22/2021
Date Data Arrived at EDR: 11/18/2021
Date Made Active in Reports: 11/22/2021
Number of Days to Update: 4

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/20/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/15/2023
Date Data Arrived at EDR: 11/20/2023
Date Made Active in Reports: 02/15/2024
Number of Days to Update: 87

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/12/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/16/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/04/2021
Date Data Arrived at EDR: 10/06/2021
Date Made Active in Reports: 12/29/2021
Number of Days to Update: 84

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/16/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/16/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 10/31/2023
Date Data Arrived at EDR: 11/03/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 81

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 10/10/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/02/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 10/10/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/02/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 10/10/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/02/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 11/09/2023
Date Data Arrived at EDR: 11/09/2023
Date Made Active in Reports: 11/21/2023
Number of Days to Update: 12

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 02/26/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 09/29/2023
Date Data Arrived at EDR: 10/04/2023
Date Made Active in Reports: 12/27/2023
Number of Days to Update: 84
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 09/29/2023
Date Data Arrived at EDR: 10/04/2023
Date Made Active in Reports: 12/27/2023
Number of Days to Update: 84
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/07/2022
Date Data Arrived at EDR: 12/21/2022
Date Made Active in Reports: 03/16/2023
Number of Days to Update: 85
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 12/18/2023
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/07/2022
Date Data Arrived at EDR: 12/09/2022
Date Made Active in Reports: 03/01/2023
Number of Days to Update: 82
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 12/18/2023
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 01/17/2024
Date Data Arrived at EDR: 01/18/2024
Date Made Active in Reports: 01/26/2024
Number of Days to Update: 8
Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 11/08/2023
Date Data Arrived at EDR: 11/09/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 90

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/12/2024
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 11/27/2023
Date Data Arrived at EDR: 11/27/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 81

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 02/27/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 04/04/2023
Date Data Arrived at EDR: 04/05/2023
Date Made Active in Reports: 06/27/2023
Number of Days to Update: 83

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/13/2022
Number of Days to Update: 86

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 02/23/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 10/30/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 10/30/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Quarterly

SAN FRANCISO COUNTY:

SAN FRANCISCO MAHER: Maher Ordinance Property Listing
a listing of properties that fall within a Maher Ordinance, for all of San Francisco

Date of Government Version: 10/15/2023
Date Data Arrived at EDR: 10/17/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 86

Source: San Francisco Planning
Telephone: 628-652-7483
Last EDR Contact: 01/18/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/08/2023
Date Data Arrived at EDR: 11/09/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 90

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/12/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/07/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 11/28/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28
Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 11/07/2023
Date Data Arrived at EDR: 11/08/2023
Date Made Active in Reports: 11/16/2023
Number of Days to Update: 8
Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/12/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22
Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/16/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: No Update Planned

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/23/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 09/15/2021
Date Data Arrived at EDR: 09/16/2021
Date Made Active in Reports: 12/09/2021
Number of Days to Update: 84

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/23/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 07/02/2021
Date Data Arrived at EDR: 07/06/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 12/12/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 86

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/12/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 02/08/2022
Date Data Arrived at EDR: 02/10/2022
Date Made Active in Reports: 05/04/2022
Number of Days to Update: 83

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 01/04/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 08/03/2023
Date Data Arrived at EDR: 08/24/2023
Date Made Active in Reports: 09/12/2023
Number of Days to Update: 19

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 02/26/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 08/01/2023
Date Data Arrived at EDR: 08/02/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 78

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 10/10/2023
Date Data Arrived at EDR: 10/11/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 85

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 10/07/2022
Date Data Arrived at EDR: 10/07/2022
Date Made Active in Reports: 12/21/2022
Number of Days to Update: 75

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/26/2023
Date Data Arrived at EDR: 10/20/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 83

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/16/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/18/2023
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/02/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 09/26/2023
Date Data Arrived at EDR: 10/24/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 79

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/16/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/28/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 02/26/2024
Number of Days to Update: 89

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/29/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 09/21/2023
Date Data Arrived at EDR: 10/04/2023
Date Made Active in Reports: 12/27/2023
Number of Days to Update: 84

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/18/2023
Next Scheduled EDR Contact: 04/08/2024
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 10/30/2023
Date Data Arrived at EDR: 11/03/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 81

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/06/2023
Date Data Arrived at EDR: 11/07/2023
Date Made Active in Reports: 01/31/2024
Number of Days to Update: 85

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/06/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 12/27/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 12/01/2023
Number of Days to Update: 1

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/26/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/05/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/18/2022
Number of Days to Update: 80

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/12/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 11/29/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.
Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

JAMUCBA FIRE STATION #43
OLD HIGHWAY 80
JACUMBA, CA 91934

TARGET PROPERTY COORDINATES

Latitude (North):	32.61814 - 32° 37' 5.30''
Longitude (West):	116.18222 - 116° 10' 55.99''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	576723.8
UTM Y (Meters):	3609060.5
Elevation:	2801 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	50004023 JACUMBA OE S, CA
Version Date:	2021
North Map:	50005569 JACUMBA, CA
Version Date:	2021

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

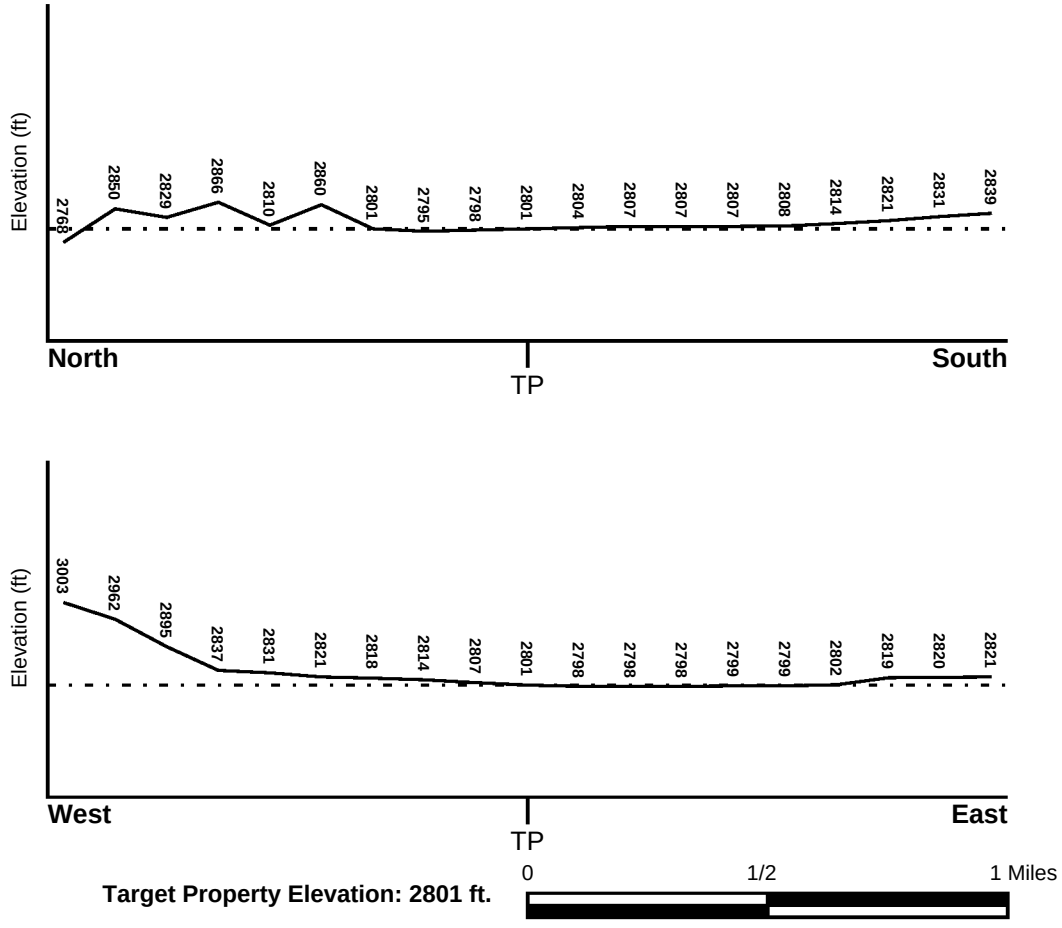
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 2801 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
Not Reported	

Additional Panels in search area:	FEMA Source Type
Not Reported	

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
SOUTH JACUMBA (OE)	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

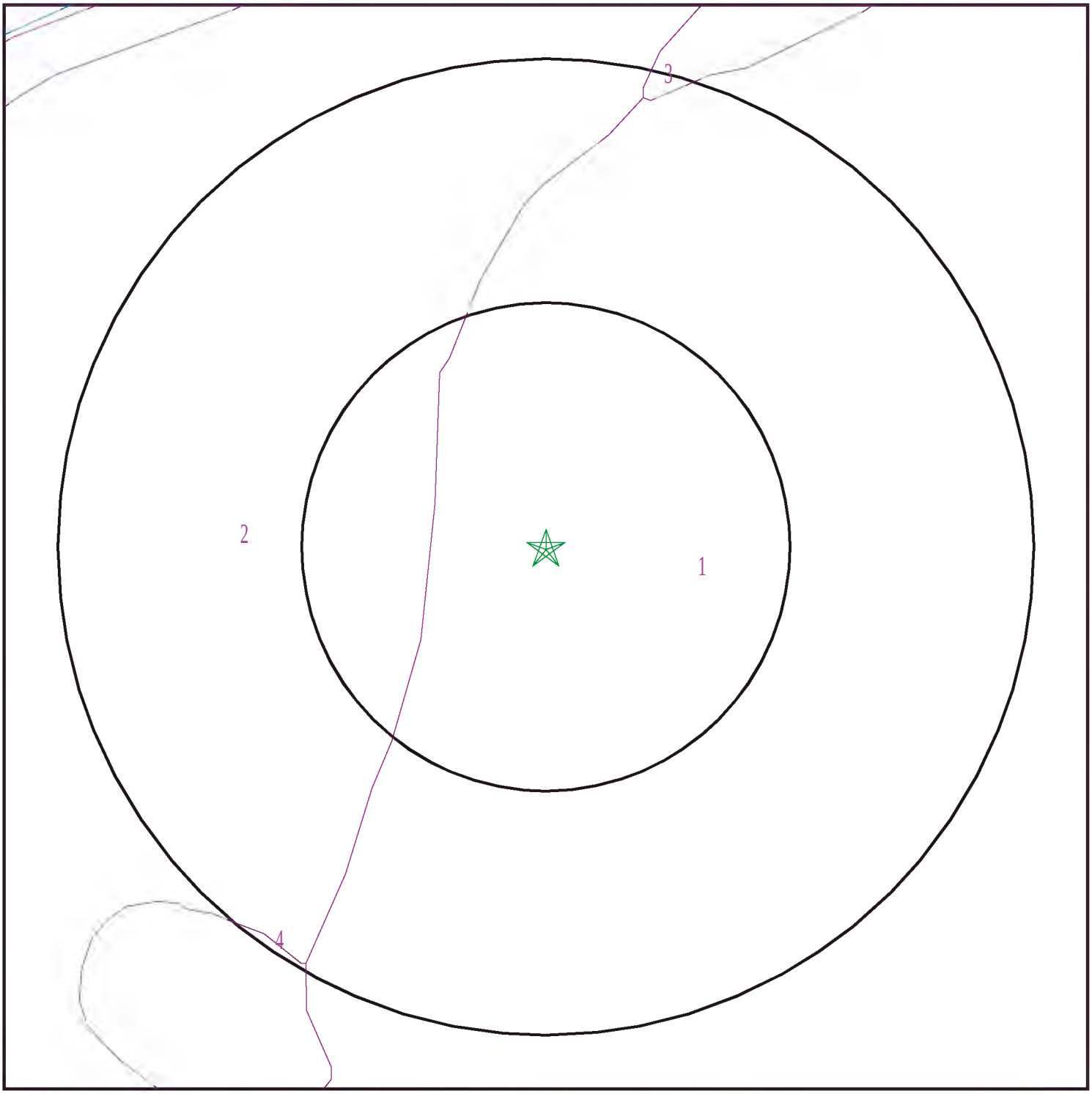
Era:	Mesozoic
System:	Lower Jurassic and Upper Triassic
Series:	Lower Mesozoic
Code:	lMze *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Eugeosynclinal Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 7580420.2s



★ Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Jamucba Fire Station #43	CLIENT:	Universal Engineering Sciences
ADDRESS:	Old Highway 80 Jacumba CA 91934	CONTACT:	Adam Canfield
LAT/LONG:	32.61814 / 116.18222	INQUIRY #:	7580420.2s
		DATE:	February 28, 2024 7:39 am

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: REIFF

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
2	14 inches	42 inches	stratified sandy loam to loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
3	42 inches	59 inches	stratified sandy loam to loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6

Soil Map ID: 2

Soil Component Name: ROSITAS

Soil Surface Texture: loamy coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	loamy coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9
2	5 inches	59 inches	gravelly loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9

Soil Map ID: 3

Soil Component Name: INDIO

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Moderately well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.9
2	5 inches	59 inches	stratified fine sandy loam to silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.9

Soil Map ID: 4

Soil Component Name: RAMONA

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 7.3 Min: 6.6
2	9 inches	59 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 7.3 Min: 6.6
3	59 inches	74 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 7.3 Min: 6.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

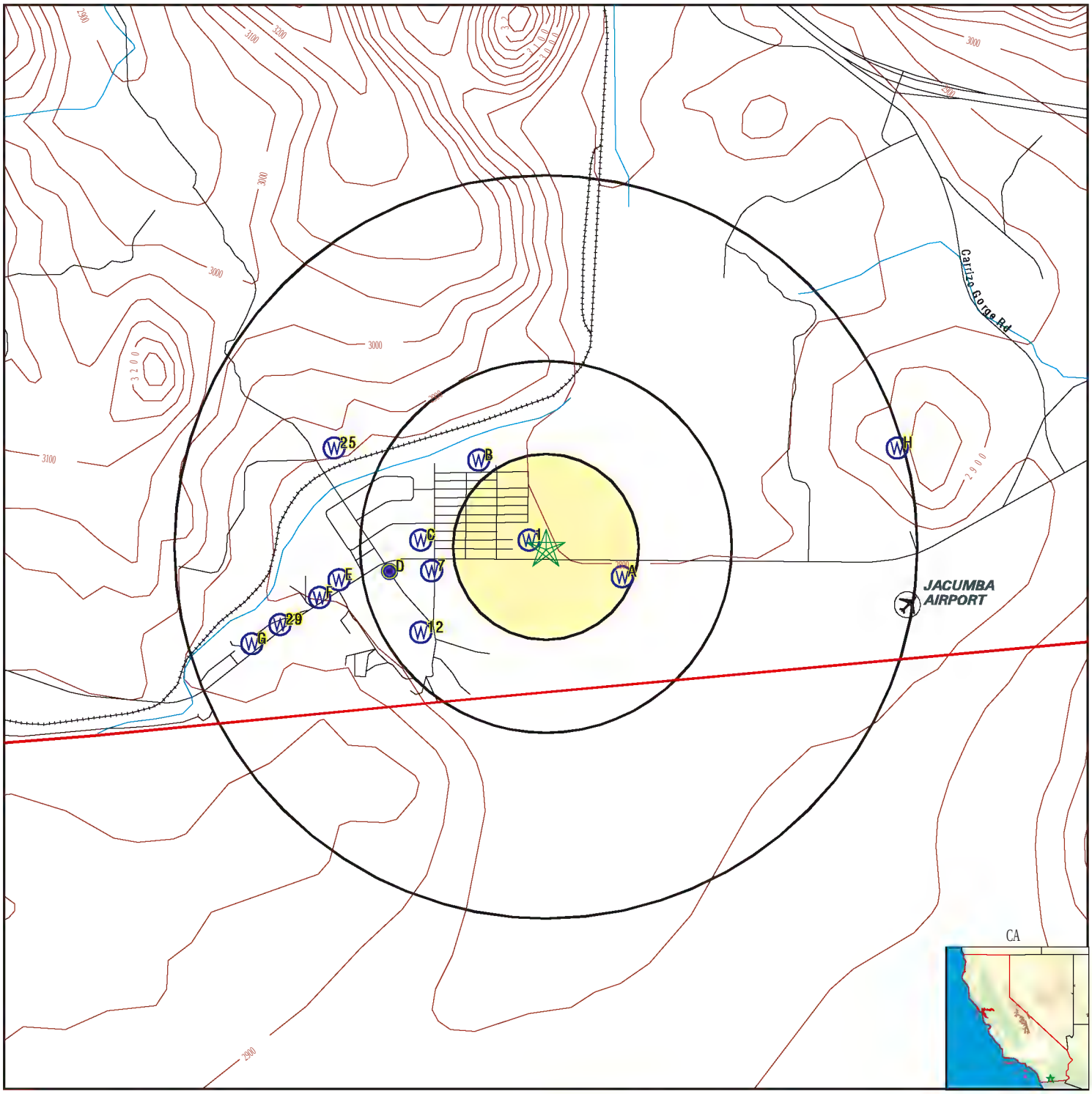
MAP ID	WELL ID	LOCATION FROM TP
D19	CA3702703	1/4 - 1/2 Mile West

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CADWR0000036259	0 - 1/8 Mile WNW
A2	13747	1/8 - 1/4 Mile ESE
A3	13748	1/8 - 1/4 Mile ESE
A4	CADDW2000006757	1/8 - 1/4 Mile ESE
B5	CADDW2000018605	1/4 - 1/2 Mile NW
B6	13746	1/4 - 1/2 Mile NW
7	CAEDF0000079894	1/4 - 1/2 Mile WSW
C8	CADWR0000035207	1/4 - 1/2 Mile West
C9	CADWR0000028243	1/4 - 1/2 Mile West
C10	CADWR0000030666	1/4 - 1/2 Mile West
D11	CAEDF0000043128	1/4 - 1/2 Mile West
12	CADWR0000001891	1/4 - 1/2 Mile SW
D13	CAEDF0000008254	1/4 - 1/2 Mile West
D14	CAEDF0000106602	1/4 - 1/2 Mile West
D15	CAEDF0000037748	1/4 - 1/2 Mile West
D16	CAEDF0000075349	1/4 - 1/2 Mile West
D17	CAEDF0000137750	1/4 - 1/2 Mile West
D18	CAEDF0000039322	1/4 - 1/2 Mile West
D20	CAEDF0000042048	1/4 - 1/2 Mile West
E21	13743	1/2 - 1 Mile West
E22	CADDW2000014666	1/2 - 1 Mile West
F23	13745	1/2 - 1 Mile WSW
F24	CADDW2000013114	1/2 - 1 Mile WSW
25	CADWR0000001978	1/2 - 1 Mile WNW
F26	CADDW2000024042	1/2 - 1 Mile WSW
F27	CAUSGS000002500	1/2 - 1 Mile WSW
F28	CAUSGSN00002025	1/2 - 1 Mile WSW
29	CAEDF0000035308	1/2 - 1 Mile WSW
G30	CADDW2000021378	1/2 - 1 Mile WSW
G31	CADDW2000012661	1/2 - 1 Mile WSW
H32	CADWR0000028395	1/2 - 1 Mile ENE
H33	CADWR0000028535	1/2 - 1 Mile ENE

PHYSICAL SETTING SOURCE MAP - 7580420.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Jamucba Fire Station #43	CLIENT:	Universal Engineering Sciences
ADDRESS:	Old Highway 80 Jacumba CA 91934	CONTACT:	Adam Canfield
LAT/LONG:	32.61814 / 116.18222	INQUIRY #:	7580420.2s
		DATE:	February 28, 2024 7:39 am

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
WNW
0 - 1/8 Mile
Higher

CA WELLS **CADWR0000036259**

Well ID:	18S08E08J001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	18S08E08J001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=18S08E08J001S&store_num=		
GeoTracker Data:	Not Reported		

A2
ESE
1/8 - 1/4 Mile
Higher

CA WELLS **13747**

Seq:	13747	Prim sta c:	18S/08E-08K98 S
Frds no:	3710011002	County:	37
District:	14	User id:	WAT
System no:	3710011	Water type:	G
Source nam:	WELL 02 - ABANDONED	Station ty:	WELL/AMBNT
Latitude:	323701.0	Longitude:	1161042.0
Precision:	2	Status:	AB
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3710011	System nam:	Jacumba Community Sd
Hqname:	Not Reported	Address:	P.O. Box 425
City:	Jacumba	State:	CA
Zip:	92034	Zip ext:	Not Reported
Pop serv:	500	Connection:	234
Area serve:	JACUMBA		

A3
ESE
1/8 - 1/4 Mile
Higher

CA WELLS **13748**

Seq:	13748	Prim sta c:	18S/08E-08K?A S
Frds no:	3710011001	County:	37
District:	14	User id:	WAT
System no:	3710011	Water type:	G
Source nam:	WELL 01 - ABANDONED	Station ty:	WELL/AMBNT
Latitude:	323701.0	Longitude:	1161040.0
Precision:	2	Status:	AB
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3710011	System nam:	Jacumba Community Sd
Hqname:	Not Reported	Address:	P.O. Box 425
City:	Jacumba	State:	CA
Zip:	92034	Zip ext:	Not Reported

Pop serv:	500	Connection:	234
Area serve:	JACUMBA		

A4
ESE **CA WELLS** **CADDW2000006757**
1/8 - 1/4 Mile
Higher

GAMA:

Well ID:	CA3710011_002_002	Well Type:	MUNICIPAL
Source:	DDW	Other Names:	3710011-002
GAMA Pfas testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=CA3710011_002_002&store_num=		
GeoTracker Data:	Not Reported		

B5
NW **CA WELLS** **CADDW2000018605**
1/4 - 1/2 Mile
Higher

GAMA:

Well ID:	CA3701588_001_001	Well Type:	MUNICIPAL
Source:	DDW	Other Names:	3701588-001
GAMA Pfas testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=CA3701588_001_001&store_num=		
GeoTracker Data:	Not Reported		

B6
NW **CA WELLS** **13746**
1/4 - 1/2 Mile
Higher

Seq:	13746	Prim sta c:	18S/08E-08C01 S
Frds no:	3701588001	County:	37
District:	67	User id:	37C
System no:	3701588	Water type:	G
Source nam:	WELL 01	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	323717.0	Longitude:	1161105.0
Precision:	2	Status:	AR
Comment 1:	WELL ~ 100 YDS N/W OF INTERSECTION OF CAMPO & SEELEY AVE, JACUMBA CA		
Comment 2:	Not Reported	Comment 3:	Not Reported
Comment 4:	Not Reported	Comment 5:	Not Reported
Comment 6:	Not Reported	Comment 7:	Not Reported
System no:	3701588	System nam:	Jojoba Ltd Wc
Hqname:	Not Reported	Address:	Not Reported
City:	Not Reported	State:	Not Reported
Zip:	Not Reported	Zip ext:	Not Reported
Pop serv:	0	Connection:	0
Area serve:	Not Reported		
Sample date:	20-APR-17	Finding:	1.1
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	16-APR-15	Finding:	4.8
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

7
WSW **CA WELLS** **CAEDF0000079894**
1/4 - 1/2 Mile
Higher

Well ID:	T0607301076-MW-8D	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-8D
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0607301076&assigned_name=MW-8D&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0607301076&assigned_name=MW-8D		

C8
West **CA WELLS** **CADWR0000035207**
1/4 - 1/2 Mile
Higher

Well ID:	18S08E08K003S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	18S08E08K003S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=18S08E08K003S&store_num=		
GeoTracker Data:	Not Reported		

C9
West **CA WELLS** **CADWR0000028243**
1/4 - 1/2 Mile
Higher

Well ID:	18S08E08K001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	18S08E08K001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=18S08E08K001S&store_num=		
GeoTracker Data:	Not Reported		

C10
West **CA WELLS** **CADWR0000030666**
1/4 - 1/2 Mile
Higher

Well ID:	18S08E08K002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	18S08E08K002S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=18S08E08K002S&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

D11
West
1/4 - 1/2 Mile
Higher | **CA WELLS** | **CAEDF0000043128**

Well ID:	T0607301076-MW-14	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-14
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0607301076&assigned_name=MW-14&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0607301076&assigned_name=MW-14		

12
SW
1/4 - 1/2 Mile
Higher | **CA WELLS** | **CADWR0000001891**

Well ID:	18S08E08Q001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	18S08E08Q001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=18S08E08Q001S&store_num=		
GeoTracker Data:	Not Reported		

D13
West
1/4 - 1/2 Mile
Higher | **CA WELLS** | **CAEDF0000008254**

Well ID:	T0607301076-MW-11	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-11
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0607301076&assigned_name=MW-11&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0607301076&assigned_name=MW-11		

D14
West
1/4 - 1/2 Mile
Higher | **CA WELLS** | **CAEDF0000106602**

Well ID:	T0607301076-MW-10	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-10
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0607301076&assigned_name=MW-10&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0607301076&assigned_name=MW-10		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

D15
West
1/4 - 1/2 Mile
Higher

CA WELLS **CAEDF0000037748**

Well ID:	T0607301076-MW-13	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-13
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0607301076&assigned_name=MW-13&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0607301076&assigned_name=MW-13		

D16
West
1/4 - 1/2 Mile
Higher

CA WELLS **CAEDF0000075349**

Well ID:	T0607301076-MW-7	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-7
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0607301076&assigned_name=MW-7&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0607301076&assigned_name=MW-7		

D17
West
1/4 - 1/2 Mile
Higher

CA WELLS **CAEDF0000137750**

Well ID:	T0607301076-MW-12	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-12
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0607301076&assigned_name=MW-12&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0607301076&assigned_name=MW-12		

D18
West
1/4 - 1/2 Mile
Higher

CA WELLS **CAEDF0000039322**

Well ID:	T0607301076-MW-5A	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-5A
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0607301076&assigned_name=MW-5A&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0607301076&assigned_name=MW-5A		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

D19
West
1/4 - 1/2 Mile
Higher | **FRDS PWS** | **CA3702703**

Epa region:	09	State:	CA
Pwsid:	CA3702703	Pwsname:	DE ANZA SPRINGS RESORT
Cityserved:	Not Reported	Stateserved:	CA
Zipserved:	Not Reported	Fipscounty:	06073
Status:	Active	Retpopsrvd:	400
Pwssvcconn:	225	Psource longname:	Groundwater
Pwstype:	TNCWS	Owner:	Private
Contact:	DAVE LANDMAN	Contactorgname:	DE ANZA SPRINGS RESORT
Contactphone:	6197664301	Contactaddress1:	P.O. BOX 561
Contactaddress2:	Not Reported	Contactcity:	JACUMBA
Contactstate:	CA	Contactzip:	91934
Pwsactivitycode:	A		

PWS ID:	CA3702703	PWS type:	System Owner/Responsible Party
PWS name:	THOUSAND TRAILS ANZA BORREGO		
PWS address:	Not Reported	PWS city:	JACUMBA
PWS state:	CA	PWS zip:	92034
PWS name:	DE ANZA SPRINGS RESORT	PWS type code:	NC
Retail population served:	400	Contact:	Not Reported
Contact address:	Not Reported	Contact city:	Not Reported
Contact state:	Not Reported	Contact zip:	Not Reported
Contact telephone:	Not Reported		

PWS ID:	CA3702703	Activity status:	Active
Date system activated:	7706	Date system deactivated:	Not Reported
Retail population:	00000450	System name:	THOUSAND TRAILS ANZA BORREGO
System address:	THOUSAND TRAILS ANZA BORREGO		
System address:	1951 CARRIZO GORGE RD	System city:	JACUMBA
System state:	CA	System zip:	92034

Population served:	101 - 500 Persons	Treatment:	Untreated

Latitude:	323703	Longitude:	1161120

Violation id:	0401241	Orig code:	S
State:	CA	Violation Year:	2004
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	23	Violation name:	Monitoring, Routine Major (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2004
Cmp edt:	06/30/2004		

Violation id:	0601980	Orig code:	S
State:	CA	Violation Year:	2005
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	23	Violation name:	Monitoring, Routine Major (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	10/01/2005
Cmp edt:	12/31/2005		

Violation id:	0702424	Orig code:	S
State:	CA	Violation Year:	2007
Contamination code:	1041	Contamination Name:	Nitrite

Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	331	Rule name:	Nitrates
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2007
Cmp edt:	06/30/2007		

Violation id:	0702497	Orig code:	S
State:	CA	Violation Year:	2007
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	23	Violation name:	Monitoring, Routine Major (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2007
Cmp edt:	09/30/2007		

Violation id:	0903031	Orig code:	S
State:	CA	Violation Year:	2009
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	23	Violation name:	Monitoring, Routine Major (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2009
Cmp edt:	06/30/2009		

Violation id:	1103323	Orig code:	S
State:	CA	Violation Year:	2011
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	23	Violation name:	Monitoring, Routine Major (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	01/01/2011
Cmp edt:	03/31/2011		

Violation id:	1203658	Orig code:	S
State:	CA	Violation Year:	2012
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	23	Violation name:	Monitoring, Routine Major (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	04/01/2012
Cmp edt:	06/30/2012		

Violation id:	1303924	Orig code:	S
State:	CA	Violation Year:	2013
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	23	Violation name:	Monitoring, Routine Major (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2013
Cmp edt:	09/30/2013		

PWS currently has or had major violation(s) or enforcement:Yes

Violation ID:	9300001	Violation source ID:	Not Reported
PWS telephone:	Not Reported	Contaminant:	COLIFORM (TCR)
Violation type:	Max Contaminant Level, Acute (TCR)		
Violation start date:	070193	Violation end date:	093093
Violation period (months):	003	Violation awareness date:	103093
Major violator:	Not Reported	Maximum contaminant level:	Not Reported
Number of required samples:	Not Reported	Number of samples taken:	Not Reported
Analysis method:	Not Reported	Analysis result:	Not Reported

Violation ID:	0401241	Orig Code:	S
Enforcemnt FY:	2004	Enforcement Action:	07/13/2004
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	0601980	Orig Code:	S
Enforcemnt FY:	2006	Enforcement Action:	01/12/2006
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	0903031	Orig Code:	S
Enforcemnt FY:	2009	Enforcement Action:	07/15/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	1103323	Orig Code:	S
Enforcemnt FY:	2011	Enforcement Action:	04/15/2011
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	1203658	Orig Code:	S
Enforcemnt FY:	2012	Enforcement Action:	07/13/2012
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
PWS name:	DE ANZA SPRINGS RESORT	Population served:	400
PWS type code:	NC	Violation ID:	0401241
Contaminant:	COLIFORM (TCR)	Violation type:	Monitoring, Routine Major (TCR)
Compliance start date:	4/1/2004 0:00:00	Compliance end date:	6/30/2004 0:00:00
Enforcement date:	7/13/2004 0:00:00	Enforcement action:	State AO (w/o Penalty) Issued
Violation measurement:	Not Reported		
PWS name:	DE ANZA SPRINGS RESORT	Population served:	400
PWS type code:	NC	Violation ID:	0601980
Contaminant:	COLIFORM (TCR)	Violation type:	Monitoring, Routine Major (TCR)
Compliance start date:	10/1/2005 0:00:00	Compliance end date:	12/31/2005 0:00:00
Enforcement date:	1/12/2006 0:00:00	Enforcement action:	State AO (w/o Penalty) Issued
Violation measurement:	Not Reported		
PWS name:	DE ANZA SPRINGS RESORT	Population served:	400
PWS type code:	NC	Violation ID:	0702424
Contaminant:	NITRITE	Violation type:	3
Compliance start date:	4/1/2007 0:00:00	Compliance end date:	6/30/2007 0:00:00
Enforcement date:	No Enf Action as of	Enforcement action:	7/8/2009 0:00:00
Violation measurement:	Not Reported		

D20
West
1/4 - 1/2 Mile
Higher

CA WELLS **CAEDF0000042048**

Well ID:	T0607301076-MW-9D	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-9D
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0607301076&assigned_name=MW-9D&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0607301076&assigned_name=MW-9D		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

E21
West
1/2 - 1 Mile
Higher

CA WELLS **13743**

Seq:	13743	Prim sta c:	18S/08E-07J97 S
Frds no:	3710011005	County:	37
District:	14	User id:	WAT
System no:	3710011	Water type:	G
Source nam:	WELL 05	Station ty:	WELL/AMBNT
Latitude:	323701.0	Longitude:	1161126.0
Precision:	2	Status:	AU
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3710011	System nam:	Jacumba Community Sd
Hqname:	Not Reported	Address:	P.O. Box 425
City:	Jacumba	State:	CA
Zip:	92034	Zip ext:	Not Reported
Pop serv:	500	Connection:	234
Area serve:	JACUMBA		

E22
West
1/2 - 1 Mile
Higher

CA WELLS **CADDW2000014666**

GAMA:

Well ID:	CA3710011_005_005	Well Type:	MUNICIPAL
Source:	DDW	Other Names:	3710011-005
GAMA Pfas testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=CA3710011_005_005&store_num=		
GeoTracker Data:	Not Reported		

F23
WSW
1/2 - 1 Mile
Higher

CA WELLS **13745**

Seq:	13745	Prim sta c:	18S/08E-07J?A S
Frds no:	3710011004	County:	37
District:	14	User id:	WAT
System no:	3710011	Water type:	G
Source nam:	WELL 04	Station ty:	WELL/AMBNT
Latitude:	323657.0	Longitude:	1161129.0
Precision:	2	Status:	AU
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3710011	System nam:	Jacumba Community Sd
Hqname:	Not Reported	Address:	P.O. Box 425
City:	Jacumba	State:	CA

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Zip:	92034	Zip ext:	Not Reported
Pop serv:	500	Connection:	234
Area serve:	JACUMBA		
Sample date:	26-JAN-18	Finding:	1.1
Chemical:	TOTAL TRIHALOMETHANES	Report units:	UG/L
Dlr:	0.		
Sample date:	26-JAN-18	Finding:	1.1
Chemical:	CHLOROFORM (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	28-DEC-17	Finding:	6.95
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	28-DEC-17	Finding:	142.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	28-DEC-17	Finding:	40.7
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	28-DEC-17	Finding:	576.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	26-SEP-17	Finding:	0.123
Chemical:	RADIUM 226 COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	26-SEP-17	Finding:	1.2
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	26-SEP-17	Finding:	4.98
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dlr:	3.		
Sample date:	26-SEP-17	Finding:	0.463
Chemical:	RADIUM 228 COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	26-SEP-17	Finding:	0.528
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	26-SEP-17	Finding:	0.989
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	26-SEP-17	Finding:	0.47
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	26-SEP-17	Finding:	0.363
Chemical:	RADIUM 226 MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	26-SEP-17	Finding:	0.505
Chemical:	RADIUM 228 MDA95	Report units:	PCI/L

Dlr:	0.		
Sample date:	01-JUN-17	Finding:	42.9
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	01-JUN-17	Finding:	156.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	01-JUN-17	Finding:	7.06
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	01-JUN-17	Finding:	620.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	22-MAY-17	Finding:	0.43
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	20-JAN-17	Finding:	1.8
Chemical:	DIBROMOCHLOROMETHANE (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	20-JAN-17	Finding:	5.5
Chemical:	BROMOFORM (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	20-JAN-17	Finding:	7.3
Chemical:	TOTAL TRIHALOMETHANES	Report units:	UG/L
Dlr:	0.		
Sample date:	30-NOV-16	Finding:	6.91
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	30-NOV-16	Finding:	37.1
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	30-NOV-16	Finding:	120.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	30-NOV-16	Finding:	578.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	30-SEP-16	Finding:	67.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	30-SEP-16	Finding:	34.3
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	30-SEP-16	Finding:	1.43
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		

Sample date:	30-SEP-16	Finding:	37.8
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	30-SEP-16	Finding:	9.21
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	19-MAY-16	Finding:	0.91
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	01-DEC-15	Finding:	82.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	01-DEC-15	Finding:	161.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	01-DEC-15	Finding:	147.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	01-DEC-15	Finding:	611.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	01-DEC-15	Finding:	331.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	01-DEC-15	Finding:	0.18
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		
Sample date:	01-DEC-15	Finding:	7.49
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	01-DEC-15	Finding:	150.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	01-DEC-15	Finding:	0.68
Chemical:	DICHLOROMETHANE	Report units:	UG/L
Dlr:	0.5		
Sample date:	01-DEC-15	Finding:	11.7
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)	Report units:	Not Reported
Dlr:	0.		
Sample date:	01-DEC-15	Finding:	7.6
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	23-DEC-14	Finding:	3.3
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	12-SEP-13	Finding:	0.13
Chemical:	FOAMING AGENTS (MBAS)	Report units:	MG/L

Dlr:	0.		
Sample date:	12-SEP-13	Finding:	16.
Chemical:	CHROMIUM (TOTAL)	Report units:	UG/L
Dlr:	10.		
Sample date:	12-SEP-13	Finding:	0.43
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	12-SEP-13	Finding:	22.3
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	12-SEP-13	Finding:	10.7
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	12-SEP-13	Finding:	52.1
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	12-SEP-13	Finding:	53.7
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	12-SEP-13	Finding:	600.
Chemical:	BARIUM	Report units:	UG/L
Dlr:	100.		

F24
WSW
1/2 - 1 Mile
Higher

CA WELLS **CADDW2000013114**

GAMA:

Well ID:	CA3710011_004_004	Well Type:	MUNICIPAL
Source:	DDW	Other Names:	3710011-004
GAMA Pfas testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=CA3710011_004_004&store_num=		
GeoTracker Data:	Not Reported		

25
WNW
1/2 - 1 Mile
Higher

CA WELLS **CADWR0000001978**

Well ID:	18S08E08F001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	18S08E08F001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=18S08E08F001S&store_num=		
GeoTracker Data:	Not Reported		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

F26
WSW
1/2 - 1 Mile
Higher

CA WELLS **CADDW2000024042**

GAMA:

Well ID:	CA3710011_006_006	Well Type:	MUNICIPAL
Source:	DDW	Other Names:	3710011-006
GAMA Pfas testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=CA3710011_006_006&store_num=		
GeoTracker Data:	Not Reported		

F27
WSW
1/2 - 1 Mile
Higher

CA WELLS **CAUSGS000002500**

GAMA:

Well ID:	LUB-18	Well Type:	MUNICIPAL
Source:	United States Geological Survey		
Other Names:	LUB-18	GAMA Pfas testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGS&samp_date=&global_id=&assigned_name=LUB-18&store_num=		
GeoTracker Data:	Not Reported		

F28
WSW
1/2 - 1 Mile
Higher

CA WELLS **CAUSGSN00002025**

Well ID:	USGS-323600116110001	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-323600116110001	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-323600116110001&store_num=		
GeoTracker Data:	Not Reported		

29
WSW
1/2 - 1 Mile
Higher

CA WELLS **CAEDF0000035308**

Well ID:	T06019724295-MW-1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T06019724295&assigned_name=MW-1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T06019724295&assigned_name=MW-1		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

G30
WSW
1/2 - 1 Mile
Higher

CA WELLS **CADDW2000021378**

GAMA:

Well ID:	CA3710011_009_009	Well Type:	MUNICIPAL
Source:	DDW	Other Names:	3710011-009
GAMA Pfas testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=CA3710011_009_009&store_num=		
GeoTracker Data:	Not Reported		

G31
WSW
1/2 - 1 Mile
Higher

CA WELLS **CADDW2000012661**

GAMA:

Well ID:	CA3710011_008_008	Well Type:	MUNICIPAL
Source:	DDW	Other Names:	3710011-008
GAMA Pfas testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=CA3710011_008_008&store_num=		
GeoTracker Data:	Not Reported		

H32
ENE
1/2 - 1 Mile
Higher

CA WELLS **CADWR0000028395**

Well ID:	18S08E09H002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	18S08E09H002S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=18S08E09H002S&store_num=		
GeoTracker Data:	Not Reported		

H33
ENE
1/2 - 1 Mile
Higher

CA WELLS **CADWR0000028535**

Well ID:	18S08E09H001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	18S08E09H001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=18S08E09H001S&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
91934	1	0

Federal EPA Radon Zone for SAN DIEGO County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for SAN DIEGO COUNTY, CA

Number of sites tested: 30

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.677 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.400 pCi/L	100%	0%	0%
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program
State Water Resources Control Board
Telephone: 916-341-5577
The GAMA Program is Californias comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Heath Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

Geothermal Wells Listing
Department of Conservation
Telephone: 916-445-9686
Geothermal well means a well constructed to extract or return water to the ground after it has been used for heating or cooling purposes. Geothermal wells in California (except for wells on federal leases which are administered by the Bureau of Land Management) are permitted, drilled, operated, and permanently sealed and closed (plugged and abandoned) under requirements and procedures administered by the Geothermal Section of the Department of Conservations Geologic Energy Management Division (CalGEM, formerly DOGGR).

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

ATTACHMENT G-2 TOPOGRAPHIC MAPS

Jamucba Fire Station #43

Old Highway 80

Jacumba, CA 91934

Inquiry Number: 7580420.4

February 28, 2024

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

02/28/24

Site Name:

Jamucba Fire Station #43
Old Highway 80
Jacumba, CA 91934
EDR Inquiry # 7580420.4

Client Name:

Universal Engineering Sciences
1441 Montiel Rd
Escondido, CA 92026
Contact: Adam Canfield

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Universal Engineering Sciences were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 4830.2400003

Project: Jamucba Fire Station #43

Coordinates:

Latitude:	32.61814 32° 37' 5" North
Longitude:	-116.18222 -116° 10' 56" West
UTM Zone:	Zone 11 North
UTM X Meters:	576722.08
UTM Y Meters:	3609250.35
Elevation:	2801.30' above sea level

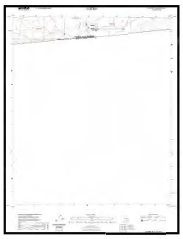
Maps Provided:

2021	1942
2018	1939
2015	
2012	
1997	
1975	
1959	
1947	

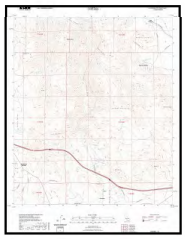
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2021 Source Sheets

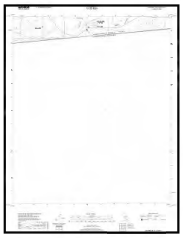


Jacumba OE S
2021
7.5-minute, 24000



Jacumba
2021
7.5-minute, 24000

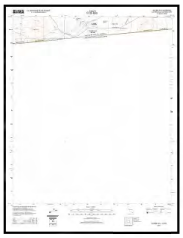
2018 Source Sheets



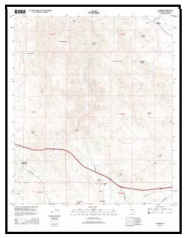
Jacumba OE S
2018
7.5-minute, 24000

Jacumba
2018
7.5-minute, 24000

2015 Source Sheets

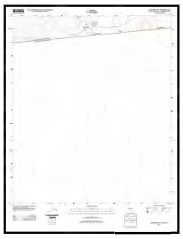


Jacumba OE S
2015
7.5-minute, 24000



Jacumba
2015
7.5-minute, 24000

2012 Source Sheets



Jacumba OE S
2012
7.5-minute, 24000

Jacumba
2012
7.5-minute, 24000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1997 Source Sheets

Jacumba
1997
7.5-minute, 24000
Aerial Photo Revised 1975

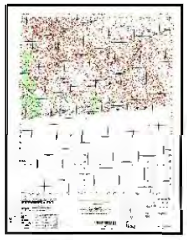
1975 Source Sheets

Jacumba
1975
7.5-minute, 24000
Aerial Photo Revised 1975

1959 Source Sheets

Jacumba
1959
7.5-minute, 24000
Aerial Photo Revised 1955

1947 Source Sheets



JACUMBA
1947
15-minute, 50000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1942 Source Sheets

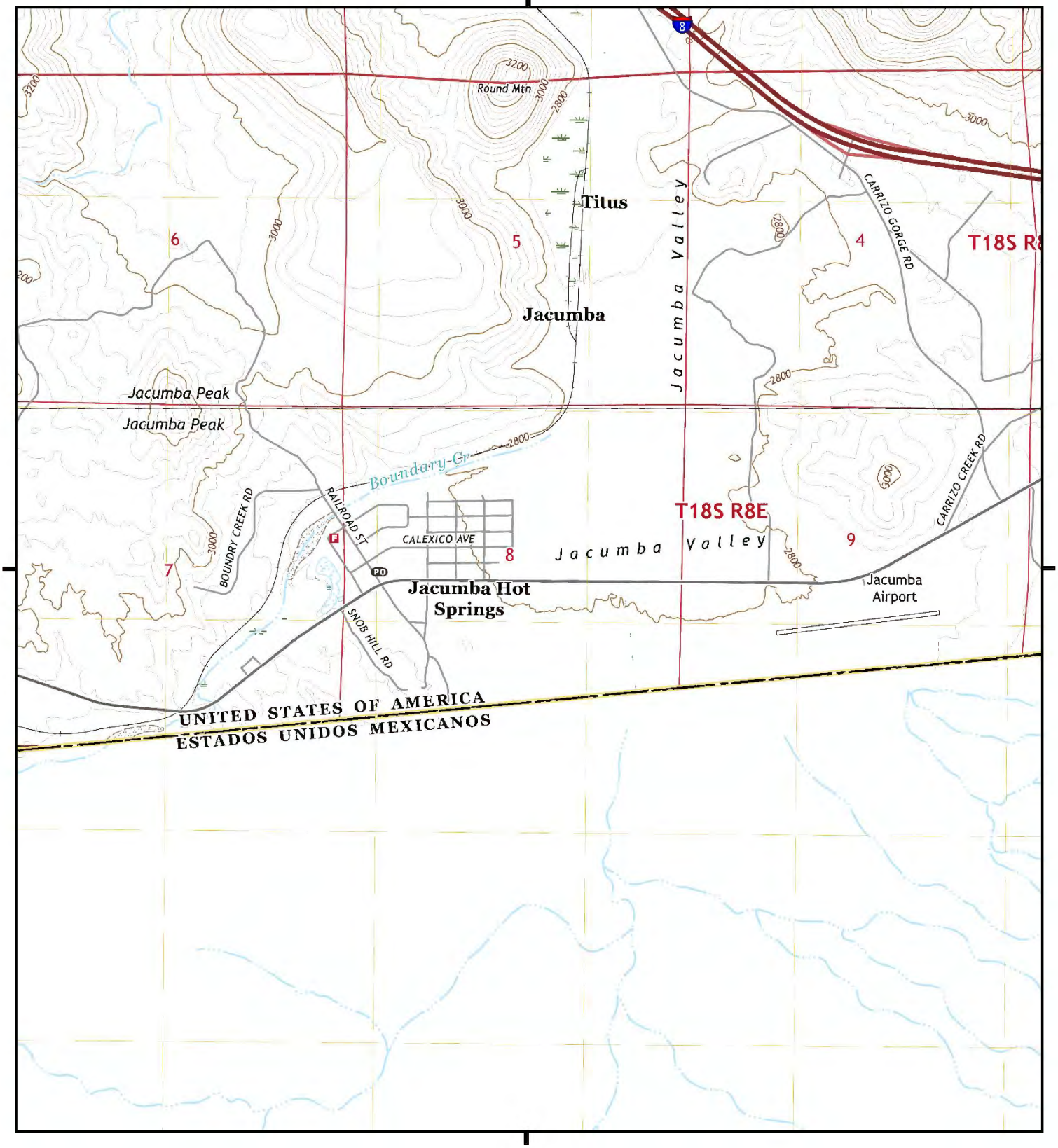
Jacumba
1942
15-minute, 62500
Aerial Photo Revised 1939

1939 Source Sheets

Jacumba
1939
15-minute, 62500
Aerial Photo Revised 1939

Historical Topo Map

2021



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

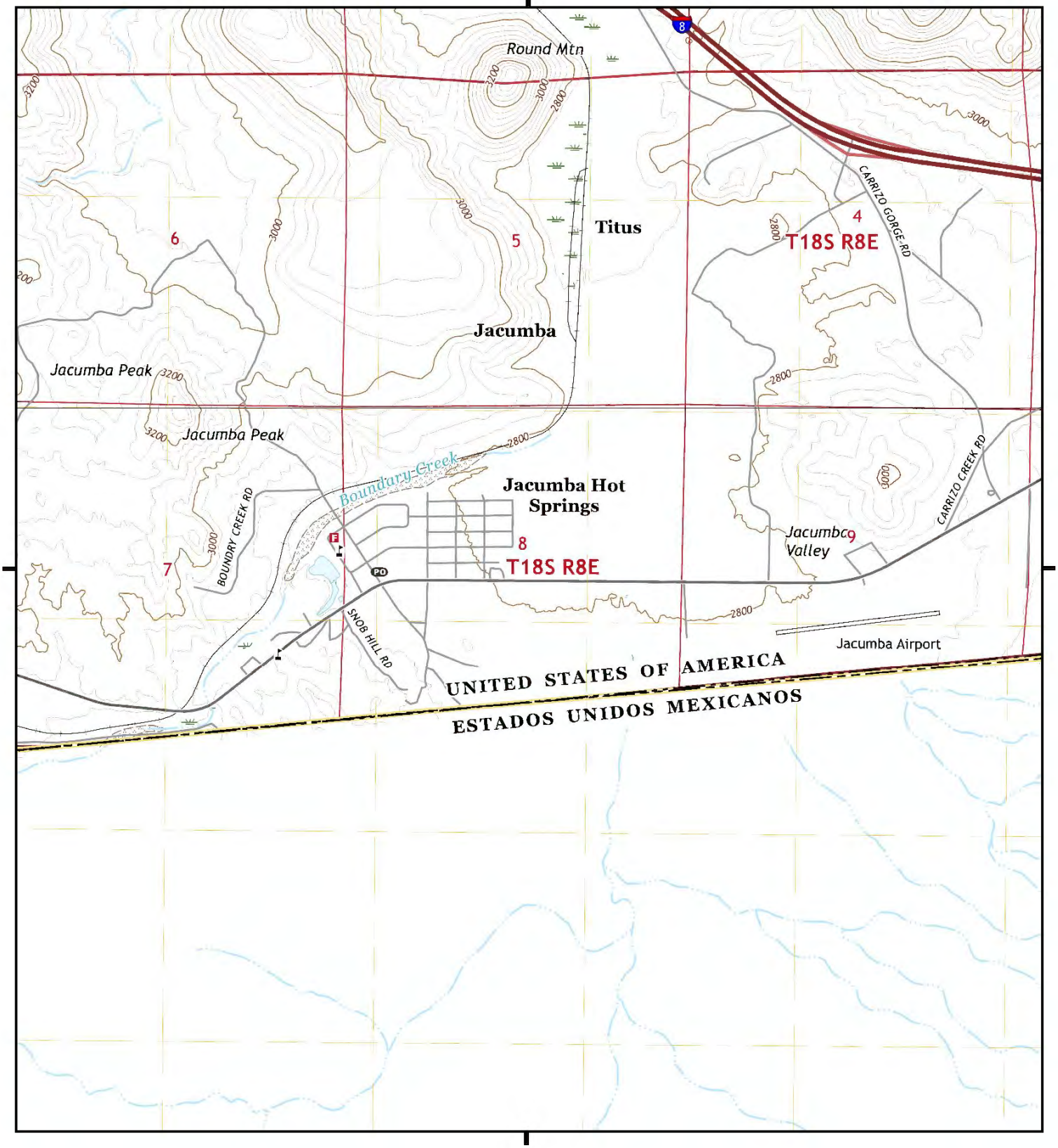
TP, Jacumba OE S, 2021, 7.5-minute
N, Jacumba, 2021, 7.5-minute

SITE NAME: Jamucba Fire Station #43
ADDRESS: Old Highway 80
Jacumba, CA 91934
CLIENT: Universal Engineering Sciences

N

Historical Topo Map

2018



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

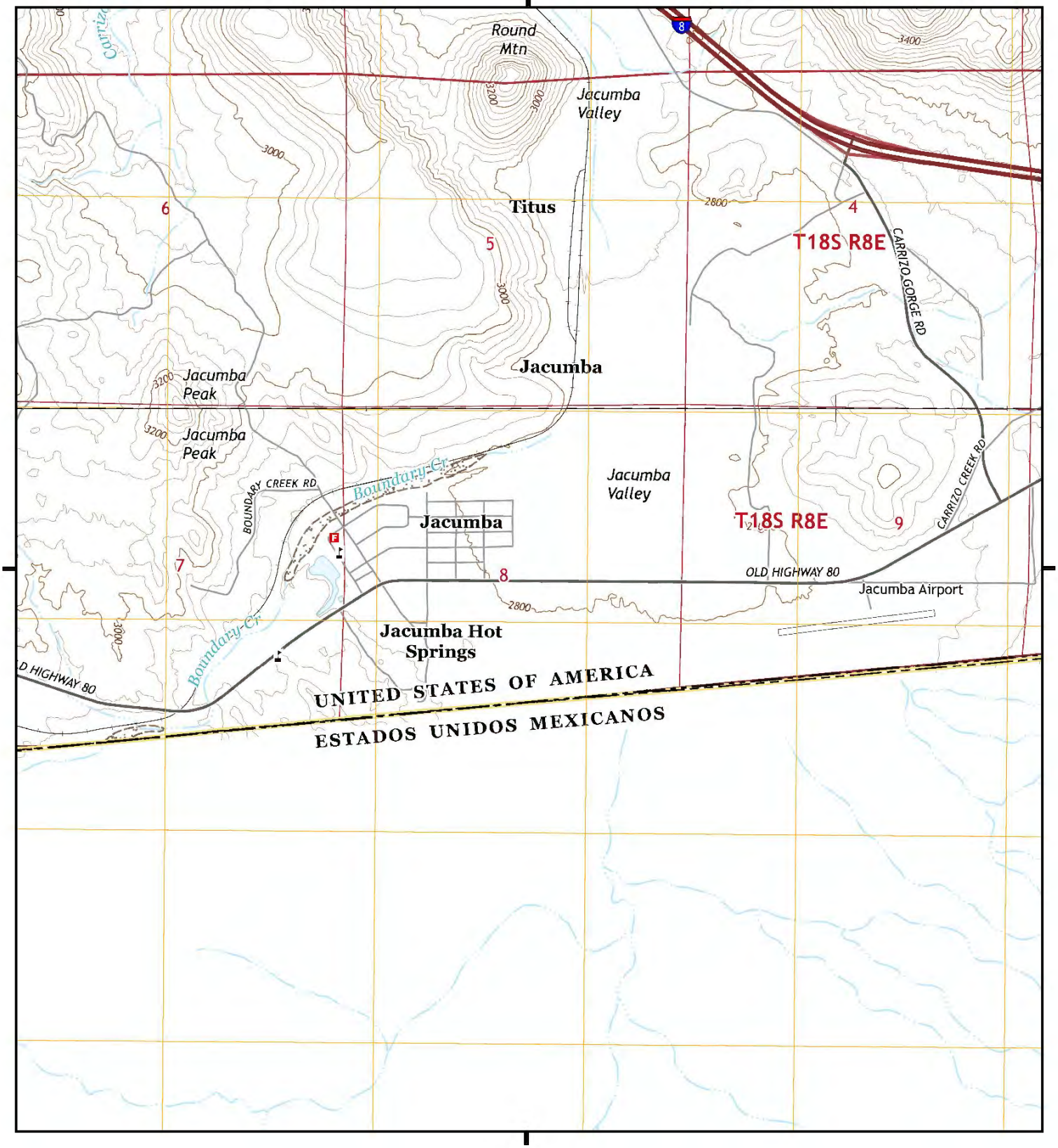
TP, Jacumba OE S, 2018, 7.5-minute
N, Jacumba, 2018, 7.5-minute

SITE NAME: Jamucba Fire Station #43
ADDRESS: Old Highway 80
Jacumba, CA 91934
CLIENT: Universal Engineering Sciences

N

Historical Topo Map

2015



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

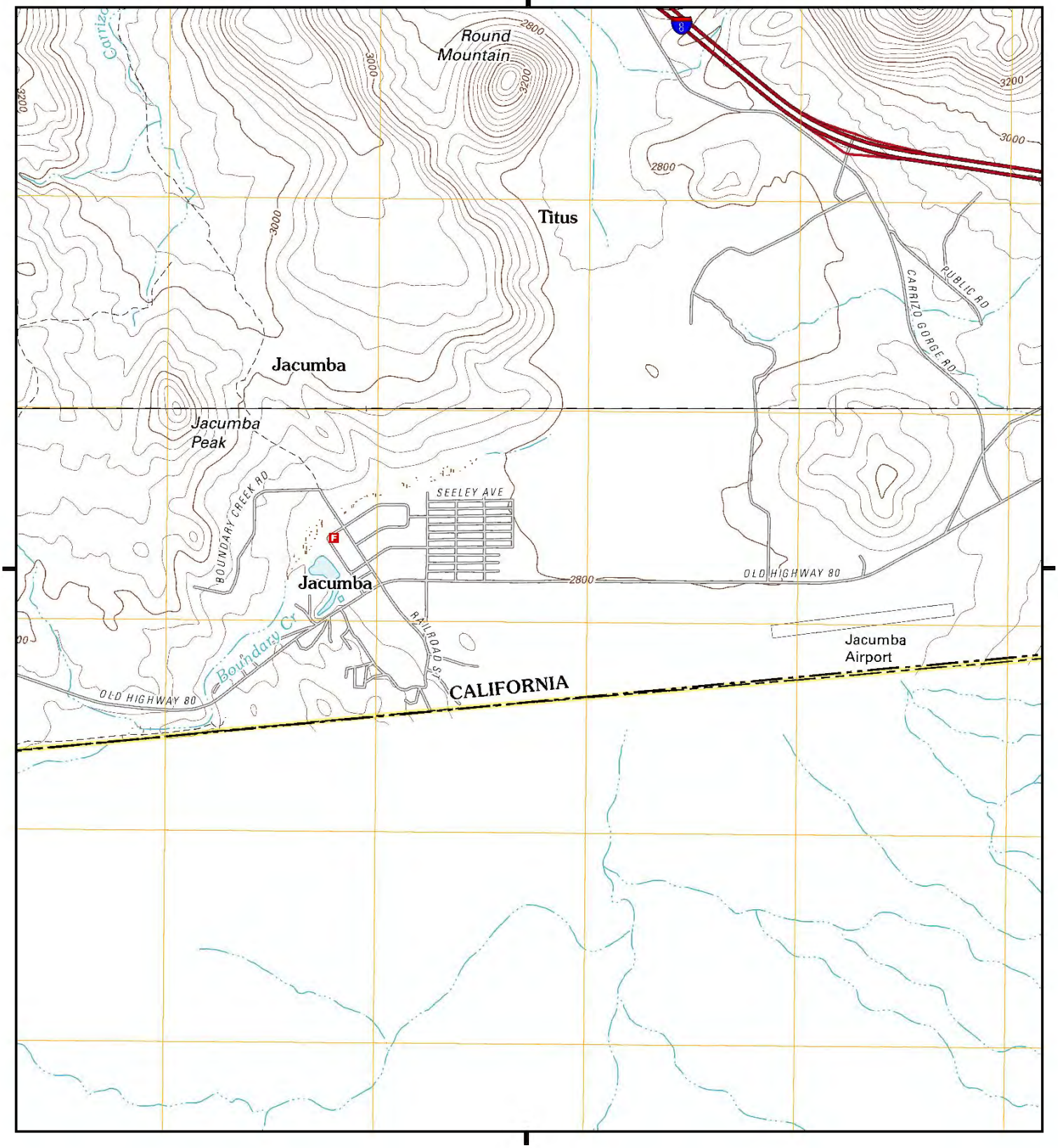
TP, Jacumba OE S, 2015, 7.5-minute
N, Jacumba, 2015, 7.5-minute

SITE NAME: Jamucba Fire Station #43
ADDRESS: Old Highway 80
Jacumba, CA 91934
CLIENT: Universal Engineering Sciences

N

Historical Topo Map

2012



This report includes information from the following map sheet(s).

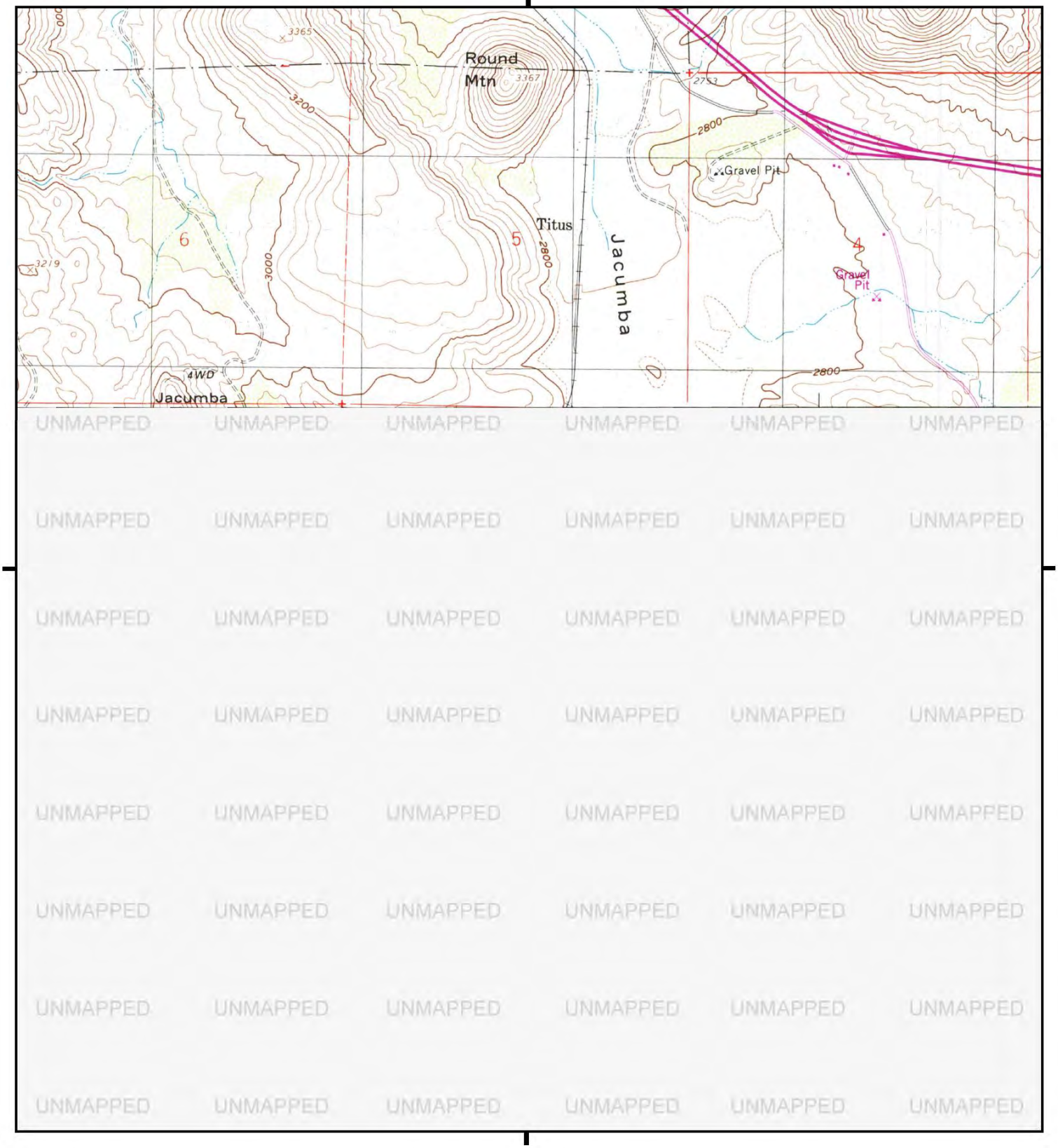
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Jacumba OE S, 2012, 7.5-minute
N, Jacumba, 2012, 7.5-minute

SITE NAME: Jamucba Fire Station #43
ADDRESS: Old Highway 80
Jacumba, CA 91934
CLIENT: Universal Engineering Sciences

N



This report includes information from the following map sheet(s).

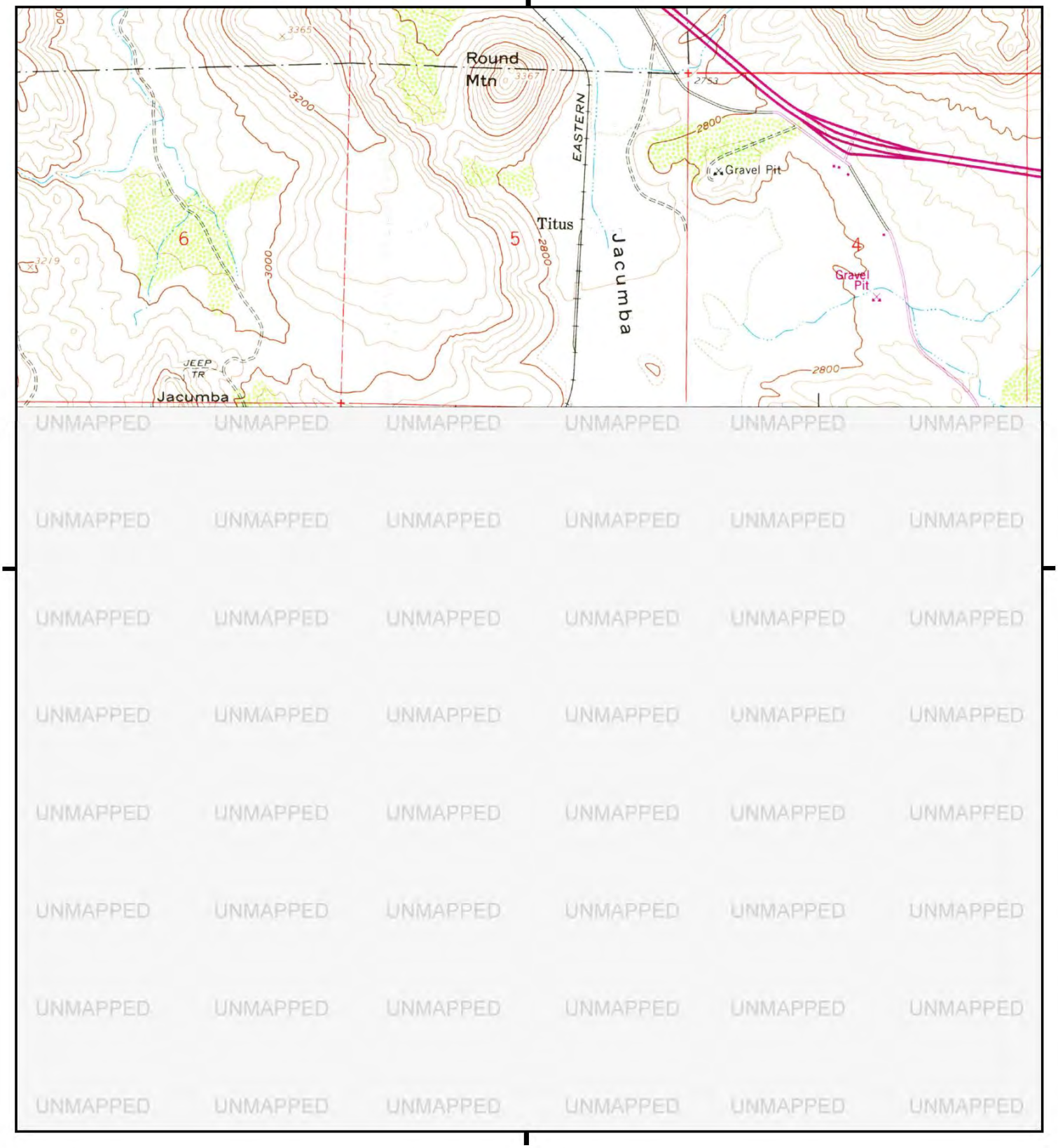
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

N, Jacumba, 1997, 7.5-minute

SITE NAME: Jamucba Fire Station #43
ADDRESS: Old Highway 80
Jacumba, CA 91934
CLIENT: Universal Engineering Sciences

N



This report includes information from the following map sheet(s).

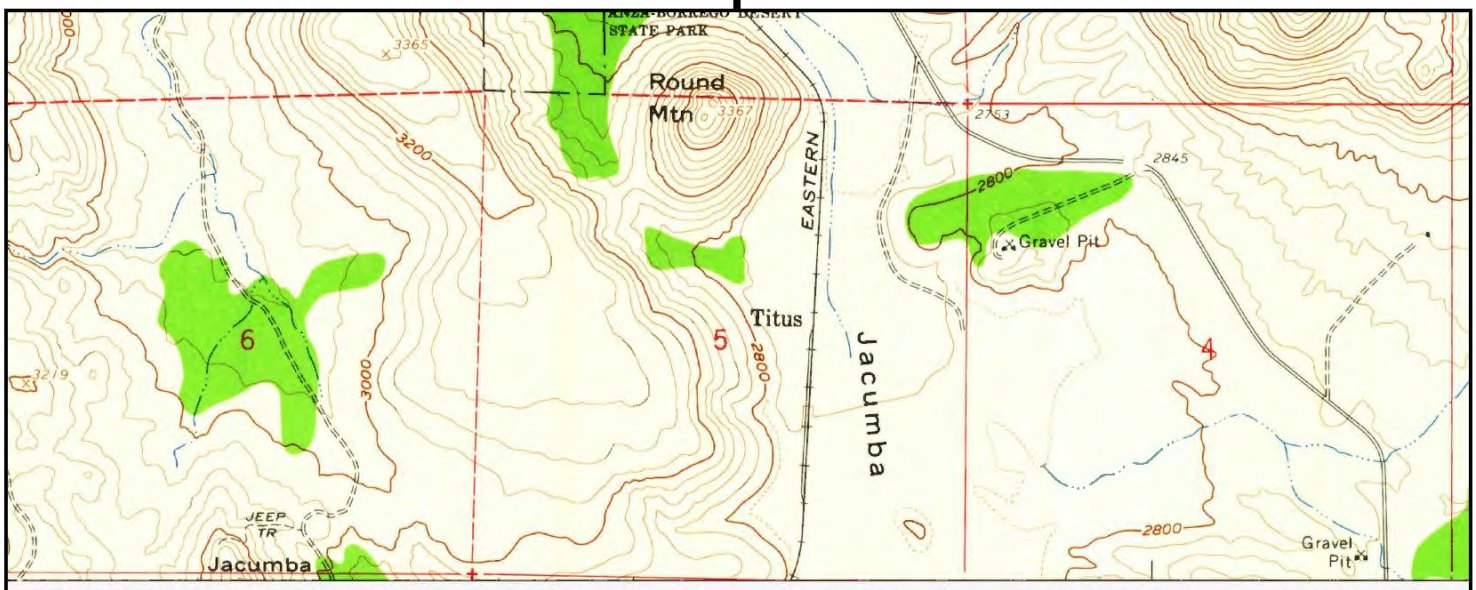
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

N, Jacumba, 1975, 7.5-minute

SITE NAME: Jamucba Fire Station #43
ADDRESS: Old Highway 80
Jacumba, CA 91934
CLIENT: Universal Engineering Sciences

N



This report includes information from the following map sheet(s).

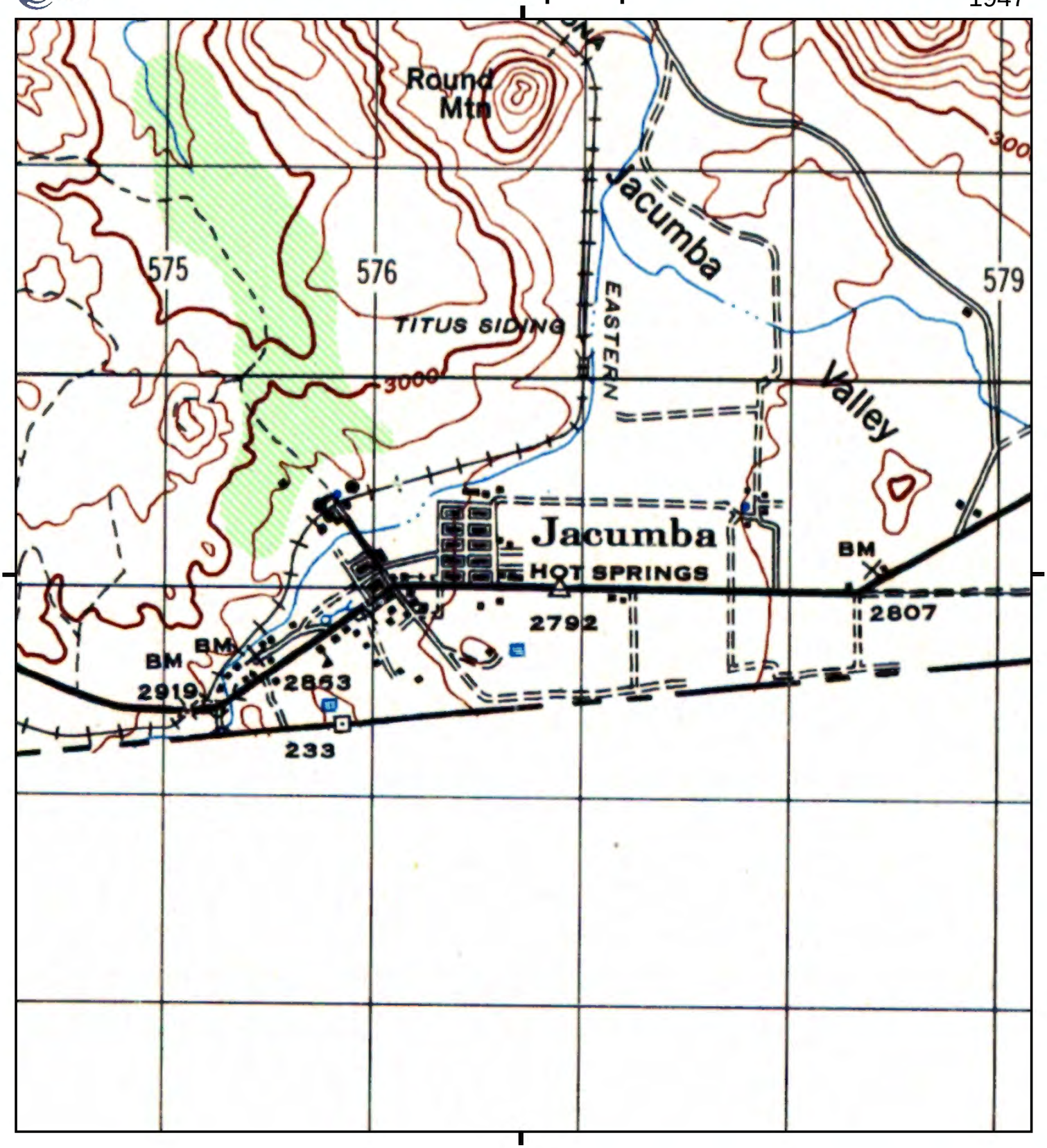
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

N, Jacumba, 1959, 7.5-minute

SITE NAME: Jamucba Fire Station #43
ADDRESS: Old Highway 80
Jacumba, CA 91934
CLIENT: Universal Engineering Sciences

N



This report includes information from the following map sheet(s).

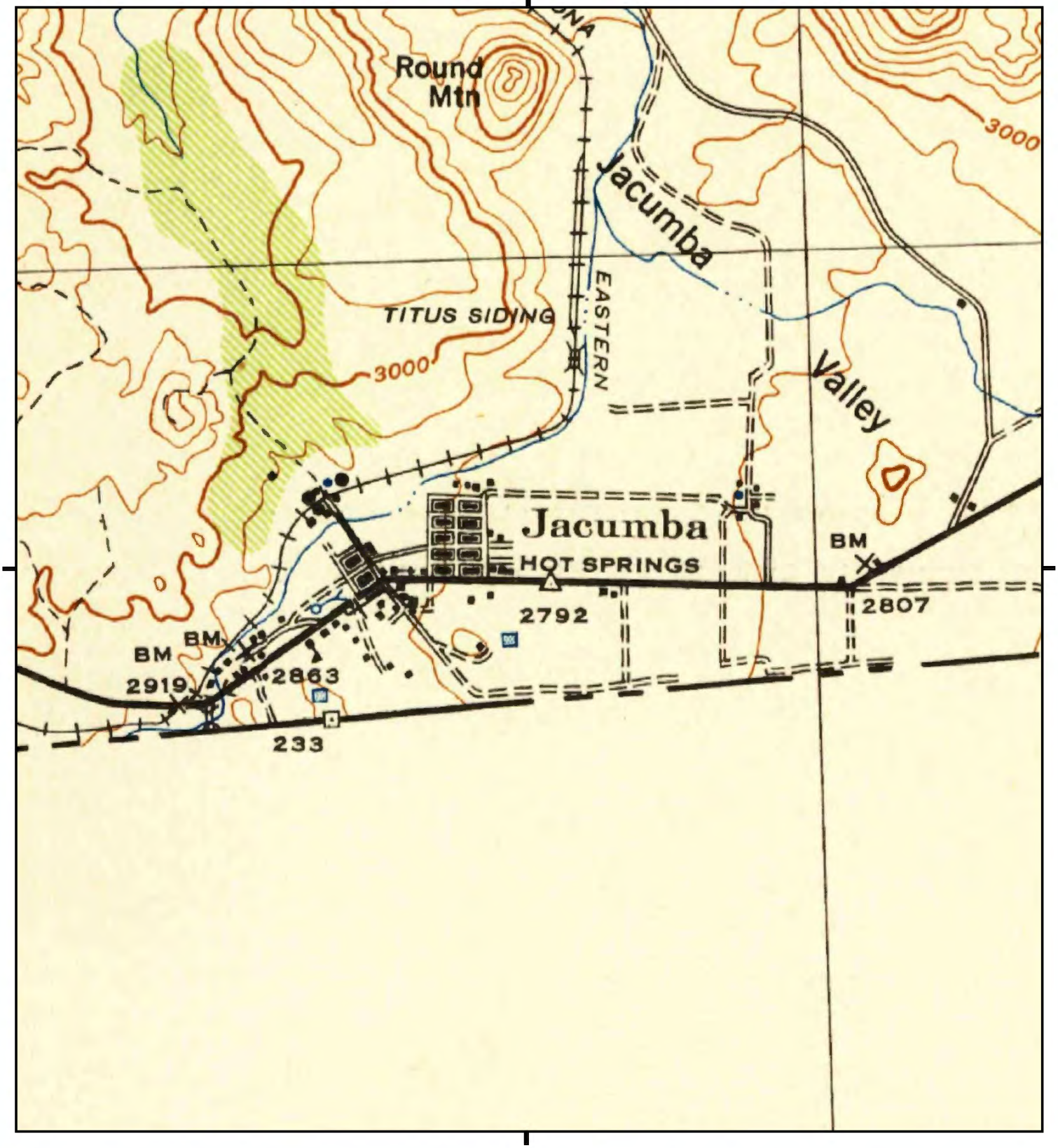
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, JACUMBA, 1947, 15-minute

SITE NAME: Jamucba Fire Station #43
ADDRESS: Old Highway 80
Jacumba, CA 91934
CLIENT: Universal Engineering Sciences

N



This report includes information from the following map sheet(s).

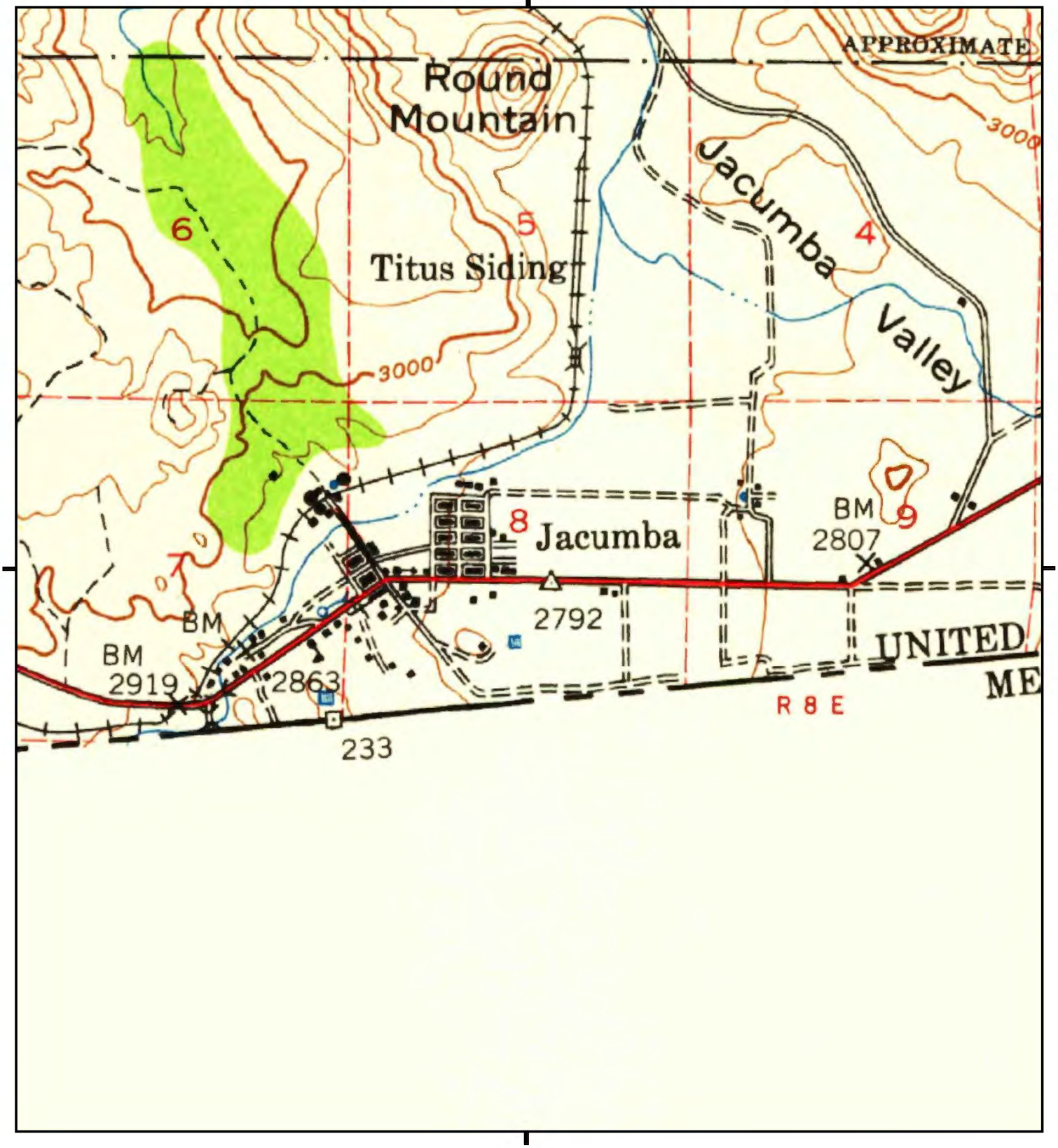
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Jacumba, 1942, 15-minute

SITE NAME: Jamucba Fire Station #43
ADDRESS: Old Highway 80
Jacumba, CA 91934
CLIENT: Universal Engineering Sciences

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Jacumba, 1939, 15-minute

SITE NAME: Jamucba Fire Station #43
ADDRESS: Old Highway 80
Jacumba, CA 91934
CLIENT: Universal Engineering Sciences

N

ATTACHMENT G-3 CITY DIRECTORY REPORT

Jamucba Fire Station #43
Old Highway 80
Jacumba, CA 91934

Inquiry Number: 7580420.5
March 01, 2024

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available business directory data at approximately five year intervals.

RECORD SOURCES

The EDR City Directory Report accesses a variety of business directory sources, including Haines, InfoUSA, Polk, Cole, Bresser, and Stewart. Listings marked as EDR Digital Archive access Cole and InfoUSA records. The various directory sources enhance and complement each other to provide a more thorough and accurate report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2020	☑	☑	EDR Digital Archive
2017	☑	☐	Cole Information
2014	☑	☑	Cole Information
2010	☑	☑	Cole Information
2005	☑	☑	Cole Information
2000	☑	☐	Cole Information
1995	☑	☑	Cole Information
1992	☑	☑	Cole Information
1986	☐	☑	Haines Criss-Cross Directory
1982	☐	☑	Haines Criss-Cross Directory
1979	☐	☑	Haines Criss-Cross Directory
1975	☐	☑	Haines Criss-Cross Directory
1971	☐	☑	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

Old Highway 80
Jacumba, CA 91934

Year	CD Image	Source	
OLD HIGHWAY 80			
2020	pg A2	EDR Digital Archive	
2017	pg A3	Cole Information	
2014	pg A5	Cole Information	
2010	pg A7	Cole Information	
2005	pg A9	Cole Information	
2000	pg A10	Cole Information	
1995	pg A12	Cole Information	
1992	pg A14	Cole Information	
1986	-	Haines Criss-Cross Directory	Street not listed in Source
1982	-	Haines Criss-Cross Directory	Street not listed in Source
1979	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source
1971	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
BRAWLEY AVE			
2020	pg. A1	EDR Digital Archive	
2017	-	Cole Information	Street not listed in Source
2014	pg. A4	Cole Information	
2010	pg. A6	Cole Information	
2005	pg. A8	Cole Information	
2000	-	Cole Information	Street not listed in Source
1995	pg. A11	Cole Information	
1992	pg. A13	Cole Information	
1986	pg. A15	Haines Criss-Cross Directory	
1982	pg. A16	Haines Criss-Cross Directory	
1979	pg. A17	Haines Criss-Cross Directory	
1975	pg. A18	Haines Criss-Cross Directory	
1971	pg. A19	Haines Criss-Cross Directory	

City Directory Images

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BRAWLEY AVE 2020

5116	CHERYL HANSEN-FURR
	FLOYD FURR
44510	MORGAN STEVENS
44525	ROBERT BRUNO
44541	FRANCISCO ULLOA
44542	SCOTT KING
44561	ASHLEY WESTON-COUSINS
44562	REAGAN SHALLAL
44566	ISAAC RAMIREZ
	JOSE AMEZCUA
44569	ARNE RAMSTEAD
44570	DONALD STEELE
44577	KATHRYN GRAZE
44600	HEATHER SCHWARTZ
44629	THOMAS BARRIOS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

OLD HIGHWAY 80 2020

43850 ERIC RUTH
GLEN RUTH

Target Street	Cross Street	Source
✓	-	Cole Information

OLD HIGHWAY 80 2017

43850 DEMERCHANT, AMANDA

Target Street	Cross Street	Source
-	✓	Cole Information

BRAWLEY AVE 2014

44624	RAMIREZ, MARIA
44630	WILKINS, ROBERT
44654	WEAKLAND, MARCY
44668	ROE, LASH A
44671	FISHER, JOE

Target Street	Cross Street	Source
✓	-	Cole Information

OLD HIGHWAY 80 2014

45864 SHINSKY, MICHAEL R

Target Street	Cross Street	Source
-	✓	Cole Information

BRAWLEY AVE 2010

44624	PLACENCIA, ELVIA
44625	SANCHEZ, MICHAEL
44630	TAYLOR, JASON
44668	CLARE, MYRAH

Target Street	Cross Street	Source
✓	-	Cole Information

OLD HIGHWAY 80 2010

45864 SHINSKY, MICHAEL R

Target Street	Cross Street	Source
-	✓	Cole Information

BRAWLEY AVE 2005

44600 COULTER, RANDY L

Target Street	Cross Street	Source
✓	-	Cole Information

OLD HIGHWAY 80 2005

45864 SHINSKY, MICHAEL R

Target Street	Cross Street	Source
✓	-	Cole Information

OLD HIGHWAY 80 2000

45851 TRENTI, MARIO

Target Street	Cross Street	Source
-	✓	Cole Information

BRAWLEY AVE 1995

44632 GILLIARD, L
44654 RANDLE, JAKE

Target Street	Cross Street	Source
✓	-	Cole Information

OLD HIGHWAY 80 1995

44681 HIGHLANDS SENIORS CITIZENS GRP

Target Street	Cross Street	Source
-	✓	Cole Information

BRAWLEY AVE 1992

1242	WOODS, KENNETH D
5116	HILGER, J
5200	ALGIER, ROSS C
44501	SHIRLEY, DONALD
44525	WILLIAMS, H D
44553	THOMPSON, WILLIAM E
44632	GILLIARD, L

Target Street	Cross Street	Source
✓	-	Cole Information

OLD HIGHWAY 80 1992

45864 BURLEY, CARL H

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

BRAWLEY AVE 1986

BRAWLEY 92034
JACUMBA

721	ANDERSON JOHN A	766-4755	+6
722	BIEDEL MARVIN J	766-4396	+6
1242	WOODS ANNALEE	766-4024	3
	WOODS KENNETH D	766-4024	
	WOODS N B	766-4571	
5105	VANDERPOEL E C	766-4380	1
5116	WALLACE J	766-4723	+6
44510	SHIRLEY DONALD	766-4854	5
44553	THOMPSON W E	766-4601	4
44561	XXXX	00	
44569	LAWRENCE GEO	766-4035	4
	LAWRENCE RUTH	766-4035	
44585	XXXX	00	
44586	RUBIO MONICA	766-4082	+6
44600	XXXX	00	
44622	XXXX	00	
NO #	RANOLE JAKE O	766-4515	
NO #	WYLY BEN	766-4353	9

• 0 BUS 18 RES 4 NEW

Target Street	Cross Street	Source
-		Haines Criss-Cross Directory

BRAWLEY AVE 1982

BRAWLEY 92034
JACUMBA

1242	WOODS L A	766-4571	
1243	XXXX	00	
1246	THOMPSON W E	766-4601	5
5105	VANDERPOEL E C	766-4380	1
5118	WISE JOSEPH	766-4427	+2
5208	XXXX	00	
44541	XXXX	00	
44561	JOAQUIN JOS	766-4513	8
44569	WINTERTON WM T MRS	766-4744	9
44585	XXXX	00	
44586	FOSTER MARIAN V	766-4846	1
44600	XXXX	00	
44622	ESKEW LILY	766-4285	1
NO #	RANDLE JAKE D	766-4515	5
NO #	WYLY BEN	766-4353	9

* 0 BUS 15 RES 1 NEW

~~Target Street~~	~~Cross Street~~	~~Source~~
-	✓	Haines Criss-Cross Directory

BRAWLEY AVE 1979

BRAWLEY 92034
JACUMBA

1242	WOODS L A	766-4571	O
1243	XXXX	00	
1246	THOMPSON W E	766-4601	5
5105	VAN DERPOEL E	766-4380+	9
5116	MCFARLAND EDNA	766-4214	B
44541	XXXX	00	
44561	JOAQUIN JOS	766-4513	B
44569	WINTERTON WM T	766-4714+	9
NO =	RANDLE JAKE D	766-4515	5
NO =	WYLY BEN	766-4353+	9

* 0 BUS 10 RES 3 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

BRAWLEY AVE 1975

BRAWLEY 92034 JACUMBA

711	CHRISSON ROBT	766-4269+5
848	NOLTA E L	766-4629 4
1242	WOODS L A	766-4571 0
1243	MATESZ GEO N	766-4726+5
1246	THOMPSON W E	766-4601+5
NO #	BURGOYNE LULA MRS	766-4384
NO #	RANOLE JAKE O	766-4515+5

* 0 BUS 7 RES 4 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

BRAWLEY AVE 1971

BRAWLEY 92034 JACUMBA

1242	WOODS L A	766-4571 O
1246	CASE CLARENCE K	766-4535
5208	XXXX	00
NO #	BURGOYNE LULA MRS	766-4384
NO #	RARKER L C	766-4394
NO #	RANOLE JAKE O	766-4515
*	0 BUS 6 RES	0 NEW

ATTACHMENT G-4 AERIAL PHOTOGRAPHS

Jamucba Fire Station #43

Old Highway 80

Jacumba, CA 91934

Inquiry Number: 7580420.8

February 28, 2024

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

02/28/24

Site Name:

Jamucba Fire Station #43
Old Highway 80
Jacumba, CA 91934
EDR Inquiry # 7580420.8

Client Name:

Universal Engineering Sciences
1441 Montiel Rd
Escondido, CA 92026
Contact: Adam Canfield

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2020	1"=500'	Flight Year: 2020	USDA/NAIP
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
2002	1"=500'	Acquisition Date: January 01, 2002	USGS/DOQQ
1996	1"=500'	Acquisition Date: January 01, 1996	USGS/DOQQ
1994	1"=500'	Acquisition Date: January 01, 1994	USGS/DOQQ
1989	1"=500'	Flight Date: August 16, 1989	USDA
1985	1"=500'	Flight Date: July 24, 1985	USDA
1975	1"=500'	Flight Date: October 16, 1975	USGS
1953	1"=500'	Flight Date: March 30, 1953	USDA

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

INQUIRY #: 7580420.8

YEAR: 2020

= 500'

N

EDR

INQUIRY #: 7580420.8

YEAR: 2016

= 500'

N

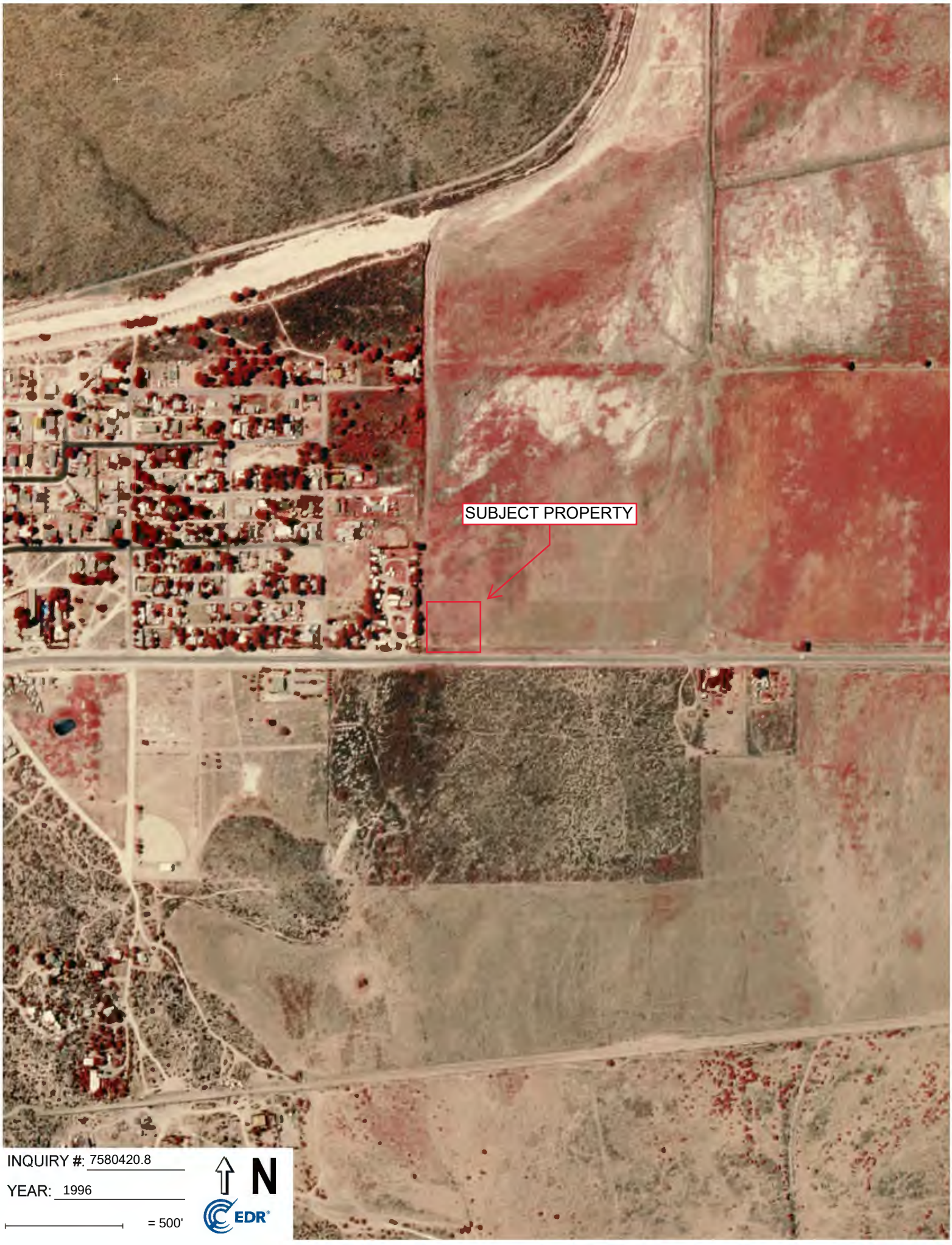
EDR


SUBJECT PROPERTY
INQUIRY #: 7580420.8
YEAR: 2012
= 500'
N
EDR


SUBJECT PROPERTY
INQUIRY #: 7580420.8
YEAR: 2009
= 500'
N
EDR


SUBJECT PROPERTY
INQUIRY #: 7580420.8
YEAR: 2005
= 500'
N
EDR


SUBJECT PROPERTY
INQUIRY #: 7580420.8
YEAR: 2002
= 500'
N
EDR


SUBJECT PROPERTY
INQUIRY #: 7580420.8
YEAR: 1996
= 500'
N
EDR

INQUIRY #: 7580420.8

YEAR: 1994

= 500'

N

EDR

INQUIRY #: 7580420.8

YEAR: 1989

= 500'

N

EDR

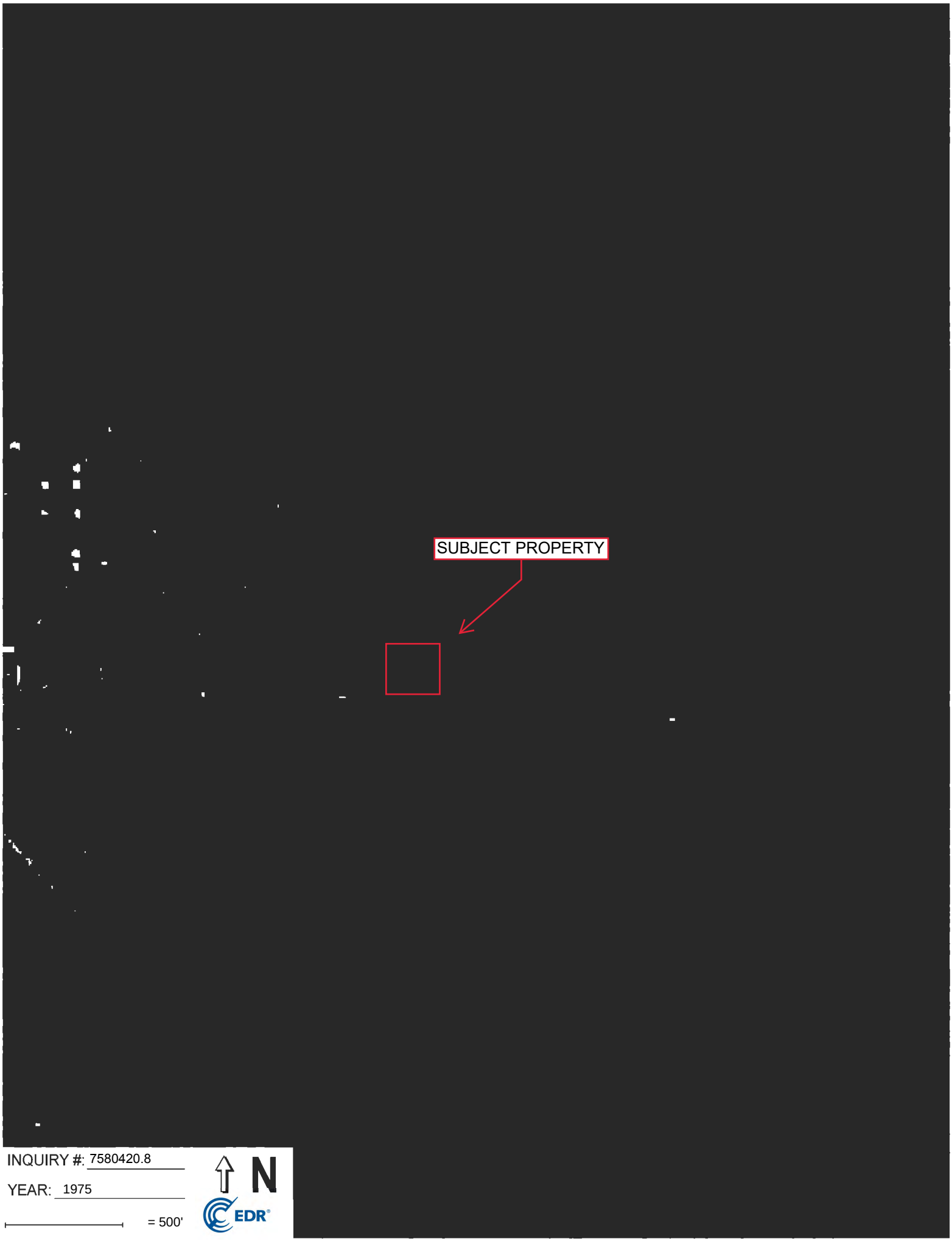
INQUIRY #: 7580420.8

YEAR: 1985

= 500'

N

EDR


SUBJECT PROPERTY
INQUIRY #: 7580420.8
YEAR: 1975
= 500'
N
EDR

INQUIRY #: 7580420.8

YEAR: 1953

= 500'

N

EDR

ATTACHMENT G-5 SANBORN MAPS

Jamucba Fire Station #43
Old Highway 80
Jacumba, CA 91934

Inquiry Number: 7580420.3
February 28, 2024

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

02/28/24

Site Name:

Jamucba Fire Station #43
Old Highway 80
Jacumba, CA 91934
EDR Inquiry # 7580420.3

Client Name:

Universal Engineering Sciences
1441 Montiel Rd
Escondido, CA 92026
Contact: Adam Canfield

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Universal Engineering Sciences were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 9247-4A84-B611

PO # 4830.2400003

Project Jamucba Fire Station #43

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 9247-4A84-B611

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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APPENDIX G

LIQUEFACTION ANALYSIS

UES
Dylan DeJauregui
dylan.dj@TeamUES.com
(760) 746-4955

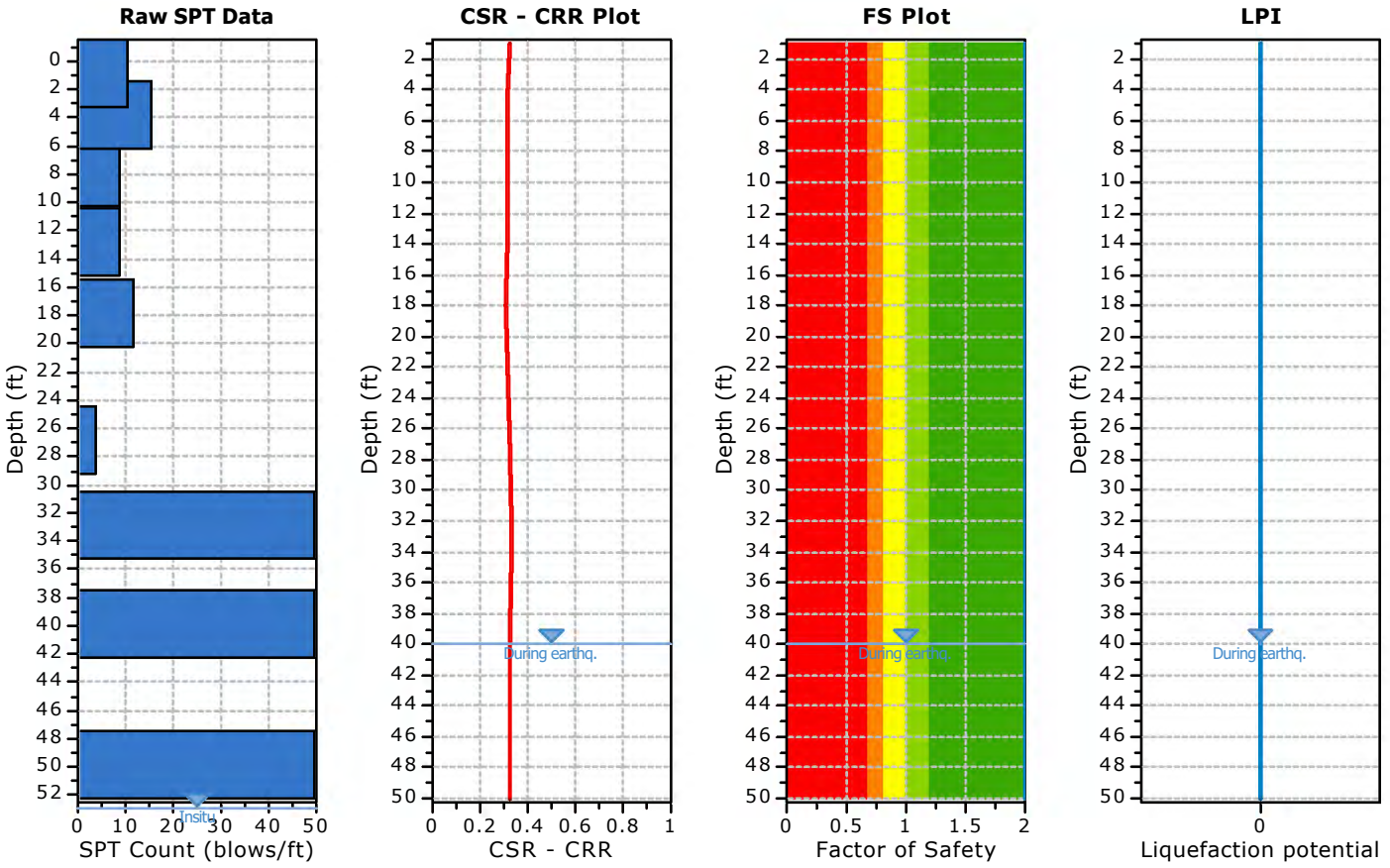
SPT BASED LIQUEFACTION ANALYSIS REPORT

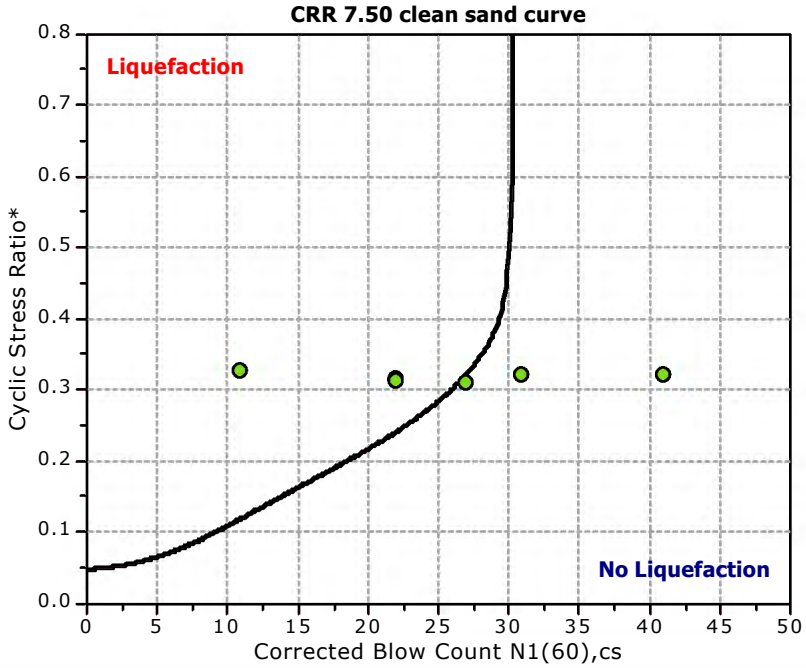
Project title : **SPT Name: B-5**

Location :

:: Input parameters and analysis properties ::

Analysis method:	NCEER 1998	G.W.T. (in-situ):	53.00 ft
Fines correction method:	NCEER 1998	G.W.T. (earthq.):	40.00 ft
Sampling method:	Sampler wo liners	Earthquake magnitude M_w:	7.20
Borehole diameter:	200mm	Peak ground acceleration:	0.55 g
Rod length:	4.50 ft	Eq. external load:	0.00 tsf
Hammer energy ratio:	1.15		





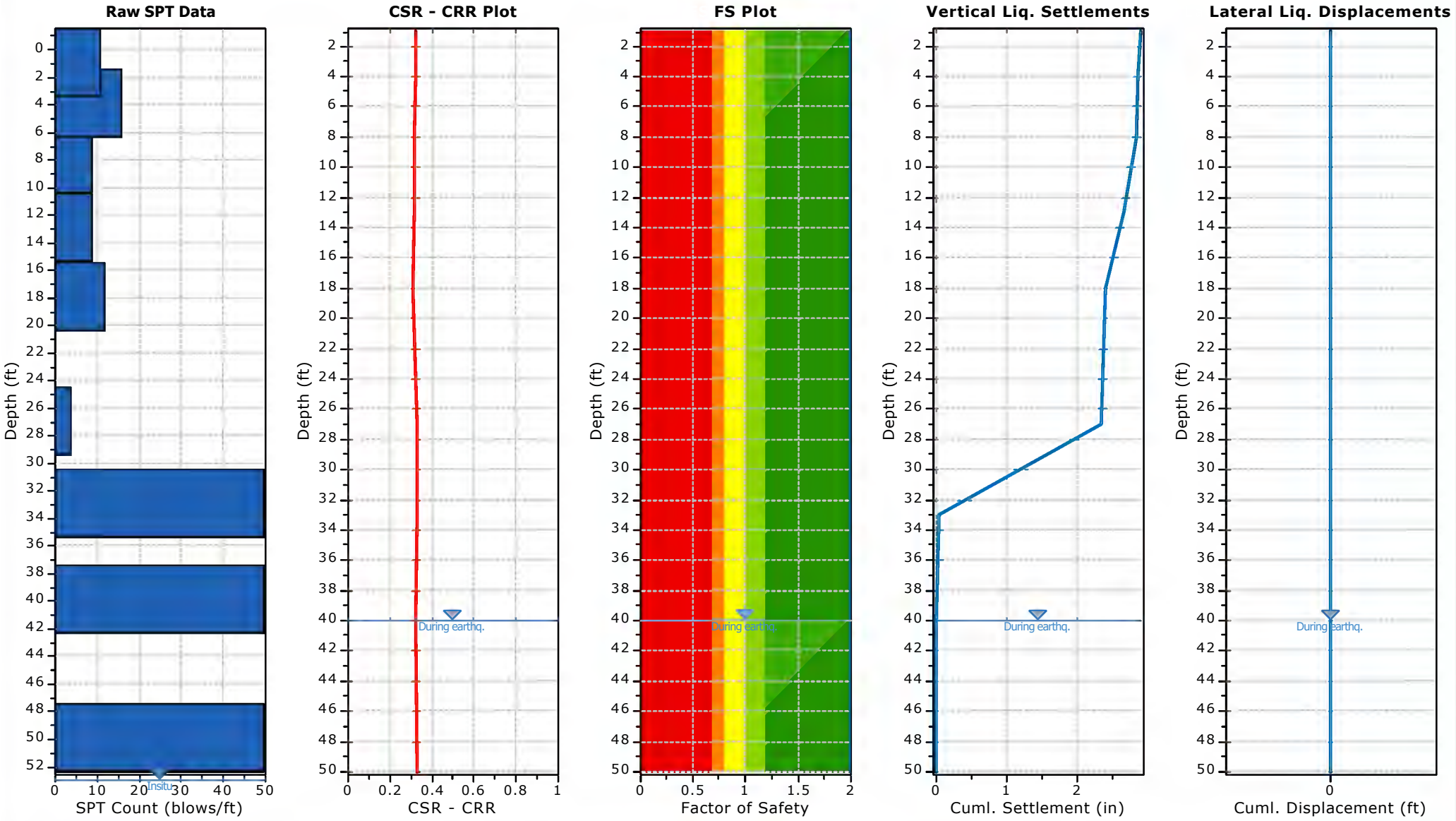
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

:: Overall Liquefaction Assessment Analysis Plots ::



:: Vertical settlements estimation for dry sands ::

Depth (ft)	$(N_1)_{60}$	τ_{av}	p	G_{max} (tsf)	α	b	γ (%)	ε_{15}	N_c	ε_{Nc} (%)	Δh (ft)	ΔS (in)
1.00	22	0.02	0.04	245.84	0.13	45157.97	0.05	0.00	12.48	0.04	4.00	0.038
4.00	30	0.08	0.15	545.23	0.13	19656.15	0.05	0.00	12.48	0.03	4.00	0.025
8.00	14	0.17	0.31	604.56	0.14	12801.96	0.13	0.00	12.48	0.19	4.00	0.180
13.00	14	0.27	0.52	773.81	0.14	9520.08	0.15	0.00	12.48	0.21	5.00	0.250
18.00	18	0.37	0.72	991.88	0.15	7814.57	0.12	0.00	12.48	0.13	2.00	0.061
27.00	5	0.54	1.08	793.87	0.17	6115.61	0.67	0.04	12.48	3.23	3.00	2.326
33.00	57	0.64	1.32	1976.38	0.18	5418.20	0.05	0.00	12.48	0.01	9.00	0.031

Cumulative settlemetns: 2.911

Abbreviations

τ_{av}: Average cyclic shear stress
p: Average stress
G_{max}: Maximum shear modulus (tsf)
α, b: Shear strain formula variables
γ: Average shear strain (%)
ε_{15}: Volumetric strain after 15 cycles
N_c: Number of cycles
ε_{Nc}: Volumetric strain for number of cycles N_c (%)
Δh: Thickness of soil layer (in)
ΔS: Settlement of soil layer (in)

:: Vertical settlements estimation for saturated sands ::

Depth (ft)	D_{50} (in)	q_c/N	e_v weight factor	e_v (%)	Δh (ft)	s (in)
40.00	0.00	5.00	1.00	0.00	6.00	0.000
50.00	0.00	5.00	1.00	0.00	7.00	0.000

Cumulative settlements: 0.000

Abbreviations

D_{50}: Median grain size (in)
q_c/N: Ratio of cone resistance to SPT
e_v: Post liquefaction volumetric strain (%)
Δh: Thickness of soil layer to be considered (ft)
s: Estimated settlement (in)

:: Lateral displacements estimation for saturated sands ::

Depth (ft)	$(N_1)_{60}$	D_r (%)	γ_{max} (%)	d_z (ft)	LDI	LD (ft)
1.00	22	65.67	0.00	4.00	0.000	0.00
4.00	30	76.68	0.00	4.00	0.000	0.00
8.00	14	52.38	0.00	4.00	0.000	0.00
13.00	14	52.38	0.00	5.00	0.000	0.00
18.00	18	59.40	0.00	2.00	0.000	0.00
27.00	5	31.30	0.00	3.00	0.000	0.00
33.00	57	100.00	0.00	9.00	0.000	0.00
40.00	51	100.00	0.00	6.00	0.000	0.00
50.00	44	100.00	0.00	7.00	0.000	0.00

:: Lateral displacements estimation for saturated sands ::

Depth (ft)	$(N_1)_{60}$	D_r (%)	γ_{max} (%)	d_z (ft)	LDI	LD (ft)

Cumulative lateral displacements: 0.00

Abbreviations

D_r: Relative density (%)
γ_{max}: Maximum amplitude of cyclic shear strain (%)
d_z: Soil layer thickness (ft)
LDI: Lateral displacement index (ft)
LD: Actual estimated displacement (ft)

APPENDIX H

WATER WELL SAMPLING AND DESIGN

TECHNICAL MEMORANDUM: JACUMBA FS#43, TEST RESULTS FOR BORING TW-1

Mr. Dylan DeJauregui
Universal Engineering Services (UES)
Project Geophysicist/Geologist
1441 Montiel Road, Suite 115
Escondido, CA 92026

March 28, 2024
By Email: Dylan.dj@teamues.com
9 pages plus 3 attachments

Dylan,

The following technical memorandum summarizes the results of sampling and testing of a temporary boring located at a proposed location for a water supply well to be used to support proposed Jacumba Fire Station 43 (the "Site"). The temporary boring (TW-1) was installed by UES to provide Site-specific lithologic information specific to the local aquifer. It was also used to obtain water samples for a preliminary water quality assessment prior to the installation of a water supply well. **Attachment A** contains a compilation of data obtained from TW-1 (Lab Reports, Sampling Documentation).

The Site is located within the Jacumba Valley Basin (DWR Basin 7-47), an area with historical agricultural water production from an alluvial aquifer system. The Site area has recently been the subject of detailed hydrologic testing and evaluation as part of the JVR Park Development. **Figure 1**, adapted from the FEIR[1], shows the Site location relative to nearby wells. **Attachment 2** contains the DWR summary for the groundwater basin, followed by a copy of a relevant portion of the FEIR.

It is understood that boring TW-1 was drilled at the location of the future water supply well. It consisted of an open boring drilled to a depth of 100 ft bgs and was temporarily completed with an inner PVC well screen to support water sampling. No filter pack was installed, and the boring was not developed prior to sampling.

In summary the following information was obtained by the installation and testing of TW-1 (Boring Log attached in **Figure 2**):

- Groundwater was observed to occur at a depth of ~51 feet bgs during sampling done 2/26/2024 (as documented in **Attachment 1**)

- Alluvium was encountered to a depth of 77 feet bgs. Bedrock, reported as local volcanics in the boring log, occurred below alluvium (**Figure 2**).

- The alluvial aquifer at TW-1 has a saturated thickness of approximately 26 ft and is comprised of sediment that ranged from coarse grained sand to fine-grained clayey silt. The results of sieve testing are described in the well recommendation section.

- Review of nearby well data indicates that the Site is located within a shallow portion of the alluvial aquifer (**Attachment 2**). Nearby wells appear to be located in thicker alluvium with production rates of 80 to 2000 gpm (see Table in **Figure 1**). The production rate of the Site well will likely be lower and will need to be determined following installation and testing of a properly developed water supply well.

[1]https://www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/JVR/PreBoard/Appendices/JVR%20FEIR%20Appendix%20J%20-%20Groundwater%20Resources%20Investigation%20Report.pdf

- Water quality testing was conducted 2/26/2024 (see **Table 1**). The temporary well did not have a filter pack and was not developed prior to sampling. Samples were obtained using low flow sampling methods from two depths that included the alluvium (at 67 ft bgs) and bedrock (at 80 ft bgs). The alluvial aquifer water sample results for inorganics showed it is potable but does exceed some secondary water quality standards and treatment may be desired for drinking water assuming the temporary well samples are representative. The bedrock water is high in TDS (960 mg/L) and coupled with expected low flow rates and will not be further considered as a water source.

  In summary by method for sample TW1-67:

  - Microbial. Coliform bacteria were present in the sample. However, the boring was open to the surface and the bacteria could be non-fecal and related to the introduction of surface soil. Water treatment (disinfection) will be necessary should these prove to be present in the water supply well.
  - General Minerals and Metals. The TDS was 530 mg/L and well within the range allowable for drinking water. Iron and manganese levels exceeded secondary drinking water standards meaning that the presence of the metals can have aesthetic (odor/taste/color) or technical effects (corrosion/staining). Water treatment may be desirable even though the water is likely safe to use. Effects include:
    - Iron: rusty color; sediment; metallic taste; reddish or orange staining
    - Manganese: black to brown color; black staining; bitter metallic taste
  - VOCs (Volatile Organic Compounds). No VOCs were detected. These are typically associated with gasoline and solvents.
  - Organochlorine Pesticides. The Site is understood to have been used for agriculture, none were detected.

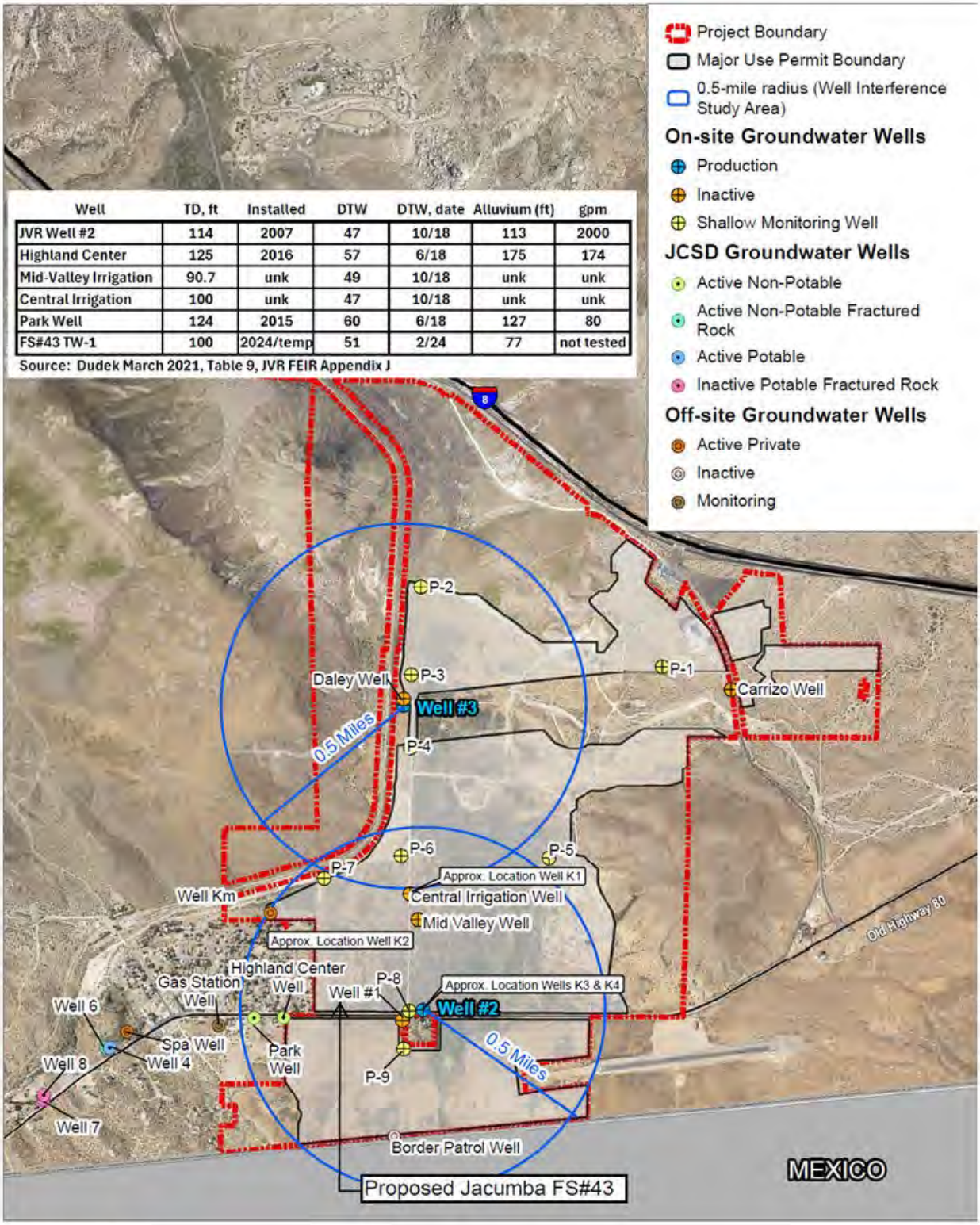
- A short-term flow test of 2.5 to 3 gpm was attempted but the pump failed after 15 minutes due to high levels of suspended solids and the testing was terminated. The presence of ~26 feet of saturated alluvium is indicative of potential flow rates on the order of at least 5 to 10 gpm or higher depending on local aquifer conditions and well conditions.

- Samples of the alluvium encountered during drilling were tested by UES' geotechnical laboratory to support well design. These are depicted in **Figure 3** and confirmed the lithologies reported in the boring log for TW-1.
  The production rate of a future well is dependent continuity and extent of higher permeability sands within the alluvium- this cannot be determined based on one test boring. However, the Jacumba Valley Basin has proven to support meaningful agricultural pumping rates as summarized in the table within **Figure 1.** Area well production rates are further documented in Appendix J of the JVR Energy Park FEIR which is included for reference in **Attachment 2**.

FIGURE 1: SITE LOCATION AND NEARBY WELLS

Well	TD, ft	Installed	DTW	DTW, date	Alluvium (ft)	gpm
JVR Well #2	114	2007	47	10/18	113	2000
Highland Center	125	2016	57	6/18	175	174
Mid-Valley Irrigation	90.7	unk	49	10/18	unk	unk
Central Irrigation	100	unk	47	10/18	unk	unk
Park Well	124	2015	60	6/18	127	80
FS#43 TW-1	100	2024/temp	51	2/24	77	not tested

Source: Dudek March 2021, Table 9, JVR FEIR Appendix J



SOURCE: JCSD; JVR; SanGIS

DUDEK 0 0.25 0.5 Miles

FIGURE 9

On-site and Off-site Wells

Groundwater Resources Investigation -JVR Energy Projec

From: JVR Energy Park FEIR, Appendix J (March 2021 Report)

FIGURE 2: BORING LOG : TW-1

PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	3 of 4	
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:	2/20/2024	
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:	~ 2798 ft msl	

BORING: TW-1

Depth (Feet)	Sample Bulk	Sample Driven Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	DESCRIPTION	Laboratory Tests
50									
						SW		Medium dense, wet, gray-brown, fine- to coarse-grained SAND. Well graded. -- Groundwater encountered at 53 feet bgs.	
55			3 5 8			SC		Loose, wet, dark gray-brown, fine-grained Clayey SAND.	
			2 3 5			ML		Stiff, moist, dark gray, fine-grained Clayey SILT.	
60			4 5 5			SM		Medium dense, wet, dark gray, fine- to medium-grained Silty SAND.	
65			8 9 12			SW		Medium dense, wet, gray, fine- to coarse-grained SAND. Well graded.	
			3 4 9			SM		Meidum dense, wet, dark gray, fine- to coarse-grained Silty SAND.	
70			5 7 10						
			5 6 9						
75									

TW-1

FIGURE 2: BORING LOG : TW-1, continued

PROJECT:	Jacumba Fire Station #43	DRILLER:	BAJA EXPLORATION	SHEET:	4	of 4
UES JOB NO:	4830.2400003	DRILL METHOD:	CME-95: 8" AUGER	DRILLING DATE:		2/20/2024
LOGGED BY:	DD	SAMPLE METHOD:	RING, SPT and BULK	ELEVATION:		~ 2798 ft msl

Depth (Feet)	Sample: Bulk	Sample: Driven	Type	Blows/6"	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: TW-1 / DESCRIPTION	Laboratory Tests
75										
							SM		**BEDROCK:** Excavates as very dense, slightly moist, light reddish-brown, fine-grained Silty SAND.	
80				50/6"						
85				50/6"						
90										
95				50/6"						
100									Total Depth = 100.0 feet bgs. Groundwater encountered at 53 feet bgs. Temporary Well Constructed.	

TW-1

TABLE 1: WQ Data (landscape)

WATER SUPPLY WELL RECOMMENDATIONS

Samples obtained during drilling were submitted to UES' geotechnical lab for sieve analysis (**Attachment C**). The gradation curves are presented in **Figure 3**. Review of the boring log (**Figure 2**) shows that the highest permeability is expected to occur at a depth of 66 to 69 feet bgs due to the presence of a well graded medium dense, wet, gray, fine- to coarse-grained sand. It occurs within a layer of silty sand located between the depths of 62 and 77 feet bgs. In contrast the finest grained and likely lower permeability materials were from samples at 58 and 61 feet bgs.

A well screened from 62 to 72 feet would encounter the 'best' sands occurring in the samples obtained at 67 and 70 feet bgs. A 10-ft screen interval would employ a commonly used well casing length.

The gradation chart (**Figure 3**) is used here to provide an initial well design as follows:

1. The particle size where 70% is retained (D_{70}) for finest-grained material within the screened section is commonly used to design the filter pack, in this case using the sample results from 64 ft bgs. This corresponds to a sieve size between #100 and #200 which is a very fine-grained silty material.

2. A 6x to 9x multiplier is typically applied to the D_{70} grain size, resulting in a screen slot size of 0.020 to 0.030 inches. 0.020 is a commonly used screen size used for groundwater monitoring wells and can be considered conservative for this application to minimize potential sand pumping by the supply well. A #30 mesh sand is the smallest that can be used and not pass through the screen. Filter pack selection should be based on material availability and driller experience.

3. The small well screen slot size will limit the hydraulic efficiency of the well. A continuous wrap screen is recommended to maximize the open area within the well screen. Increasing the well diameter will also improve efficiency. A minimum 8-inch diameter well casing is recommended for use with a 4-inch submersible pump. The pump capacity (size) will need to be determined following well installation and development.

4. Given the depth of the water supply well (~72 ft bgs plus sump) and a well diameter of 8 to 10 inches the well can be installed using commonly available large diameter hollow stem auger drilling methods. The choice of drilling methods will be based on local driller experience and cost considerations.

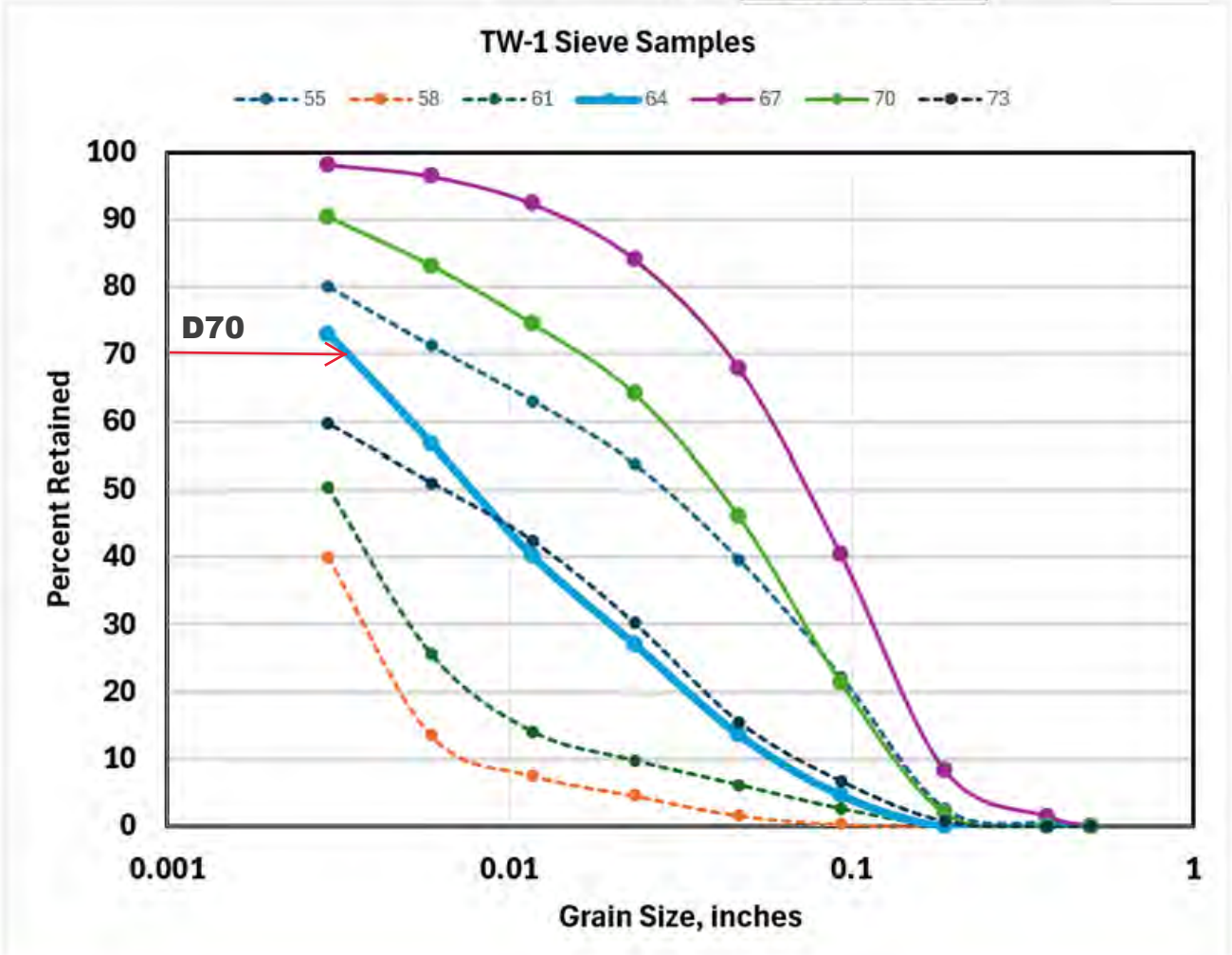
FIGURE 3. GRADATION CHART: TW-1 SAMPLES

BORING TW-1 SIEVE SAMPLES: PERCENT RETAINED

		USCS	SC	ML	ML	SM	SW	SM	SM
Mesh	mm	Inches	55	58	61	64	67	70	73
	12.7	0.5	0.51	0.00	0.00	0.00	0.00	0.00	0.00
	9.5	0.374016	0.51	0.00	0.00	0.00	1.43	0.00	0.00
#4	4.75	0.187	2.61	0.00	0.05	0.00	8.30	2.05	0.79
#8	2.36	0.0931	22.25	0.36	2.66	4.70	40.36	21.45	6.76
#16	1.18	0.0469	**39.64**	1.66	6.20	13.67	**67.87**	46.05	15.51
#30	0.6	0.0232	**53.79**	4.63	9.84	27.13	84.08	**64.14**	30.20
#50	0.3	0.0117	63.05	7.60	14.11	40.16	92.33	**74.50**	**42.42**
#100	0.15	0.005906	71.25	13.58	25.70	**56.77**	96.43	83.18	**51.06**
#200	0.075	0.002953	80.02	40.10	50.47	**72.99**	98.16	90.41	59.65

Screen Size. Inches

Pct ret.	6x	9x
73	**0.018**	**0.027**



WATER QUALITY TESTING AND POTENTIAL TREATMENT NEEDS

The data in **Table 1** provide a preliminary indication of the potential water quality to be expected from a water supply well completed in the alluvial aquifer. These analyses are preliminary and may not be fully representative of the water quality associated with a properly constructed and developed water well. Review of the current data supports that the water is potable but treatment may be desirable to address the impact of iron and manganese on drinking water. The need for disinfection will need to be assessed based on sampling from the properly completed and developed water well.

CONCLUDING REMARKS

TW-1 provided supporting data that a water supply well can feasibly be installed at the Site. Locally there are nearby wells with production rates with a minimum of 80 gpm; however, while the depth to groundwater is similar the alluvial thickness is comparatively less at the Site. A well screened from ~62 to 72 feet bgs will encounter a productive interval of sand within the aquifer. The flow rate of the well can only be determined after well installation and development. An 8-hour constant discharge test is recommended to assess the well performance and water quality samples will need to be obtained to confirm the water quality and determine the need or desire for water treatment.

Of potential concern to the local water supply is the pending construction of the JVR Energy park which will include the operation of Well #2 shown in **Figure 1**, located east of the site. An impact analysis was conducted in the FEIR (included in **Attachment 2**) to examine the effect of pumping at Well #2 on water levels in the Highland Park well located west of the Site. The analysis and associated mitigation plan did not contemplate a water supply well as proposed for the Site which is located between Well #2 and the Highland Park well. A dedicated sounding tube should be installed to facilitate water level measurements at the new water supply well and can be compared to the water level observed March 2024 during sampling to assess potential impacts. Should impacts be observed it is recommended that they be documented, and the information provided to the County of SanDiego[2] acting as lead agency for the project EIR.

Please let me know if you have any questions or concerns regarding this technical memorandum.

Sincerely,

Jay W Jones, CA PG#4106, Ph.D.
Principal Hydrogeologist, Environmental Navigation Services, Inc.
Phone: 760 944 9576 Email: jaywjones@environavigation.com

Attachments

1. Water Quality Sampling Results, 2/26/2024
2. Jacumba Valley Basin: Aquifer Information from DWR and the JVR Energy FEIR
3. Sieve Test Results (UES)

[2] County of San Diego Planning and Development Services, 5510 Overland Avenue, San Diego, California 92123
Contact indicated in the FEIR: Bronwyn Brown

ATTACHMENT 1.
Water Quality Sampling Results, 2/26/2024

Site Name: Jacumba F. S.
Site Address: Old Hwy 80, Jacumba, CA
Sampler: D. Chambers

Low-Flow Sampling

Date: 2/26/24
Well ID: TW-1/67'

Purge Data

(Variable)	0.2 C	3-5%	0.2 u	20mv	0.2mg/L	10%	ML		
Time	Temp.	E.C.(uS)	pH	ORP	DO	Turbidity	Volume	DTW	Notes
Start: 11:00	~~~~~~	~~~~~~	~~~~~~	~~~~~~	~~~~~~	~~~~~~	~~~~~~	51.39	
11:10	20.0	810	7.67	107.9	2.91	99.15	2000	51.43	Slightly Turbid/Grey
11:15	20.1	807	7.62	95.0	2.26	91.88	3000	51.43	
11:20	20.4	806	7.37	68.6	1.49	67.60	4000	51.42	
11:25	20.7	810	6.97	45.4	1.34	80.45	5000	51.43	
11:30	20.8	812	6.80	39.5	1.34	69.99	6000	51.43	
11:35	20.8	814	6.81	35.0	1.32	66.88	7000	51.43	
Stop: 11:35									
Rate: (ML/Min.)	200								

Purge Pump: Peristaltic
Pump Set Time: 10:50
Pump/Inlet Depth (BGS): 67/[redacted]
Decon:
Triple-Rinse
Total Vol. Purged 7.0 Liters
Final Temp.: 20.8
Final EC: 814
Final pH: 6.81
Final ORP: 35.0
Final DO: 1.32
Final Turb: 66.88
Draw Down: 0.04
Sample Start: 11:55
Sample Stop 11:43
Analyses: Sample Container:

TW1-67

Sample ID: ↗ <<<<<
(If different from above)
DTW @ Sample: 51.43

Well Data

Bore OD:	8
Casing ID:	2
Well TD:	100'
D.T.W.:	51.39

Special Notes for This Well:

IDW stored in 55-Gal. drum on site.

Meters:
Solinst 12202 Interphase Probe
Oakton / Horiba / YSI

Methods: 1=3 BV sample after 80%.
2= 1 BV and monitor parameters each 0.5 BV.
3=Low-flow.
4= slow recharge. 5= non-purge.

Site Name: Jacumba F. S.
Site Address: Old Hwy 80, Jacumba, CA
Sampler: D. Chambers

Low-Flow Sampling

Date: 2/26/24
Well ID: TW-1 / 80

Purge Data

(Variable)	0.2 C	3-5%	0.2 u	20mv	0.2mg/L	10%	ML		
Time	**Temp.**	**E.C.(uS)**	**pH**	**ORP**	**DO**	**Turbidity**	**Volume**	**DTW**	**Notes**
Start: 12:35	~~~~~~	~~~~~~	~~~~~~	~~~~~~	~~~~~~	~~~~~~	~~~~~~	51.39	VERY TURBID/GREY
12:45	19.2	821	6.58	114.0	1.94	76.69	2000	51.42	
12:50	19.3	817	6.52	113.0	2.11	139.49	3000	51.43	
12:50	19.3	818	6.51	113.1	2.48	127.24	4000	51.43	
13:00	19.4	826	6.53	114.8	2.68	115.50	5000	51.43	
13:05	19.4	828	6.52	114.9	2.71	115.90	6000	51.43	
Stop: 13:05									
Rate: (ML/Min.)	200								

Well Data

Bore OD:	8
Casing ID:	2
Well TD:	96
D.T.W.:	51.39

Special Notes for This Well:

4+ Ft of silt/clay in Bottom of well.

IDW stored in 55-Gal. drum on site.

Meters:
Solinst 12202 ~~Interphase Probe~~
Oakton / Horiba / YSI

Purge Pump: Peristaltic
Pump Set Time: 11:50
Pump/Inlet Depth (BGS): 80

Decon:
Triple-Rinse

Total Vol. Purged: 6.0 L.
Final Temp.: 19.4
Final EC: 828
Final pH: 6.52
Final ORP: 114.9
Final DO: 2.71
Final Turb: 115.90
Draw Down: 0.04

Sample Start: 13:05
Sample Stop 13:25
Analyses: Sample Container:

TW1-80

Sample ID: TW1-80
(If different from above)
DTW @ Sample: 51.43

Methods: 1=3 BV sample after 80%.
2= 1 BV and monitor parameters each 0.5 BV.
3=Low-flow.
4= slow recharge. 5= non-purge.

Project: Jacumba F.S.

Pump Test Data Sheet

Date: 2/26/24

Well ID	Time	Elapsed time	DTW	GPM	
TW-1	13:44	~~0~~	51.44	~~0~~	
	13:45	0	51.44	2.0	START
	13:47		51.95	2.5	
	13:50		52.04	2.5	
	13:55		52.34	3.0	
	14:00		52.34	3.0	
	14:01		52.34	~~0~~	STOPPED PUMP
	14:03		51.60	~~0~~	
	14:03:30		51.50		
	14:11		END Test, Pump Failure		

Comments/Notes	
Static Water Level	51.44
Pump Start:	13:45
Pump Stop:	14:01
VERY SILTY/CLAYEY WATER; HIGH TURBIDITY	
LESS TURBIDITY	
LESS TURBIDITY	
Pump lost capacity. Possible Pump Damage/ Occlusion.	
Unable to pump more than 1.0 GPM @ Peak Hz.	

SIERRA ANALYTICAL

08 March 2024

Jay Jones
Environmental Navigation Services, Inc.
P.O. Box 231026
Encinitas, CA 92024

RE:Jacumba F. S.

Work Order No.: 2402460

Attached are the results of the analyses for samples received by the laboratory on 02/27/24 09:40.

The samples were received by Sierra Analytical Labs, Inc. with a chain of custody record attached or completed at the submittal of the samples.

The analyses were performed according to the prescribed method as outlined by EPA, Standard Methods, and A.S.T.M.

The remaining portions of the samples will be disposed of within 30 days from the date of this report.
If you require any additional retaining time, please advise us.

Sincerely,

Richard K. Forsyth

Laboratory Director

Sierra Analytical Labs, Inc. is certified by the California Department of Health Services (DOHS),
Environmental Laboratory Accredidation Program (ELAP) No. 2320.

SIERRA ANALYTICAL

Environmental Navigation Services, Inc.	Project:	Jacumba F. S.	
P.O. Box 231026	Project Number:	[none]	**Reported:**
Encinitas CA, 92024	Project Manager:	Jay Jones	03/08/24 16:56

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TWI-67	2402460-01	Water	02/26/24 11:35	02/27/24 09:40
TWI-80	2402460-02	Water	02/26/24 13:05	02/27/24 09:40

26052 MERIT CIRCLE SUITE 104, LAGUNA HILLS, CALIFORNIA 92653
TELEPHONE: (949) 348-9389 FAX: (949) 348-9115
E-MAIL: SIERRALABS @ SIERRALABS.NET

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Microbiological Parameters by APHA Standard Methods

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TWI-67 (2402460-01) Water Sampled: 02/26/24 11:35 Received: 02/27/24 09:40									
E. Coli	Absent		P/A	1	B4B2812	02/27/24	02/27/24 11:00	SM 9223B	
Plate Count-Pour Plate (1 ml)	>5700	1	CFU/mL	"	"	"	"	SM 9215B	
Standard Method Agar 35°C/48h	0		"	"	"	"	"	"	
Total Coliforms	Present		P/A	"	"	"	"	SM 9223B	EC-0

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

26052 Merit Circle Suite 104, Laguna Hills, California 92653
Telephone: (949) 348-9389 Fax: (949) 348-9115
E-Mail: sierralabs @ sierralabs.net

SIERRA ANALYTICAL

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Conventional Chemistry Parameters by APHA/EPA Methods

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TWI-67 (2402460-01) Water Sampled: 02/26/24 11:35 Received: 02/27/24 09:40									
Total Alkalinity	**213**	4.00	mg/L CaCO3	1	B4B2910	02/27/24	02/27/24 10:50	SM 2320 B	
Carbonate Alkalinity	ND	4.00	"	"	"	"	"	"	
Bicarbonate Alkalinity	**213**	4.00	"	"	"	"	"	"	
Hydroxide Alkalinity	ND	4.00	"	"	"	"	"	"	
Chloride	**106**	0.500	mg/L	"	"	"	"	SM 4500-Cl- B	
Methylene Blue Active Substances	ND	0.100	"	"	"	"	"	SM 5540-C	
pH	**6.79**	0.100	pH Units	"	"	"	"	SM 4500-H+	H-0
at Temperature °C	**22.4**		"	"	"	"	"	"	
Sulfate as SO4	**83.0**	1.00	mg/L	"	"	"	"	SM 4500-SO4 E	
Total Dissolved Solids	**530**	1.00	"	"	"	"	"	SM 2540 C	
TWI-80 (2402460-02) Water Sampled: 02/26/24 13:05 Received: 02/27/24 09:40									
Total Alkalinity	**536**	4.00	mg/L CaCO3	1	B4B2910	02/27/24	02/27/24 10:50	SM 2320 B	
Carbonate Alkalinity	ND	4.00	"	"	"	"	"	"	
Bicarbonate Alkalinity	**536**	4.00	"	"	"	"	"	"	
Hydroxide Alkalinity	ND	4.00	"	"	"	"	"	"	
Chloride	**110**	0.500	mg/L	"	"	"	"	SM 4500-Cl- B	
Methylene Blue Active Substances	ND	0.100	"	"	"	"	"	SM 5540-C	
pH	**7.39**	0.100	pH Units	"	"	"	"	SM 4500-H+	H-0
at Temperature °C	**22.2**		"	"	"	"	"	"	
Sulfate as SO4	**120**	1.00	mg/L	"	"	"	"	SM 4500-SO4 E	
Total Dissolved Solids	**960**	1.00	"	"	"	"	"	SM 2540 C	

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Metals by EPA 200 Series Methods

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TWI-67 (2402460-01) Water Sampled: 02/26/24 11:35 Received: 02/27/24 09:40									
Calcium	**48**	0.50	mg/L	1	B4B2713	02/27/24	02/28/24 12:50	EPA 200.7	
Copper	ND	0.030	"	"	"	"	"	"	
Iron	**0.91**	0.010	"	"	"	"	"	"	
Potassium	ND	5.1	"	"	"	"	"	"	
Magnesium	**11**	0.75	"	"	"	"	"	"	
Manganese	**0.39**	0.010	"	"	"	"	"	"	
Sodium	**98**	1.5	"	"	"	"	"	"	
Zinc	ND	0.020	"	"	"	"	"	"	
TWI-80 (2402460-02) Water Sampled: 02/26/24 13:05 Received: 02/27/24 09:40									
Calcium	**150**	0.50	mg/L	1	B4B2713	02/27/24	02/28/24 12:50	EPA 200.7	
Copper	ND	0.030	"	"	"	"	"	"	
Iron	**1.3**	0.010	"	"	"	"	"	"	
Potassium	**5.7**	5.1	"	"	"	"	"	"	
Magnesium	**21**	0.75	"	"	"	"	"	"	
Manganese	**1.1**	0.010	"	"	"	"	"	"	
Sodium	**100**	1.5	"	"	"	"	"	"	
Zinc	ND	0.020	"	"	"	"	"	"	

26052 Merit Circle Suite 104, Laguna Hills, California 92653
Telephone: (949) 348-9389 Fax: (949) 348-9115
E-Mail: sierralabs @ sierralabs.net

SIERRA ANALYTICAL

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Organochlorine Pesticides by EPA Method 8081A

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TWI-67 (2402460-01) Water Sampled: 02/26/24 11:35 Received: 02/27/24 09:40									
Aldrin	ND	0.020	µg/L	1	B4C0601	03/04/24	03/06/24 11:25	EPA 8081A	
HCH-alpha	ND	0.010	"	"	"	"	"	"	
HCH-beta	ND	0.020	"	"	"	"	"	"	
HCH-delta	ND	0.010	"	"	"	"	"	"	
HCH-gamma (Lindane)	ND	0.010	"	"	"	"	"	"	
Chlordane	ND	0.050	"	"	"	"	"	"	
4,4´-DDD	ND	0.020	"	"	"	"	"	"	
4,4´-DDE	ND	0.030	"	"	"	"	"	"	
4,4´-DDT	ND	0.030	"	"	"	"	"	"	
Dieldrin	ND	0.010	"	"	"	"	"	"	
Endosulfan I	ND	0.020	"	"	"	"	"	"	
Endosulfan II	ND	0.050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.010	"	"	"	"	"	"	
Endrin	ND	0.060	"	"	"	"	"	"	
Endrin aldehyde	ND	0.010	"	"	"	"	"	"	
Endrin ketone	ND	0.010	"	"	"	"	"	"	
Heptachlor	ND	0.010	"	"	"	"	"	"	
Heptachlor Epoxide	ND	0.010	"	"	"	"	"	"	
Methoxychlor	ND	0.50	"	"	"	"	"	"	
Toxaphene	ND	0.50	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*46.8 %*	*42-147*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*72.6 %*	*42-147*		"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SIERRA ANALYTICAL

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Volatile Organic Compounds by EPA Method 8260B

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TWI-67 (2402460-01) Water Sampled: 02/26/24 11:35 Received: 02/27/24 09:40									
Benzene	ND	1.0	µg/L	1	B4C0101	02/29/24	03/01/24 11:09	EPA 8260B	
Bromobenzene	ND	1.0	"	"	"	"	"	"	
Bromochloromethane	ND	1.0	"	"	"	"	"	"	
Bromodichloromethane	ND	1.0	"	"	"	"	"	"	
Bromoform	ND	1.0	"	"	"	"	"	"	
Bromomethane	ND	1.0	"	"	"	"	"	"	
n-Butylbenzene	ND	1.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.0	"	"	"	"	"	"	
Carbon Tetrachloride	ND	1.0	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
2-Chloroethylvinyl ether	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.0	"	"	"	"	"	"	
Dibromomethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.0	"	"	"	"	"	"	
Methylene Chloride	ND	1.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
n-Propylbenzene	ND	1.0	"	"	"	"	"	"	
Styrene	ND	1.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	

SIERRA ANALYTICAL

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Volatile Organic Compounds by EPA Method 8260B

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TWI-67 (2402460-01) Water Sampled: 02/26/24 11:35 Received: 02/27/24 09:40									
1,1,2,2-Tetrachloroethane	ND	1.0	µg/L	1	B4C0101	02/29/24	03/01/24 11:09	EPA 8260B	
Tetrachloroethene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.0	"	"	"	"	"	"	
Vinyl Chloride	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*117 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*94.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.0 %*	*80-120*		"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Inductively Coupled Plasma (ICP) Spectroscopy

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TWI-67 (2402460-01) Water	**Sampled: 02/26/24 11:35**	**Received: 02/27/24 09:40**							
Hardness	**165**	1.25	mg/L	1	B4B2714	02/27/24	02/27/24 20:09	Calculation	
TWI-80 (2402460-02) Water	**Sampled: 02/26/24 13:05**	**Received: 02/27/24 09:40**							
Hardness	**469**	1.25	mg/L	1	B4B2714	02/27/24	02/27/24 20:09	Calculation	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SIERRA ANALYTICAL

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Metals by EPA 200 Series Methods - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4B2713 - EPA 200 Series										
Blank (B4B2713-BLK1)				Prepared: 02/27/24 Analyzed: 02/28/24						
Calcium	ND	0.50	mg/L							
Copper	ND	0.030	"							
Iron	ND	0.010	"							
Magnesium	ND	0.75	"							
Manganese	ND	0.010	"							
Potassium	ND	5.1	"							
Sodium	ND	1.5	"							
Zinc	ND	0.020	"							
LCS (B4B2713-BS1)				Prepared: 02/27/24 Analyzed: 02/28/24						
Calcium	10.9	0.50	mg/L	10.2		107	85-115			
Copper	0.198	0.030	"	0.200		98.8	85-115			
Iron	0.209	0.010	"	0.200		104	70-130			
Magnesium	10.6	0.75	"	10.2		104	85-115			
Manganese	0.173	0.010	"	0.200		86.4	85-115			
Potassium	11.0	5.1	"	10.2		108	85-115			
Sodium	10.2	1.5	"	10.2		100	85-115			
Zinc	0.207	0.020	"	0.200		104	85-115			
Matrix Spike (B4B2713-MS1)	**Source: 2402453-03**			Prepared: 02/27/24 Analyzed: 02/28/24						
Calcium	109	0.50	mg/L	10.2	114	NR	70-130			QM-0
Copper	0.201	0.030	"	0.200	ND	100	70-130			
Iron	0.306	0.010	"	0.200	0.124	91.3	70-130			
Magnesium	45.6	0.75	"	10.2	40.4	51.7	70-130			QM-0
Manganese	0.270	0.010	"	0.200	0.0745	97.5	70-130			
Potassium	32.5	5.1	"	10.2	24.6	77.5	70-130			
Sodium	247	1.5	"	10.2	276	NR	70-130			QM-0
Zinc	0.208	0.020	"	0.200	0.00790	99.9	70-130			

26052 MERIT CIRCLE SUITE 104, LAGUNA HILLS, CALIFORNIA 92653
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SIERRA ANALYTICAL

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Metals by EPA 200 Series Methods - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4B2713 - EPA 200 Series										
Matrix Spike Dup (B4B2713-MSD1)	**Source: 2402453-03**			Prepared: 02/27/24 Analyzed: 02/28/24						
Calcium	111	0.50	mg/L	10.2	114	NR	70-130	1.20	20	QM-0
Copper	0.201	0.030	"	0.200	ND	101	70-130	0.249	20	
Iron	0.306	0.010	"	0.200	0.124	90.9	70-130	0.229	20	
Magnesium	46.3	0.75	"	10.2	40.4	57.7	70-130	1.35	20	QM-0
Manganese	0.268	0.010	"	0.200	0.0745	96.8	70-130	0.521	20	
Potassium	32.6	5.1	"	10.2	24.6	78.1	70-130	0.215	20	
Sodium	259	1.5	"	10.2	276	NR	70-130	4.98	20	QM-0
Zinc	0.206	0.020	"	0.200	0.00790	99.2	70-130	0.725	20	

SIERRA ANALYTICAL

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Organochlorine Pesticides by EPA Method 8081A - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4C0601 - EPA 3510C Sep Funnel										
Blank (B4C0601-BLK1)				Prepared: 03/04/24 Analyzed: 03/06/24						
4,4´-DDD	ND	0.020	µg/L							
4,4´-DDE	ND	0.030	"							
4,4´-DDT	ND	0.030	"							
Aldrin	ND	0.020	"							
Chlordane	ND	0.050	"							
Dieldrin	ND	0.010	"							
Endosulfan I	ND	0.020	"							
Endosulfan II	ND	0.050	"							
Endosulfan sulfate	ND	0.010	"							
Endrin	ND	0.060	"							
Endrin aldehyde	ND	0.010	"							
Endrin ketone	ND	0.010	"							
HCH-alpha	ND	0.010	"							
HCH-beta	ND	0.020	"							
HCH-delta	ND	0.010	"							
HCH-gamma (Lindane)	ND	0.010	"							
Heptachlor	ND	0.010	"							
Heptachlor Epoxide	ND	0.010	"							
Methoxychlor	ND	0.50	"							
Toxaphene	ND	0.50	"							
LCS (B4C0601-BS1)				Prepared: 03/04/24 Analyzed: 03/06/24						
4,4´-DDT	0.417	0.030	µg/L	0.500		83.5	80-120			
Aldrin	0.580	0.020	"	0.500		116	80-120			
Dieldrin	0.522	0.010	"	0.500		104	80-120			
HCH-gamma (Lindane)	0.446	0.010	"	0.500		89.2	80-120			
Heptachlor	0.543	0.010	"	0.500		109	80-120			

SIERRA ANALYTICAL

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Organochlorine Pesticides by EPA Method 8081A - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4C0601 - EPA 3510C Sep Funnel										
LCS (B4C0601-BS2)				Prepared: 03/04/24 Analyzed: 03/06/24						
4,4´-DDT	0.497	0.030	µg/L	0.500		99.4	80-120			
Aldrin	0.539	0.020	"	0.500		108	80-120			
Dieldrin	0.554	0.010	"	0.500		111	80-120			
HCH-gamma (Lindane)	0.530	0.010	"	0.500		106	80-120			
Heptachlor	0.590	0.010	"	0.500		118	80-120			
LCS Dup (B4C0601-BSD1)				Prepared: 03/04/24 Analyzed: 03/06/24						
4,4´-DDT	0.455	0.030	µg/L	0.500		91.1	80-120	8.66	30	
Aldrin	0.589	0.020	"	0.500		118	80-120	1.61	30	
Dieldrin	0.500	0.010	"	0.500		100	80-120	4.39	30	
HCH-gamma (Lindane)	0.576	0.010	"	0.500		115	80-120	25.4	30	
Heptachlor	0.588	0.010	"	0.500		118	80-120	7.96	30	

SIERRA ANALYTICAL

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4C0101 - EPA 5030B P & T										
Blank (B4C0101-BLK1)				Prepared: 02/29/24 Analyzed: 03/01/24						
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
1,1,2-Trichloroethane	ND	1.0	"							
1,1-Dichloroethane	ND	1.0	"							
1,1-Dichloroethene	ND	1.0	"							
1,2,3-Trichloropropane	ND	1.0	"							
1,2,4-Trichlorobenzene	ND	1.0	"							
1,2-Dibromo-3-chloropropane	ND	5.0	"							
1,2-Dibromoethane (EDB)	ND	1.0	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
1,3-Dichlorobenzene	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
2-Chloroethylvinyl ether	ND	5.0	"							
4-Chlorotoluene	ND	1.0	"							
4-Methyl-2-pentanone	ND	5.0	"							
Benzene	ND	1.0	"							
Bromobenzene	ND	1.0	"							
Bromochloromethane	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
Bromoform	ND	1.0	"							
Bromomethane	ND	1.0	"							
Carbon Tetrachloride	ND	1.0	"							
Chlorobenzene	ND	1.0	"							
Chloroethane	ND	1.0	"							
Chloroform	ND	1.0	"							
Chloromethane	ND	1.0	"							
cis-1,2-Dichloroethene	ND	1.0	"							
cis-1,3-Dichloropropene	ND	1.0	"							
Dibromochloromethane	ND	1.0	"							
Dibromomethane	ND	1.0	"							
Dichlorodifluoromethane	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Hexachlorobutadiene	ND	1.0	"							
m,p-Xylene	ND	1.0	"							

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4C0101 - EPA 5030B P & T										
Blank (B4C0101-BLK1)				Prepared: 02/29/24 Analyzed: 03/01/24						
Methyl tert-butyl ether	ND	1.0	µg/L							
Methylene Chloride	ND	1.0	"							
Naphthalene	ND	1.0	"							
n-Butylbenzene	ND	1.0	"							
n-Propylbenzene	ND	1.0	"							
o-Xylene	ND	1.0	"							
sec-Butylbenzene	ND	1.0	"							
Styrene	ND	1.0	"							
tert-Butylbenzene	ND	1.0	"							
Tetrachloroethene	ND	1.0	"							
Toluene	ND	1.0	"							
trans-1,2-Dichloroethene	ND	1.0	"							
trans-1,3-Dichloropropene	ND	1.0	"							
Trichloroethene	ND	1.0	"							
Trichlorofluoromethane	ND	1.0	"							
Vinyl Chloride	ND	1.0	"							
LCS (B4C0101-BS1)				Prepared: 02/29/24 Analyzed: 03/01/24						
1,1-Dichloroethene	48.4	1.0	µg/L	50.0		96.9	80-120			
Benzene	54.8	1.0	"	50.0		110	80-120			
Chlorobenzene	52.7	1.0	"	50.0		105	80-120			
Toluene	56.9	1.0	"	50.0		114	80-120			
Trichloroethene	58.6	1.0	"	50.0		117	80-120			
Matrix Spike (B4C0101-MS1)	**Source: 2402460-01**			Prepared: 02/29/24 Analyzed: 03/01/24						
1,1-Dichloroethene	44.2	1.0	µg/L	50.0	ND	88.4	50-150			
Benzene	55.8	1.0	"	50.0	ND	112	37-151			
Chlorobenzene	56.9	1.0	"	50.0	ND	114	37-160			
Toluene	53.2	1.0	"	50.0	ND	106	47-150			
Trichloroethene	54.0	1.0	"	50.0	ND	108	71-157			

SIERRA ANALYTICAL

Environmental Navigation Services, Inc.	Project: Jacumba F. S.	
P.O. Box 231026	Project Number: [none]	**Reported:**
Encinitas CA, 92024	Project Manager: Jay Jones	03/08/24 16:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4C0101 - EPA 5030B P & T										
Matrix Spike Dup (B4C0101-MSD1)	**Source: 2402460-01**			Prepared: 02/29/24 Analyzed: 03/01/24						
1,1-Dichloroethene	49.1	1.0	µg/L	50.0	ND	98.1	50-150	10.4	30	
Benzene	54.5	1.0	"	50.0	ND	109	37-151	2.37	30	
Chlorobenzene	53.8	1.0	"	50.0	ND	108	37-160	5.66	30	
Toluene	59.1	1.0	"	50.0	ND	118	47-150	10.5	30	
Trichloroethene	60.6	1.0	"	50.0	ND	121	71-157	11.5	30	

Environmental Navigation Services, Inc.	Project:	Jacumba F. S.	
P.O. Box 231026	Project Number:	[none]	**Reported:**
Encinitas CA, 92024	Project Manager:	Jay Jones	03/08/24 16:56

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
H-01	Sample received without sufficient time to complete analysis within recommended holding time.
EC-01	Result Present for Total Coliform, but Absent for E. Coli.
>5700	>5700
_P	Present
_A	Absent
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

CHAIN OF CUSTODY RECORD

2402460

Chambers Environmental Services

4230 5th Ave, San Diego, CA 92103 619.782.9640

Lab: Sierra Analytical
Lab Location: Laguna Hills, CA

Client Name/Consultant: Environmental Navigation Services, Inc.
Address: PO Box 23106
City/State/Zip: Encinitas, CA 92024
Project Manager: Jay Jones
Telephone Number: (760) 944-9576 **Fax No.:**
Sampler Name: (Print) D. Chambers
Sampler Signature: D. Chambers

Date: 2/26/24
Report To: Jay Jones
jwjones4@pacbell.net
Invoice To: Same
Project ID: Jacumba F. S.
Project #:

	Sample ID / Description	Date Sampled	Time Sampled	No. of Containers	Grab	Composite	Field Filtered	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: TPH Gas	Diesel	VOC's Method 8260B	1-4 Dioxane	BTEX	MTBE	Oxygenates	TDS, Gen. Minerals	Bacteria, Tot. Coliform	E. Coli	Het. Plate Count	High Concentrations	24H 48H 7-day rush	Standard TAT
01	TW1-67	2/26/24	11:35	4	X		N	X								X					X	X	X	X			X
02	TW1-80	↓	13:05	1	X		N	X													X						X

Special Instructions:

Call and confirm before analysis.

Method of Shipment: (FEDEX) Courrier, Client drop

Laboratory Comments:
Temperature Upon Receipt: 4.8°C
VOCs Free of Headspace? Y N

Relinquished by:	Date	Time	Received by:	Date	Time
D. Chambers	2/26/24		Alc	2/27/24	0940
Relinquished by:	Date	Time	Received by:	Date	Time

Gmail Andrew Kim <andrewk@sierralabs.net>

Jacumba

Jay W. Jones <JayWJones@environavigation.com> Wed, Feb 28, 2024 at 3:29 PM
To: "Andrew J. Kim" <andrewk@sierralabs.net>

yep the lower sample is pretty dirty- sampled from an open borehole...

please let it settle and/or filter out the TSS so its representative of a well. forgot to ask and it may be tool late.

Jay W. Jones
Environmental Navigation Services, Inc.
760.944.9576
JayWJones@environavigation.com

[Quoted text hidden]

Gmail

Andrew Kim <andrewk@sierralabs.net>

Fwd: Report #2402460

Jay W. Jones <JayWJones@environavigation.com> Fri, Mar 1, 2024 at 4:42 PM
To: "Andrew J. Kim" <andrewk@sierralabs.net>

Andrew,

Please run the TW67 sample for organochlorine pesticides. Don't add TW80 water, we'll accept higher RLs.

thanks, Jay

-------- Forwarded Message --------
Subject: Report #2402460
Date: Fri, 01 Mar 2024 15:47:56 -0800
From: Sierra Analytical Labs <sierralabs@sierralabs.net>
Reply-To: Sierra Analytical Labs <sierralabs@sierralabs.net>
To: Jay W. Jones <JayWJones@environavigation.com>

Please Note: In order to help reduce our impact on the environment, a hard copy of the report will not be generated unless requested. Sierra will retain the original copy of the chain of custody on file unless otherwise directed by the client.

Sierra Analytical Labs, Inc.
26052 Merit Circle, Suite 104
Laguna Hills, CA 92653
Tel: (949) 348-9389
Fax: (949) 348-9115
www.sierralabs.net

2402460.pdf
282K

ATTACHMENT 2.
Jacumba Valley Basin:
Aquifer Information from DWR
and the
JVR Energy Park FEIR (Appendix J)

Jacumba Valley Groundwater Basin

- Groundwater Basin Number: 7-47
- County: San Diego
- Surface Area: 6,400 acres (10 square miles)

Basin Boundaries and Hydrology

Jacumba Valley Groundwater Basin lies within the southeastern Peninsular Ranges. The basin is bounded by faults on the east and west, and by the international border with the Republic of Mexico on the south. The remainder of the basin is bounded by crystalline rocks of the Penninsular Ranges. A prominent hill adjacent to the basin is named Dubber Spur (Roff and Franzone 1994). Average annual rainfall ranges from about 14 to 16 inches. Several streams have deposited a thick section of alluvium in the central part of the valley, and several springs, including hot springs are found in the basin (Roff and Franzone 1994).

Hydrogeologic Information

Water Bearing Formations

The main water bearing deposits in the basin are alluvium and the Table Mountain Formation.

Alluvium. Holocene age alluvium consists mostly of gravel, sand, and clay. These deposits are estimated to reach 100 (Roff and Franzone 1994) or 150 feet (Swenson 1980) in thickness. Wells completed in these deposits can produce more than 1,000 gpm (Roff and Franzone 1994). Specific yields for this unconfined aquifer have been estimated to range from 5 to 10 percent (Swenson 1980) and from 15 to 25 percent (Roff and Franzone 1994).

Table Mountain Formation. The Table Mountain Formation is comprised of Tertiary age, medium- to coarse-grained sandstone and conglomerate that rests unconformably on crystalline basement. This unit lies below and is separated from the Holocene alluvium by the Jacumba volcanics, creating a semi-confined to confined aquifer (Swenson 1980). The Table Mountain Formation may reach 600 feet thick and has specific yields ranging from 5 to 10 percent (Swenson 1980).

Groundwater Level Trends

Groundwater levels in the basin remained stable into the 1990s with some fluctuations caused by seasonal or climatic factors (Roff and Franzone 1994).

Groundwater Storage

Groundwater Storage Capacity. Total groundwater storage capacity is unknown.

Groundwater in Storage. Groundwater in storage in the alluvial aquifer was estimated to range from 9,600 to 16,000 af (Roff and Franzone 1994), or from 3,200 to 6,400 af (Swenson 1980). Groundwater stored in the Table Mountain Formation aquifer was estimated to range from 84,000 to 169,000 af (Swenson 1980).

Groundwater Budget (Type A)

Recharge from runoff in Boundary Creek was calculated by Roff and Franzone (1994) to be about 982 af/yr. Recharge from runoff in Flat Creek and Boundary Creek was calculated by Swenson (1980) at about 2,700 af/yr. Groundwater usage is approximately 810 af/yr (Roff and Franzone 1994).

Groundwater Quality

Characterization. Water type ranges from sodium chloride to sodium sulfate and calcium chloride to calcium sulfate. TDS content ranges from 296 to 6,100 mg/L and conductivity ranges from 499 to 8,030 μmhos (Roff and Franzone 1994). Water from one public supply well has a TDS concentration of 424 mg/L.

Impairments. Groundwater quality degrades in the basin northward towards Carrizo Gorge where spring water has TDS concentrations ranging from 2,000 to 6,000 mg/L. During the summer and fall, surface flow in Carrizo Gorge is dominated by this poor quality spring water. The Jacumba Valley groundwater basin is recharged from the Boundary Creek drainage and the Flat Creek drainage. Groundwater in the Boundary Creek drainage shows TDS concentrations ranging from 292 to 422 mg/L; whereas, the Flat Creek drainage has TDS concentrations that reach 1,640 mg/L (Roff and Franzone 1994).

Water Quality in Public Supply Wells

Constituent Group[1]	Number of wells sampled[2]	Number of wells with a concentration above an MCL[3]
Inorganics – Primary	1	0
Radiological	0	0
Nitrates	1	0
Pesticides	0	0
VOCs and SVOCs	0	0
Inorganics – Secondary	1	0

[1] A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).
[2] Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.
[3] Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

Well yields (gal/min)

Municipal/Irrigation

Total depths (ft)

Domestic

Municipal/Irrigation

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
Department of Health Services and cooperators	Title 22 water quality	3

Basin Management

Groundwater management:

Water agencies

Public	Unknown
Private	Unknown

References Cited

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Weber, F. J. 1963. Geology and Mineral Resources of San Diego County, California. California Division of Mines and Geology. County Report No. 3. Map.

Errata

Changes made to the basin description will be noted here.

APPENDIX J

Groundwater Resources
Investigation Report

Groundwater Resources Investigation Report
JVR Energy Park Project
Jacumba Hot Springs, San Diego County, California

Lead Agency:

County of San Diego
Planning and Development Services
5510 Overland Avenue
San Diego, California 92123
Contact: Bronwyn Brown

Project Proponent:

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
AC	alternating current
afy	acre-feet per year
amsl	above mean sea level
bgs	below ground surface
CIMIS	California Irrigation Management Information System
County	County of San Diego
ET	potential evapotranspiration
ETo	reference evapotranspiration
ft^2/day	square feet per day
GMMP	Groundwater Monitoring and Mitigation Plan
gpm	gallons per minute
JCSD	Jacumba Community Services District
kV	kilovolt
O&M	operations and maintenance
Proposed Project	JVR Energy Park Project
SDG&E	San Diego Gas & Electric
µg/L	micrograms per liter

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EXECUTIVE SUMMARY

Dudek has prepared this Groundwater Resources Investigation Report to evaluate the potential impact of groundwater extraction from the construction and operation of the proposed JVR Energy Park Project (Proposed Project) located within Jacumba Hot Springs, California.

The Proposed Project would involve the use of existing on-site wells (Well #2 and Well #3) for groundwater supply. This analysis addresses potential impacts on groundwater resources based on the Proposed Project requiring up to 140 acre-feet during construction (approximately 1 year), 11 acre-feet per year for ongoing operations and maintenance, and 50 acre-feet for decommissioning and dismantling. The significant results of this Groundwater Resource Investigation Report are as follows:

- The water demand from Well #2 and Well #3 is expected to be up to 45.6 million gallons, or 140 acre-feet, for construction to occur over an approximate 1-year period.
- The current groundwater storage in the Jacumba Valley alluvial aquifer, including the portion of the alluvial aquifer located in Mexico, is conservatively estimated to be 9,005 acre-feet based on updated groundwater level data and updated interpreted depth to bedrock using additional well logs.
- The volume of groundwater in storage would not be reduced to 50% or less than the current groundwater storage in the aquifer as a result of additional pumping for Proposed Project water supply.
- Estimated drawdown was based on groundwater production for the construction phase from either Well #2 or Well #3 at a rate of 352, 87, and 17 gallons per minute (rounded) for 90 days, 1 year, and 5 years, respectively. These adjusted production rates equal 140 acre-feet for each time period.
- The nearest off-site well to Well #2 is the Highland Center Well, located 1,817 feet (0.34 miles) to the west. The estimated groundwater level drawdown at the Highland Center Well is predicted to be 1.08 feet, 0.34 feet, and 0.08 feet after 90 days, 1 year, and 5 years, respectively.
- No groundwater wells are located within a 0.5-mile radius of Well #3. The nearest off-site well, Well Km, is located 3,548 feet (0.67 miles) from Well #3. The estimated groundwater level drawdown at Well Km is predicted to be 0.15 feet, 0.17 feet, and 0.08 feet after 90 days, 1 year, and 5 years, respectively.
- Based on the County of San Diego well interference threshold guidance for alluvial wells, drawdown from Well #2 and Well #3 groundwater extraction would be less than significant.

- The estimated drawdown at the nearest groundwater-dependent habitat from pumping Well #2 is predicted to be 1.08 feet, 0.34 feet, and 0.08 feet after 90 days, 1 year, and 5 years, respectively.
- The estimated drawdown at the nearest groundwater-dependent habitat from pumping Well #3 is predicted to be 3.66 feet, 1.11 feet, and 0.27 feet after 90 days, 1 year, and 5 years, respectively.
- Based on the County of San Diego groundwater-dependent habitat threshold guidance for alluvial wells, drawdown from Well #2 and Well #3 groundwater extraction would be less than significant. Estimated drawdown at the nearest groundwater-dependent habitat from pumping Well #2 and Well #3 is temporary and less than 3 feet at 1 year and 5 years. Furthermore, current groundwater levels in Well #3 are at least 12 feet higher than the historical low groundwater level recorded in the Jacumba Valley alluvial aquifer (Exhibit 2, Well K3). Therefore, drawdown as a result of Proposed Project groundwater use would be unlikely to exceed the historical low groundwater level, and impacts to groundwater-dependent habitat are anticipated to be less than significant.
- Well #2 and Well #3 are proposed to be a non-potable water source; therefore, no water quality analysis was performed for this report.

A separate Groundwater Monitoring and Mitigation Plan (GMMP, Appendix E) has been prepared for theproposed groundwater extraction from Well #2 and Well #3. The GMMP establishes groundwater level thresholds for off-site well interference and groundwater-dependent habitat. Additionally ,the GMMP details requirements for ongoing groundwater level and productionmonitoring and reporting to the County of San Diego

1 INTRODUCTION

1.1 Purpose of the Report

This Groundwater Resources Investigation Report was prepared on behalf of JVR Energy Park LLC by Dudek for submittal to County of San Diego (County) Planning and Development Services to satisfy groundwater resource investigation scoping requirements outlined in Guidelines for Determining Significance and Report Format and Content Requirements: Groundwater Resources (County of San Diego 2007) for the proposed JVR Energy Park Project (Proposed Project). This groundwater resource investigation evaluates the use of up to 140 acre-feet of water during Proposed Project construction, 11 acre-feet per year (afy) for ongoing operations and maintenance (O&M), and 50 acre-feet for decommissioning, which would occur after the Proposed Project has reached its expected lifetime (i.e., approximately 38 years). Proposed Project water would be supplied from two on-site groundwater wells.

The results of this groundwater investigation should not be relied upon for use in any other groundwater proposal subject to County review in Jacumba Hot Springs, California.

1.2 Project Location

The Project site is located within the Jacumba Subregional Group Area of the Mountain Empire Subregional Plan Area in unincorporated San Diego County (Figure 1, Regional Location). The Project site is located on approximately 1,356 acres in southeastern San Diego County. The Proposed Project's solar facilities would be within an approximately 643-acre fenced area south of Interstate 8, east of Jacumba Hot Springs, and immediately north of the U.S./Mexico border. The Major Use Permit boundary is an approximately 643-acre area within the Project site (Figure 2, Vicinity Map).

1.3 Project Description

The Proposed Project would have a rated capacity of up to 90 megawatts of alternating current (AC) generating capacity and would consist of photovoltaic modules fitted on single-axis solar trackers. In addition to the panels and direct current to AC conversion equipment (i.e., inverter and transformer units), the Proposed Project would include the following primary components:

- Approximately 300,000 photovoltaic (PV) modules mounted on support structures (single-axis solar trackers)
- A 1,000- to 1,500-volt direct current (DC) underground collection system linking the modules to the inverters

- 25 inverter/transformer platforms, located throughout the solar facility, to convert the power generated by the modules into a compatible form for use with the transmission network
- Approximately 5,000 feet of 34.5-kilovolt (kV) underground AC collection system and 50 feet of overhead AC feeders, approximately 30-feet-tall linking the inverters to the on-site collector substation
- An on-site collector substation located within an approximately 27,360-square-foot area (152 feet by 180 feet)
- A 138 kV switchyard adjacent to the on-site collector substation to transfer power from the on-site collector substation to the existing SDG&E 138 kV transmission line
- A 138 kV, 220-foot-long 65-foot-high overhead slack span transmission line to connect the on-site collector substation to the switchyard
- Two 138 kV overhead transmission lines (gen-tie) to loop the switchyard into the existing SDG&E Boulevard – East County 138 kV transmission line on five 70- to 115-foot-tall transmission poles
- A battery energy storage system of up to 90 MW (or 180MWh) comprised of battery storage containers located adjacent to the inverter/transformer pads (up to 3 containers at each location for a total of 75 containers on site)
- Fiber optic line
- Control system
- Five meteorological weather stations
- Site access driveways
- Internal access
- Improvements within SDG&E Transmission Corridor
- Security fencing and signage
- Lighting
- Water tanks (fire protection)
- Fuel modification zones (FMZs)
- Landscaping

The switchyard would be sized to accommodate the full 90-megawatt (AC) solar facility and the proposed battery energy storage system. The Proposed Project would be located entirely on private

lands within unincorporated San Diego County. Upon completion, the Proposed Project would be monitored and operated off site through a supervisory control and data acquisition (SCADA) system.

Access to the Project site would be provided via five access driveways, including an access driveway off of Old Highway 80 and off Carrizo Gorge Road.

1.4 Project Water Demand

The following discussion includes an estimate of the amount of water required for the Proposed Project during construction, ongoing O&M, and decommissioning. Groundwater demand would be supplied from on-site Well #2 and Well #3 (Figure 2). The Proposed Project would require a maximum water demand of approximately 358,436 gallons per day (approximately 250 gallons per minute [gpm]) for approximately the first 6 weeks during grading activities. The existing on-site wells have the capacity to supply the peak construction water demand. Total construction water demand is expected to be 140 acre-feet over 365 days. Estimated construction water demand by construction activity is provided in Table 1 (a detailed construction water demand estimate is provided in Appendix A, Construction and Operational Water Demand Estimates).

Table 1
Estimated Construction Water Demand

Activity	Description	Total Estimated Water Demand (acre-feet)[1]
Site preparation (clearing, grubbing, grinding, and dust control)	Limited clearing and grubbing will be required for fallowed agricultural land at Jacumba Valley Ranch. Assume pre-weeding od soils with 1-inch of water over 570.5 acres	48
Grading	Grading of 264,000 cubic yards. Uses estimated of on-site moisture and optimum soil of moisture to gain compaction to determine required input of water	39
Concrete	Estimated based on 65 enclosures with concrete pads measuring 14 feet by 44 feet by 1 foot. One substation pad measuring 110 feet by 215 feet by 1.5 feet. Assumes concrete free installation of beams driven into the soil using a pile/vibratory/rotary driving technique. +100% contingency added for uncertainty. Additional 15% added for additional concrete use for fence posts, lighting posts etc.	1
Dust abatement[2]	Value used from Jacumba Solar Construction Estimate: (6) 3,000-gallon water trucks per day	37
Other construction needs	Water necessary for other construction needs, such as filling tanks for fire protection; washing stations for vehicles/equipment (noxious weed mitigation); the 1,500-foot gen-tie line; and hydroseeding	15
	Total Construction Water Use	**140**

[1] 1 acre-foot equals 325,851 gallons.

[2] Dust abatement is included in the estimate for initial site preparation (first 40 days); therefore, general dust abatement was assumed to occur over 104 days (i.e., the remainder of the construction phase).

During operation, the Proposed Project would require water for panel washing up to four times per year. Similar solar photovoltaic operations use approximately 0.3 gallons of water per square yard of panel. Based on the planned 90 MW capacity of the Proposed Project, approximately 300,000 panels at approximately 21 square feet per panel totaling 6,259,500 square feet (695, 500 square yards) may be washed up to 4 times per year. Annual water demand for panel washing is approximately up to 2.6 acre-feet. Irrigation of a landscape buffer is estimated at up to 8.4 acre-feet per year. Total operational water demand is estimated to be up to 11 afy (Table 2). A detailed operational water demand estimate is provided in Appendix A. Actual water use during operation for panel washing may be considerably less based on documented water demand for the nearby active Jacumba Solar project. In 2019, the Jacumba Solar Project used no water for project operation (Dudek 2020a).

Table 2
Estimated Operational Water Demand

Activity	Estimated Water Demand (acre-feet)
Panel washing (up to 4 times per year)	2.6
Landscape buffer	8.4
Total Water Use per Year	**11**

It is estimated that the amount of water necessary to decommission the Proposed Project would be less than that required for construction, because there would be no need to use water for concrete mixing or to hydrate and compact on-site fills. The activities associated with decommissioning would not include grading, and based on the estimates calculated for construction, water demand for decommissioning dust abatement would be approximately 40 acre-feet of water total. Additional equipment washing and modest compaction needs, if necessary, would require approximately 10 acre-feet.

The total estimated water demand for decommissioning is approximately 50 acre-feet (Table 3).

Table 3
Estimated Decommission and Dismantling Water Demand

Activity	Total Estimated Water Demand (acre-feet)
Decommission Dust Abatement	40
Equipment Washing and Compaction	10
Total Water Use	**50**

1.5 Study Area

The study area for the purpose of discussions of groundwater storage is the Quaternary alluvium, referred to as the Jacumba Valley alluvial aquifer. The study area for the purpose of discussions of recharge consists of Flat Creek (which includes Blue Angel Peak and an unnamed subwatershed; naming convention adopted from Swenson 1981), Boundary Creek, and a portion of Walker Canyon-Carrizo Creek subwatersheds (referred to in this report as "contributing watersheds"). The study area for the purpose of well interference is the 0.5-mile radius around Well #2 and around Well #3.

1.6 Applicable Groundwater Regulations

The County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Groundwater Resources (County Guidelines) contain a series of significance thresholds for groundwater quantity and groundwater quality (County of San Diego 2007). The County Guidelines contain the following guidelines that, if met, would be considered a significant impact to local groundwater resources as a result of Proposed Project implementation.

To evaluate impacts to groundwater resources, a water balance analysis is typically required; the following guideline for determining significance is typically used (County of San Diego 2007):

> For proposed projects in fractured rock and sedimentary basins, groundwater impacts will be considered significant if a soil moisture balance, or equivalent analysis, conducted using a minimum of 30 years of precipitation data, including drought periods, concludes that at any time groundwater in storage is reduced to a level of 50% or less as a result of groundwater extraction.

To evaluate off-site well interference in alluvial wells, the following guideline for determining significance is typically used (County of San Diego 2007):

> As an initial screening tool, off-site well interference will be considered a significant impact if after a five year projection of drawdown, the results indicate a decrease in water level of 5 feet or more in the off-site wells. If site-specific data indicates alluvium or sedimentary rocks exist which substantiate a saturated thickness greater than 100 feet in off-site wells, a decrease in saturated thickness of 5% or more in the off-site wells would be considered a significant impact.

To evaluate groundwater quality impacts, the following guideline for determining significance is typically used (County of San Diego 2007):

> Groundwater resources for proposed projects requiring a potable water source must not exceed the Primary State or Federal Maximum Contaminant Levels (MCLs) for applicable contaminants. Proposed projects that cannot demonstrate compliance with applicable MCLs will be considered to have a significant impact. In general, projects will be required to sample water supply wells for nitrate, bacteria (fecal and total coliform), and radioactive elements. Projects may be required to sample other contaminants of potential concern depending on the geographical location within the County.

The Proposed Project does not propose to use groundwater as a potable water source, so the above guideline for determining significance does not apply.

To evaluate impacts to groundwater-dependent habitat, the following guideline for determining significance is typically used (County of San Diego 2010a):

> The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of 3 feet or more from historical low groundwater levels.[1]

The County adopted the San Diego County Groundwater Ordinance in 1991; it was last amended in 2013. The ordinance establishes regulations for the protection, preservation, and maintenance of groundwater resources and is contained within the San Diego County Code of Regulatory Ordinances, Title 6, Division 7 Chapter 7 Groundwater Sections 67.701–67.750 (County of San Diego 2013). The purpose of the ordinance is to ensure that development would not occur in groundwater-dependent areas of the County unless adequate supplies are available to serve both existing and proposed uses. Section 67.722, All Other Projects, regulates all areas within the County outside Borrego Valley and any future groundwater impacted basins. For discretionary permit applications, the following findings must be made: (1) For projects using greater than 20 afy or 20,000 gallons per day, that groundwater resources are adequate to meet the groundwater demands both of the project and the groundwater basin if the basin were developed to the maximum density and intensity permitted by the General Plan, and (2) for all other projects, that groundwater resources are adequate to meet the groundwater demands of the project.

The San Diego Groundwater Ordinance defines a "water intensive use" as, "Any land use that requires a permit listed in Section 67.711 and is not exempt from this ordinance, and that will

[1] Studies have found that groundwater elevation reductions adversely affect native plant species. Two of the referenced studies (Integrated Urban Forestry 2001 and National Research Council 2002) found that a permanent reduction in groundwater elevation of greater than 3 feet is enough to induce water stress in some riparian trees, particularly willow (*Salix* spp.), cottonwood (*Populus* spp.), and *Baccharis* species.

require more water than 20 afy or more than 20,000 gallons per day." While there is an initial peak water demand required for Proposed Project construction, operational water demands are minimal, and when Proposed Project water demands are amortized over the life of the Proposed Project, do not represent a water intensive use.

Updated (and adopted) in August 2011, the San Diego County General Plan guides future growth in the unincorporated areas of the County and considers projected growth anticipated to occur within various communities. The Land Use Element includes a requirement to encourage sustainable use of groundwater and properly manage groundwater recharge areas (LU-8). Specifically, Goal LU-8 includes the following policies (County of San Diego 2011):

- Policy LU-8.1: Require land use densities in groundwater dependent areas to be consistent with the long-term sustainability of groundwater supplies, except in the Borrego Valley.
- Policy LU-8.2: Require development to identify adequate groundwater resources in groundwater dependent areas, as follows:
    - In dependent areas within currently identified groundwater overdrafted basins, prohibit new development from exacerbating overdraft conditions, and
    - In areas without current overdraft groundwater conditions, evaluate new groundwater-dependent development to assure a sustainable long-term supply of groundwater is available that will not adversely impact existing groundwater users.
- Policy LU-8.3: Discourage development that would significantly draw down the groundwater table to the detriment of groundwater-dependent habitat.

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2 EXISTING CONDITIONS

2.1 Topographic and Hydrologic Setting

Jacumba Hot Springs is located in the southeastern corner of San Diego County and is bordered by Imperial County to the east and Mexico to the south (Figures 1 and 2). The general topography of the Project site within the Jacumba Valley is gently rolling. The Project site has been previously disturbed for agricultural purposes. The elevation range within the Project site is from approximately 2,715 feet to 2,915 feet above mean sea level (amsl).

The contributing watersheds to the Project site cover 70,868 acres (111 square miles), with 76% located in Baja California, Mexico. The contributing watersheds are located in the Upper Carrizo Creek watershed as defined by the U.S. Geological Survey (Figure 3, Hydrologic Areas). The majority of flow from Mexico north into the Jacumba Valley is derived from the Flat Creek subwatershed, which includes Blue Angel Peak and an unnamed subwatershed. The subwatersheds predominantly located in the United States are the Boundary Creek and Walker Canyon-Carrizo Creek subwatersheds. The Jacumba Valley ultimately drains through a narrow constriction north of Jacumba Hot Springs known as the Carrizo Gorge.

The Flat Creek subwatershed consists of approximately 51,052 acres, with 134 acres (0.26%) of the watershed located in the United States. The Flat Creek subwatershed ranges from 4,774 feet amsl at its headwaters along the Sierra Juarez Mountains to 2,800 feet amsl near the international border. The Boundary Creek subwatershed consists of approximately 12,535 acres, with 10,106 acres (81%) of the watershed located in the United States. The Boundary Creek subwatershed ranges from 4,240 feet amsl and its headwaters along the Tecate Divide to 2,788 feet amsl. The Walker Canyon-Carrizo Creek subwatershed consist of approximately 7,281 acres, with 6,927 acres (95%) of the watershed located in the United States. The Walker Canyon-Carrizo Creek subwatershed ranges from 4,097 feet amsl at Table Mountain to 2,713 feet amsl at the north end of the Project site (Google Earth 2015).

2.2 Climate

Jacumba Hot Springs experiences warm summer months and cool winters. Average temperatures vary greatly within the region. Mean maximum temperatures in the summer months reach the high-80s to low-90s degrees Fahrenheit. Temperatures may fall below freezing in the winter, with snow levels occasionally below 2,500 feet (WRCC 2019).

2.2.1 Precipitation

The precipitation that recharges the Project site falls within the contributing watersheds. Monthly precipitation records were obtained from the County for a rain gauge previously located in Jacumba at 32°37' North latitude, 116°11' West longitude, and an elevation of 2,800 feet. The period of record available is from March 1963 until March 2011. Table 4 provides average monthly precipitation data, as well as the highest and lowest monthly precipitation for the Jacumba rain gauge (Allan 2013).

Table 4
Precipitation Data Recorded at Jacumba Rain Gauge

Month	Rainfall (inches) for 1963–2011[a]		
	Average	*Highest / Year*	*Lowest*[b]
January	1.45	5.79 / 1983	0
February	1.66	10.86 / 1993	0
March	1.82	6.76 / 1998	0
April	1.45	7.13 / 1991	0
May	0.50	2.38 / 1965	0
June	0.19	2.24 / 1981	0
July	0.06	0.96 / 1984	0
August	0.45	3.97 / 1984	0
September	0.50	3.48 / 1992	0
October	0.37	4.58 / 1976	0
November	0.60	4.37 / 2004	0
December	0.85	3.82 / 1965	0
Year	9.64	22.16 / 1982–1983	2.26

Source: Allan 2013.
Notes: Jacumba rain gauge was located at N 32°37', W 116°11', at an elevation of 2,800 feet.
a. Jacumba rain gauge was active from 1963 to 2011.
b. Lowest monthly recorded precipitation data is not available due to data gaps.

For the period from 1963 through 2011, the average annual precipitation at the Jacumba rain gauge was approximately 9.64 inches, with 85% of the precipitation occurring between October and April. Annual precipitation totals at the Jacumba rain gauge varied from a high of 22.16 inches in the 1982–1983 water year to a low of 2.26 inches in the 2001–2002 water year (Allan 2013) (see Exhibit 1).

Precipitation records from four nearby rain gauges were obtained to determine annual average rainfall within the watersheds. The rain gauges are located in Boulevard (two stations), Tierra del Sol, and Jacumba. The locations, elevations, years of operation, mean annual rainfall, and source of data are provided in Table 5.

Table 5
Rain Gauges in Project Area

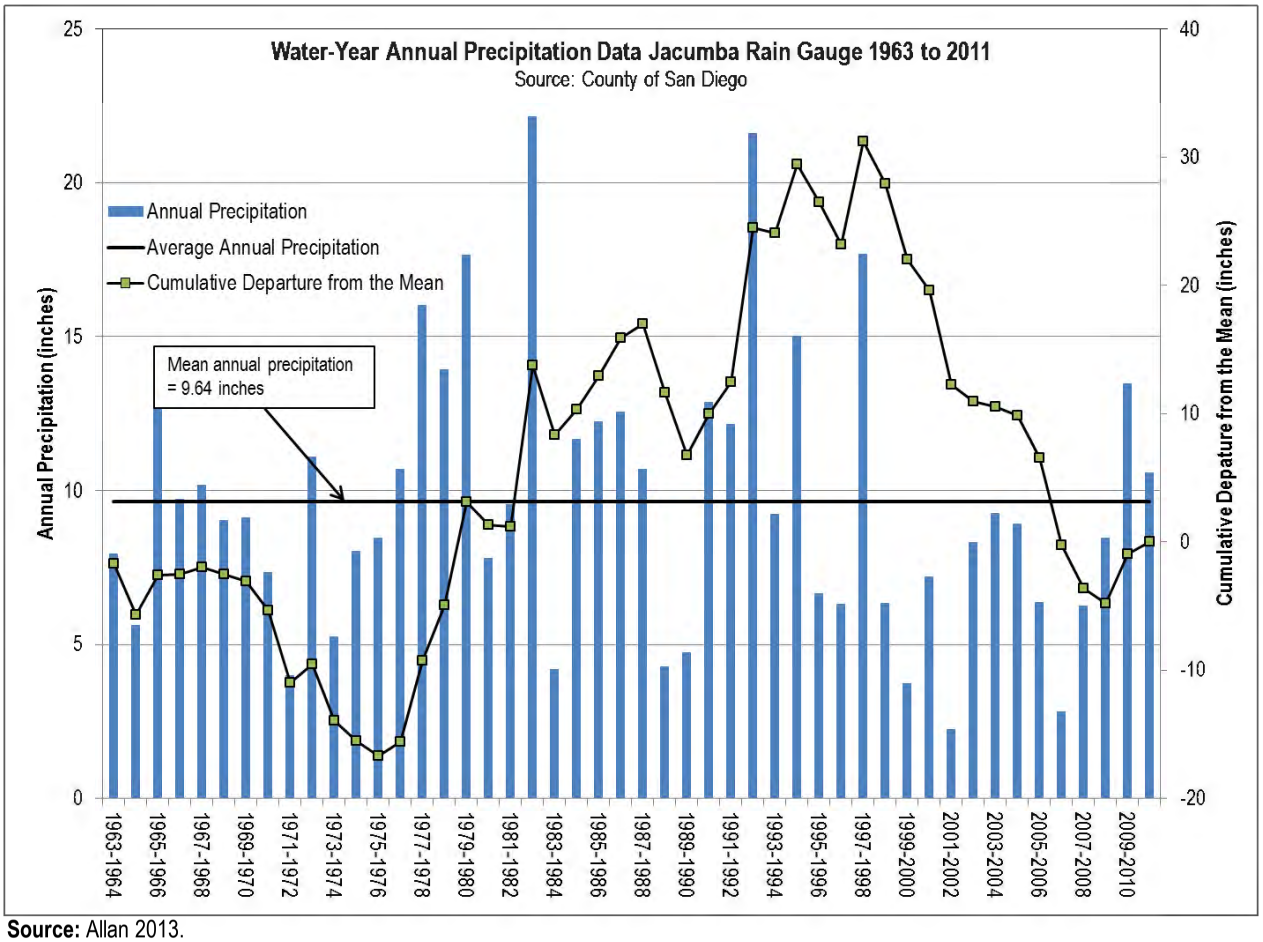
Station	Location	Elevation (feet amsl)	Years of Operation	Average Annual Rainfall (inches)	Source
Boulevard 1	N 32°40', W 116°17'	3,353	1924 to 1967	14.8	NOAA[1]
Boulevard 2	N 32°40', W 116°18'	3,600	1969 to 1994	17.0	NOAA
Tierra del Sol	N 32°39', W 116°19'	4,000	1971 to 2017	10.8	County[2]
Jacumba	N 32°37', W 116°11'	2,800	1963 to 2011	9.64	County[3]

1 NOAA 2011
2 Allan 2014
3 Allan 2013
amsl = above mean sea level

The isohyetal map of annual precipitation, developed by Swenson (1981), shows that the majority of the Flat Creek subwatershed receives an average of 11 inches of precipitation per year (Figure 4, Regional Mean Annual Precipitation). The lower elevations of the subwatershed receive an average of 9 inches of precipitation per year. Mean annual precipitation, as determined from the County of San Diego map entitled "Groundwater Limitations Map" on file with the Clerk of the Board of Supervisors as Document No. 195172, indicates the Walker Canyon-Carrizo Creek subwatershed receives an average of 9 inches of precipitation per year. The Groundwater Limitations Map indicates that the majority of the Boundary Creek subwatershed receives an average of 14 inches of precipitation per year at its highest elevation, and an average of 9 inches of precipitation per year at its lowest (County of San Diego 2004). The County Groundwater Limitations Map roughly concurs with those developed by Swenson (1981) (Figure 4).

The average annual precipitation of 9 inches at the Project site also roughly agrees with the average precipitation calculated for the Jacumba rain gauge between 1963 and 2011 of 9.64 inches (Allan 2013). The Jacumba rain gauge was located at the lowest elevation in the Flat Creek subwatershed.

Exhibit 1
Annual Precipitation Data Jacumba Rain Gauge 1963 to 2011



Source: Allan 2013.
Note: Station located at N 32°37', W 116°11' at an elevation of 2,800 feet

2.2.2 Evapotranspiration

According to the State of California Reference Evapotranspiration Map developed by the California Irrigation Management Information System (CIMIS), the Project site is located in Evapotranspiration Zone 16, with an average of 62.5 inches of reference evapotranspiration (ETo) per year (CIMIS 1999). Table 6 presents ETo by month in CIMIS Zone 16. The annual 62.5 inches of ETo is based on potential evapotranspiration (ET) from turf grass/alfalfa crop, which assumes a continuous source of moisture and does not consider summer plant dormancy. Therefore, ETo is an overestimation of actual ET, which varies with the vegetation type. To account for variations in plant water consumption and more accurately assess ET, a crop coefficient can be applied to ETo. Plants that consume less water have lower crop coefficients. Drought-tolerant plants and native vegetation have a crop coefficient of approximately 0.3 (DWR and UCCE 2000). Using this crop coefficient, the annual estimated ET for the Project site is 62.5 inches x 0.3 = 18.75 inches.

Table 6
CIMIS Zone 16 Reference Evapotranspiration

Month	Reference Evapotranspiration (inches)
January	1.55
February	2.52
March	4.03
April	5.7
May	7.75
June	8.7
July	9.3
August	8.37
September	6.3
October	4.34
November	2.4
December	1.55
Year	**62.51**

Source: CIMIS 1999

2.3 Land Use

According to the San Diego County General Plan, Jacumba Hot Springs is located within the Mountain Empire Subregional Plan area (County of San Diego 2016). Land use designations within a 0.5-mile radius of Well #2 consist of single-family residential, spaced rural residential, airstrip, communications and utilities, railroad right-of-way, road right-of-way, neighborhood shopping center, religious facility, library, other public services, and open space park or preserve (see Figure 5, Current General Plan Land Use). Land use designations within 0.5-mile radius of

Well #3 consist of spaced rural residential, single-family residential, railroad right-of-way, and open space park or preserve (County of San Diego 2011).

The parcels on which the Project site is located are zoned as single family residential, undeveloped natural area, open space park and preserve, neighborhood shopping center, and railroad right-of-way. Bordering current land uses to the Project site are open space park and preserve, spaced rural residential, single-family residential, freeway, other retail trade and strip commercial, road right-of-way, airstrip, neighborhood shopping center, and library (County of San Diego 2011) (see Figure 5).

Current land use within the contributing watersheds in Mexico was not available for this report, but is mostly undeveloped lands. Current land use on the United States side of the Flat Creek subwatershed consists of open space park or preserve, field crops, and vacant undeveloped land. Current land use on the United States side of the Boundary Creek subwatershed consists of spaced rural residential, single-family detached, single-family multiple-units, single-family residential without units, communications and utilities, railroad right-of-way, road right-of-way, other retail trade and strip commercial, fire/police station, other public services, elementary school, open space park or preserve, field crops, and vacant and undeveloped land. Current land use on the United States side of the Walker Canyon- Carrizo Creek subwatershed consists of spaced rural residential, single-family detached, single-family multiple-units, single-family residential without units, mobile home park, hotel/motel (low-rise), airstrip, freeway, communication and utilities, railroad right-of-way, road right-of-way, other retail trade and strip commercial, library, post office, religious facility, open space park or preserve, field crops, and vacant and undeveloped land (County of San Diego 2011).

2.4 Geology and Soils

2.4.1 Geology

Jacumba Hot Springs is located on the eastern portion of the Peninsular Range geomorphic province, which consists of northwest-oriented mountain ranges separated by northwest-trending fault-produced valleys subparallel to faults branching from the San Andreas Fault. The regional geology is depicted in Figure 6, Regional Geologic Map. Because much of the contributing watershed area is located south of the international border with Mexico, worldwide geologic data was used to depict geology south of the border (Garrity and Soller 2009).

The surface area of the contributing watersheds primarily consists of exposed Cretaceous plutonic rocks of the Peninsular Ranges Batholith. These plutonic rocks consist of the bedrock unit known as the tonalite of La Posta (also referred to as the La Posta Quartz Diorite) (USGS 2004). The Sierra Juarez Mountains, located on the southeastern side of the Flat Creek watershed in Mexico

consist of Mesozoic sedimentary rocks (Garrity and Soller 2009). Quaternary alluvium is present in low-lying areas in portions of the watershed, including the Jacumba Valley (USGS 2004).

The Project site is located within Jacumba Valley. Jacumba Valley contains exposures of the Jacumba Volcanics and the Table Mountain Formation, overlain by Quaternary alluvium (DWR 2004; Swenson 1981). The Quaternary alluvium reaches up to 175 feet in thickness and consists of Holocene-age gravels, sands, and clays (Dudek 2016a; DWR 2004). The alluvium thins toward the sides and ends of the valley (DWR 2004; Swenson 1981). The Jacumba Volcanics are encountered below the Quaternary alluvium, as reported in numerous boring log reports (County of San Diego 2018; CRA 2012; Petra 2006). The Tertiary-age Table Mountain Formation underlies the Jacumba Volcanics in some areas of Jacumba Valley and is described as medium- to coarse-grained sandstone and conglomerate, and may reach up to 600 feet in thickness (Swenson 1981). The migmatitic schist and gneiss of the Stephenson Peak Formation outcrop just west of the valley and underlie the Jacumba Valley (Swenson 1981; USGS 2004).

2.4.2 Soils

The type, areal extent, and key physical and hydrologic characteristics of soils mapped on the United States side of the contributing watersheds were identified based on a review of soil surveys completed by the U.S. Department of Agriculture, Natural Resources Conservation Service (USDA 2015). Swenson (1981) provides a map and description of soil types on the Mexico side of the Flat Creek watershed based on representative soil samples and measurements of their porosity and specific retention. Soils on the Mexico side of the Boundary Creek watershed were digitized based on aerial imagery. Soil units are shown in Figure 7, Soils Map, and are described in Table 7.

Table 7
Soil Units within the Contributing Watersheds

Map Unit, Soil Name	Acres (Percent of the Flat Creek Watershed)	Acres (Percent of the Boundary Creek Watershed	Acres (Percent of the Walker Canyon – Carrizo Creek Watershed)
Soil Identification by the U.S. Department of Agriculture			
AcG, Acid Igneous Rock Land	0 (0%)	2,237.66 (15.47%)	2,105.09 (31.49%)
CaB, Calpine coarse sandy loam, 2–5% slope	0 (0%)	14.39 (0.10%)	0 (0%)
CaC, Calpine coarse sandy loam, 5–9% slope	0 (0%)	14.69 (0.10%)	264.68 (3.96%)
CaD2, Calpine coarse sandy loam, 9–15% slopes, eroded	0 (0%)	41.85 (0.29%)	0 (0%)

Table 7
Soil Units within the Contributing Watersheds

Map Unit, Soil Name	Acres (Percent of the Flat Creek Watershed)	Acres (Percent of the Boundary Creek Watershed	Acres (Percent of the Walker Canyon – Carrizo Creek Watershed)
CeC, Carrizo very gravelly sand, 0–9% slope	0 (0%)	796.85 (5.51%)	0 (0%)
InA, Indio silt loam, 0–2% slope	18.10 (30.33%)	0 (0%)	44.90 (0.67%)
InB, Indio silt loam, 2–5% slope	0 (0%)	0 (0%)	183.72 (2.75%)
IoA, Indio silt loam, saline, 0–2% slope	0 (0%)	0.02 (0.0001%)	382.58 (5.72%)
LaE2, La Posta loamy coarse sand, 5–30% slopes, eroded	0 (0%)	1,854.48 (12.82%)	0 (0%)
LcE2, La Posta rocky loamy coarse sand, 5–30% slope, eroded	0 (0%)	1,649.29 (11.40%)	43.92 (0.66%)
LdE, La Posta-Sheephead complex, 9–30% slopes	0 (0%)	2,339.43 (16.17%)	0 (0%)
LdG, La Posta-Sheephead complex, 30–65% slopes	0 (0%)	258.21 (1.78%)	0 (0%)
Lu, Loamy alluvial land	0 (0%)	17.35 (0.12%)	0 (0%)
MnB, Mecca coarse sandy loam, 2–5% slopes	4.86 (8.14%)	0 (0%)	62.83 (0.94%)
MvC, Mottsville loamy coarse sand, 2–9% slopes	0 (0%)	948.47 (6.56%)	0 (0%)
MvD, Mottsville loamy coarse sand, 9–15% slopes	0 (0%)	65.60 (0.45%)	0 (0%)
RaC, Ramona sandy loam, 5–9% slopes	0 (0%)	0 (0%)	168.35 (2.52%)
RaD2, Ramona sandy loam, 9–15% slopes, eroded	0 (0%)	0 (0%)	26.00 (0.39%)
RkA, Reiff fine sandy loam, 0-2% slopes	17.31 (29.00%)	0 (0%)	262.87 (3.93%)
RsC, Rositas loamy coarse sand, 2–9% slope	0 (0%)	152.95 (1.06%)	531.38 (7.95%)
RuG, Rough broken land	0 (0%)	0 (0%)	342.31 (5.12%)
SrD, Sloping gullied land	19.41 (32.53%)	12.55 (0.09%)	0 (0%)
SvE, Stony land	0 (0%)	255.46 (1.77%)	933.88 (13.97%)

Table 7
Soil Units within the Contributing Watersheds

Map Unit, Soil Name	Acres (Percent of the Flat Creek Watershed)	Acres (Percent of the Boundary Creek Watershed	Acres (Percent of the Walker Canyon – Carrizo Creek Watershed)
ToE2, Tollhouse rocky coarse sandy loam, 5–30% slopes, eroded	0 (0%)	3,395.02 (23.47%)	0 (0%)
ToG, Tollhouse rocky coarse sandy loam, 30–65% slopes	0 (0%)	413.14 (2.86%)	0 (0%)
Subtotal	*59.68 (0.12%)*	*14,467.40 (100%)*	*6,685.40 (94.67%)*
Soil Identification by Swenson			
W, Sandy Alluvium	7,020.04 (13.77%)	0 (0%)	132.95 (35.35%)
X, Metamorphic and Plutonic Residuum	43,462.93 (85.27%)	0 (0%)	93.11 (24.76%)
Y, Volcanic residuum and fine sand alluvium	489.09 (0.96%)	0 (0%)	150.04 (39.89%)
Subtotal	*50,972.06 (99.88%)*	*0 (0%)*	*376.10 (5.33%)*
Total Acreage	**51,031.73**	**14,467.40**	**7,061.50**

Sources: Swenson 1981; USDA 2015

2.5 Hydrogeologic Units

The Project site is located within the California Department of Water Resources Bulletin 118 defined Jacumba Valley Groundwater Basin, Department of Water Resources Basin No. 7-47 (Figure 8, Hydrogeologic Units) (DWR 2004). The Jacumba Valley Groundwater Basin consists of two primary aquifer units. The upper alluvial aquifer unit reaches up to 175 feet in thickness and consists of Holocene-age gravels, sands, and clays (Dudek 2016a; DWR 2004). In some areas, this aquifer unit is underlain by the Jacumba Volcanics that act as a semi-confining to confining unit to the lower aquifer. The lower aquifer consists of the Tertiary-age Table Mountain Formation described as medium- to coarse-grained sandstone and conglomerate, and may reach up to 600 feet in thickness (Swenson 1981). The Table Mountain Formation lies unconformably on top of crystalline basement (DWR 2004).

On-site Proposed Project groundwater wells produce from the upper alluvial aquifer (referred to in this report as the "Jacumba Valley alluvial aquifer"). This unconfined aquifer has been estimated to have specific yields ranging from 5% to 10% (Swenson 1981) and 15% to 20% (Roff and Franzone 1994). Production wells screened in the Jacumba Valley alluvial aquifer have been reported to produce more than 1,000 gpm (Roff and Franzone 1994). Groundwater in storage has

been estimated to range from 3,200 to 6,400 acre-feet by Swenson (1981) and 9,600 to 16,000 acre-feet by Roff and Franzone (1994).

2.6 Current Groundwater Demand

The current water demand for the Jacumba Valley alluvial aquifer includes potable demand for Jacumba Valley Ranch Water Company (formerly the Ketchum Ranch Water Company), and potable and non-potable demand from the Jacumba Community Services District (JCSD) (Table 8).

The Jacumba Valley Ranch Water Company is classified as a transient non-community water system. According to County Department of Environmental Health Small Drinking Water System files, seven connections—three ranch homes, two gas stations, and two fire hydrants—are part of the Jacumba Valley Ranch water system (McCullough, pers. comm. 2015). Estimated water demands for the Jacumba Valley Ranch Water Company is 5 afy.

JCSD currently supplies potable water to 239 connections from JCSD Well #4 (Devine, pers. comm. 2019). JCSD's current water usage was not made available for this report, but historical water demand and water use calculations were used to estimate current demand. Based on available data from Barrett Consulting Group (Barrett 1996), JCSD produced between 86 and 146 acre-feet annually from 1991 to 1995, averaging 116 afy. More recent production data indicates that JCSD served 27.6 million gallons (85 acre-feet) of water from Well #4 in 2013 and 26.2 million gallons (80.4 acre-feet) from January 2014 through August 2014 to meet the water demands of the potable water system (Troutt, pers. comm. 2015). Based on the number of connections and an estimated 0.5 afy per connection, JCSD potable water demand is estimated to be 119.5 afy. This estimate roughly coincides with average historical water demand from 1991 to 1995, and conservatively overestimates production from more recent data received by the previous JCSD General Manager in 2014 (Troutt, pers. comm. 2015).

JCSD also supplies non-potable water for commercial sale. Historically, JCSD has supplied non-potable water from Well #6, a fractured rock well not screened in the Jacumba Valley alluvium. Beginning in 2016, JCSD began supplying non-potable water from the Highland Center Well and the Park Well, both screened in the Jacumba Valley alluvium. Non-potable water supply from JCSD varied based on customer demand. From February 2017 to February 2018, JCSD supplied 50.1 acre-feet from the Highland Center Well and 3.5 acre-feet from the Park Well. From February 2018 to January 2019, JCSD supplied 4 acre-feet from the Highland Center Well and 0 acre-feet

from the Park Well. Maximum annual groundwater extraction from the Jacumba Valley alluvial aquifer by JCSD for non-potable water is 53.6 afy.[2]

Based on the County Department of Environmental Health well completion report database, no additional active wells are located within the Jacumba Valley alluvium (County of San Diego 2018). Because there is the potential for active wells to exist without proper County Department of Environmental Health permitting, this report conservatively estimates six potential domestic wells that produce groundwater from the Jacumba Valley alluvial aquifer. Estimated water demands for the potential domestic wells is 3 afy, or 0.5 afy per well.

Agriculture located on the Jacumba Valley Ranch historically extracted the majority of groundwater from the Jacumba Valley alluvial aquifer. Currently no water is being extracted from the Jacumba Valley Ranch for these activities.

Table 8
Jacumba Valley Alluvial Aquifer Existing Water Demands

Groundwater Extraction Sources	Wells Names	Total Water Demand (acre-feet per year)
Jacumba Valley Ranch Water Co.	Well Km	5[a]
Jacumba Community Services District (JCSD) (potable)	Well 4	119.5[b]
JCSD (non-potable)	Highland Center Well, Park Well	53.6[c]
Potential Domestic Wells	Private Domestic Wells	3[d]
	Total Water Demand	**181.1**

a. Jacumba Valley Ranch Water Company has seven connections: three ranch homes, two gas stations, and two fire hydrants. No water demand was assigned to the fire hydrants. Water demand is estimated at approximately 1 acre-foot per connection.
b. Estimated based on 0.5 afy for 239 potable Jacumba Community Services District connections.
c. Maximum demand based on meter reads from February 2017 to February 2018.
d. Not all domestic wells are currently active or known; however, a consumptive water demand of 0.5 afy has been assigned to up to six potential domestic wells

2.7 Hydrogeologic Inventory and Groundwater Level Trends

Published well logs were reviewed to locate wells and refine the thickness of hydrologic units present within the Jacumba Valley alluvial aquifer. Table 9 provides a summary of the information available from driller well logs obtained to date. Well information has been updated based on field reconnaissance and/or historical data.

[2] Non-potable groundwater extraction from the Highland Center Well and the Park Well is based on totalizer readings collected during routine groundwater monitoring performed by Dudek staff as required for the Jacumba Solar Groundwater Monitoring and Mitigation Plan.

Table 9
Jacumba Valley Well Inventory

Well Number	Well Depth (feet bgs)/ (Year Drilled)	Depth to Water (feet btoc)/date	Approximate Production Capability (gpm)	Alluvium/ Residual Soil (feet bgs)	Bedrock Depth (feet bgs)/ (Type)
Jacumba Community Services District Wells					
JCSD 1	124 (1956)	43.0; 10/1955	148	120	124 (volcanic)
JCSD 2	140 (1963)	72.13; 11/1979	—	140	—
JCSD 3	79	—	—	—	—
JCSD 3A	49	—	—	49	—
JCSD 4	39	20.66; 6/26/2018	175[a]	0–39[b]	—
JCSD 5	—	—	—	—	—
JCSD 6	465 (2003)	5.50; 6/26/2018	600+	—	—
JCSD 7	518 (2008)	31.20; 6/26/2018	300+	0–10	10–23 (granitic)
JCSD 8	518 (2009)	31.02; 6/26/2018	275+	0–42	42–55 (granitic)
MW-3	84.5 (2007)	28.0; 3/2009	Monitor well	0–30	30–80 (granitic)
Park Well	124 (2005)	59.74; 6/26/2018	80	0–127	127 (volcanic)
Highland Center Well	125 (2016)	56.98; 6/26/2018	174	0–175	182 (granitic)
Jacumba Valley Ranch Wells					
K	102+ (1960s)	—	—	—	—
K1	110 (1950s)	42.3; 9/6/1980	—	106	—
K2	103 (1950s)	41.0; 4/1958	—	103	—
K3	117 (1950s)	8.5; 2/1996	1,000	—	—
K4	109 (1950s)	9.9; 3/1994	908	—	—
Daley Well	150 (Unknown)	36.94; 10/2018	—	—	—
Well #1	124 (Unknown)[d]	59.99; 10/2018	148	120	124 (volcanic)
Well #2	114 (2007)[d]	46.56; 10/2018	2,000[c]	113	—
Well #3	100 (2005)[d]	38.96; 10/2018	2,000[c]	112	—
Central Irrigation Well	100 (Unknown)[d]	46.56; 10/2018	—	—	—
Mid Valley Well	90.7 (Unknown)[d]	48.72; 10/2018	—	—	—
Carrizo Gorge Well	—	80.22; 7/2018	—	—	—
Well Km	150 (130 silted)	51.62; 7/2018	33.7	—	—
Test Well 1 JVR	82 (1990)	2; 5/1990	225	75	—
P-1	—	—	Monitoring well	—	—
P-2	23.72[d]	Dry; 7/30/2018	Monitoring well	—	—
P-3	30.92[d]	Dry; 7/30/2018	Monitoring well	—	—
P-4	33.71[d]	Dry; 7/30/2018	Monitoring well	—	—
P-5	27.3[d]	Dry; 7/30/2018	Monitoring well	—	—
P-6	32.26[d]	Dry; 7/30/2018	Monitoring well	—	—

Table 9
Jacumba Valley Well Inventory

Well Number	Well Depth (feet bgs)/ (Year Drilled)	Depth to Water (feet btoc)/date	Approximate Production Capability (gpm)	Alluvium/ Residual Soil (feet bgs)	Bedrock Depth (feet bgs)/ (Type)
P-7	38.8[d]	Dry; 7/30/2018	Monitoring well	—	—
P-8	39.3[d]	Dry; 7/30/2018	Monitoring well	—	—
P-9	60.17[d]	Dry; 7/30/2018	Monitoring well	—	—
Other Wells					
R1	137	—	—	—	—
R2	400	—	—	—	—
(Abandoned Well near R2)	Abandoned (1979)	—	—	—	150–492 (Sandstone)
T5	—	—	—	—	—
T8	—	—	—	—	—
T1	—	—	—	—	—
RM	34	—	—	—	—
Spa Well	200 (1955)	—	—	—	—
Daley Construction Well	230 (N/A)	—	—	—	—
Former Chevron Service Station 20-5934					
MW-8S	50 (2007)	—	—	81.5+	—
MW8-D	80 (2007)	—	—	81.5+	—
MW-9S	50 (2007)	—	—	80	80 (Volcanics)
MW-9D	80 (2007)	—	—	80	80 (Volcanics)
MW-10	57 (2007)	—	—	50+	—
MW-11	80 (2007)	—	—	80+	—
MW-12	80 (2012)	—	—	40	40 (DG to 80.5)
MW-13	80 (2012)	—	—	81+	—
MW-14	81 (2012)	—	—	80.5+	—
B-10	(2012)	—	—	55.5+	—
B-11	(2012)	—	—	66.5+	—
B-12	(2012)	—	—	57	57 (DG to 70)

Sources: Barrett 1996; CRA 2012; Pape 2015; Petra 2006; Swenson 1981
bgs = below ground surface; btoc = below top of casing; gpm = gallons per minute; JCSD = Jacumba Community Services District; N/A = not available; DG = decomposed granite

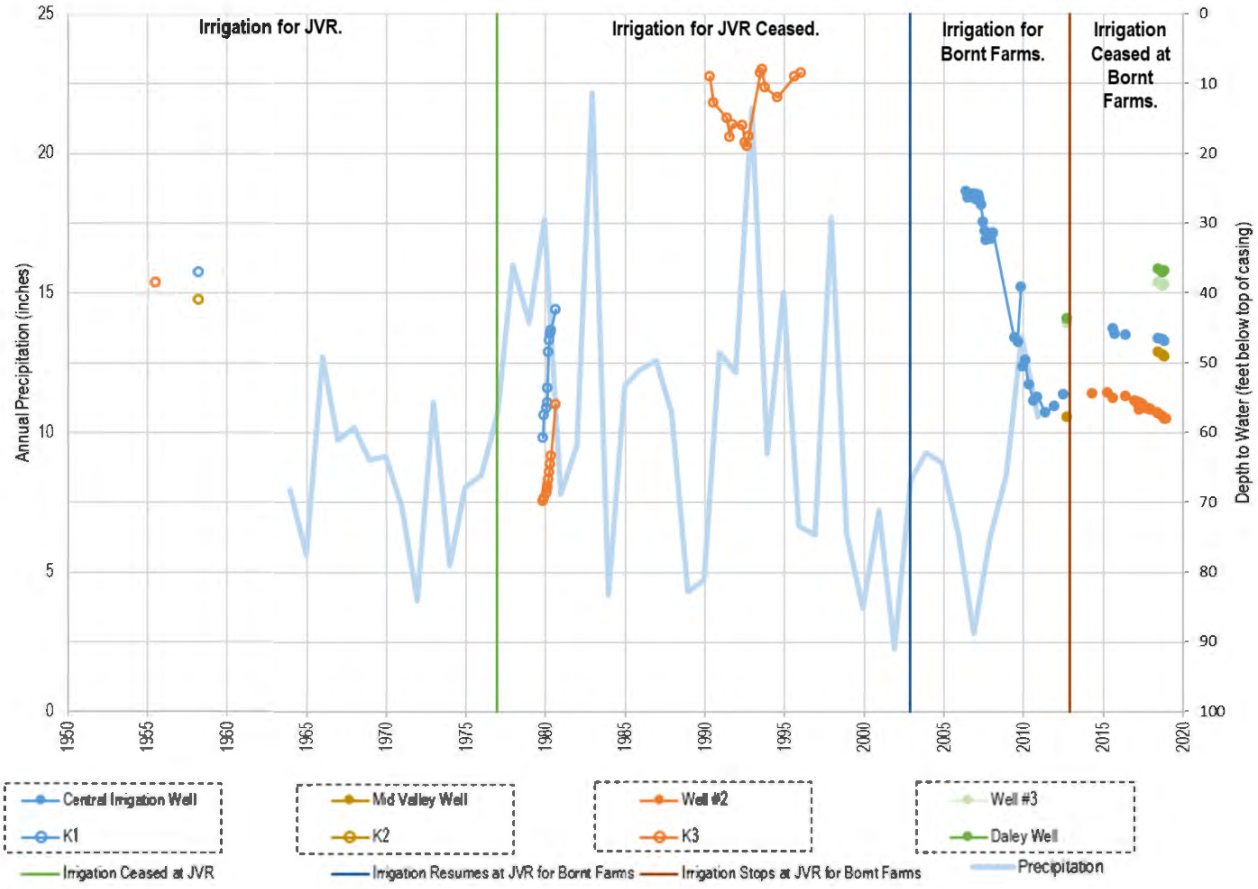
a. Reported pumping capacity provided by JCSD.
b. Alluvial depth based on total depth of Well #4.
c. Pumping rate based on airlifting by driller.
d. Based on field reconnaissance conducted in 2018 by Dudek staff.

Groundwater level data were obtained from JCSD from January 2012 through June 2018 (Devine, pers. comm. 2019; Troutt, pers. comm. 2015). Groundwater level data were also obtained from

Barrett Consulting Group (1996), Peterson (2014), and Swenson (1981). Historical groundwater level data were available for Jacumba Valley as far back as 1955, but a continuous water level record was not available. On-site groundwater levels were recently measured by Dudek in July, October, and December 2018.

Fluctuations in water levels in the Jacumba Valley alluvial aquifer result from both groundwater production and cycles of wet and dry climatic periods. Historical groundwater measurements from wells K1, K2, and K3 were used to represent trends associated with previous land use on the Project site (Exhibit 2). Wells K1, K2, and K3 have the closest geographical relationship to the Central Irrigation Well, Mid Valley Well, and Well #2, respectively.

Exhibit 2
Jacumba Valley Alluvial Aquifer Groundwater Level Data July 1955 to December 2018



Sources: Barrett 1996; Pape 2015; Peterson 2014; Swenson 1981.
Note: Boxes outlined by dashes represent wells in similar geographical locations.

Groundwater levels have fluctuated up to 61 feet in Well K3. When Well K3 was initially drilled in 1955, the groundwater level was 38.5 feet below ground surface (bgs). From 1932 to 1977, Jacumba Valley Ranch extracted on average 2,066 afy from the Jacumba Valley alluvial aquifer (Barrett 1996). Jacumba Valley Ranch pumping, in combination with lower than average precipitation in the late 1960s through the mid-1970s (see declining cumulative departure from mean precipitation in Exhibit 1), resulted in a groundwater level decline in the Jacumba Valley alluvial aquifer (Exhibit 2). Irrigation of agricultural lands ceased on Jacumba Valley Ranch in approximately 1977. In 1979, the groundwater level in Well K3 was 69.9 feet bgs (more than 30 feet lower than initial water level recorded in 1955). By 1990, groundwater levels had risen to near the surface in several Jacumba Valley alluvial aquifer wells (9 feet bgs in Well K3) because of higher recharge rates during a period of above-average precipitation in the late 1970s to mid-1980s (see ascending cumulative departure from mean precipitation in Exhibit 1) and low groundwater extraction during this time period.

Groundwater levels from the Central Irrigation Well declined from 2006 to 2011. This decline coincided with a lower than average rainfall period from 1999 to 2008 and the extraction of approximately 741 afy of groundwater by Bornt Farms. Groundwater levels began to rise after Bornt Farms ceased groundwater extraction in 2013. The current gradual declining trend in groundwater levels, shown in Well #2, can be attributed to lower than average rainfall years and recent extraction from JCSD non-potable wells. The groundwater level in Well #2 is currently 11.9 feet above the historic low groundwater level observed in Well K3, located near Well #2.

2.8 Water Quality

Spring water in the northern area of the Jacumba Valley at Carrizo Gorge had measured total dissolved solids concentrations ranging from 2,000 to 6,000 milligrams per liter. Surface water drainage measured from the Flat Creek watershed and the Boundary Creek watershed have had recorded total dissolved solids concentrations at 292 to 422 milligrams per liter and 1,640 milligrams per liter, respectively (Roff and Franzone 1994). Historically, groundwater included sodium chloride, calcium chloride, and calcium sulfate (Roff and Franzone 1994).

JCSD supplies non-potable water from the Park and Highland Center Wells, and potable water from Well #4. A water quality sample collected from the Highland Center Well in 2016 had a measured total dissolved solids concentration of 400 milligrams per liter. A wide range of constituents, including general minerals, inorganic minerals, and volatile organic compounds, were analyzed. Laboratory results indicated that no volatile organic compounds were detected and that groundwater produced from the Highland Center Well is suitable for construction water supply (Dudek 2016a). The Park Well was initially intended for use as a potable water well; however, low concentrations of volatile organic compounds were detected during drilling. Toluene was detected

at concentrations of 291 micrograms per liter (µg/L), 199 µg/L, and 520 µg/L in water quality samples collected from the Park Well in 2006 (Petra 2006). A subsequent water quality sample was collected from the Park Well on November 5, 2015, by Dudek staff. Results from the sample collected on November 5, 2015, indicated no detections above the reporting limits for all constituents analyzed, including toluene, which was previously detected in the Park Well above the drinking water maximum contaminant level of 150 µg/L. It is possible that the toluene was introduced into the Park Well as a result of drilling or from chemicals (Scothchkote™) used in splicing the submersible cable for installation of the submersible pump and motor when the well was originally tested. Dudek has previously detected toluene in other water wells after the use of Scothchkote (EnviroMatrix Analytical 2015).

Since the Proposed Project would use groundwater for non-potable use, water quality samples were not collected from on-site wells.

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3 WATER QUANTITY IMPACTS ANALYSIS

This section discusses the potential impacts on local groundwater resources in terms of the County Guidelines (County of San Diego 2007).

3.1 50% Reduction of Groundwater Storage

To apply the County methodology for determining a 50% reduction in groundwater storage to a given well, the area of the aquifer that can be accessed by a pumping well must be defined. For this analysis, the 2,061-acre extent and variable thickness of the alluvium underlying the Jacumba Valley as defined by Swenson (1981) was used to perform the 50% reduction in storage analysis.

3.1.1 Guidelines for Determination of Significance

The following requirement is set forth in the County Guidelines (County of San Diego 2007):

> For proposed projects in fractured rock and sedimentary basins, groundwater impacts will be considered significant if a soil moisture balance, or equivalent analysis, conducted using a minimum of 30 years of precipitation data, including drought periods, concludes that at any time groundwater in storage is reduced to a level of 50% or less as a result of groundwater extraction.

A Proposed-Project-specific soil-moisture-based water balance was not performed for the Project site. Instead, an updated estimate of groundwater in storage was made based on previous work conducted by Roff and Fanzone (1994) and Swenson (1981). The estimate evaluated whether the water demands for the Proposed Project would maintain at least 50% groundwater in storage over the 2,061-acre Jacumba Valley alluvial aquifer (mapped by Swenson 1981). Additionally, a one-time Proposed Project extraction of up to 112 acre-feet over a 1-year period was compared to historical groundwater extraction rates from the Jacumba Valley alluvial aquifer.

3.1.2 Methodology

3.1.2.1 Groundwater Recharge

Groundwater recharge was not calculated for the contributing watersheds or the Jacumba Valley alluvial aquifer.

3.1.2.2 Groundwater Demand

Historical Demand

The groundwater demands of the Jacumba Valley alluvial aquifer vary with time. Historically, Jacumba Valley Ranch was the primary user of groundwater from the aquifer. Jacumba Valley Ranch produced water for irrigation of agricultural lands. From 1932 through 1977, Jacumba Valley Ranch extracted on average 2,066 afy of groundwater (Barrett 1996). Irrigation ceased on Jacumba Valley Ranch and the agricultural lands were fallowed from about 1977 until 2002. From 2002 until 2013, Bornt Farms resumed irrigation at Jacumba Valley Ranch. The water demand of Bornt Farms was reported to be in excess of 1 million gallons per day (Pape, pers. comm. 2015). To determine the area of active irrigated agricultural land by year, historical aerial photographs were reviewed. Between 2002 and 2013, 187 to 465 acres of the Jacumba Valley Ranch was irrigated to grow predominantly lettuce and spinach (Google Earth 2015). Assuming a crop irrigation rate of 2.14 acre-feet per acre for lettuce, the maximum annual water demand of the lettuce crop at Bornt Farms would be 995 acre-feet (Barrett 1996; UC Davis 2011). Other estimates state that Bornt Farms extracted 7,413 acre-feet over the farm's lifetime, or an average of 741.3 afy.

Other groundwater users include the Jacumba Valley Ranch Water Company, which has historically extracted in excess of 242 afy (Barrett 1996). Groundwater extraction on the Mexican side of the border has historically been estimated to be 24 afy (Barrett 1996).

Since 1985, JCSD has extracted potable water from up to four groundwater wells within its approximately 423-acre boundary (LAFCO 2013). The water system includes storage of up to 638,000 gallons. As discussed in Section 2.6, Current Groundwater Demand, historical potable water demand has been documented to be between 85 and 146 afy (Barret 1996; Trout, pers. comm. 2015).

As discussed in Section 2.6, JCSD has historically supplied non-potable water for commercial sale from Well #6 (a fractured rock well not screened in the Jacumba Valley alluvium) and the Highland Center Well and Park Well (both screened in the Jacumba Valley alluvium). Non-potable water supply from JCSD varies based on customer demand. Based on meter reads by Dudek staff, from February 2017 to February 2018, JCSD supplied 50.1 acre-feet from the Highland Center Well and 3.5 acre-feet from the Park Well. Maximum annual groundwater extraction from the Jacumba Valley alluvial aquifer by JCSD for non-potable water is 53.6 afy.

Current Demand

Current groundwater demand from the Jacumba Valley alluvial aquifer includes extraction by JCSD, Jacumba Valley Ranch Water Company, and a few potential domestic well owners. The

Project site, which was historically produced an excess of 2,000 afy, no long extracts groundwater for agriculture. The Jacumba Valley Ranch Water Company, which has historically extracted an excess of 242 afy, currently supplies approximately 5 afy for three ranch homes, two gas stations, and two fire hydrants (Barrett 1996; McCullough, pers. comm. 2015).

JCSD continues to extract both potable and non-potable groundwater from the Jacumba Valley alluvial aquifer. As discussed in Section 2.6, JCSD is estimated to produce approximately 119.5 afy of potable water for 239 connections from Well #4, and 4 afy of non-potable water during 2018 from the Highland Center Well and Park Well (Devine, pers. comm. 2019).

There may be small volumes of groundwater (less than 3 afy) extracted from domestic wells located in the residential area in Jacumba Hot Springs.

Groundwater extraction is occurring from the fractured rock aquifer by JCSD, Jacumba Hot Springs Resort, and a few domestic well users on the outskirts of town. Since the Proposed Project is proposing to extract groundwater from the Jacumba Valley alluvial aquifer, groundwater extraction from the fractured rock aquifer was not included in this analysis.

Future Demand

Future demand is expected to include JCSD potable and non-potable demand, Jacumba Valley Ranch Water Company, and private domestic users. Potable groundwater use from JCSD, the Jacumba Valley Ranch Water Company, and private domestic users is expected to be similar to current conditions over the long-term. JCSD has the potential to serve non-potable from the Highland Center and the Park Well.

JCSD completed a manganese water treatment system for Wells #7 and #8 that is serving all potable water demands for its customers (Dudek 2016b). This treatment system came online on March 6, 2020. Wells #7 and #8 source water from the fractured rock aquifer rather than the Jacumba Valley alluvial aquifer.

Table 10 provides historical, current, and future water demand from the Proposed Project, other projects, and Proposed Project O&M. The future projected water demand conservatively evaluates the Proposed Project and other projects taking place concurrently.

Table 10
Jacumba Valley Alluvial Aquifer Groundwater Demand

Land Use	Historical Water Demand (afy)	Current Water Demand (afy)	Future Water Demand During Construction (afy)	Future Ongoing Water Demand for O&M (afy)	Future Maximum Demand During Construction (acre-feet)
Project Site (Jacumba Valley Ranch; Bornt Farms)	2,066; 741–995	0	140	11	140
Jacumba Valley Ranch Water Company	242	5	5	5	5
Private Domestic[a]	3	3	3	3	3
JCSD (Potable)	80–146[b]	119.5	0[c]	0[c]	0
JCSD (Non-Potable)	53.6	4[d]	4 (ongoing)[d] 290 (one-time use)[e]	4 (ongoing)[d] 7.3 (future O&M)	294[e]
Total Estimated Water Demand	**2,212**[f]	**131.5**	**302**	**19.3**	**302**
Total Estimated Water Demand With Project	**2,212**[f]	**131.5**	**442**	**30.3**	**442**

Source: Barrett 1996; Dudek 2015; Troutt, pers. comm. 2015
afy = acre-feet per year; O&M = operations and maintenance; JCSD = Jacumba Community Services District
a. Not all domestic wells are currently active or known; however, a consumptive water demand of 0.5 afy has been assigned to up to six potential domestic wells
b. JCSD Wells #1 and #2 supplied all potable demands for the town of Jacumba Hot Springs until JCSD Wells #3 and #4 were drilled in the early 1970s. As of March 2020 JCSD is no longer pumping water for potable supply form the alluvial aquifer.
c. Future JCSD potable water demand is supplied from Wells #7 and #8, completed in the fractured rock aquifer.
d. Assumes current groundwater demand based on Dudek metered data from 2018.
e. Water demand from all reasonably foreseeable projects includes: 50 acre-feet for Boulder Brush, 76 acre-feet for Torrey Wind, 123 acre-feet for Campo Wind, 37 acre-feet for Rugged Solar and 4 acre-feet for Cameron Solar (all values rounded to the nearest acre-foot). O&M water demand is 7 afy for Torrey Wind, 0.25 afy for Campo Wind and 0.03 afy for Cameron Solar.
f. Assumes maximum concurrent water demand from JCSD potable demand and Jacumba Valley Ranch.

Historically, groundwater demand from the Jacumba Valley alluvial aquifer has been estimated to be up to 2,066 afy (Barrett 1996). A drastic reduction in groundwater production has occurred since agriculture irrigation ceased on Jacumba Valley Ranch. The current groundwater demand from the Jacumba Valley alluvial aquifer is estimated to be 131.5 afy (Table 10). An additional 112 acre-feet would be extracted during Proposed Project construction, resulting in a 1-year extraction of 243.5 acre-feet from the aquifer, assuming other groundwater users continue their current estimated extraction amounts. However, starting in spring 2019, groundwater extraction from the Jacumba Valley alluvial aquifer for JCSD potable use is expected to cease after the completion of a manganese water treatment system for fractured rock Wells #7 and #8. This will result in a reduction of water demand from the Jacumba Valley alluvial aquifer, taking into account water demand for Proposed Project construction. The total water demand from the Jacumba Valley

alluvial aquifer during Proposed Project construction is expected to be 124 acre-feet, which includes the Proposed Project and ongoing use, minus JCSD potable demand.

After Proposed Project construction, ongoing groundwater productions from the alluvial aquifer is estimated to be 30.3 afy, based on 11 afy of Proposed Project water use for O&M, 11.3 acre-feet of continuous non-potable water use by JCSD and 8 afy for private domestic and Jacumba Valley Ranch Water Company (Table 10). Additionally, the Proposed Project would extract groundwater for decommissioning in the future.

JCSD is proposing the use of the Highland Center Well with potential backup supply provided by the Park Well to serve JCSD non-potable water to commercial customers. Based on foreseeable renewable energy projects, JCSD is proposing to extract up to 290 acre-feet of groundwater from the Highland Center and Park Wells for construction of five renewable energy projects. Water demand from all reasonably foreseeable projects includes: 50 acre-feet for Boulder Brush, 76 acre-feet for Torrey Wind, 123 acre-feet for Campo Wind, 37 acre-feet for Rugged Solar and 4 acre-feet for Cameron Solar (all values rounded to the nearest acre-foot). O&M water demand is 7 afy for Torrey Wind, 0.25 afy for Campo Wind and 0.03 afy for Cameron Solar

3.1.2.3 Groundwater in Storage

Groundwater in storage was calculated using estimates of the saturated aquifer thickness underlying the 2,060-acre area of the Jacumba Valley alluvial aquifer, as mapped by Swenson (1981). Aquifer thickness was updated from the Swenson groundwater storage compartments (A through E) with available well completion information. The estimated saturated thickness is based on recent groundwater levels measured in June and December 2018. The updated well completion information used to constrain aquifer thickness is provided in Table 11 and included in Appendix B, Well Completion Information. For compartments with multiple wells and groundwater level measurements, values were averaged to represent a non-uniform saturated aquifer thickness. In all cases, the average saturated thickness used to define groundwater in storage (Table 12) was less than the measured saturated thickness at each well (Table 11). For compartments in which no wells were located, groundwater levels were extrapolated from the nearest well (Table 12). Groundwater storage compartments and their representative wells are depicted in Figure 8. Specific yield was estimated based on historical and recent aquifer test analyses.

Table 11
Well Completion Information for Constraining Alluvial Saturated Thickness

Common Well Name	Source or County of San Diego Well Record Identification	Aquifer Thickness (feet)	Depth to Groundwater/ (feet below ground surface)	Depth to Groundwater Measurement Date	Saturated Thickness (feet)	Swenson Compartment (Swenson 1981)
JVR – Carrizo Creek	Lwell 6933	55	—	—	—	A
Leighton B-12	Leighton 1991a	20	—	—	—	A
Well #3	Lwel 16419	89	35.14	12/11/2018	50.26	C
Well #2	Lwel 1815	113	56.21	12/11/2018	55.27	C
Test Hole	Lwel 20450	100	—	—	—	C
Leighton B-2	Leighton 1991a	25	—	—	—	C
Central Irrigation Well	—	—	44.33	12/11/2018	—	C
Mid-Valley Well	—	—	47.42	12/11/2018	—	C
Well #1	—	124	57.87	12/11/2018	—	D
J2	Swenson 1981	120	—	—		D
Test Hole	Lwel 17922	108	—	—	—	D
Southwest Irrigation	Lwel 18031	86	—	—	—	D
Test Hole	Lwel 20411	150	—	—	—	D
Highland Center Well	Lwel 001506	175	56.98	6/26/2018	118.02	E
Park Well	—	—	59.74	6/26/2018	—	E
J3	Swenson 1981	60	—	—	—	E
J4	Swenson 1981	50	—	—	—	E

— = no information is available

Specific Yield (Storage Coefficient)

Previous estimates of specific yield for the Jacumba Valley alluvial aquifer were made by Swenson (1981) and calculated from aquifer testing performed by Barrett (1996). The specific yield associated with the alluvium was conservatively estimated by Swenson (1981) to be between 5% and 10%. Barrett (1996) estimated specific yield to be 25% based on aquifer testing of Well K4, Test Well No. 1, and Well Km.

Storativity (storage coefficient) was calculated for this report (Section 3.2, Well Interference and Groundwater Dependent Habitat) based on two constant-rate aquifer tests. The storage coefficient from the Well #2 aquifer test, located in compartment D, ranged from 0.008 to 0.028. The storage

coefficient from the Well #3 aquifer test, located in compartment C, was calculated to be 0.2349 (Geosyntec 2012). Since the aquifer tests were conducted in the unconfined aquifer, the calculated storage coefficient is equivalent to the specific yield (Driscoll 1986). Values for the storage coefficient for unconfined aquifers range from 0.01 to 0.30 (Driscoll 1986). The calculated storage coefficients from the Well #2 and Well #3 aquifer tests fall within this range.

Based on recent aquifer test analysis performed on Well #2 and Well #3 within the Jacumba Valley alluvial aquifer, the specific yield ranges from 0.08% to 24%, with a mean value of 12% (Geosyntec 2012). To provide a conservative estimate, a specific yield value of 10% was used for this analysis to calculate groundwater in storage.

Saturated thickness was calculated by subtracting the average alluvial thickness by recent depth to groundwater measurements recorded in 2018. Saturated thickness for each compartment was then multiplied by the compartments acreage and the 10% specific yield value to determine the groundwater in storage by compartment. Based on these calculations, the current groundwater in storage within the Jacumba Valley alluvial aquifer is estimated to be 9,005 acre-feet (Table 12).[3]

In comparison, groundwater in storage was estimated to range from 9,600 to 16,000 acre-feet by Roff and Fanzone (1994), and from 3,200 to 6,400 acre-feet by Swenson (1981). The 2018 groundwater in storage estimate is based on additional information including borings indicating depth to bedrock and site-specific specific yield values that were not available to Swenson (1981) or Roff and Fanzone (1994).

[3] The estimate of 9,005 acre-feet of groundwater in storage in 2018 for the Jacumba Valley alluvial aquifer is an initial estimate based on available data, including well logs, water levels, and aquifer properties estimated by pump testing. The estimated storage in the Jacumba Valley alluvial aquifer may be revised as additional data is acquired.

Table 12
Jacumba Valley Alluvial Aquifer 2018 Groundwater in Storage Estimate

Alluvial Aquifer Compartments*	Area (acres)	Leighton Alluvial Thickness (1991) (feet)	Average Alluvial Thickness (feet)	Depth to Water 2018 (feet below ground surface)	Average Saturated Thickness (feet)	Specific Yield (unitless)	Storage (acre-feet)
A	240.94	50+	37.5	35.14	2.36	0.10	56.86
B	104.70	50+	50	35.14	14.86	0.10	155.58
C	439.40	120+	81.75	43.5	38.25	0.10	1,680.71
D	1,082.73	100+	117	57.87	59.13	0.10	6,402.18
E	193.61	80+	95.0	58.36	36.64	0.10	709.39
Total Groundwater in Storage (rounded acre-feet)							**9,005**

* **Compartment Details:**

A Aquifer thickness estimated from an average alluvial thickness observed in well log Lwel 6933 and B-12 (Leighton 1991a). Depth to water extrapolated from Well #3 (Lwel 16419)

B Aquifer thickness defined by Leighton 1991a. Depth to water extrapolated from Well #3 (Lwel 16419)

C Aquifer thickness estimated from Well #3 (Lwel 16419), Well #2 (Lwel 1814), Test Hole (L well 20450), and Leighton B-7 (Leighton 1991a). Depth to water averaged from Well #3 (Lwel 16419) and Well #2 (Lwel 1814).

D Aquifer thickness estimated from Well J2 (Swenson 1981), Test Holes (Lwell 17922 and 201411), and the Southwest Irrigation Well (Lwell 18031). Depth to water estimated from Well #1.

E Aquifer thickness estimated from the Highland Center Well (Lwell 001506), and Wells J3 and J4 (Swenson 1981). Depth to water estimated from an average of the Highland Center Well (Lwell 001506) and the Park Well.

3.1.2.4 Long-Term Groundwater Availability (Sustainability)

Long-term groundwater availability was evaluated in context of the current available groundwater in storage, historical groundwater levels, and water demand. The volume of groundwater in storage varies depending on the rate of recharge and the volume of water pumped from storage (water demand). Sustainable groundwater availability is less than the historical average groundwater production rate of 2,066 afy from 1932 to 1977. This is observed during dry periods when the Jacumba Valley experienced groundwater overdraft, as indicated by declining groundwater levels in the alluvial aquifer wells (Exhibit 2). Pumping by Jacumba Valley Ranch between 2003 and 2013 also resulted in groundwater level declines in the alluvial aquifer. Bornt Farms grew lettuce and spinach on up to 465 acres, year-round, with an estimated maximum extraction rate of 995 acre-feet per year (Barrett 1996; UC Davis 2011). Due to Bornt Farms irrigation and below-average precipitation recorded in the contributing watersheds over the last decade, the water demands exceeded available recharge, resulting in groundwater level decline (Exhibit 2). Several years of drought and limited non-potable extraction by JCSD likely contributed to the current groundwater level decline.

The Proposed Project proposes to extract groundwater for 1 year at a maximum quantity of 140 acre-feet. This one time use of groundwater for construction is approximately 10% of the annual production quantity of Bornt Farms, and 5% of the annual production quantity of Jacumba Valley Ranch. After Proposed Project construction, groundwater extraction for O&M would be 0.9% of the annual production quantity of Bornt Farms and 0.5% of the annual production quantity of Jacumba Valley Ranch for the maximum groundwater historically extracted from the Project site. Groundwater extraction for decommissioning and dismantling would be 5% of the annual production quantity of Bornt Farms and 2% of the annual production quantity of Jacumba Valley Ranch for the maximum groundwater historically extracted from the Project site.

The Proposed Project proposes to use 140 acre-feet during construction for 1 year. Assuming no recharge to the aquifer, the Proposed Project alone would reduce groundwater in storage by 1.6% during construction. The estimated maximum extraction from all known sources during the period of Proposed Project construction is 442 acre-feet. Total reduction of groundwater in storage from all sources during the construction period is estimated to be 4.9%. Assuming a Proposed Project lifetime of 40 years (1 year of construction, 38 years of O&M, and 1 year of decommissioning), the Proposed Project would use 619 acre-feet of water. Other groundwater uses within the basin including reasonably foreseeable projects would use 1,054 acre-feet of water. This equates to a total water demand of 1,673 acre-feet, which results in a 18.6% reduction in storage over 40 years, assuming no recharge to the aquifer.

3.1.3 Significance of Impacts Prior to Mitigation

The total estimated water use for the Proposed Project, other uses, and reasonably foreseeable projects is estimated at 1,673 acre-feet over 40 years, which results in an 18.6% reduction in storage. This demonstrates that groundwater would not be depleted to 50% or less of the estimated basin storage capacity of 9,005 acre-feet.

3.1.4 Mitigation Measures and Design Considerations

Since impacts are considered less than significant, no mitigation is required.

3.1.5 Conclusions

The Proposed Project would have a less-than-significant impact to groundwater in storage, as defined by the County Guidelines (County of San Diego 2007). Proposed Project groundwater extraction, and other groundwater use, including reasonably foreseeable projects for the life of the Proposed Project, assuming a 40-year lifespan would equate to an 18.6% reduction in groundwater storage. This is less than the County's significance criteria of 50%.

3.2 Well Interference and Groundwater Dependent Habitat

3.2.1 Guidelines for Determination of Significance

3.2.1.1 Well Interference

The following significant impact requirements are set forth in the County Guidelines (County of San Diego 2007):

> *Alluvial Well:* As an initial screening tool, off-site well interference will be considered a significant impact if after a five year projection of drawdown, the results indicate a decrease in water level of 5 feet or more in the off-site wells. If site-specific data indicates alluvium or sedimentary rocks exist which substantiate a saturated thickness greater than 100 feet in off-site wells, a decrease in saturated thickness of 5% or more in the off-site wells would be considered a significant impact.

According to the County Groundwater Geologist, the primary author of the County of San Diego Guidelines, the intent of the above guideline was to cover projects that have continual ongoing water uses that remain static over time (Bennett, pers. comm. 2015). Historically, this has been the case for the majority of groundwater-dependent projects processed by the County. The Proposed Project, however, proposes to use variable quantities of water, with intensive pumping over short periods. The intensive pumping during short periods may cause direct well interference impacts. Therefore, to evaluate potential impacts from short-term pumping of groundwater, the County

Groundwater Geologist has requested a short-term drawdown analysis, in addition to the 5-year projection of drawdown, to evaluate the potential impacts from operating at the highest rate of pumping (Bennett, pers. comm. 2015).

Potential well interference impacts for Well #2 and Well #3 were evaluated over a 0.5-mile radius from each well (Figure 9, On-Site and Off-Site Wells). Table 13 lists known off-site active wells screened in the Jacumba Valley alluvial aquifer that are within a 0.5-mile radius of the on-site Proposed Project production wells.

Table 13
Alluvial Aquifer Wells Within 0.5-Mile Radius of On-Site Proposed Project Wells

Well Name	Use	Distance from Well #2	Distance from Well #3
		Feet	
Jacumba Valley Ranch Water Company			
Well Km	Public/Potable	2,453	**3,548**
Jacumba Community Services District Wells			
Highland Center Well	Public/Non-Potable	1,817	**4,835**
Park Well	Public/Non-Potable	2,256	**5,025**
Other			
Border Patrol Well	Private/Inactive	1,892	**6,235**

Note: Bold = Well is located at a distance greater than 0.5 miles (>2,640 feet).

3.2.1.2 Groundwater-Dependent Habitat

Guideline 4.2.C from the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Biological Resources defines the following threshold for determining a significant impact to riparian habitat or a sensitive natural community (County of San Diego 2010a):

> The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of 3 feet or more from historical low groundwater levels.[4]

A biological field survey, including vegetation mapping, was conducted on the Project site by Dudek biologist in 2018 (Dudek 2020b). The biological survey presents the most current and site-specific vegetation on the Project site and was used to identify potential groundwater-dependent habitat for the distance drawdown calculations. Vegetation and potential groundwater-dependent

[4] Historical groundwater level hydrographs compiled by the Jacumba Community Sponsor Group –Town Center Well Hydrographs from 1990 to 2008 indicate up to 20 feet of water level decline in one well during this period of measurement (Figure 2-58 in County of San Diego 2010b). Historical groundwater level monitoring for JCSD Well #4 from 1990 to 2008 indicates up to 20 feet of water level decline during the period of measurement.

habitats present on the Project site are depicted in Figure 10, Potential Groundwater-Dependent Habitat. The survey identified two types of groundwater-dependent habitat, desert sink scrub and mesquite bosque.

The dominant species of the desert sink scrub are succulent chenopods, which occurs on fine-textured, poorly drained soils with high alkalinity or salt content. Characteristic species include iodine bush (*Allenrolfea occidentalis*), fourwing saltbush (*Atriplex canescens*), and salt heliotrope (*Heliotropium curassavicum*) (Oberbauer et al. 2008).

The dominant species of the mesquite bosque are mesquite (*Prosopis glandulosa*) with additional characteristic species including carelessweed (*Amaranthus palmeri*), white bursage, fourwing saltbush, and allscale (Oberbauer et al. 2008). Mesquite bosque commonly occur on higher alluvial terraces and near washes, streambanks, alkali sinks, or outwash plains with substantial groundwater (Dudek 2020b).

The Natural Communities Commonly Associated with Groundwater (DWR 2018) and SanGIS (SanGIS 2018) vegetation dataset were also reviewed to verify potential groundwater- dependent habitat.

3.2.2 Aquifer Testing

The following subsections describe the procedures followed during aquifer testing at Well #2 and Well #3, and the analysis of aquifer test data.

3.2.2.1 Aquifer Test Description

A 24-hour constant rate test was performed at Well #2 by Dudek on December 14, 2018, at an average pumping rate of 317 gpm. A 72-hour constant rate test was performed at Well #3 by Geosyntec on November 6, 2012, at an average pumping rate of 350 gpm (Geosyntec 2012). The purpose of the constant rate tests were to obtain approximate long-term production rates, estimate drawdown at off-site wells and groundwater-dependent habitat, and estimate aquifer properties.

3.2.2.2 Aquifer Test Analysis

Aquifer Test Analysis Methodology

Hydraulic aquifer properties (transmissivity and storativity) were estimated using the computer program Aquifer Test Solver Pro, Version 4.50 (AQTESOLV). Projected drawdown was roughly estimated using drawdown data on a log-log plot. Distance drawdown was estimated at select distances from each pumping well using the Theis non-equilibrium well equation (Theis equation).

Aquifer Properties (Transmissivity and Storativity)

Aquifer transmissivity is the rate at which water flows through a vertical strip of the aquifer 1 foot wide and extending through the fully saturated thickness under a hydraulic gradient of 1, or 100%.

The aquifer coefficient of storage (also called storativity) is the volume of water released from storage per unit decline in hydraulic head in the aquifer per unit area of the aquifer. Due to well loses and inefficiency of the pumping well, an observation well is required to calculate the coefficient of storage.

Transmissivity and storativity were calculated in AQTESOLV by fitting the Cooper-Jacob (Cooper and Jacob 1953), Theis, and Neuman methods to drawdown and recovery data, where applicable.

Projected Drawdown

Groundwater drawdown was projected using the pumping rate for each aquifer test on a log-log plot. The late time trend of the drawdown curve was projected to 90 days, 1 year (365 days), and 5 years (1,825 days).

Distance Drawdown

Groundwater drawdown after 90 days, 1 year, and 5 years was estimated at the nearest off-site wells and groundwater-dependent habitat using the Theis equation (Driscoll 1986):

$$s = \frac{114.6\,Q\,W(u)}{T}$$

Where:

s = predicted drawdown (feet)
Q = pumping rate (gpm)
T = transmissivity (gallons per day per foot)
t = time (days)
W(u) = the well function of u

For the W(u) function, u is equal to:

$$u = \frac{1.87 r^2 S}{Tt}$$

r = distance from pumping well (feet)
S = coefficient of storage (dimensionless)

The W(u) function, known as the Theis well function, is equal to:

$$W(u) = -0.5772 - ln\,u + u - \frac{u^2}{2 \cdot 2!} + \frac{u^3}{3 \cdot 3!} - \frac{u^4}{4 \cdot 4!} + \cdots$$

The groundwater extraction rate used to predict drawdown was adjusted to equal the Proposed Project demand for 90 days, 1 year, and 5 years.

3.2.2.3 Aquifer Test Results

Well #2 Aquifer Test

Aquifer Properties

After 24 hours of continuous groundwater extraction, the observed groundwater level drawdown was 3.1 feet in Well #2 (pumping well) and approximately 0.5 feet in Well #1 (observation well, located 305 feet away). Drawdown in Wells #2 and #1 are shown in Figures 11 and 12, respectively.

The transmissivity values obtained from the Theis and Neuman equations using AQTESOLV were 36,290 square feet per day (ft^2/day) and 26,410 ft^2/day in Well #1, and 33,050 ft^2/day and 28,310 ft^2/day in Well #2. These values were obtained using an aquifer saturated thickness (b) equivalent to 40 feet (the saturated thickness of the screened interval of Well #2). The hydraulic conductivity values calculated by dividing transmissivity by aquifer thickness (K=T/b) ranged from 660 feet per day to 907 feet per day. The storativity values estimated using data collected in Well #1 ranged from 0.028 using Theis and 0.00826 using Neuman. Table 14 shows the range of aquifer parameters and residual statistics obtained from the AQTESOLV curve matching of drawdown and recovery data from Wells #1 and #2. AQTESOLV results from the Well #2 aquifer test are presented in Appendix C, Well #2 Aquifer Test AQTESOLV Data.

Table 14
Well #2 Aquifer Test – AQTESOLV Estimated Aquifer Hydraulic Properties

Solution Method	Estimated Aquifer Hydraulic Properties Estimates			Residual Statistics
	Transmissivity (square feet per day)	*Hydraulic Conductivity (feet per day)*	*Storativity (dimensionless)*	*Sum of Squares (square feet)*
Well #1 (Observation)				
Theis	36,290	907	0.02876	3.952
Neuman	26,410	660	0.00826	0.3775
Well #2 (Pumping)				
Theis	33,050	826	—	11.52
Neuman	28,310	708	—	14.1

Note: Storativity calculated from the observation well (Well #1).

Aquifer properties estimated by using the Neuman method provided the best fit to the observation well data (see Appendix C). The transmissivity and storativity values estimated by fitting the Neuman method to Well #1 (observation well) drawdown data in AQTESOLV are 26,410 ft^2/day and 0.00826, respectively. These aquifer hydraulic properties were used in the Well #2 (pumping well) distance drawdown calculation using the Theis equation.

Projected Drawdown

Projected drawdown was estimated in Wells #2 and #1 after 90 days, 1 year, and 5 years. At a constant pumping rate of 317 gpm, projected drawdown in Well #2 after 90 days, 1 year, and 5 years is 3.6 feet, 3.8 feet, and 4.0 feet, respectively (see Figure 13). Projected drawdown in Well #1 (located 305 feet away from the pumping well) at 90 days, 1 year, and 5 years is 1.49 feet, 1.81 feet, and 2.17 feet, respectively (see Figure 14).

Distance Drawdown

Distance drawdown calculations were performed at select distances from Well #2 to evaluate impacts to off-site well users and groundwater-dependent habitat after 90 days, 1 year, and 5 years of continuous groundwater extraction. The Proposed Project construction groundwater demand was analyzed over 90 days, 1 year, and 5 years. The adjusted extraction rates for distance drawdown after 90 days, 1 year, and 5 years were 352 gpm, 87 gpm, and 17 gpm (rounded), respectively. Transmissivity and storativity values used were from the Well #1 (observation well) AQTESOLV analysis (26,410 ft^2/day and 0.00826, respectively).

The closest off-site well to Well #2 is the Highland Center Well located approximately 1,817 feet to the west (Figure 9, On-Site and Off-Site Wells). Projected drawdown at the Highland Center Well after 90 days, 1 year, and 5 years is predicted to be 1.08 feet, 0.34 feet, and 0.08 feet, respectively. The closest groundwater-dependent habitat to Well #2 is mesquite bosque located approximately 1,820 feet south near the international border with Mexico (Figure 10). Projected drawdown at the nearest groundwater-dependent habitat after 90 days, 1 year, and 5 years is predicted to be 1.08 feet, 0.34 feet, and 0.08 feet, respectively. Table 15 summarizes projected drawdown at select distances from Well #2.

Table 15
Well #2 Distance Drawdown Calculations

Nearest Off-Site Well or Groundwater-Dependent Habitat	Distance from Pumping Well #2 (feet)	Drawdown After 90 Days in Feet at a Constant Pumping Rate of 352 gpm	u	Drawdown After 1 Year in Feet at a Constant Pumping Rate of 87 gpm	u	Drawdown After 5 Years in Feet at a Constant Pumping Rate of 17 gpm	u
Highland Center Well	1,817	1.08	0.0029	0.34	0.0007	0.08	0.0001
Mesquite Bosque	1,820	1.08	0.0029	0.34	0.0007	0.08	0.0001
Park Well	2,256	0.99	0.0044	0.31	0.0011	0.08	0.0002
Well KM	2,453	0.96	0.0052	0.31	0.0013	0.08	0.0003

gpm = gallons per minute; u = a ratio of distance and storativity over transmissivity and time. See Section 3.2.2.2, Aquifer Test Analysis, for equation.

Wells #1 and #2 recovery data were evaluated using the plot of residual drawdown versus time since pumping started divided by time since pumping stopped (t/t') to assess impacts to storage from pumping. At t/t' equals to 1 (infinite time), a residual drawdown would indicate permanent dewatering or incomplete dewatering due to limited extent of the aquifer. The projected residual drawdown at infinite time for Wells #1 and #2 is 0.02 and 0.01 feet, respectively (Figures 15 and 16). This negligible residual drawdown indicates no permanent dewatering or limited extent of aquifer.

Well #3 Aquifer Test

Aquifer Properties

Aquifer properties from the Well #3 aquifer test were calculated by Geosyntec (2012). After 72 hours of continuous groundwater extraction, groundwater level drawdown was 7.3 feet in Well #3 (pumping well) and approximately 4.07 feet in the Daley Well (observation well, located 60 feet away). Drawdown in Well #3 and the Daley Well are shown in Figures 17 and 18. Aquifer properties were estimated using AQTESOLV with drawdown and recovery data recorded in Well #3 and the Daley Well (see Appendix D, Well #3 Aquifer Test Report). The transmissivity value estimated by fitting the Cooper-Jacob method (Cooper and Jacob 1953) to drawdown data recorded in the Daley Well was 8,779 ft^2/day (65,821 gallons per day per foot). The transmissivity value estimated by fitting the Theis method to recovery data recorded in Well #3 was 12,950 ft^2/day (96,872 gallons per day per foot). These values were obtained using an aquifer saturated thickness equivalent to 58 feet (the saturated thickness of the screened interval of Well #3), and equate to hydraulic conductivity values ranging from 151 feet per day to 223 feet per day. The storativity value estimated using data collected in the Daley Well was 0.2349 (Geosyntec 2012).

Projected Drawdown

Projected drawdown was estimated in Well #3 and the Daley Well after 90 days, 1 year, and 5 years of constantly pumping Well #3 at 350 gpm. The projected drawdown in Well #3 after 90 days, 1 year, and 5 years is 11.1 feet, 12.7 feet, and 14.5 feet, respectively (Figure 19). Projected drawdown in the Daley Well after 90 days, 1 year, and 5 years of pumping is 8.0 feet, 9.5 feet, and 11.4 feet, respectively (Figure 19) (Appendix D).

Distance Drawdown

Distance drawdown calculations were performed at select distances from Well #3 to evaluate impacts to off-site well users and groundwater-dependent habitat after 90 days, 1 year, and 5 years of continuous groundwater extraction. The Proposed Project construction groundwater demand was analyzed over 90 days, 1 year, and 5 years. The adjusted extraction rates for distance drawdown after 90 days, 1 year, and 5 years were 352 gpm, 87 gpm, and 17 gpm (rounded), respectively. The transmissivity and storativity values used were 8,779 ft^2/day and 0.2349, respectively (Appendix D).

The closest off-site well to Well #3 is Well KM, owned by the Jacumba Valley Ranch Water Company, located greater than 0.5 miles (3,548 feet) to the southwest (Figure 9). Projected drawdown at Well KM after 90 days, 1 year, and 5 years is predicted to be 0.15 feet, 0.17 feet, and 0.08 feet, respectively.

The closest groundwater-dependent habitat to Well #3 is mesquite bosque located 140 feet to the west (Figure 10). Projected drawdown at the nearest groundwater-dependent habitat as a result of pumping Well #3 after 90 days, 1 year, and 5 years is predicted to be 3.66 feet, 1.11 feet, and 0.27 feet, respectively. Table 16 summarizes projected drawdown at select distances from Well #3.

Table 16
Well #3 Distance Drawdown Calculations

Nearest Off-Site Well or Groundwater-Dependent Habitat	Distance from Pumping Well #2 (feet)	Drawdown After 90 Days in Feet at a Constant Pumping Rate of 352 gpm	u	Drawdown After 1 Year in Feet at a Constant Pumping Rate of 87 gpm	u	Drawdown After 5 Years in Feet at a Constant Pumping Rate of 17 gpm	u
Mesquite Basque	140	3.66	0.0015	1.11	0.0004	0.27	0.0001
Off-Site Groundwater Production Wells Greater than 0.5 Miles from Well #3							
Well KM	3,548	0.15	0.9356	0.17	0.9356	0.08	0.9356

Table 16
Well #3 Distance Drawdown Calculations

Nearest Off-Site Well or Groundwater-Dependent Habitat	Distance from Pumping Well #2 (feet)	Drawdown After 90 Days in Feet at a Constant Pumping Rate of 352 gpm	u	Drawdown After 1 Year in Feet at a Constant Pumping Rate of 87 gpm	u	Drawdown After 5 Years in Feet at a Constant Pumping Rate of 17 gpm	u
Highland Center Well	4,835	0.04	1.7374	0.10	1.7374	0.06	1.7374
Park Well	5,025	0.04	1.8766	0.09	1.8766	0.06	1.8766

gpm = gallons per minute; u = a ratio of distance and storavitivty over transmissivity and time. See Section 3.2.2.2 for equation.

Daley Well and Well #3 recovery data were evaluated using the plot of residual drawdown versus time since pumping started divided by time since pumping stopped (t/t') to assess impacts to storage from pumping. The projected residual drawdown at infinite time for the Daley Well and Well #3 is 0.5 feet (Figures 20 and 21). This residual drawdown is less than the County's standard (County of San Diego 2007) of more than 0.5 feet of residual drawdown that would indicate permeant dewatering or limited aquifer extent.

3.2.3 Significance of Impacts Prior to Mitigation

A pumping rate of 317 gpm from the Well #2 aquifer test and of 350 gpm from the Well #3 aquifer test were used to predict Proposed Project drawdown using each well's maximum pumping rate. These pumping rates equate to maximum annual production of approximately 511 afy from Well #2 and 564 afy from Well #3. The maximum annual production rates calculated for Well #2 and Well #3 are significantly greater than the Proposed Project water demand of 140 acre-feet of water during Proposed Project construction (1 year), 11 afy for ongoing O&M (approximately 38 years), and 50 acre-feet for decommissioning and dismantling (1 year).

To assess the potential for Proposed Project groundwater extraction to draw down the groundwater table to the detriment of nearby groundwater-dependent habitat, or to cause well interference, projected drawdown within a 0.5-mile radius of Wells #2 and #3 was estimated using the Theis equation. Periods of 90 days, 1 year, and 5 years were used to calculate the potential long-term impacts to nearby groundwater-dependent habitats and domestic and public pumping wells. Pumping rates for each well were adjusted to reach total Proposed Project construction demand at the end of 90 days, 1 year, and 5 years.

Based on the drawdown calculations performed, drawdown at the closest off-site groundwater well to Well #2, the Highland Center Well, after 90 days, 1 year, and 5 years of pumping is predicted

to be 1.08 feet, 0.34 feet, and 0.08 feet, respectively. Drawdown at the nearest groundwater-dependent habitat to Well #2 (located approximately 1,820 feet south) after 90 days, 1 year, and 5 years of pumping is predicted to be 1.08 feet, 0.34 feet, and 0.08 feet, respectively.

No groundwater wells are located within a 0.5-mile radius of Well #3. The nearest off-site production well is Well Km, located 3,548 feet (greater than 0.5 miles) southwest of Well #3. The projected drawdown at Well Km from Well #3 pumping after 90 days, 1 year, and 5 years is predicted to be 0.15 feet, 0.17 feet, and 0.08 feet, respectively. Drawdown at the nearest groundwater-dependent habitat to Well #3 (located approximately 140 feet west) after 90 days, 1 year, and 5 years of pumping is predicted to be 3.66 feet, 1.11 feet, and 0.27 feet, respectively.

Current groundwater levels near Well #2 and Well #3 are at least 12 feet higher than the historical low groundwater level recorded in the Jacumba Valley alluvial aquifer (Exhibit 2, Well K3). Well #2 and #3 pumping is not expected to draw down the groundwater table greater than 3 feet from the historical low.

Based on the Theis methods, the effects of Proposed Project pumping on nearby groundwater-dependent vegetation and off-site domestic and public pumping wells is anticipated to be less-than-significant. Proposed Project pumping is not anticipated to adversely impact nearby groundwater-dependent vegetation or cause well interference. Additionally, the analysis performed is a conservative approach, since it likely overestimated predicted drawdown. This is because the calculations assumed no rainfall recharge to occur over the time periods tested. Recharge will offset groundwater-level decline related to groundwater extraction during periods of above-average annual rainfall (non-drought conditions).

3.2.4 Mitigation Measures and Design Considerations

Actual conditions during groundwater extraction for the Proposed Project may vary from the above analysis, so a Groundwater Monitoring and Mitigation Plan (GMMP) has been prepared to ensure that pumping does not significantly impact existing well users and groundwater dependent habitat. The GMMP provides for monitoring the duration and rate of Proposed Project pumping to document the total volume of groundwater extracted. The GMMP also provides for monitoring groundwater levels from Proposed Project pumping and monitoring wells.

3.2.5 Conclusions

The analysis above indicates that the potential for Proposed Project groundwater extraction from Wells #2 and #3 to impact off-site wells or nearby groundwater-dependent habitat is anticipated to be less-than-significant. For safe measure, groundwater-level monitoring would be performed in several wells to record groundwater levels during groundwater extraction. A GMMP detailing groundwater

thresholds for off-site well interference and groundwater-dependent habitat has been prepared. Annual review of groundwater-level data would be conducted by a Professional Geologist or Certified Hydrogeologist registered in the State of California to evaluate long-term impacts.

4 WATER QUALITY IMPACT ANALYSIS

The Proposed Project does not propose to use groundwater as a potable water source; therefore, no water quality impact analysis was conducted.

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5 SUMMARY OF PROJECT IMPACTS AND MITIGATION

5.1 50% Reduction in Groundwater Storage

As discussed in Section 3.1, 50% Reduction of Groundwater Storage, a Proposed-Project-specific soil-moisture-based water balance was not performed for the Project site. Instead, a 1-year Proposed Project construction groundwater extraction volume of 140 acre-feet was compared to historical, ongoing, and future estimated groundwater extraction rates from the Jacumba Valley alluvial aquifer and updated estimates of groundwater in storage originally made by Roff and Franzone (1994) and Swenson (1981). The analysis evaluated whether the water demands for Proposed Project construction, ongoing groundwater extraction, and maximum non-potable extraction by JCSD maintain at least 50% groundwater in storage over the 2,060-acre Jacumba Valley alluvial aquifer. The analysis evaluated groundwater extraction of 140 acre-feet for Proposed Project construction, 8 afy for ongoing domestic and Jacumba Valley Ranch Water Company use, 4 acre-feet for ongoing JCSD non-potable supply and 290 acre-feet for one-time construction supply of reasonably foreseeable renewable energy projects. The total water demand of 442 acre-feet for these projects is 4.9% of the current estimated groundwater storage of the Jacumba Valley Alluvial aquifer. The analysis concluded that groundwater extraction for the Proposed Project and for ongoing and future water demands would maintain at least 50% groundwater in storage.

Total groundwater extraction over the assumed lifetime of the Proposed Project was also analyzed along with groundwater extraction from other users and reasonably foreseeable projects. The total estimated groundwater extraction for the 40-year lifetime (1,673 acre-feet) of the Proposed Project is 18.6% of the current groundwater in storage. Since the Proposed Project would not exceed the 50% reduction in groundwater storage threshold, and other cumulative groundwater demands would be met, groundwater impacts to storage would be less than significant.

5.2 Well Interference

As presented in Section 3.2.2.2, Aquifer Test Analysis, based on the Theis equation, drawdown at the closest off-site groundwater well to Well #2, the Highland Center Well, after 90 days, 1 year, and 5 years of pumping is predicted to be 1.08 feet, 0.34 feet, and 0.08 feet, respectively (Table 15). No groundwater wells are located within a 0.5-mile radius of Well #3. These results indicate that drawdown is not predicted to exceed the County well interference threshold of significance of a decrease in water level of 5 feet or more in off-site alluvial wells (County of San Diego 2007).

5.3 Groundwater-Dependent Habitat

As presented in Section 3.2.1.2, Groundwater-Dependent Habitat, Mesquite Bosque located approximately 1,820 feet south of Well #2 is potentially groundwater-dependent habitat. Based on the Theis equation, drawdown at the closest groundwater-dependent habitat to Well #2 after 90 days, 1 year, and 5 years is predicted to be 1.08 feet, 0.34 feet, and 0.08 feet, respectively (Table 15).

Mesquite Basque located approximately 410 feet west of Well #3 is potentially groundwater-dependent habitat. Based on the distance drawdown calculations, drawdown at the closest groundwater-dependent habitat to Well #3 after 90 days, 1 year, and 5 years of pumping is predicted to be 3.66 feet, 1.11 feet, and 0.27 feet, respectively. Current groundwater levels in Well #3 are at least 12 feet higher than the historical low groundwater level recorded in the Jacumba Valley alluvial aquifer (Exhibit 2, Well K3). Therefore, the Proposed Project is unlikely to draw down the groundwater table to the detriment of groundwater-dependent habitat, and impacts are anticipated to be less than significant.

5.4 Mitigation Measures

Proposed Project production wells, Well #2 and Well #3, should be fitted with totalizing flow meters to record production during each phase of the Proposed Project. Groundwater wells should also have access for taking groundwater-level measurements. Monitoring would be in place during groundwater production for Well #2 and Well #3 to monitor impacts to groundwater storage, well interference, and groundwater-dependent habitat. A GMMP has been prepared that details groundwater thresholds for off-site well interference and groundwater-dependent habitat.

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7 LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

This report was prepared by Dudek Hydrogeologist Trey Driscoll, PG, CHG, who is a County of San Diego–approved hydrogeologist. Dudek hydrogeologist Hugh McManus conducted fieldwork, report preparation, graphics, and GIS mapping. Dudek hydrogeologist Devin Pritchard-Peterson performed aquifer test data analysis and preparation of associated graphics, and composed sections of this report. Peer review was provided by Kayvan Ilkhanipour, PG, CHG. This report was prepared in coordination with County Groundwater Geologist Jim Bennett with meteorological input from Rand Allan from the San Diego County Flood Control. Billy Devine, General Manger, Jacumba Community Services District, assisted with background information and data for this report.

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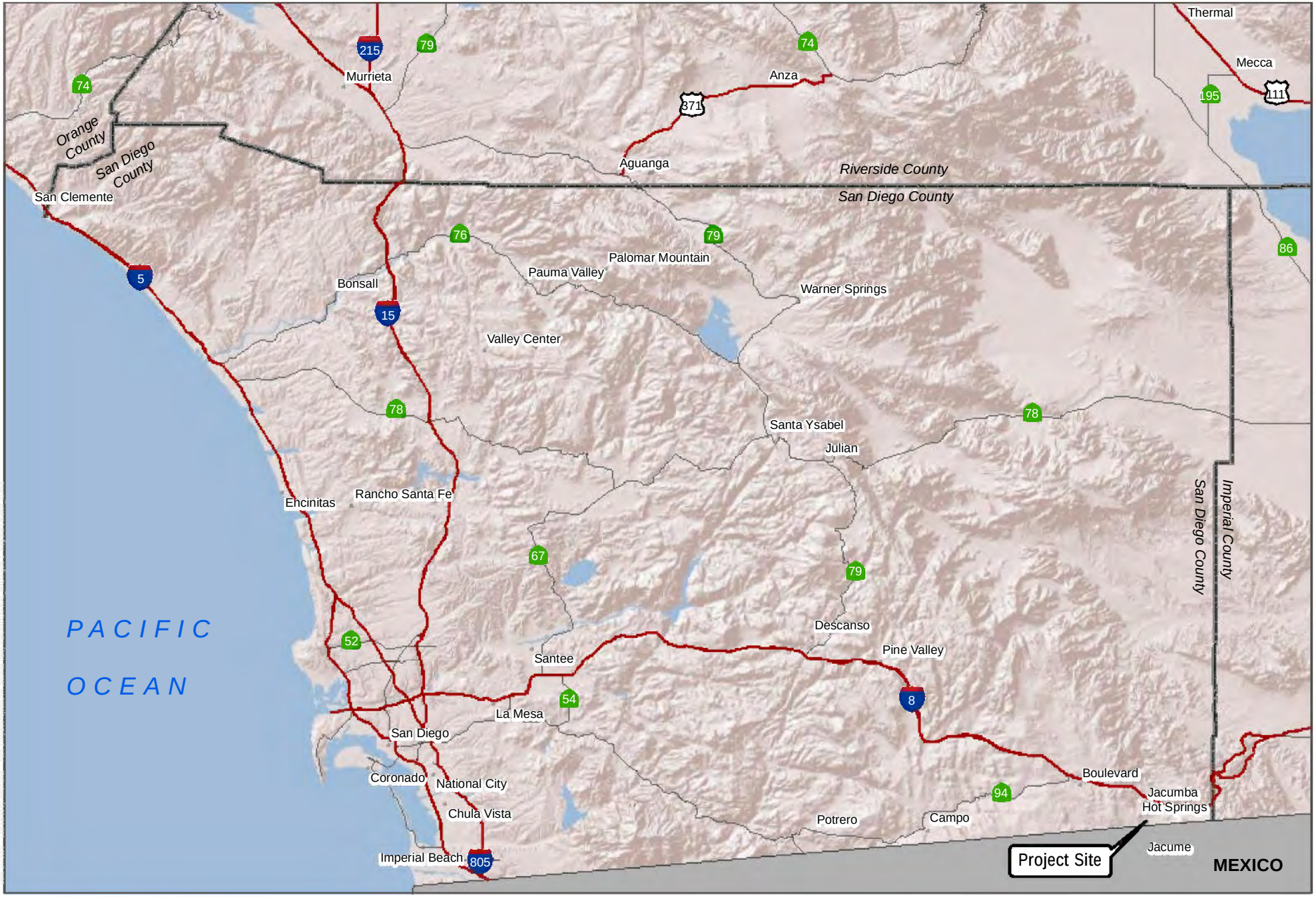

SOURCE: ESRI

DUDEK

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FIGURE 1

Regional Location

Groundwater Resources Investigation - JVR Energy Project

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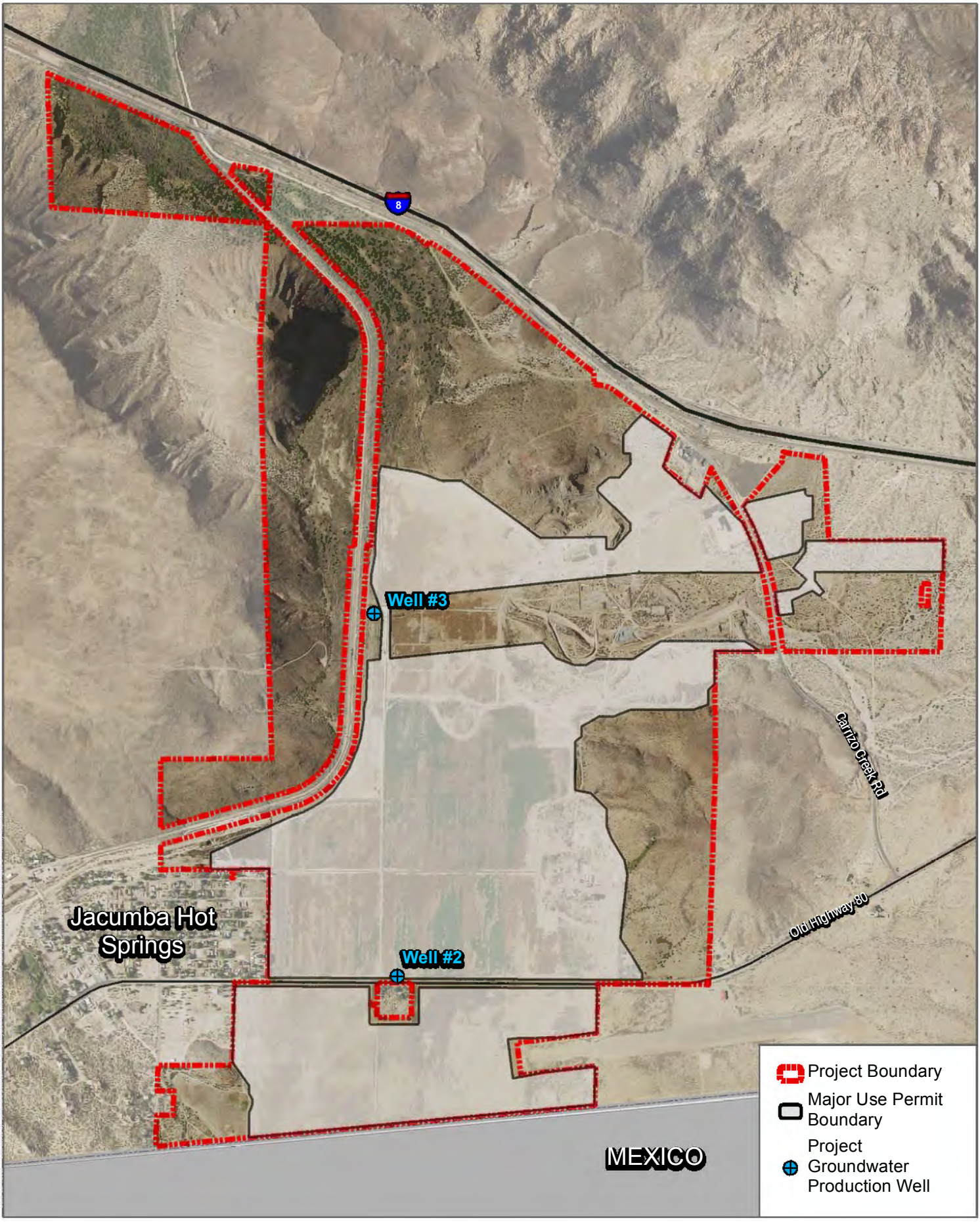

SOURCE: SANDAG; SanGIS

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FIGURE 2

Vicinity Map

Groundwater Resources Investigation - JVR Energy Park

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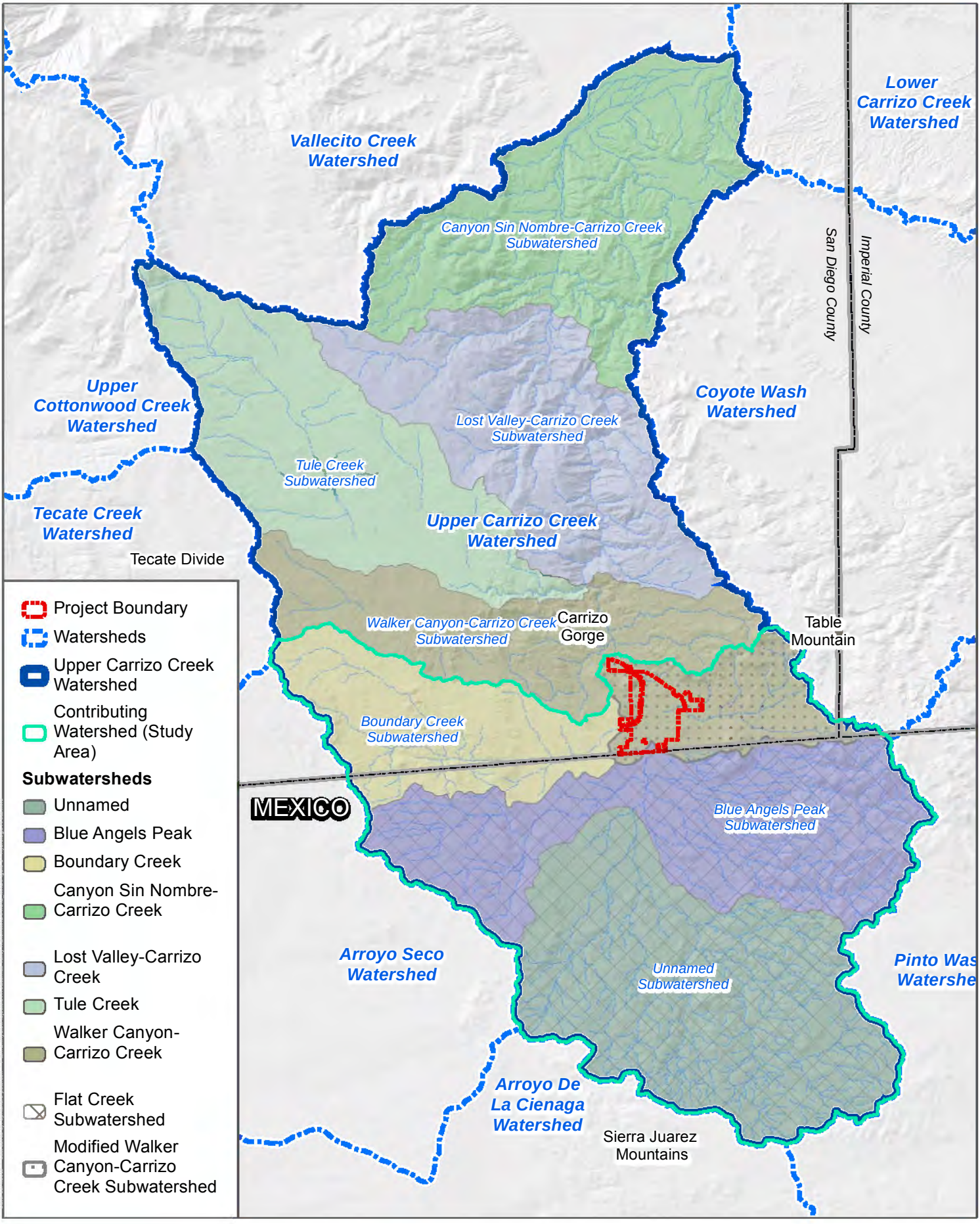

SOURCE: USGS

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0 2 4 Miles

FIGURE 3

Hydrologic Areas

Groundwater Resources Investigation - JVR Energy Project

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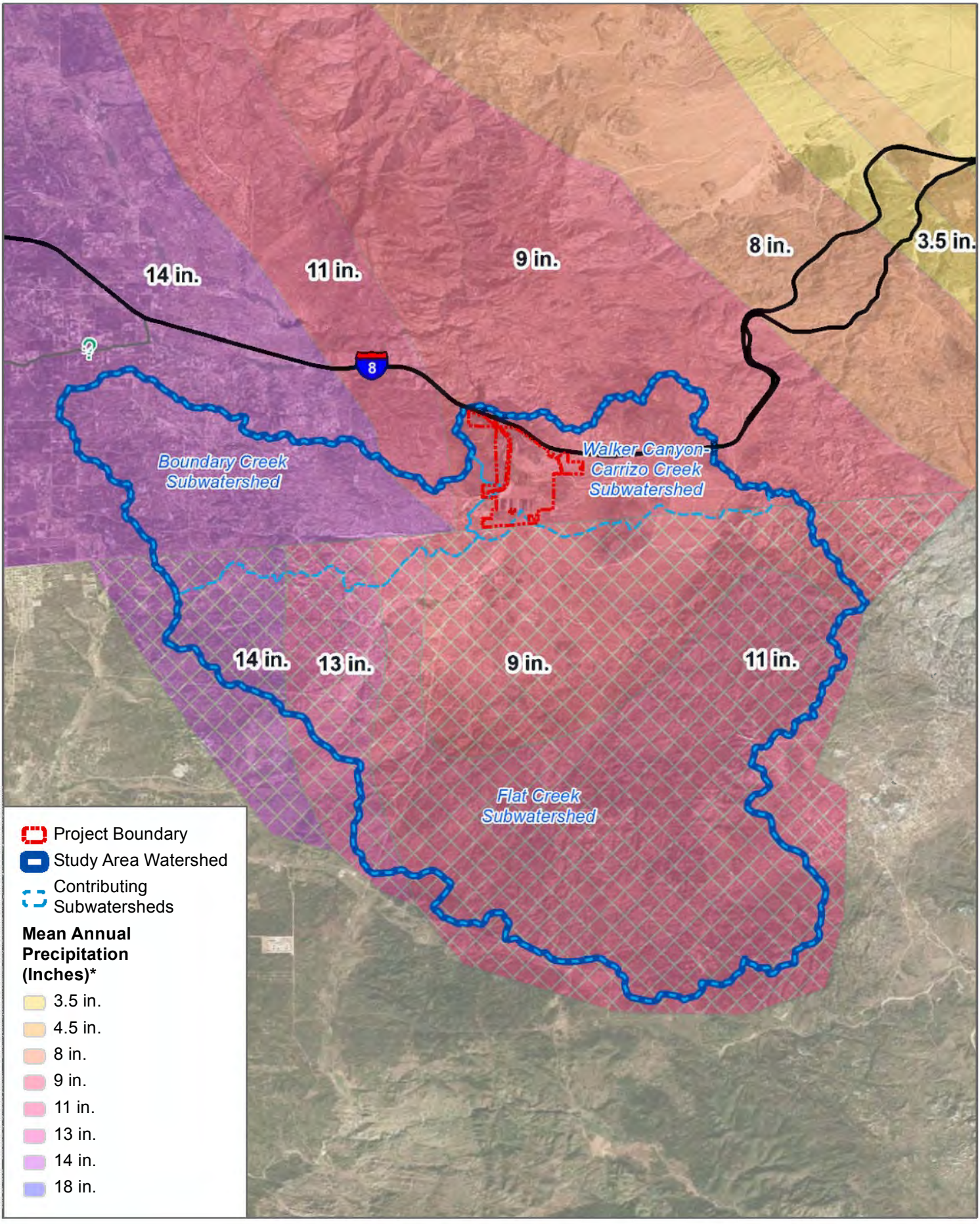

SOURCE: County of San Diego; SANDAG; Swenson, 1981
*Note: Hatched area precipitation data inferred from Swenson, 1981 isohyetal lines

DUDEK

0 2 4 Miles

FIGURE 4

Regional Mean Annual Precipitation

Groundwater Resources Investigation - JVR Energy Park

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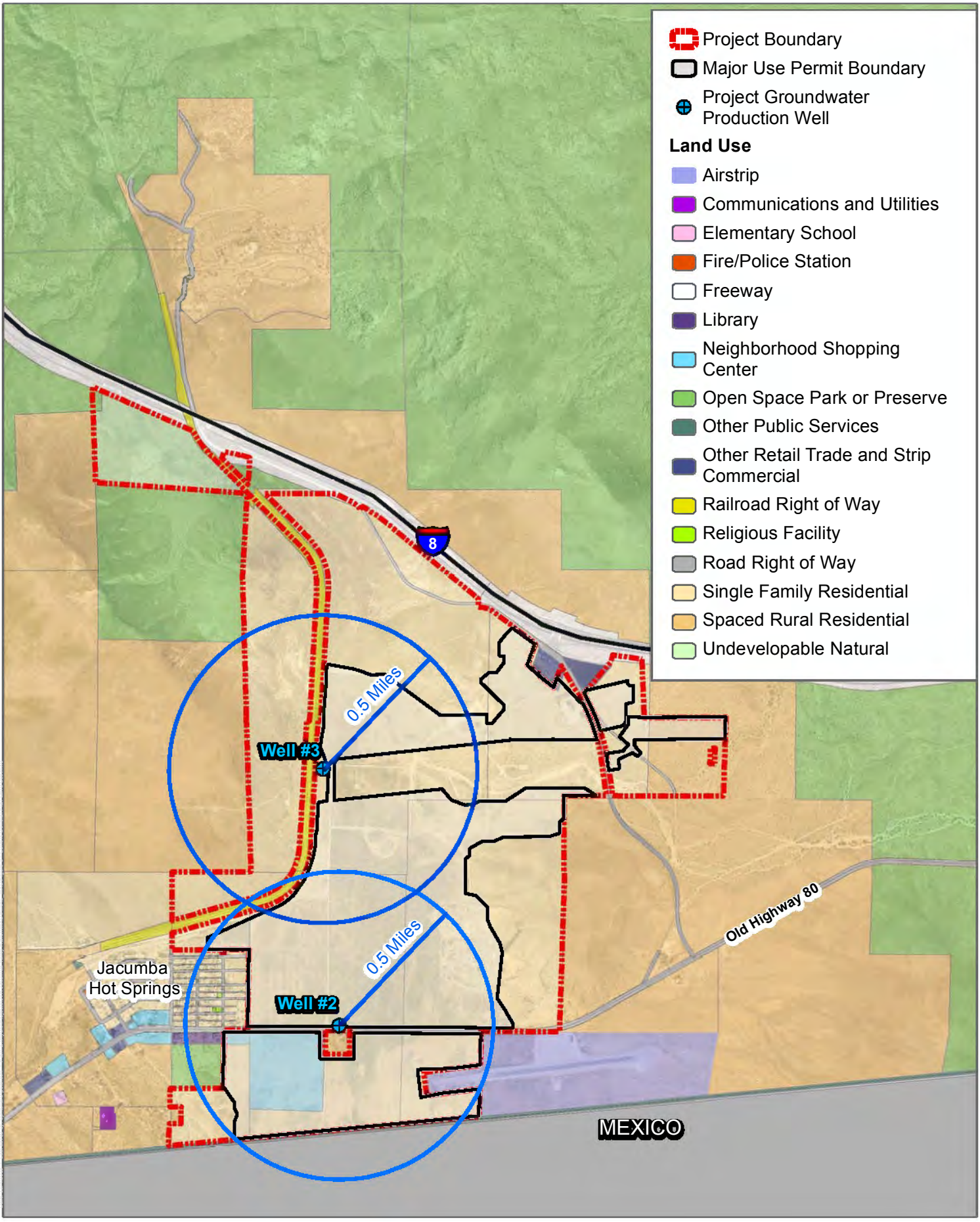

SOURCE: SANDAG, SanGIS

DUDEK

0 0.25 0.5 Miles

FIGURE 5

Current General Plan Land Use

Groundwater Resources Investigation - JVR Energy Project

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Project Boundary

Study Area Watershed

Contributing Subwatersheds

Quaternary Alluvial Aquifer (Study Area)(Swenson, 1981)

Project Groundwater Production Wells

Geologic Units (CGS 2012)

Late Holocene (Surficial Deposits)

Qa, Alluvial Valley Deposits

Middle to Early Pleistocene

Qvot, Very Old Terrace Deposits

Tertiary Units (Bedrock)

Tss, Coarse-Grained Tertiary Age Formations

Tv, Tertiary Age Formations of Volcanic Origin

Mesozoic and Older Units (Bedrock)

Kss, Coarse-Grained Cretaceous age Formations of Sedimentary Origin

pKm, Cretaceous and Pre-Cretaceous Metamorphic Formations of Sedimentary and Volcanic Origin

gr, Granitic and Other Intrusive Crystalline Rocks

Faults and Geologic Contacts (CGS 2012)

contact, identity and existence certain, location accurate

contact, identity and existence certain, location approximate

reference contact, identity and existence certain, location concealed

reference contact, identity or existence questionable, location accurate

fault, identity and existence certain, location accurate

fault, identity and existence certain, location approximate

fault, identity and existence certain, location concealed

fault, identity and existence certain, location inferred

Geologic Units (GSA 2005)

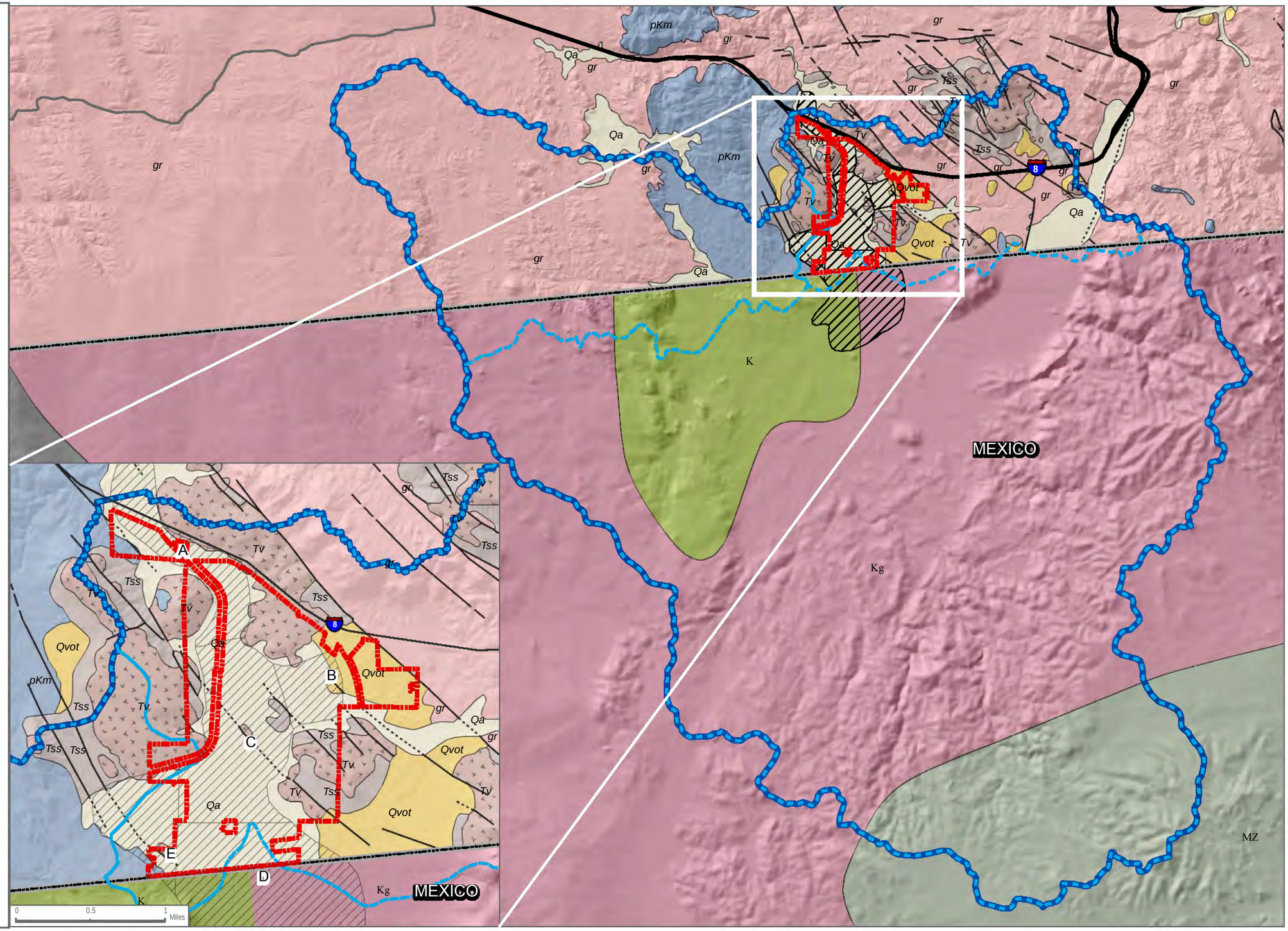
K, Sedimentary, Cretaceous

Kg, Plutonic, undivided grantic rocks, Cretaceous

MZ, Sedimentary, Mesozoic

Geologic Contacts (GSA 2005)

Location accurate



SOURCE: USGS; GSA; Swenson, 1981

DUDEK

0 1 2 Miles

FIGURE 6

Regional Geologic Map

Groundwater Resources Investigation - JVR Energy Park

INTENTIONALLY LEFT BLANK

- Project Boundary
- Study Area Watershed
- Contributing Subwatersheds
- Project Production Wells

Soil Map Unit Symbol, Name (Swenson, 1981)

- W, Sandy alluvium
- X, Metamorphic and Plutonic residum
- Y, Volcanic residum and Fine sand alluvium

Soil Map Unit Symbol, Name (USDA)

- AcG, Acid igneous rock land
- CaB, Calpine coarse sandy loam, 2 to 5 percent slopes
- CaC, Calpine coarse sandy loam, 5 to 9 percent slopes
- CaD2, Calpine coarse sandy loam, 9 to 15 percent slopes, eroded
- CeC, Carrizo very gravelly sand, 0 to 9 percent slopes
- InA, Indio silt loam, 0 to 2 percent slopes
- InB, Indio silt loam, 2 to 5 percent slopes
- IoA, Indio silt loam, saline, 0 to 2 percent slopes
- LaE2, La Posta loamy coarse sand, 5 to 30 percent slopes, eroded
- LcE2, La Posta rocky loamy coarse sand, 5 to 30 percent slope s, eroded
- LdG, La Posta-Sheephead complex, 30 to 65 percent slopes
- LdE, La Posta-Sheephead complex, 9 to 30 percent slopes
- Lu, Loamy alluvial land
- MnB, Mecca coarse sandy loam, 2 to 5 percent slopes
- MvC, Mottsville loamy coarse sand, 2 to 9 percent slopes
- MvD, Mottsville loamy coarse sand, 9 to 15 percent slopes
- RaC, Ramona sandy loam, 5 to 9 percent slopes
- RaD2, Ramona sandy loam, 9 to 15 percent slopes, eroded
- RkA, Reiff fine sandy loam, 0 to 2 percent slopes
- RsC, Rositas loamy coarse sand, 2 to 9 percent slopes
- RuG, Rough broken land
- SrD, Sloping gullied land
- SvE, Stony land
- ToG, Tollhouse rocky coarse sandy loam, 30 to 65 percent slo pes
- ToE2, Tollhouse rocky coarse sandy loam, 5 to 30 percent slop es, eroded

SOURCE: Bing Maps; USDA; USGS; Swenson, 1981
*Note: Hatched area soils based on USDA soil classification using aerial photography

DUDEK 0 1 2 Miles

FIGURE 7
Soils Map
Groundwater Resources Investigation - JVR Energy Park

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- Project Boundary
- Major Use Permit Boundary
- Aquifer Thickness Well
- Jacumba Valley Groundwater Basin (DWR 7-47)

Quaternary Alluvial Aquifer Units (Swenson, 1981)

- Compartment A
- Compartment B
- Compartment C
- Compartment D
- Compartment E

Geologic Units (CGS 2012)

Late Holocene (Surficial Deposits)

- Qa, Alluvial Valley Deposits

Middle to Early Pleistocene

- Qvot, Very Old Terrace Deposits

Tertiary Units (Bedrock)

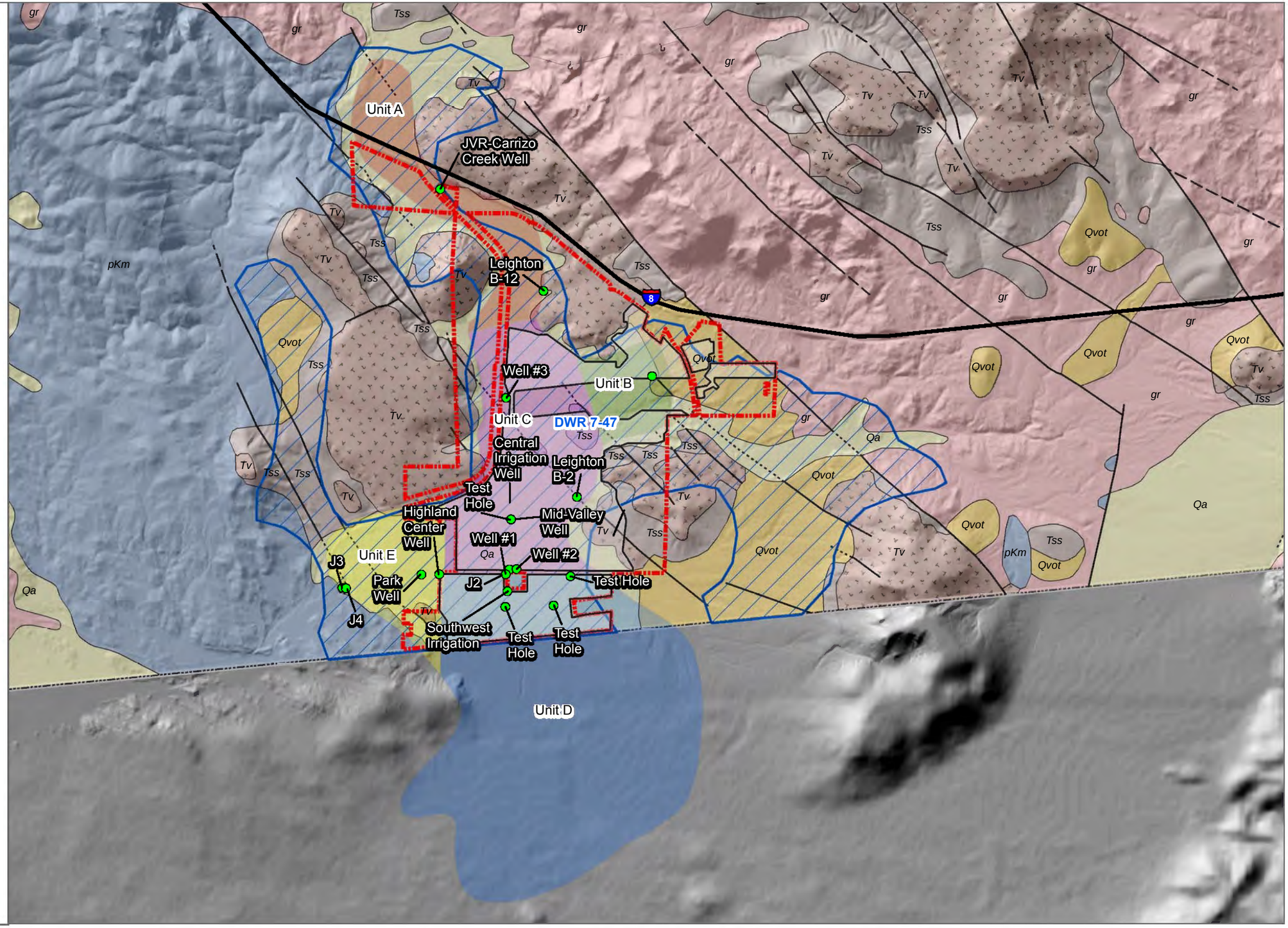
- Tss, Coarse-Grained Tertiary Age Formations
- Tv, Tertiary Age Formations of Volcanic Origin

Mesozoic and Older Units (Bedrock)

- Kss, Coarse-Grained Cretaceous age Formations of Sedimentary Origin
- pKm, Cretaceous and Pre-Cretaceous Metamorphic Formations of Sedimentary and Volcanic Origin
- gr, Granitic and Other Intrusive Crystalline Rocks

Faults and Geologic Contacts (CGS 2012)

- contact, identity and existence certain, location accurate
- contact, identity and existence certain, location approximate
- reference contact, identity and existence certain, location concealed
- reference contact, identity or existence questionable, location accurate
- fault, identity and existence certain, location accurate
- fault, identity and existence certain, location approximate
- fault, identity and existence certain, location concealed
- fault, identity and existence certain, location inferred



SOURCE: Swenson, 1981; DWR; CGS 2012
*Note: Aquifer thickness wells include Swenson, 1981 study wells and wells with available completion information

DUDEK

0 0.5 1 Miles

FIGURE 8
Hydrogeologic Units
Groundwater Resources Investigation - JVR Energy Project

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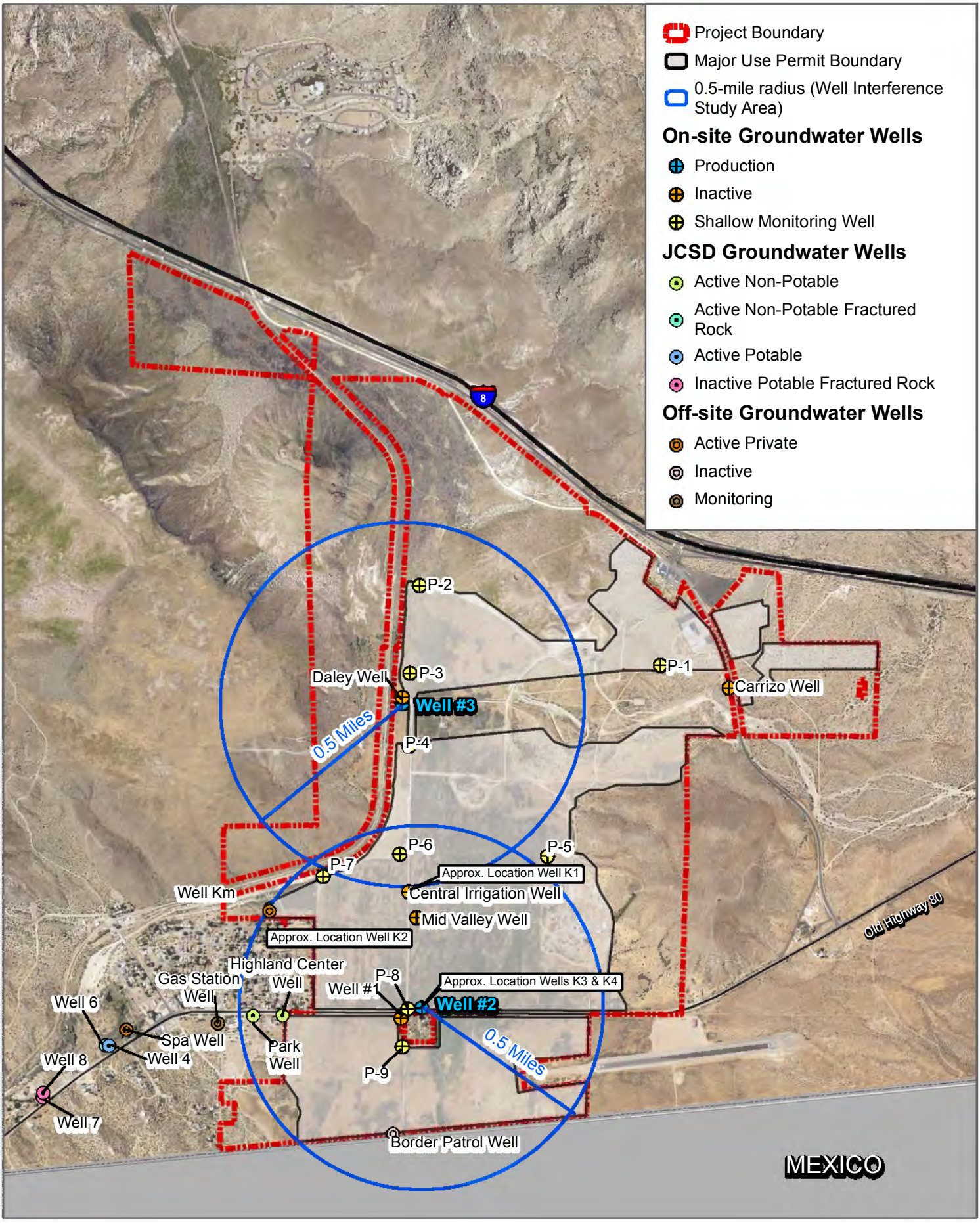

SOURCE: JCSD; JVR; SanGIS

FIGURE 9

On-site and Off-site Wells

Groundwater Resources Investigation -JVR Energy Project

DUDEK

0 0.25 0.5 Miles

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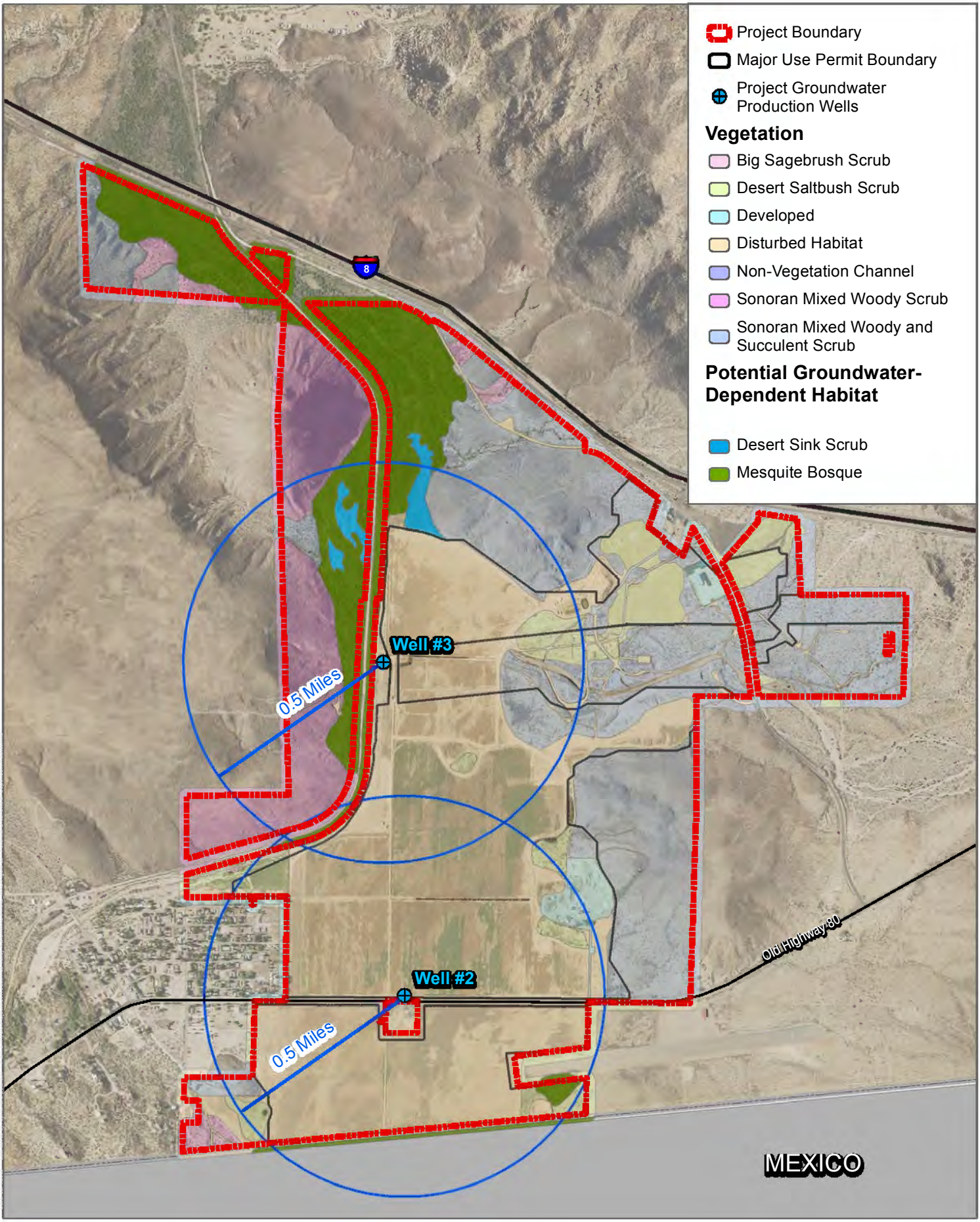

SOURCE: Dudek 2019

FIGURE 10

Potential Groundwater-Dependent Habitat

Groundwater Resources Investigation - JVR Energy Park

DUDEK

0 0.25 0.5 Miles

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Figure 11. Well #2 24-Hour Constant Rate Test: Well #2 Drawdown

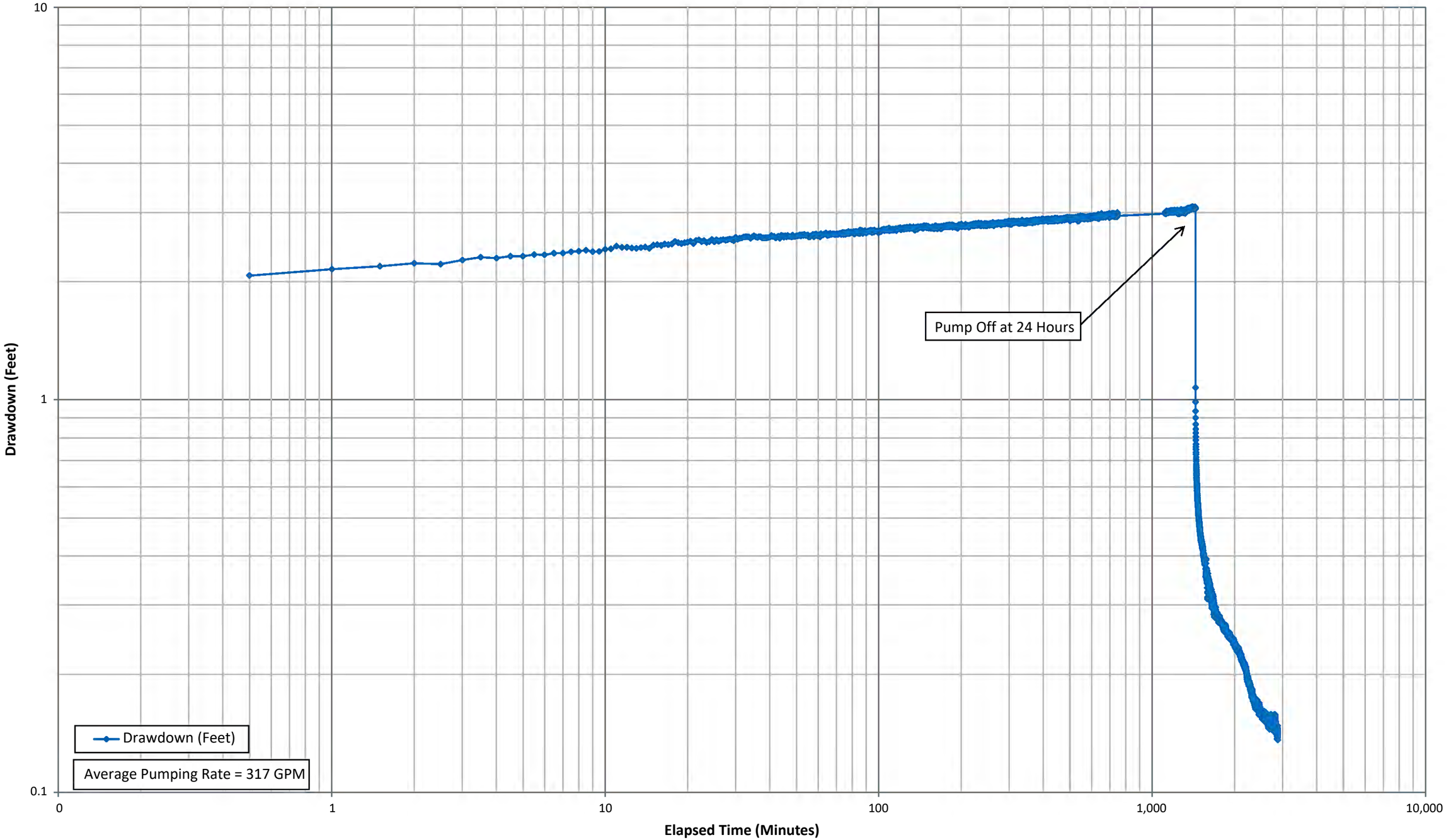

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Figure 12. Well #2 24-Hour Constant Rate Test: Well #1 Drawdown

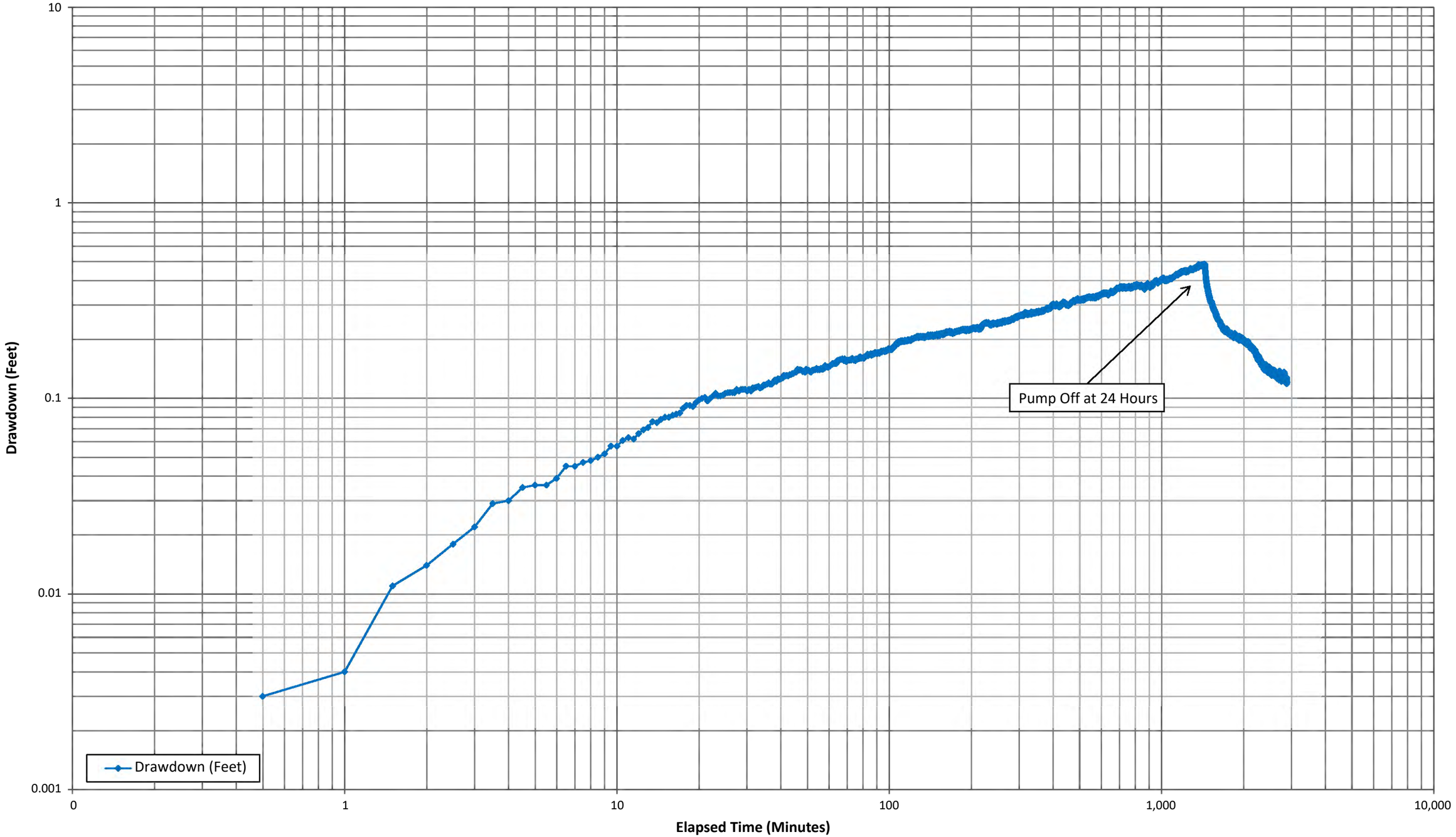

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Figure 13. Well #2 24-Hour Constant Rate Test: Well #2 Projected Drawdown

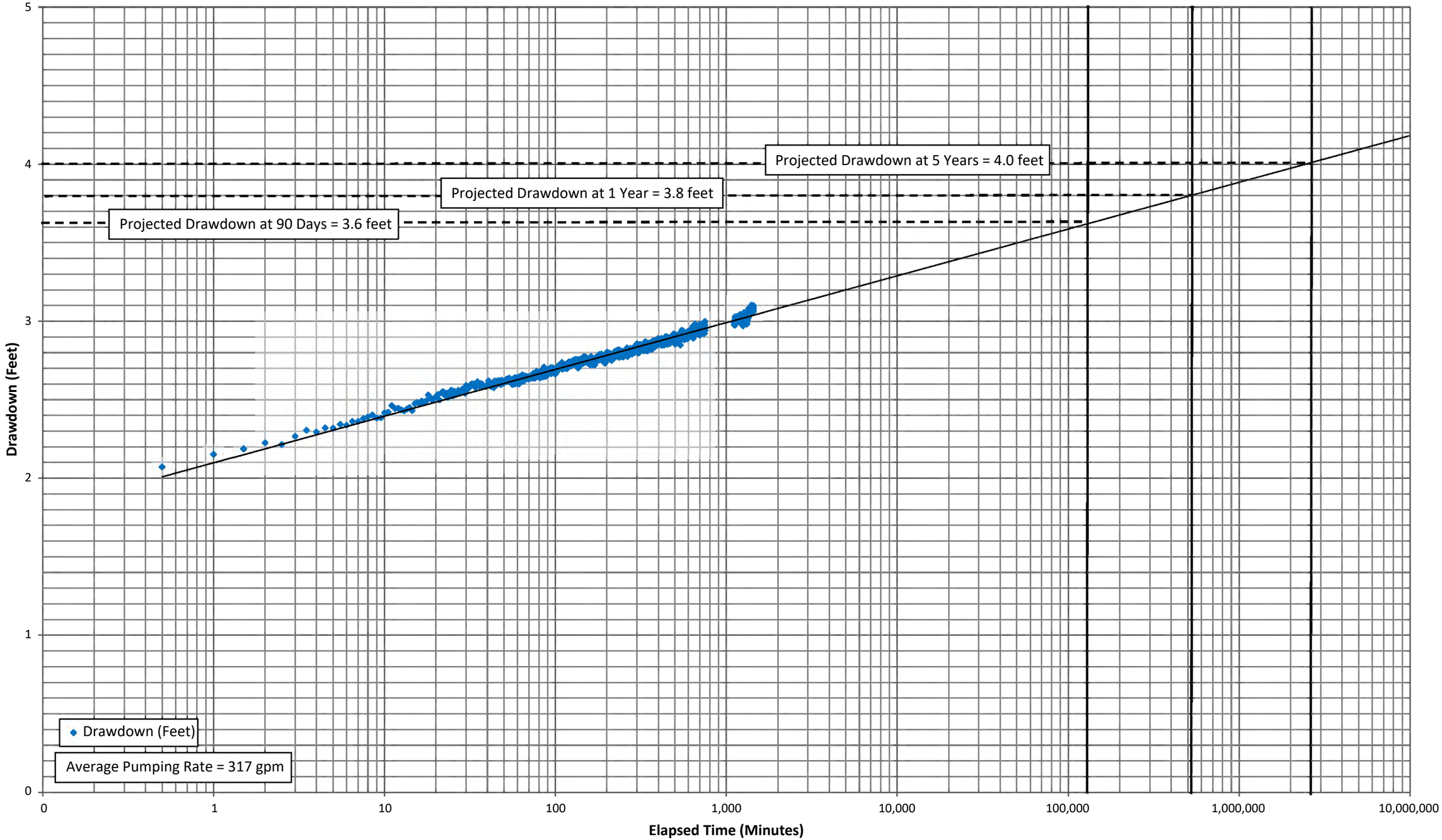

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Figure 14. Well #2 24-Hour Constant Rate Test: Well #1 Projected Drawdown

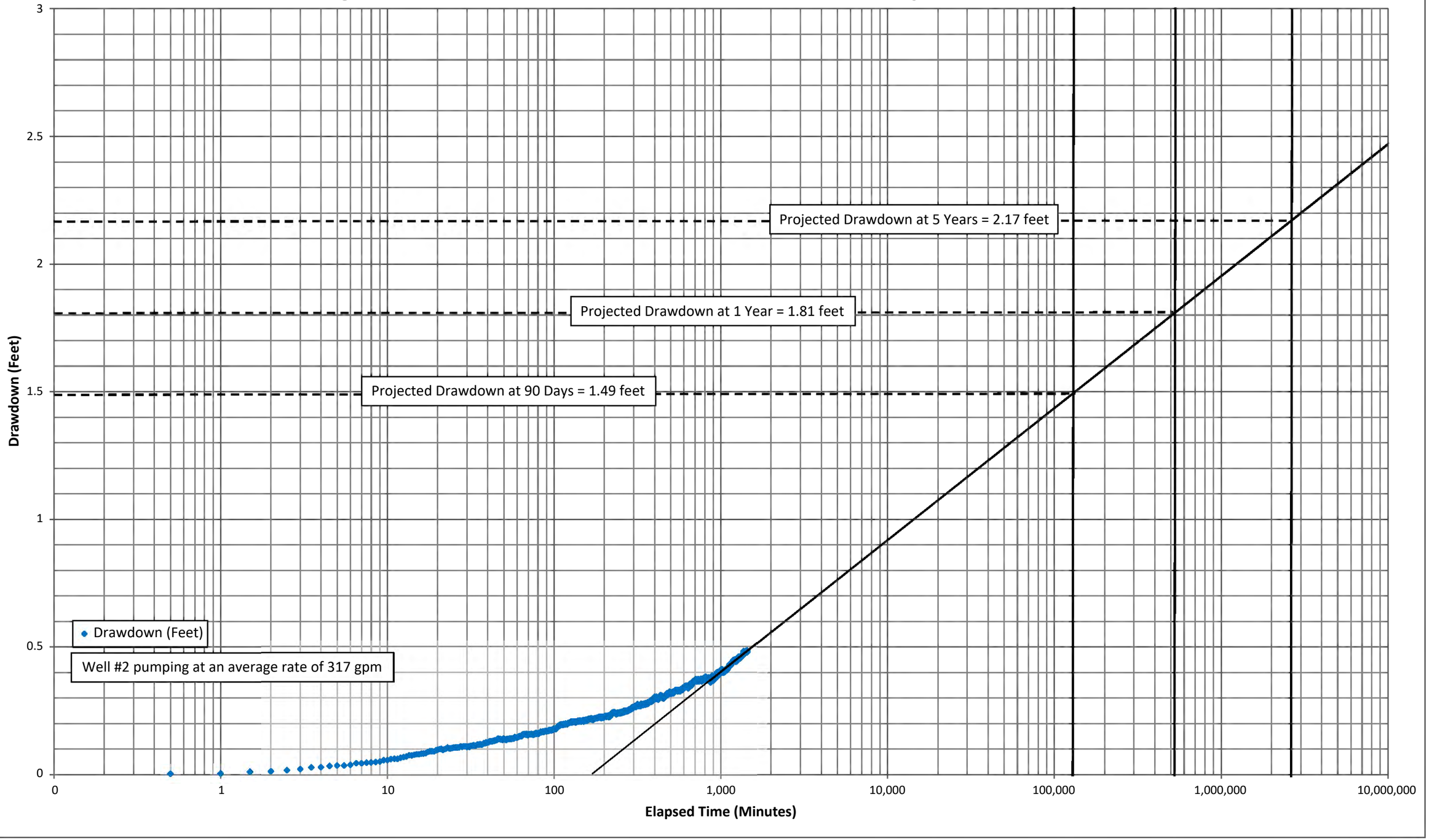

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Figure 15. Well #2 24-Hour Constant Rate Test: Well #2 Recovery

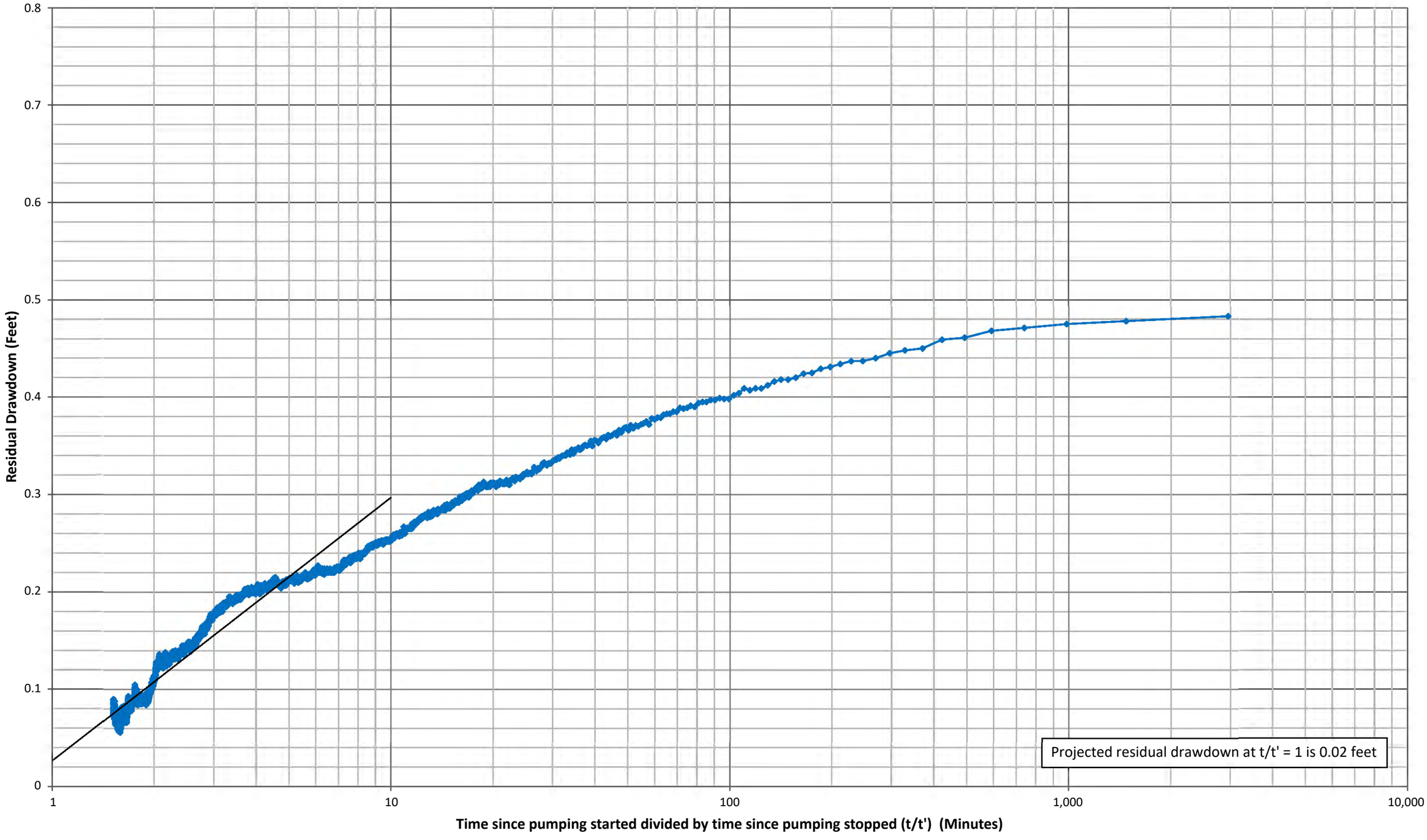

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Figure 16. Well #2 24-Hour Constant Rate Test: Well #1 Recovery

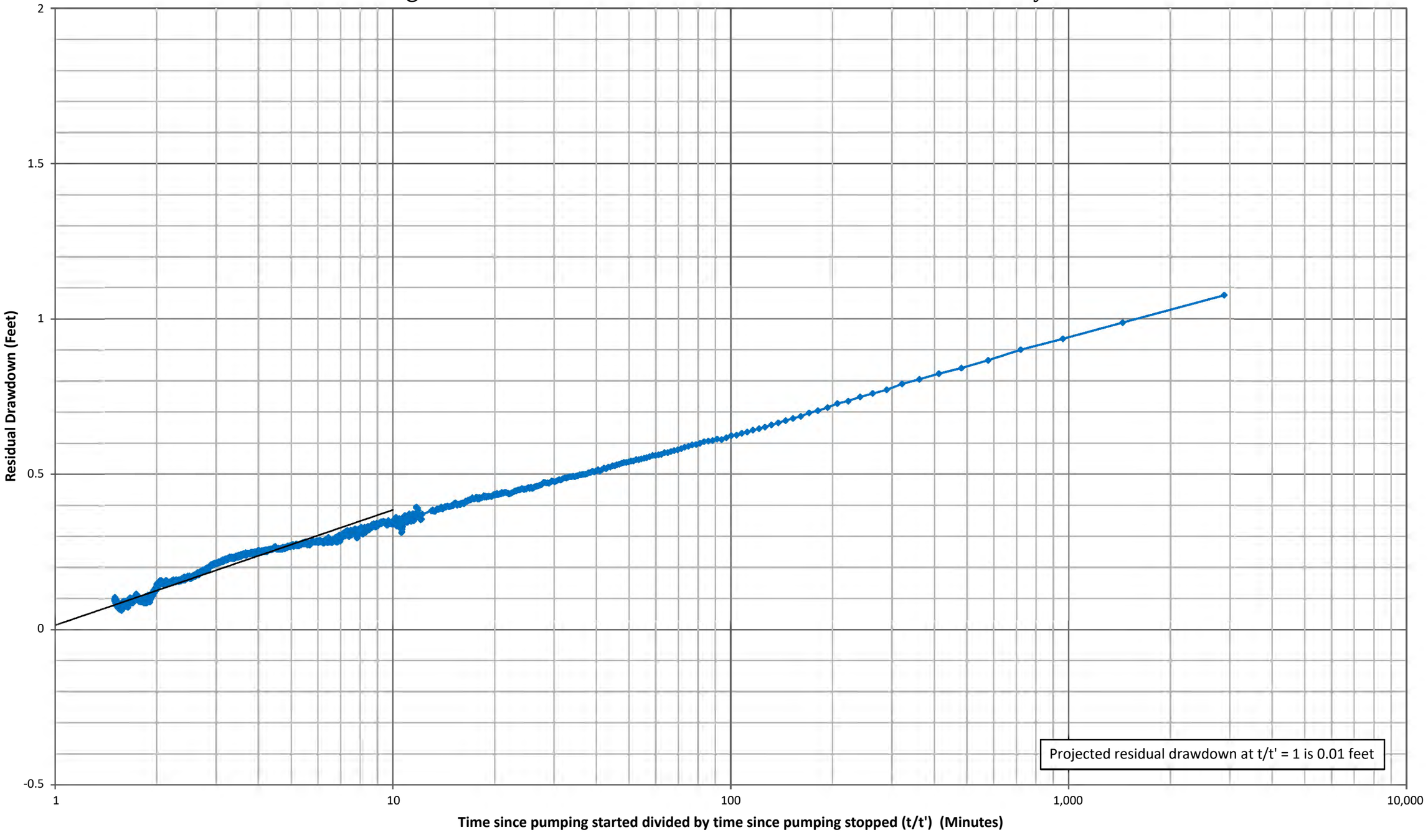

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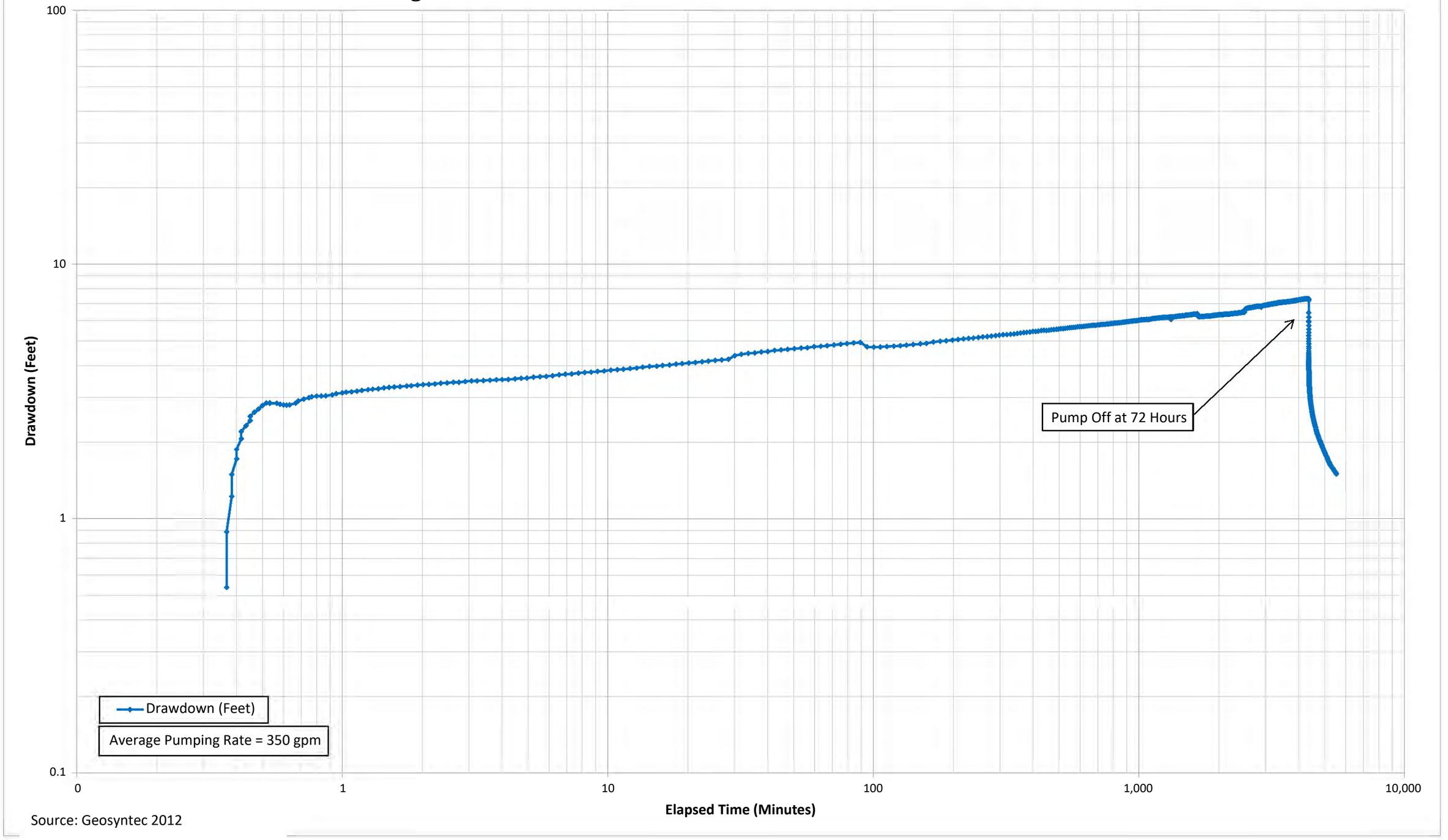
Figure 17. Well #3 72-Hour Constant Rate Test: Well #3 Drawdown



Source: Geosyntec 2012

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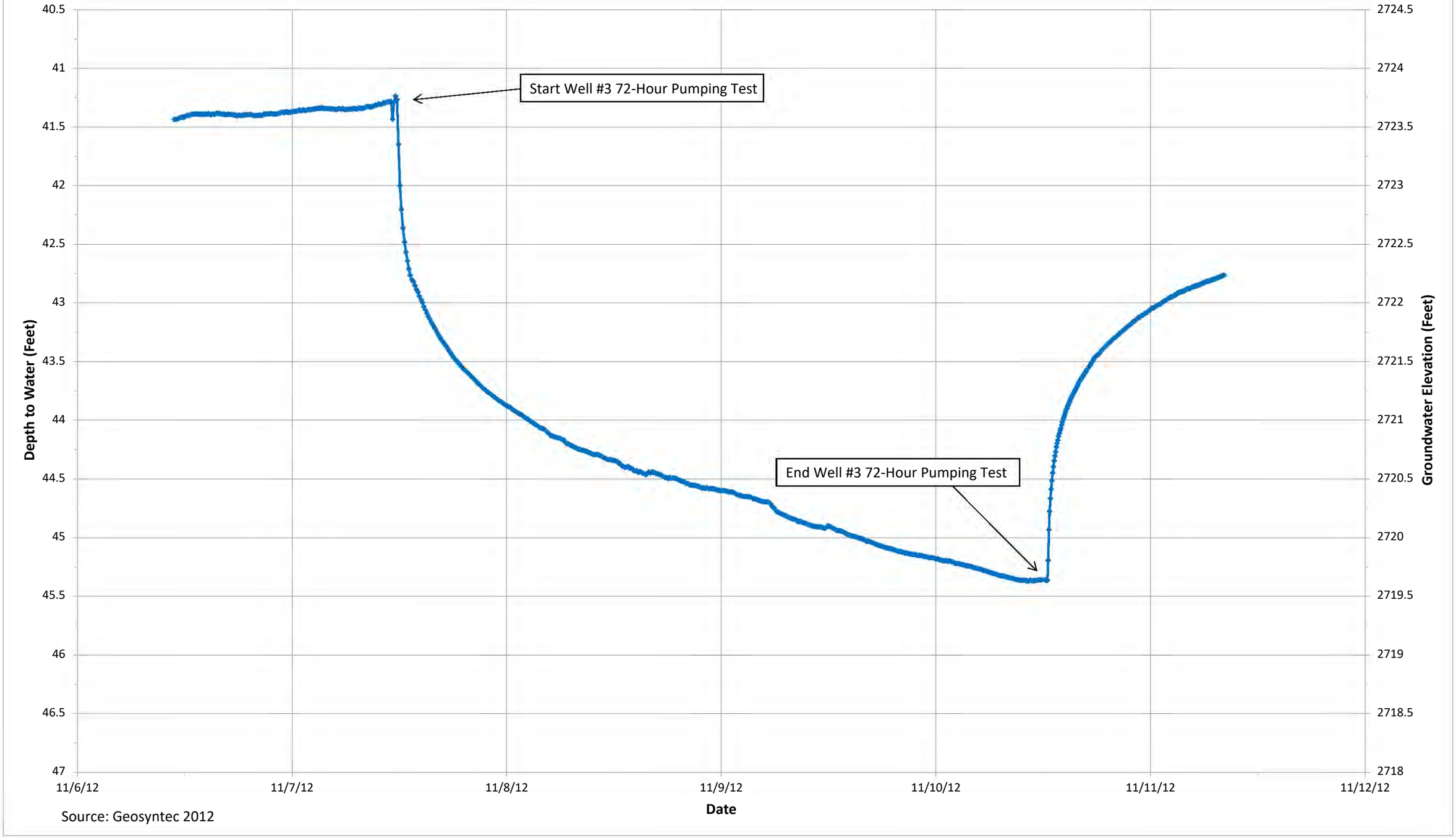
Figure 18. Well #3 72-Hour Constant Rate Test: Daley Well Hydrograph



Source: Geosyntec 2012

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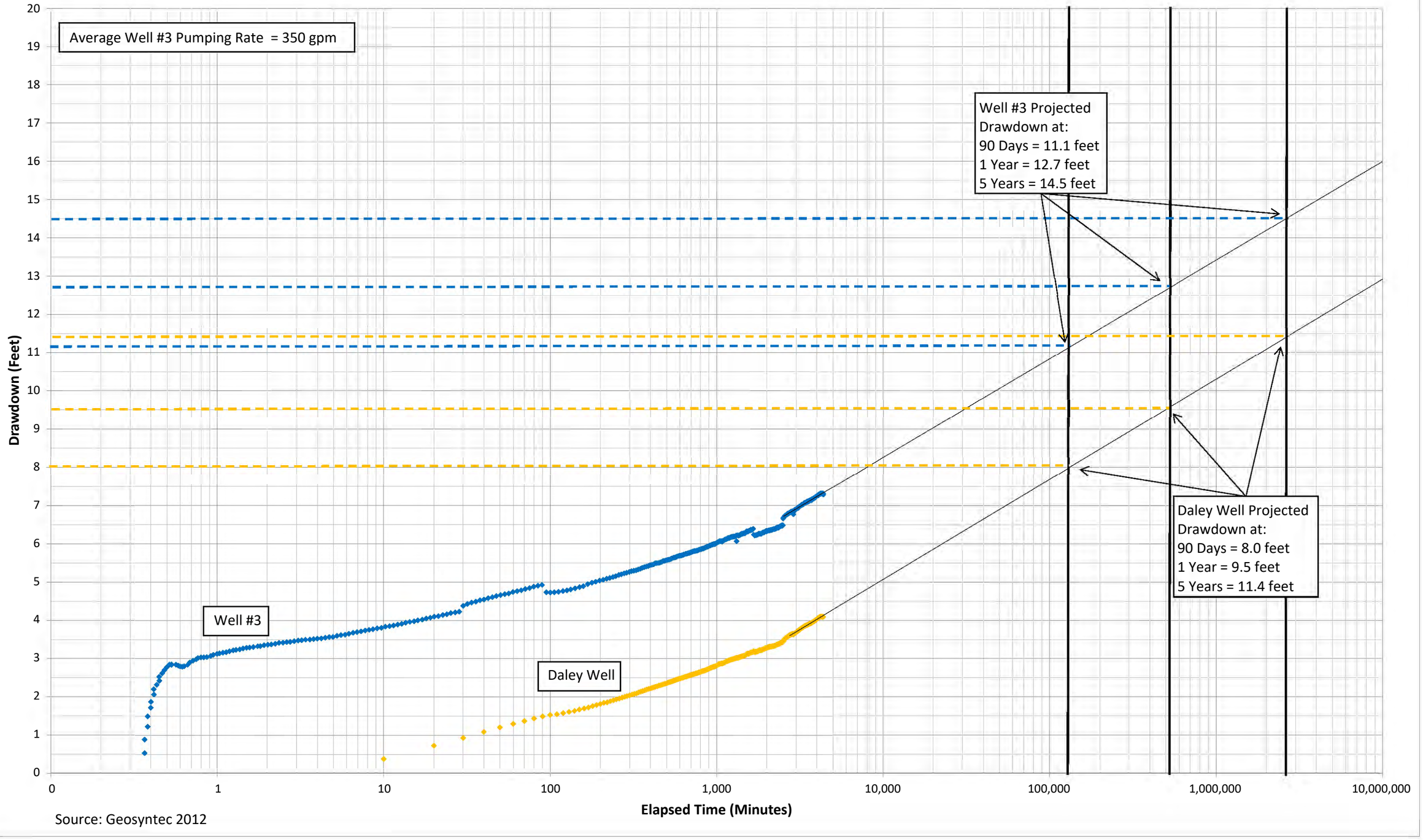
Figure 19. Well #3 72-Hour Constant Rate Test: Well #3 and Daley Well Projected Drawdown



Source: Geosyntec 2012

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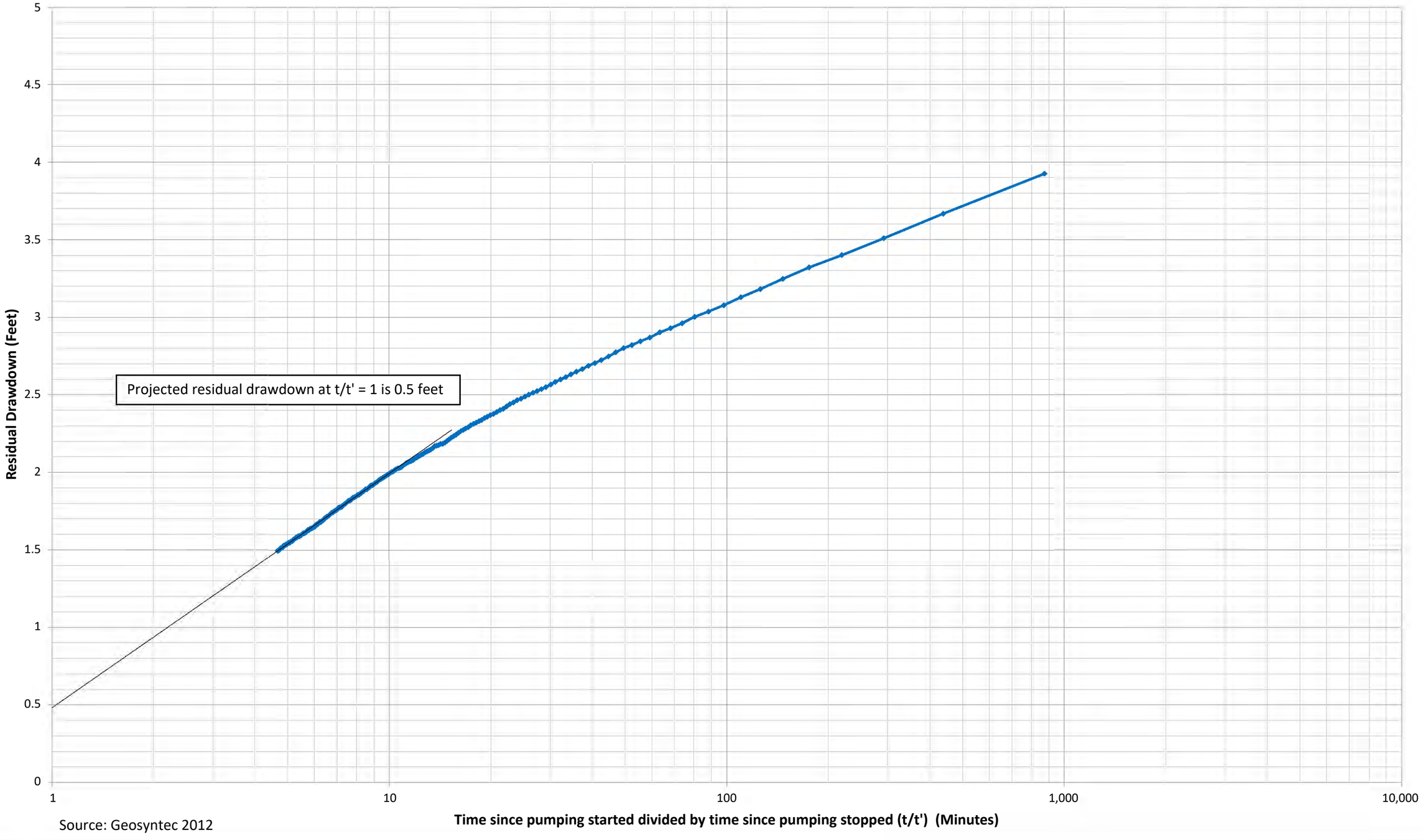
Figure 20. Well #3 72-Hour Constant Rate Test: Daley Well Recovery



Source: Geosyntec 2012

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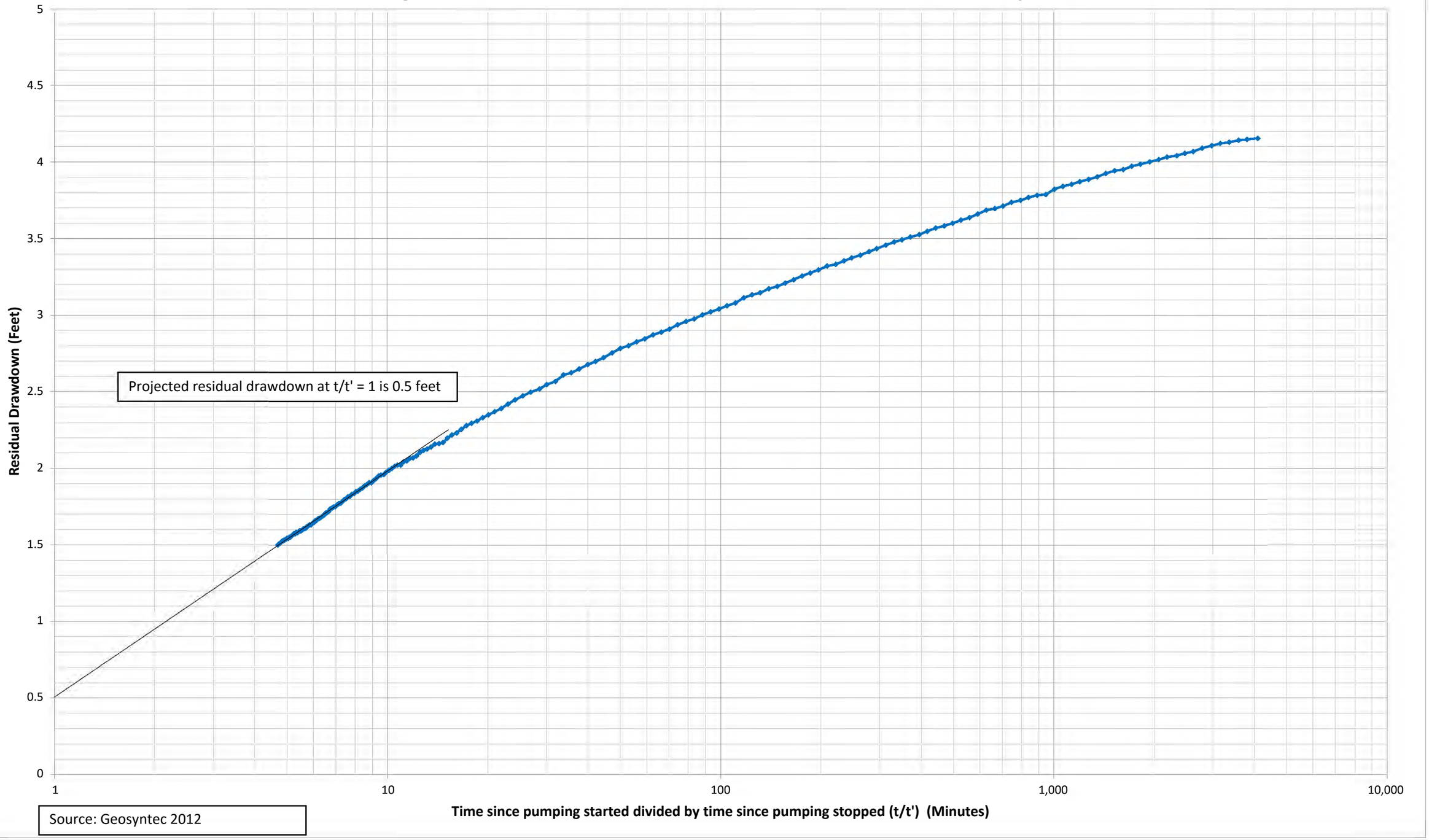
Figure 21. Well #3 72-Hour Constant Rate Test: Well #3 Recovery



Source: Geosyntec 2012

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APPENDIX A

Construction and Operational Water Demand Estimates

APPENDIX A
Construction and Operational Water Demand Estimates

Draft Preliminary Construction Water Demand Estimation Sheet

Project: JVR Energy Park, Jacumba Hot Springs, San Diego County, California		
Subject: PRELIMINARY ESTIMATE Construction Water Demand Prepared May 8, 2020		
Estimated Water Use Initial Site Preparation (Clearing, Grubbing, Grinding and Pre-Wetting)		
Based on pre-wetting surface with 1-inch of water for clearing, grubbing, and grinding	27,154	GAL/ACRE
Input Total Disturbance	570.54	ACRE
Total water to clear, grub, grind and pre-wet	15,492,586	GAL
Conversion to gallons per acre-foot	325,851	
Total water to clear, grub, grind and pre-wet	**48**	**ACRE-FT**
Total water to clear, grub, grind and pre-wet	**570.54**	**ACRES**
Input expected duration to clear, grub and grind	90	DAY
Water demand to clear, grub and grind	0.53	ACRE-FT/DAY
Water demand to clear, grub and grind	172,140	GAL/DAY
Estimated Mass grading		
Input quantity of on-site fill used to balance site	264,000	CY
Input optimum moisture content	9	%
Input observed moisture content	2.0	%
Input dry unit weight of on-site fill	115	PCF
Weight of water to reach saturation	8.050	PCF
Water required to hydrate and gain compaction	29	GAL/CY
Input contingency to account for evaporation during summer months	1.667	
Water required to hydrate and gain compaction	48	GAL/CY
Water for grading	12,785,294	GAL
Conversion to gallons per acre-foot	325,851	
Water required for grading	**39.2**	**ACRE-FT**
Input quantity of Scrapers (CAT 627H @ 24 cubic yards per load)	4	EA
Volume per haul	96	CY/EA
Time per haul	10	MIN
Hauls per hour	6	EA/HR
Grading Rate	576	CY/HR
Grading Rate for each work day	4,608	CY/DAY
Time to complete grading (work days)	90	DAYS
Water demand to complete mass grading	0.44	ACRE-FT/DAY
Water demand to complete mass grading	142,059	GAL/DAY
Estimated Water Use for Concrete		
Quantity of concrete for concrete pad foundations	5594	CY
Rate of water use for concrete hydration	40	GAL/CY
Total water use for concrete pad foundations (Substation + inverters)	225,957	GAL
Total water use for concrete pad foundations (Substation + inverters)	**0.7**	**ACRE-FT**
Daily Dust Control		
Number of Construction Days after clearing/grubbing/grinding	365	Days
Typical Rate of Water Use	30,000	GAL/DAY

Draft Preliminary Construction Water Demand Estimation Sheet

Project: JVR Energy Park, Jacumba Hot Springs, San Diego County, California		
Subject: PRELIMINARY ESTIMATE Construction Water Demand Prepared May 8, 2020		
Approx. No. High Wind Days over Period (Based on Boulevard Met Data)	27	High Wind Days
Rate of Water Use on Windy Days (Average Winds > 15 MPH)	54,000	GAL/DAY
Total water use for high wind days	1,458,000	GAL
Total Water Use for Daily Dust Control	12,138,000	GAL
Total Water Use for Daily Dust Control	**37.3**	**ACRE-FT**
Additional Miscellaneous Items		
Fire Protection Requirements	30,000	GAL
Noxious Weed Mitigation	624,000	GAL
Quarter-mile underground Gen-Tie Line	13,200	GAL
Hydroseeding	4,279,050	GAL
Additional Miscellaneous Items	**13.1**	**ACRE-FT**
Total Estimated Construction Demand		
Total Project Water Usage	45,588,087	Gallons
	139.9	**ACRE-FT**

Draft Preliminary Operation and Maintenance Water Demand Estimation Sheet

Project: JVR Energy Park, Jacumba Hot Springs, San Diego County, California		
Subject: PRELIMINARY ESTIMATE Construction Water Demand Prepared May 8, 2020		
Panel Washing Water Demand		
Number of panels	300,000	panels
Panel rating	300	watts
Project size	90	MW
Panel type	72	cells per panel
Panel height	6.42	feet
Panel width	3.25	feet
Panel area	21	square feet
Project panel area	6,259,500	square feet
Project panel area	695,500	square yards
Per wash water demand	0.3	gallons per square yard
Per wash water demand	208,650	gallons
Washes per year	4	washes per year
Gallons per year	834,600	gallons
Panel Washing Water Demand	**2.6**	**acre-feet per year**
Landscape Buffer		
Landscape Buffer	5.39	acres
CIMIS Zone 16 Reference Evapotranspiration (Eto)1	5.21	feet
Crop Coefficient (expressed as percentage of Eto)	0.3	percent
Landscape Buffer Water Demand	**8.4**	**acre-feet per year**

Draft Preliminary Operation and Maintenance Water Demand Estimation Sheet

Project: JVR Energy Park, Jacumba Hot Springs, San Diego County, California		
Subject: PRELIMINARY ESTIMATE Construction Water Demand Prepared May 8, 2020		
Total Estimated Operational Water Use		
Total Estimated Operational Water Use	**11.0**	**acre-feet per year**

1. Water requirements of a mixed-species xeriscape with low water demand (WUCOLS 2020). Categories of Water Needs. Univ. Calif. Coop. Ext. https://ucanr.edu/sites/WUCOLS/WUCOLS_IV_User_Manual/Categories_of_Water_Needs/

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APPENDIX B

~~*Well Completion Information*~~

JVR Energy Park Project

Revised Construction Water Demand Memorandum

605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 760.942.5147 F 760.632.0164

DRAFT TECHNICAL MEMORANDUM

To:	Patrick Brown, Baywa
From:	Trey Driscoll, PG No. 8511, CHG No. 936
Subject:	JVR Energy Park Project Revised Construction Water Demand
Date:	March 3, 2021

This technical memorandum evaluates revised estimated construction water demand for the JVR Energy Park Project (Proposed Project) located in Jacumba Hot Springs, California. The revised estimated construction water demand is based on an increase in the volume of grading, a decrease in area of the Proposed Project and additional water required to construct the water main replacement for the Ketchum Water Company.

1 Background

Appendix A of the Groundwater Resources Investigation Report included as Appendix J to the Draft Environmental Impact Report (DEIR) for the JVR Energy Park Project provided detailed estimates of construction water demand by activity for the JVR Energy Park Project. The total construction water demand estimated in the DEIR is 139.9 acre-feet.

2 Updated Construction Water Demand Estimate

Based on comments received on the DEIR, and additional evaluation and design of the Proposed Project it has been determined that an additional 16,000 cubic yards (CY) of grading is required for the switchyard component of the Proposed Project. As a result, the estimated volume of mass grading in the construction water demand estimation has been revised from an initial estimate of 264,000 CY to a revised estimate of 280,000 CY. The volume of water required for grading increased by 2.4 acre-feet (AF) from 39.2 AF to 41.6 AF (Table 1).

Due to a series of additional setbacks that have been added to the Project design, the Proposed Project's area of disturbance has been reduced by approximately 3% from 643 acres to approximately 626 acres. This acreage includes a reduction of the MUP area from 643 acres to 623 acres plus approximately 3 acres of disturbance outside the MUP boundary to cover the relocation of the existing water main. The daily dust control rate of water use has been reduced by 3% based on this reduction of Proposed Project area. This result in a reduced water demand estimate of 1 AF for dust control from 36.3 AF of 37.3 AF (Table 1).

It is estimated that up to 500 gallons per 100 feet of linear pipe will be needed to construct the replacement water main for Ketchum Ranch Water Company. This equates to 47,500 gallons (0.15 AF) of water to construct the new alignment that would be approximately 9,500 feet long (Table 1).

Table 1. Draft Preliminary Construction Water Demand Estimation Sheet

Project: JVR Energy Park, Jacumba Hot Springs, San Diego County, California		
Subject: PRELIMINARY ESTIMATE Construction Water Demand Prepared May 8, 2020		
Estimated Water Use Initial Site Preparation (Clearing, Grubbing, Grinding and Pre-Wetting)		
Based on pre-wetting surface with 1-inch of water for clearing, grubbing, and grinding	27,154	GAL/ACRE
Input Total Disturbance	570.54	ACRE
Total water to clear, grub, grind and pre-wet	15,492,586	GAL
Conversion to gallons per acre-foot	325,851	
Total water to clear, grub, grind and pre-wet	**48**	**ACRE-FT**
Total water to clear, grub, grind and pre-wet 570.54 acres		
Input expected duration to clear, grub and grind	90	DAY
Water demand to clear, grub and grind	0.53	ACRE-FT/DAY
Water demand to clear, grub and grind	172,140	GAL/DAY
Estimated Mass grading		
Input quantity of on-site fill used to balance site	280,000	CY
Input optimum moisture content	9	%
Input observed moisture content	2.0	%
Input dry unit weight of on-site fill	115	PCF
Weight of water to reach saturation	8.050	PCF
Water required to hydrate and gain compaction	29	GAL/CY
Input contingency to account for evaporation during summer months	1.667	
Water required to hydrate and gain compaction	48	GAL/CY
Water for grading	13,560,160	GAL
Conversion to gallons per acre-foot	325,851	
Water required for grading	**41.6**	**ACRE-FT**
Input quantity of Scrapers (CAT 627H @ 24 cubic yards per load)	4	EA
Volume per haul	96	CY/EA
Time per haul	10	MIN
Hauls per hour	6	EA/HR
Grading Rate	576	CY/HR
Grading Rate for each workday	4,608	CY/DAY
Time to complete grading (workdays)	90	DAYS
Water demand to complete mass grading	0.46	ACRE-FT/DAY
Water demand to complete mass grading	150,668	GAL/DAY
Estimated Water Use for Concrete		
Quantity of concrete for concrete pad foundations	5594	CY
Rate of water use for concrete hydration	40	GAL/CY
Total water use for concrete pad foundations (Substation + inverters)	225,957	GAL
Total water use for concrete pad foundations (Substation + inverters)	**0.7**	**ACRE-FT**
Daily Dust Control		
Number of Construction Days after clearing/grubbing/grinding	365	Days

Table 1. Draft Preliminary Construction Water Demand Estimation Sheet

Project: JVR Energy Park, Jacumba Hot Springs, San Diego County, California		
Subject: PRELIMINARY ESTIMATE Construction Water Demand Prepared May 8, 2020		
Typical Rate of Water Use	29,100	GAL/DAY
Approx. No. High Wind Days over Period (Based on Boulevard Met Data)	27	High Wind Days
Rate of Water Use on Windy Days (Average Winds > 15 MPH)	54,000	GAL/DAY
Total water use for high wind days	1,458,000	GAL
Total Water Use for Daily Dust Control	11,817,600	GAL
Total Water Use for Daily Dust Control	**36.3**	**ACRE-FT**
Additional Miscellaneous Items		
Fire Protection Requirements	30,000	GAL
Noxious Weed Mitigation	624,000	GAL
Quarter-mile underground Gen-Tie Line	13,200	GAL
Hydroseeding	4,279,050	GAL
New Ketchum Ranch Water Company Water Main	47,500	GAL
Additional Miscellaneous Items	**15.3**	**ACRE-FT**
Total Estimated Construction Demand		
Total Project Water Usage	46,090,053.	Gallons
	141.4	**ACRE-FT**

3 Conclusion

The total construction water demand estimated in the DEIR for the Proposed Project is 139.9 acre-feet. The revised total construction water demand for the Proposed Project is 141.4 acre-feet or an increase of 1.1%. An increase in estimated construction water demand of 1.1% does not result in any substantial changes to the findings of the DEIR for the JVR Energy Park Project.

APPENDIX ~~B~~ C

Well Completion Information

COUNTY OF SAN DIEGO
DEPARTMENT OF HEALTH SERVICES

WELL PERMIT APPLICATION 6983

APN 614 100 20
Control # W02683

614-100-15

TYPE OF WORK (Check)		USE (Check)		EQUIPMENT (Check)	
New Well	☒	Individual Domestic	☐	Rotary MUD	☒
Repair or Modification	☐	Agricultural	☒	Cable Tool	☐
Time Extension	☐	Industrial	☐	Other	☐
Destruction	☐	Community	☐ & TEST		
		Other	☐		

PROPOSED WELL DEPTH
Max. 100 Min. 50 (Feet)

PROPOSED CASING
Type PVC Depth FULL Diameter 6" ID Wall or Gage 240

PROPOSED SEALING ZONE(S)
From 0 to 90 Feet
From _____ to _____ Feet
From _____ to _____ Feet

PROPOSED PERFORATIONS OR SCREEN
From 20 to BOTTOM Feet
From _____ to _____ Feet
From _____ to _____ Feet
From _____ to _____ Feet

SEALING MATERIAL (Check)
Neat Cement Grout ☐ Bentonite Clay ☒
Sand Cement Grout ☒ Concrete ☐
Other-Specify: _____

DATE OF WORK
Start MAY 90
Completion MAY 90

NAME OF WELL OWNER
WILLIAM KETCHEM

NAME OF WELL DRILLER
FRANK MURPHY

LOCATION OF WELL Interstate 8
SEC MAP (JACUMBA)

COMPANY
MURPHY'S WELL DRILLING

DISPOSITION OF APPLICATION
(FOR HEALTH OFFICERS USE ONLY)

☐ APPROVED ☐ DENIED

☒ APPROVED WITH CONDITIONS

Report Reason(s) for Denial or Necessary Conditions Here:
Well Installation To be in Accordance with San Diego County and State Code. Test hole is To Be dug within 30 days

none

Jay Linkl
HEALTH OFFICER

5/17/90
DATE

BUSINESS ADDRESS
PO 434 JACUMBA 92034

LICENSE NUMBER
500834

Cash Deposit ☐
Bond Posted ☒

$150 Fee paid on _____

I hereby agree to comply with all regulations of the Department of Health Services and with all ordinances and laws of the County of San Diego and of the State of California pertaining to well construction, repair, modification and destruction. Immediately upon completion of work I will furnish the Department of Health Services with a complete and accurate log of the well.

Frank A. Murphy
APPLICANT'S SIGNATURE

5-17-90
DATE

COUNTY OF SAN DIEGO
DEPARTMENT OF HEALTH SERVICES

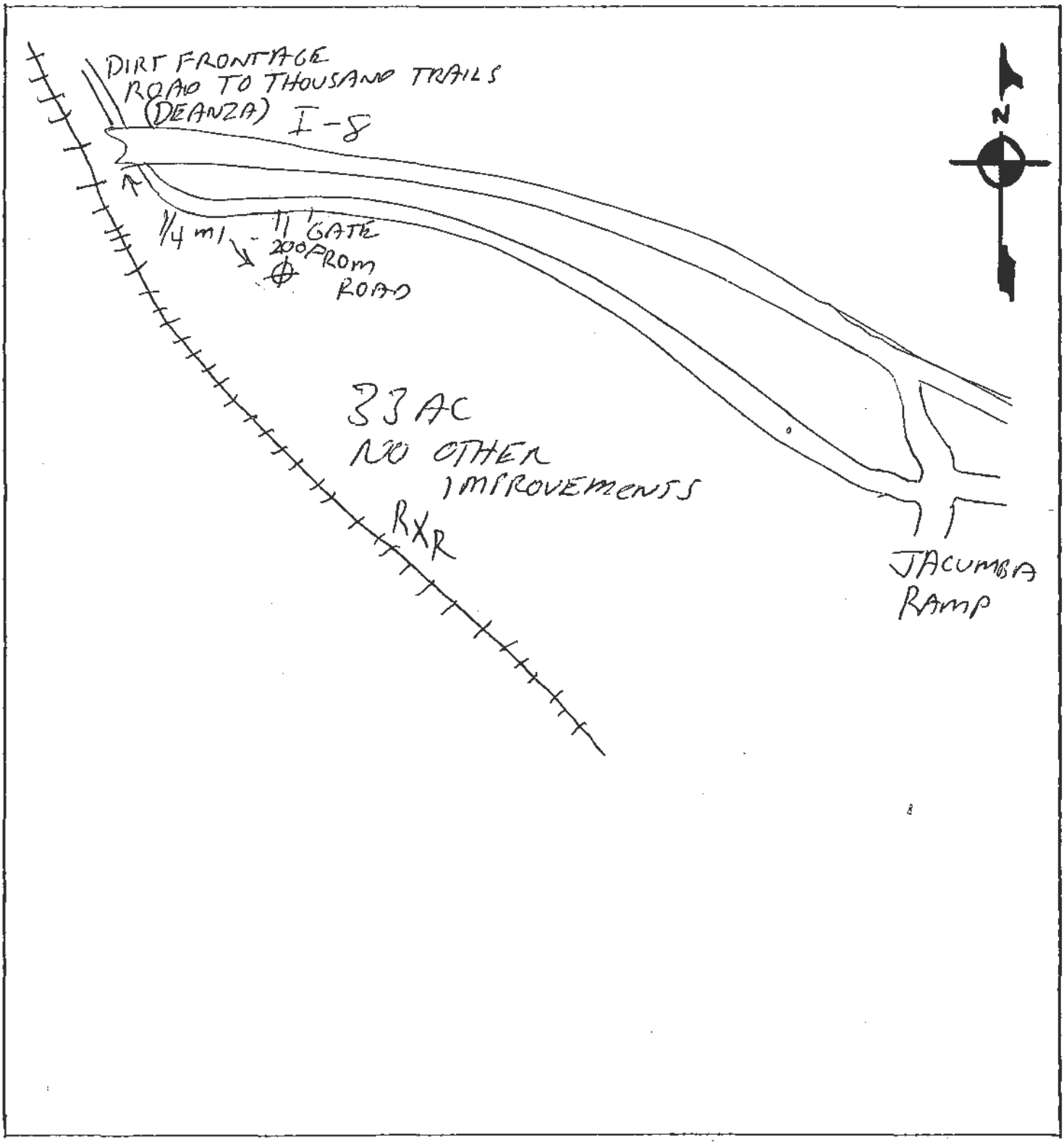
WELL PERMIT APPLICATION

Control # WO2683

Assessor's Parcel No. 614-100-20

LOCATION

INDICATE BELOW THE VICINITY AND EXACT LOCATION OF WELL WITH RESPECT TO THE FOLLOWING ITEMS: PROPERTY LINES, WATER BODIES OR WATER COURSES, DRAINAGE PATTERN, ROADS, EXISTING WELLS, SEWERS AND PRIVATE SEWAGE DISPOSAL SYSTEMS AND OTHER POTENTIAL CONTAMINATION SOURCES, INCLUDING DIMENSIONS.



WDR to RC
8/24/1998

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

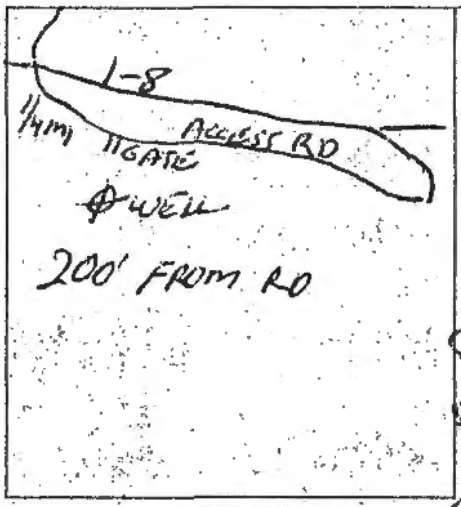
WATER WELL DRILLERS REPORT

Do not fill in
No. 341230

Notice of Intent No. _____
Local Permit No. or Date W-02683

State Well No. _____
Other Well No. _____

(2) LOCATION OF WELL (See instructions):
County SAN DIEGO Owner's Well Number _____
Well address if different from above JACUMBA VALLEY RANCH
Township 17S Range 8E Section 32
Distance from cities, roads, railroads, fences, etc. SEE MAP



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [X]
Industrial [ ]
Test Well [X]
Municipal [ ]
Other [ ]
(Describe)

(5) EQUIPMENT:
Rotary [X] MUD Reverse [ ]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK: Yes [X] No [ ] Size ~~3/4 X 1~~ 1/4"
Diameter of bore 6" GRAVEL
Packed from 20 ft. to 78 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [X] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	20	6"	SCH 200

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
20	78	1/8" X 4

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 20 ft.
Were strata sealed against pollution? Yes [X] No [ ] Interval _____ ft.
Method of sealing CLAY & CEMENT GROUT

(10) WATER LEVELS:
Depth of first water, if known APPROX. 24' ft.
Standing level after well completion APPROX. 4' ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? DRILLER
Type of test Pump [X] Bailer [ ] Air lift [X]
Depth to water at start of test 4' ft. At end of test _____ ft.
Discharge 240 gal/min after 10 hours Water temperature COLD
Chemical analysis made? Yes [ ] No [ ] If yes, by whom? _____
Was electric log made Yes [ ] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 81' ft. Completed depth 78' ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	24'	CLAY - RUST BROWN COLOR
24	55	COARSE SAND
55	65	BROKEN GRAVEL
65	75	BLACK SAND
75	81	VOLCANIC ROCK

Good Seal
J. Murphy
5/16/91

Work started 5-10-1990 Completed 5-14-1990

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed Fred A. Murphy (Well Driller)
NAME MURPHY'S WELL DRILLING (Person, firm, or corporation) (Typed or printed)
Address PO 434
City JACUMBA CA ZIP 92034
License No. 505834 Date of this report 5-23-90

DWR 188 (REV. 12-88) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
WELL PERMIT APPLICATION

DEH USE ONLY
PERMIT # W LW2L 116419
WELL COMPUTER #
FEE:
WATER DIST:

1. Property Owner: (Lessee) BORNT FARMS Phone: 760-356-2233
   2307 EAST Hwy 98 (Mailing Address) HOLTVILLE (City) 92250 (Zip)
2. Well Location - Assessors Parcel Number 660-020-05
   OLD Hwy 80 (Site Address) JACUMBA (City) 91934 (Zip)
3. Well Contractor - Well Driller Joe EDWARDS Company Name: FAIN DRILLING
   12029 OLD CASTLE Rd (Mailing Address) VALLEY CENTER (City) 92082 (Zip)
   Phone#: 760-749-0701 C-57#: 328289 ☐ Cash Deposit ☒ Bond Posted
4. Use: ☒ Private ☐ Public ☐ Industrial ☐ Cathodic ☐ Other AG-WELL
5. Type of Work: ☒ New ☐ Reconstruction ☐ Destruction Time Extension: ☐ 1st ☐ 2nd
6. Type of Equipment: ROTARY
7. Depth of Well: Proposed: 100' Existing: 0
8. Proposed:

Casing	Conductor Casing	Filter/Filler Material	Perforations
Type: Steel A-139-B	☒ Yes ☐ No	☒ Yes ☐ No	S.S. 304 STAINLESS WIRE WRAP SCREEN
Depth: 100	Depth: 20 ft.	From: 20 To: 100	From: 40 To: 100
Diameter 14 in.	Diameter 24 in.	Type: PEA GRAVEL	From: To:
Wall/Gauge: .250	Wall/Gauge: .250	Wall/Gauge:	From: To:

9. Annular Seal: Depth: 20 ft. Sealing Material: Cement
   Borehole diameter: 32 in. Conductor diameter: 24 in. Annular Thickness 5 in.
10. Date of Work: Start: 1-21-05 Complete: 1-24-05

On sites served by public water, contact the local water agency for meter protection requirements.

I hereby agree to comply with all regulations of the Department of Environmental Health, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well construction, repair, modification and destruction. Immediately upon completion of work, I will furnish the Department of Environmental Health with a complete and accurate log of the well. I accept responsibility for all work done as part of this permit and all work will be performed under my direct supervision.

Contractor's Signature: Joe R. Fain Date: 1-20-05

DISPOSITION OF APPLICATION (Department of Environmental Health Use only)

☒ **Approved** ☐ **Denied** Special Conditions: Grading and clearing associated with access to, or the construction, maintenance or destruction of water wells, may require additional permits from the County of San Diego and/or other agencies.

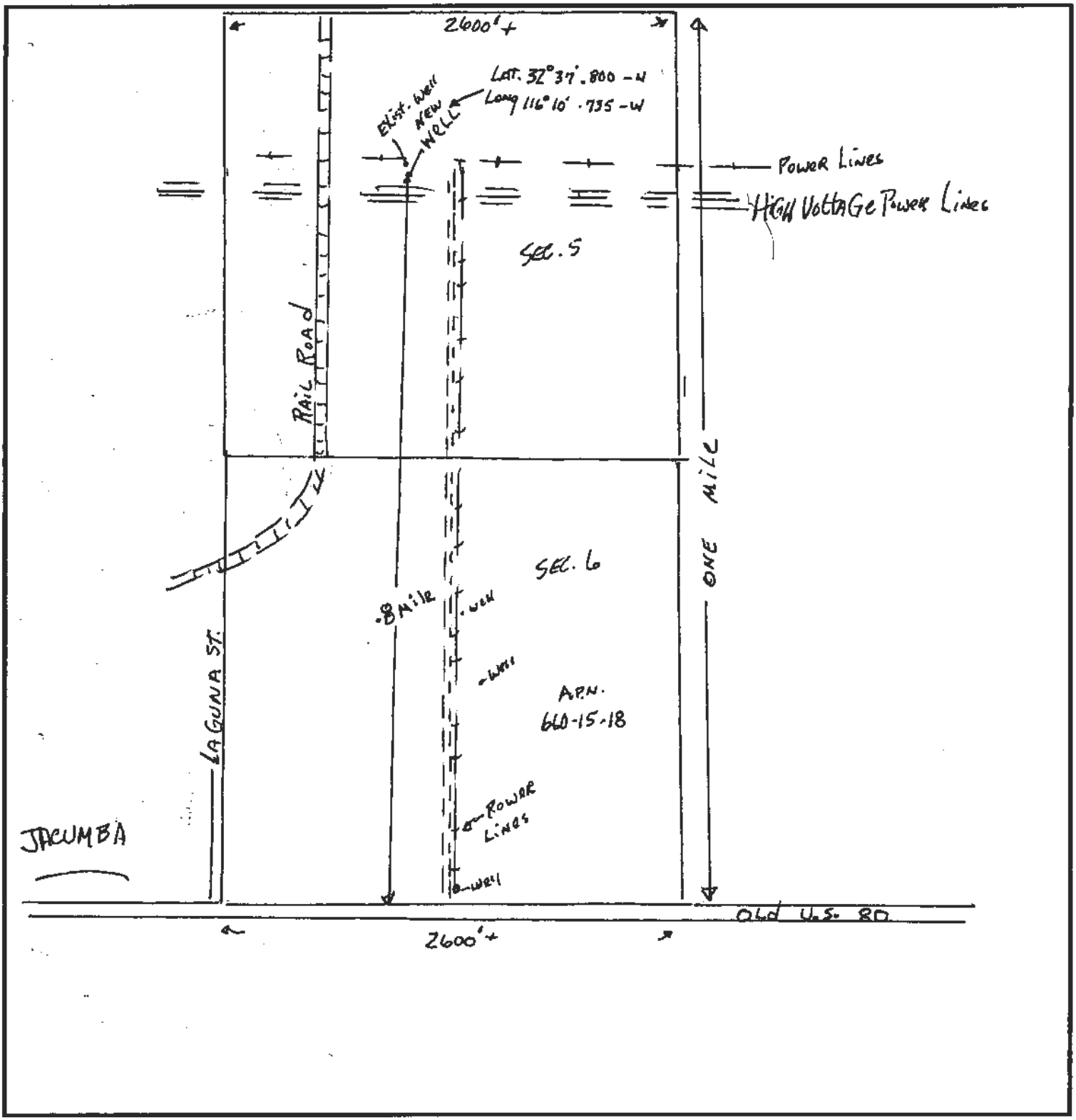
Specialist: Date: 1/28/05

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH

Control #: LUEG 16419
Assessor's Parcel Number: 660-020-05

LOCATION

Indicate below the vicinity and exact location of well with respect to the following items: Property lines, water bodies or water courses, drainage pattern, easements, roads, existing wells, sewers and private sewage disposal systems and other potential contamination sources, including dimensions.

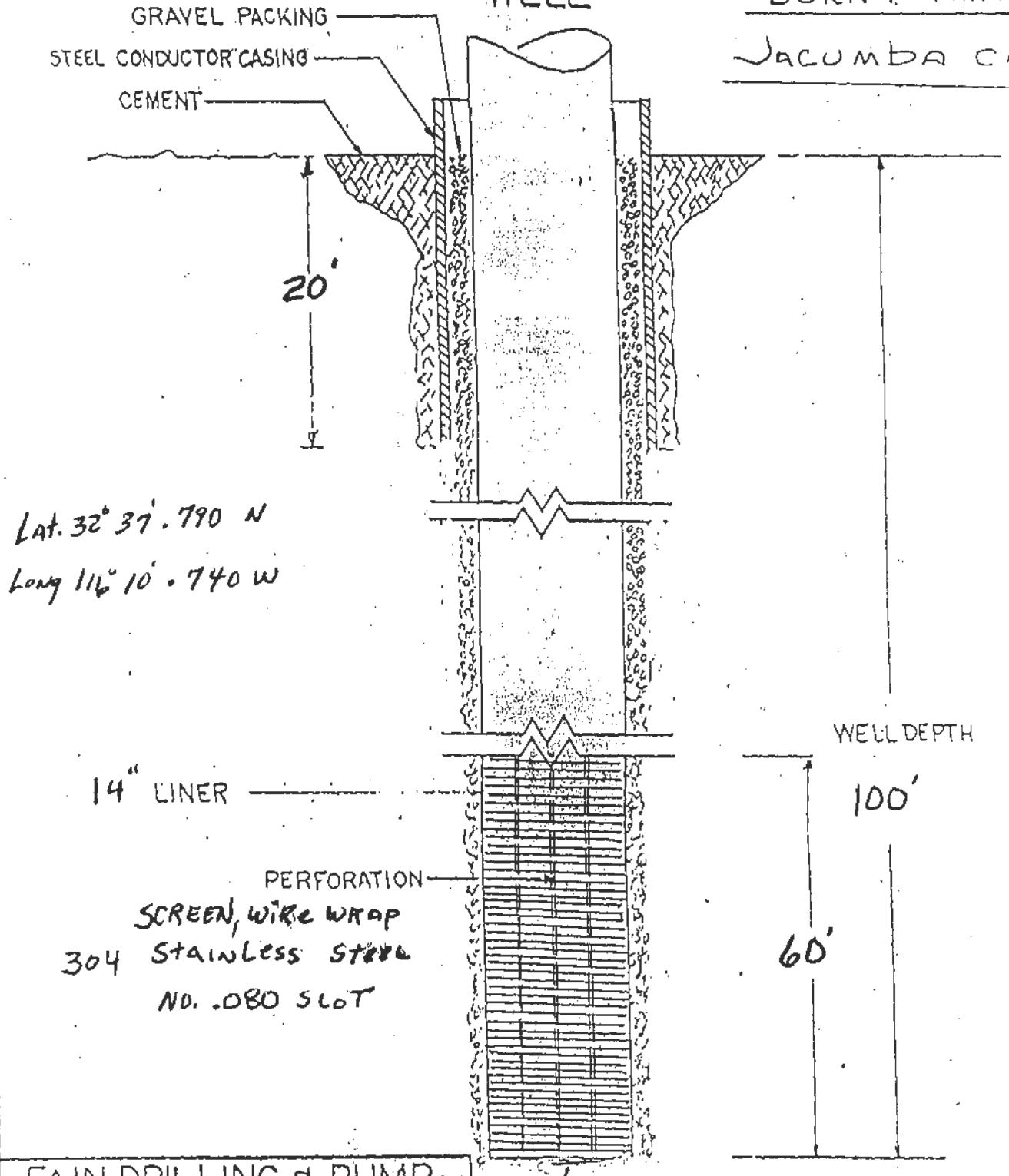


LWEL 16419

"AS BUILT" WELL

BORNT FARMS

JACUMBA CA.



Lat. 32° 37'. 790 N

Long 116° 10'. 740 W

SCREEN, WIRE WRAP
304 Stainless Steel
NO. .080 SLOT

-FAIN DRILLING & PUMP-
12029 OLD CASTLE RD.
VALLEY CENTER CA.

STEEL CONDUCTOR 24" X 20'
steel LINER 14" X 100'
GRAVEL SIZE 5/16 X 7

BY JF 1-26-05

JOE FAIN-OWNER

QUADRUPLICATE
For Local Requirements

Page 1 of 1
Owner's Well No. Case
Date Work Began 1/17/05, Ended 1/25/05
Local Permit Agency [illegible]
Permit No. 16419 Permit Date 1/25/05

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 0909529

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Rotary FLUID Gel

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	11	Clayey sand and silt fine grains
11	56	Grey clayey sand fine to coarse medium grained
56	76	Coarse grand and gravel
76	89	sand fine to course with gravel and boulders
90	112	Clay weathered, rock

116.10.740
32 37.790

TOTAL DEPTH OF BORING 112 (Feet)
TOTAL DEPTH OF COMPLETED WELL 100 (Feet)

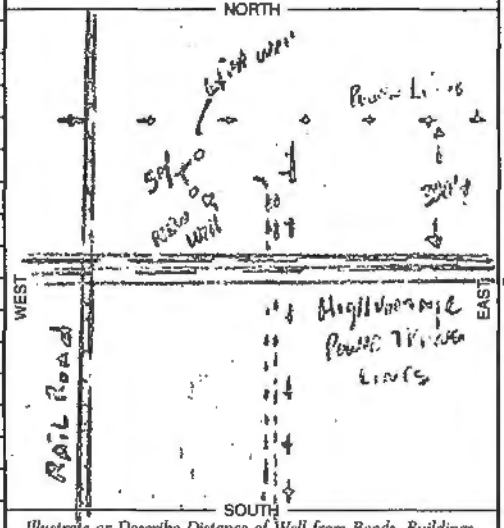
WELL OWNER

The information in this grayed area has been blocked from public viewing pursuant to section 13752 of the Water Code and the Information Practice Act of 1977, to protect personal information.

WELL LOCATION

Address n/o Hwy 80 & East Hwy 98
City Jacumba
County San Diego
APN Book 660 Page 020 Parcel 05
Township 16-S Range 8-E Section 5
Lat 32 DEG. 37.790 N MIN. SEC. Long 116 DEG. 10.740 W MIN. SEC.

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ___ Public
X Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 12 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 9 (Ft.) & DATE MEASURED 1-26-05
ESTIMATED YIELD * 2000 (GPM) & TEST TYPE Air Lift
TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN 90 (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	20	32	X				Steel A-53	23.5	.250	
0	40	22	X				Steel A-139	18.5	.250	
41	100	22		X			304 S.S.	18.5	.250	.080

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
0	100				Sand

ATTACHMENTS (✓)

___ Geologic Log
X Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
X Other Site Map

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

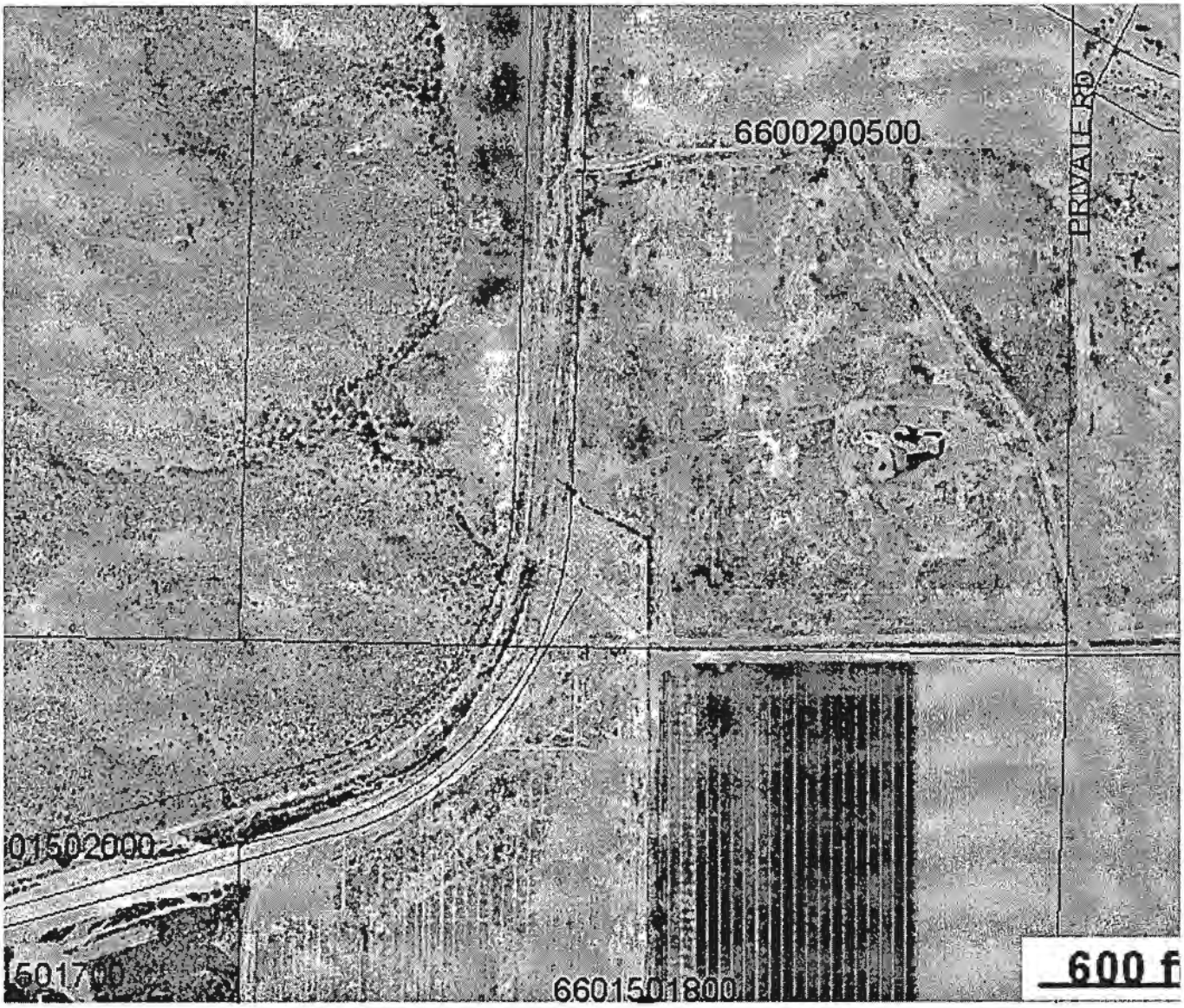
I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Fain Drilling & Pump Co. Inc.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 12029 Old Castle Rd. CITY Valley Center STATE Ca ZIP 92082

Signed [signature] 1-29-05
C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER 325257

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM


6600200500
PRIVATE Rd
01502000
501700
6601501800
600 f

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
WELL PERMIT APPLICATION

DEH USE ONLY
PERMIT # W Wsel 17922
WELL COMPUTER #
FEE: _____
WATER DIST: _____

1. Property Owner: BORNT FARMS Phone: 619-766-4213
   2307 EAST Hwy 98 (Mailing Address) HOLTVille CA (City) 92250 (Zip)
2. Well Location - Assessors Parcel Number 661-060-22
   Old Hwy 80 (Site Address) JACUMBA (City) _____ (Zip)
3. Well Contractor - Well Driller Joe EDWARDS Company Name: FAIN Drilling
   12029 Old CASTLE Rd (Mailing Address) VALLEY CENTER (City) 92082 (Zip)
   Phone#: 760-749-0701 C-57#: 328287 ☐ Cash Deposit ☒ Bond Posted
4. Use: ☒ Private ☐ Public ☐ Industrial ☐ Cathodic ☐ Other _____
5. Type of Work: ☒ New ☐ Reconstruction ☐ Destruction Time Extension: ☐ 1st ☐ 2nd
6. Type of Equipment: Rotary
7. Depth of Well: Proposed: 120' Existing: 0
8. Proposed:

Casing	Conductor Casing	Filter/Filler Material	Perforations
Type: STEEL	☒ Yes ☐ No	☒ Yes ☐ No	
Depth: 120	Depth: 20 ft.	From: 20 To: 120	From: 60 To: 120
Diameter 14" in.	Diameter _____ in.	Type: _____	From: _____ To: _____
Wall/Gauge: .250	Wall/Gauge: _____	Wall/Gauge: _____	From: _____ To: _____

9. Annular Seal: Depth: 20 ft. Sealing Material: CEMENT
   Borehole diameter: 32 in. Conductor diameter: 24 in. Annular Thickness 4 in.
10. Date of Work: Start: MAY 26-06 Complete: MAY-31-06

On sites served by public water, contact the local water agency for meter protection requirements.

I hereby agree to comply with all regulations of the Department of Environmental Health, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well construction, repair, modification and destruction. Immediately upon completion of work, I will furnish the Department of Environmental Health with a complete and accurate log of the well. I accept responsibility for all work done as part of this permit and all work will be performed under my direct supervision.

Contractor's Signature: J. R. Fain Date: MAY-19-06

DISPOSITION OF APPLICATION (Department of Environmental Health Use only)

☒ **Approved** ☐ **Denied** Special Conditions: Grading and clearing associated with access to, or the construction, maintenance or destruction of water wells, may require additional permits from the County of San Diego and/or other agencies.

Specialist: Ken Munter Date: [redacted] 5/19/06

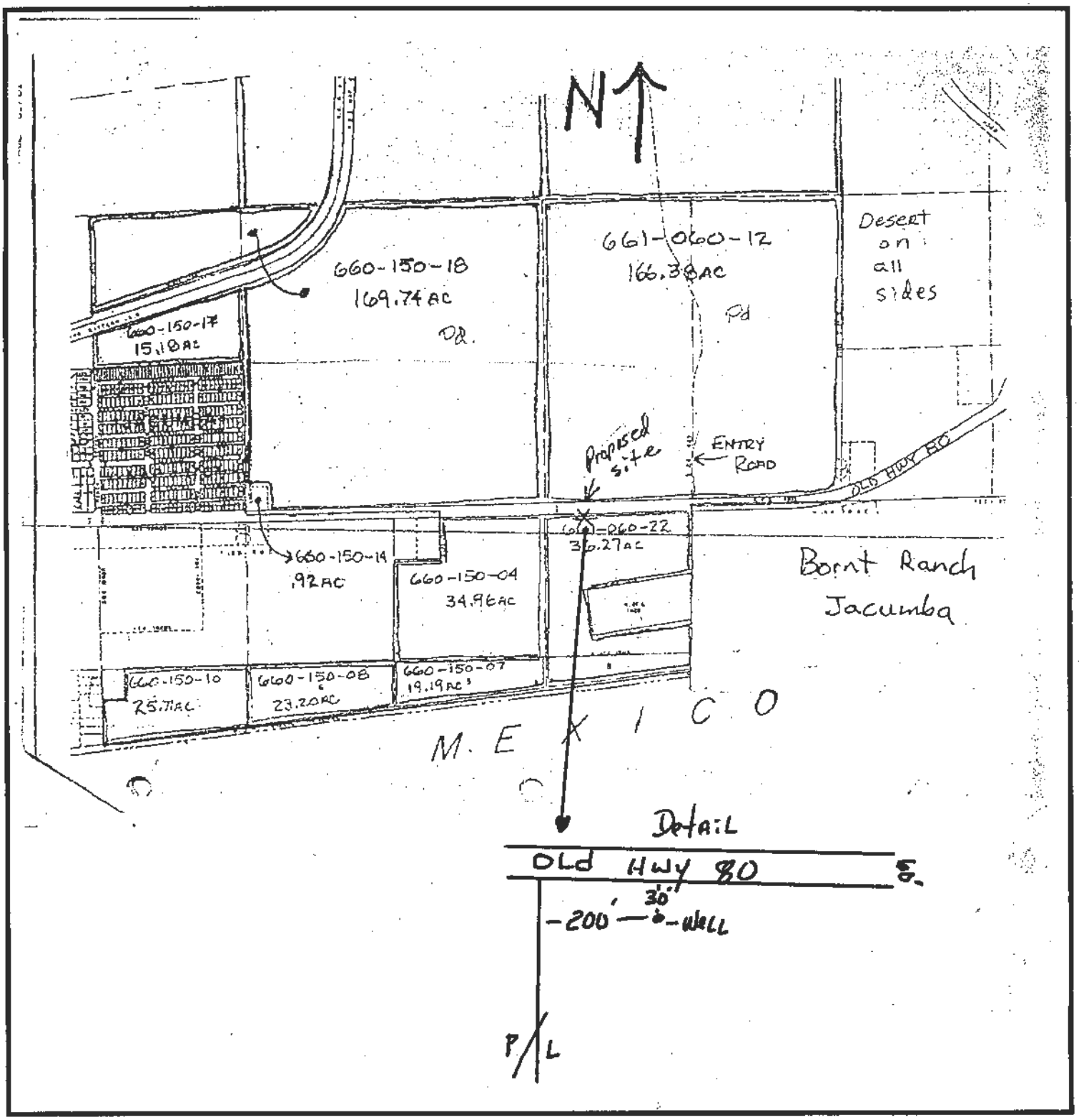
COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH

Control #: 2wel 17922

Assessor's Parcel Number: 661-060-22

LOCATION

Indicate below the vicinity and exact location of well with respect to the following items: Property lines, water bodies or water courses, drainage pattern, roads, existing wells, sewers and private sewage disposal systems and other potential contamination sources, including dimensions.



QUADRUPLICATE
For Local Requirements

Rec 9/18/06 MW

Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 1085056

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

Owner's Well No. TEST WELL

Date Work Began 6/26/06 Ended 7/6/06

Local Permit Agency DEH

Permit No. LWEL 17977 Permit Date 5/19/06

The information in this grayed area has been blocked from public viewing pursuant to section 13752 of the Water Code and the Information Practice Act of 1977, to protect personal information.

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Rotary FLUID Gel

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	8	Loose silty sand - brown color
8	17	Clacy sand
17	45	Medium to coarse sand - brown color
45	75	Medium to coarse sand and small aggregates round to sub-round partly cemented - red to purple color
75	108	Clacy sand and small aggregated purple color
108	120	Hard, cemented aggregates - purple color

116.17025
32.61767

TOTAL DEPTH OF BORING 120 (Feet)

TOTAL DEPTH OF COMPLETED WELL 0 (Feet)

WELL LOCATION

Address Old Hwy 80

City Jacumba

County San Diego

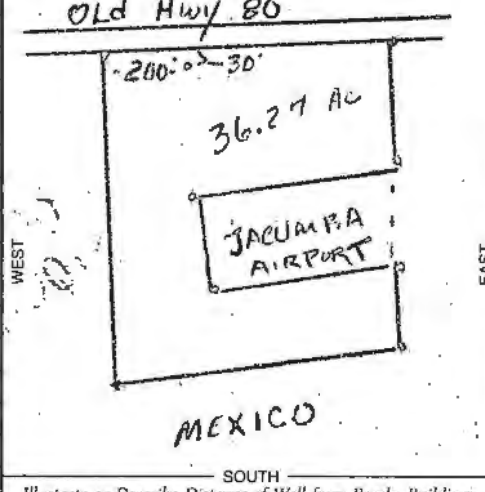
APN Book 661 Page 060 Parcel 22

Township 18S Range 8E Section 9

Lat ___ DEG. ___ MIN. ___ SEC. N

Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

✓ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

MONITORING ___
TEST WELL ✓
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 40 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 25 (Ft.) & DATE MEASURED 7/5/06

ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
20	120		X		

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
✓ Other S.A. Map

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Fain Drilling & Pump Co Inc (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 12029 Old Castle Rd. CITY Valley Center, STATE Ca ZIP 92082

Signed Don R. Fain C-57 LICENSED WATER WELL CONTRACTOR

DATE SIGNED 9-5-06

C-57 LICENSE NUMBER 372727

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
WELL PERMIT APPLICATION

DEH USE ONLY
PERMIT # WWCI -1803
WELL COMPUTER #
FEE: _____
WATER DIST: _____

1. Property Owner: BORNT FARMS Phone: 619 766-4213
   2307 EAST Hwy 98 (Mailing Address) HOLTVILLE CA 92250 (City, Zip)
2. Well Location - Assessors Parcel Number 660-150-04
   OLd Hwy 80 (Site Address) JACUMBA (City, Zip)
3. Well Contractor - Well Driller Joe EDWARds Company Name: FAIN DRILLING
   12029 Old CASTLE Rd (Mailing Address) VALLEY CENTER (City) 92082 (Zip)
   Phone#: 760-749-0701 C-57#: 328287 ☐ Cash Deposit ☒ Bond Posted
4. Use: ☒ Private ☐ Public ☐ Industrial ☐ Cathodic ☐ Other AG-WELL
5. Type of Work: ☒ New ☐ Reconstruction ☐ Destruction Time Extension: ☐ 1st ☐ 2nd
6. Type of Equipment: Rotary
7. Depth of Well: Proposed: 100' Existing: -0-
8. Proposed:

Casing	Conductor Casing	Filter/Filler Material	Perforations
Type: Steel - A-129	☒ Yes ☐ No	☒ Yes ☐ No	
Depth: 100 ±	Depth: 20 ft.	From: 20 To: 100	From: 50 To: 90
Diameter 14" in.	Diameter 24 in.	Type:	From: To:
Wall/Gauge: .250	Wall/Gauge: .250	Wall/Gauge:	From: To:

9. Annular Seal: Depth: 20 ft. Sealing Material: CEMENT
   Borehole diameter: 32 in. Conductor diameter: 24 in. Annular Thickness 4 in.
10. Date of Work: Start: AUG - 2006 Complete: AUG-2006

On sites served by public water, contact the local water agency for meter protection requirements.

I hereby agree to comply with all regulations of the Department of Environmental Health, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well construction, repair, modification and destruction. Immediately upon completion of work, I will furnish the Department of Environmental Health with a complete and accurate log of the well. I accept rasponsibility for all work done as part of this permit and all work will be performed under my direct supervision.

Contractor's Signature: Joe R. Fain Date: 8-1-06

DISPOSITION OF APPLICATION (Department of Environmental Health Use only)

☒ **Approved** ☐ **Denied** Special Conditions: Grading and clearing associated with access to, or the construction, maintenance or destruction of water wells, may require additional permits from the County of San Diego and/or other agencies.

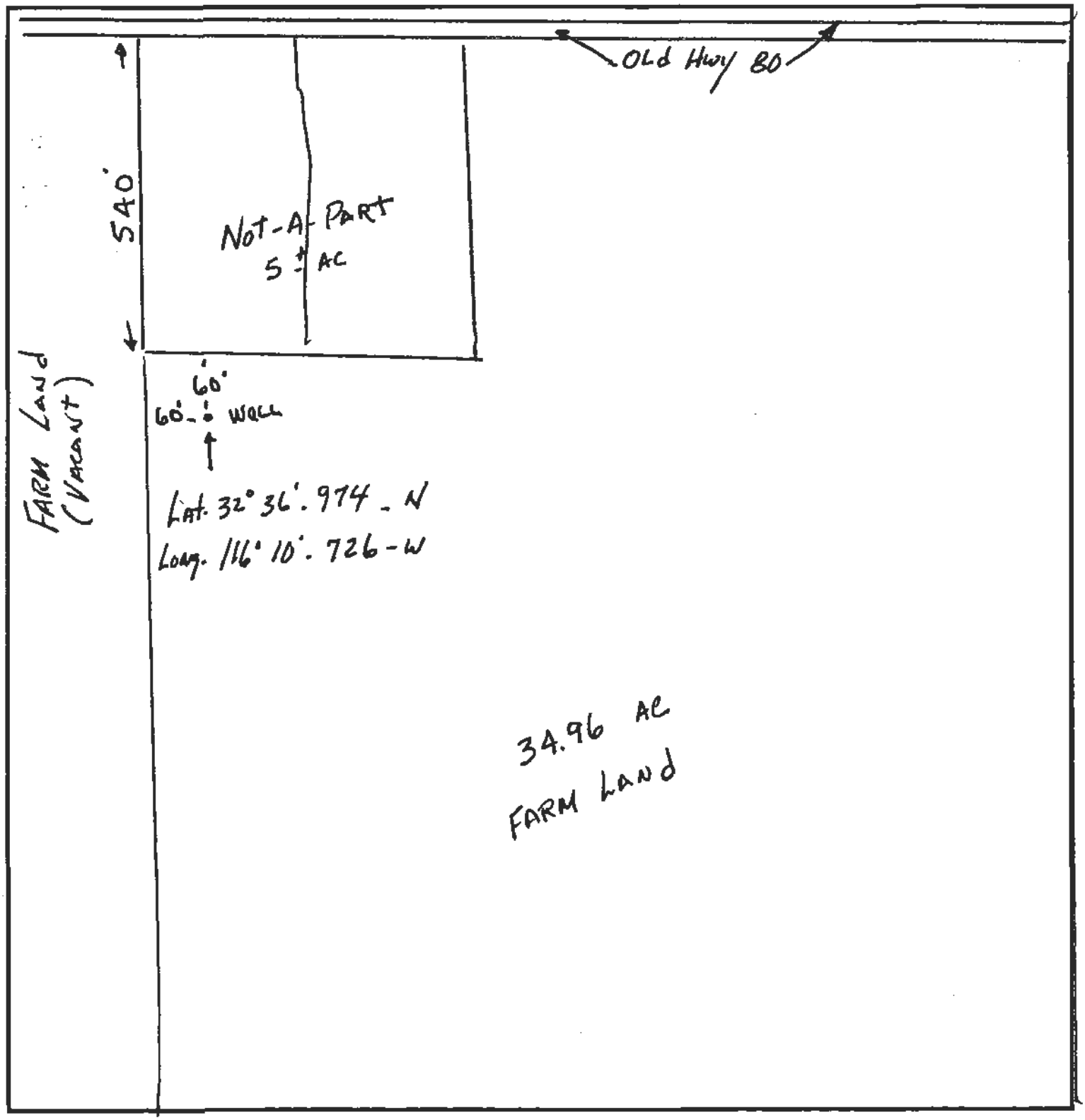
Specialist: _____ Date: 8-4-06

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH

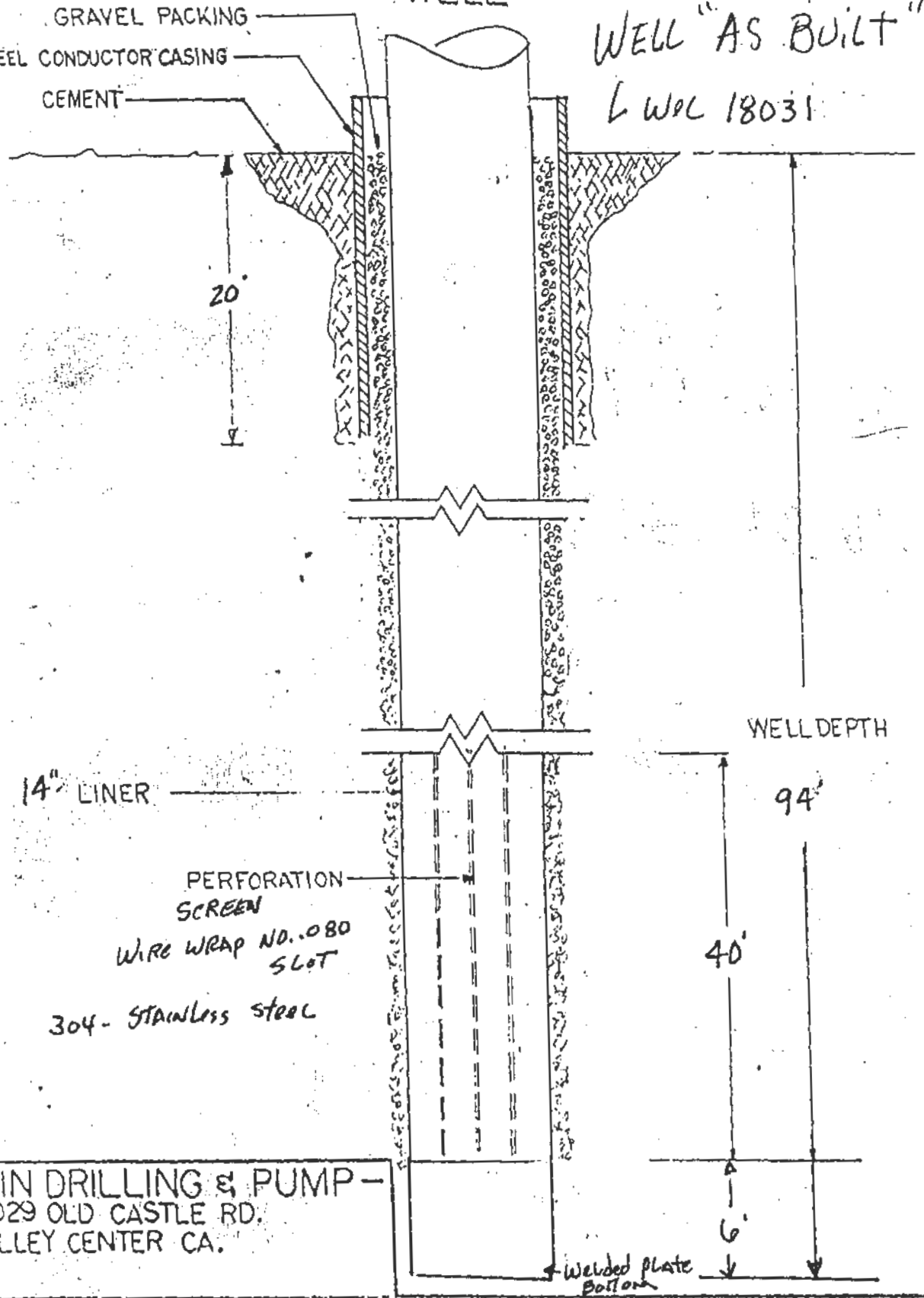
Control #: LWel - 18031
Assessor's Parcel Number: 660-150-04

LOCATION

Indicate below the vicinity and exact location of well with respect to the following items: Property lines, water bodies or water courses, drainage pattern, easements, roads, existing wells, sewers and private sewage disposal systems and other potential contamination sources, including dimensions.



BORNT FARMS
WELL "AS BUILT"
L WPC 18031



-FAIN DRILLING & PUMP-
12029 OLD CASTLE RD.
VALLEY CENTER CA.

STEEL CONDUCTOR 24" X 21'
STEEL LINER 14" X 96'
GRAVEL SIZE 5/16 X 7

BY: [signature] 8-5-06
JOE FAIN-OWNER

QUADRUPLICATE
For Local Requirements

Rec 9/18/06

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 1085057

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page 1 of 1
Owner's Well No. 2006
Date Work Began 7/27/06, Ended 8/2/06
Local Permit Agency DEH
Permit No. LWEL 18031 Permit Date 8/4/06

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Rotary FLUID Gel

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	23	Fine grained silty sand, partly cemented - brown color
23	56	Fine to medium gravel sand brown color
56	86	Coarse sand with gravel
86	96	Weathered bedrock
96	105	Black meta - volcanics

116.10.726
32.36.974

TOTAL DEPTH OF BORING 105 (Feet)
TOTAL DEPTH OF COMPLETED WELL 94 (Feet)

The information in this grayed area has been blocked from public viewing pursuant to section 13752 of the Water Code and the Information Practice Act of 1977, to protect personal information.

WELL LOCATION

Address Old Hwy 80
City Jacumba
County San Diego
APN Book 660 Page 150 Parcel 06
Township 18S Range 8E Section 9
Lat 32 DEG. 36 MIN. .974 SEC. N
Long 116 DEG. 10 MIN. .726 SEC. W

LOCATION SKETCH

NORTH
Old Hwy 80
Well
34.96 AC
See attached MAP for detail
WEST
EAST
SOUTH

*Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ___ Public
X Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 57 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 38 (Ft.) & DATE MEASURED 8/2/06
ESTIMATED YIELD * 1000 (GPM) & TEST TYPE airlift
TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN 40 (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	20	32	X				Steel	23.5	.250	
0	50	22	X				Steel	13.5	.250	
50	90	22		X			Steel-SS	13.5	.250	
90	96	22	X				Steel	13.5	.250	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
0	96				5/16x7

ATTACHMENTS (✓)

___ Geologic Log
X Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
X Other site map

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME FAIN DRILLING & PUMP CO INC
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
12029 Old castle Rd. valley Center, Ca 92082
ADDRESS CITY STATE ZIP

Signed [signature] 8-5-06 32297
C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
WELL PERMIT APPLICATION

DEH USE ONLY
LWEL - 18415
PERMIT # W
WELL COMPUTER #
FEE:
WATER DIST:

1. Property Owner: BORNT FARMS Phone: 619-766-4213
   2307 EAST HWY 98 (Mailing Address) HOLTVILLE, CA (City) 92250 (Zip)
2. Well Location - Assessors Parcel Number 660-150-18
   OLD HWY 80 (Site Address) JACUMBA (City) (Zip)
3. Well Contractor - Well Driller JOE EDWARDS Company Name: FAM DRILLING
   12029 OLD CASTLE RD (Mailing Address) VALLEY CENTER (City) 92082 (Zip)
   Phone#: (760) 749-0701 C-57#: 328287 ☐ Cash Deposit ☒ Bond Posted
4. Use: ☒ Private ☐ Public ☐ Industrial ☐ Cathodic ☐ Other
5. Type of Work: ☒ New ☐ Reconstruction ☐ Destruction Time Extension: ☐ 1st ☐ 2nd
6. Type of Equipment: ROTARY
7. Depth of Well: Proposed: 110' Existing: 0
8. Proposed:

Casing	Conductor Casing	Filter/Filler Material	Perforations
Type: STEEL	☒ Yes ☐ No	☒ Yes ☐ No	
Depth: 110'	Depth: 20' ft.	From: 20 To: 120	From: 70 To: 110
Diameter 14 in.	Diameter 24" in.	Type:	From: To:
Wall/Gauge: .250	Wall/Gauge: .250	Wall/Gauge:	From: To:

9. Annular Seal: Depth: 20 ft. Sealing Material: CEMENT
   Borehole diameter: 32" in. Conductor diameter: 24 in. Annular Thickness 4 in.
10. Date of Work: Start: 7-A-07 Complete: 7-24-07

On sites served by public water, contact the local water agency for meter protection requirements.

I hereby agree to comply with all regulations of the Department of Environmental Health, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well construction, repair, modification and destruction. Immediately upon completion of work, I will furnish the Department of Environmental Health with a complete and accurate log of the well. I accept responsibility for all work done as part of this permit and all work will be performed under my direct supervision.

Contractor's Signature: [signature] Date: 7-13-07

DISPOSITION OF APPLICATION (Department of Environmental Health Use only)

☒ **Approved** ☐ **Denied** Special Conditions: Grading and clearing associated with access to, or the construction, maintenance or destruction of water wells, may require additional permits from the County of San Diego and/or other agencies.

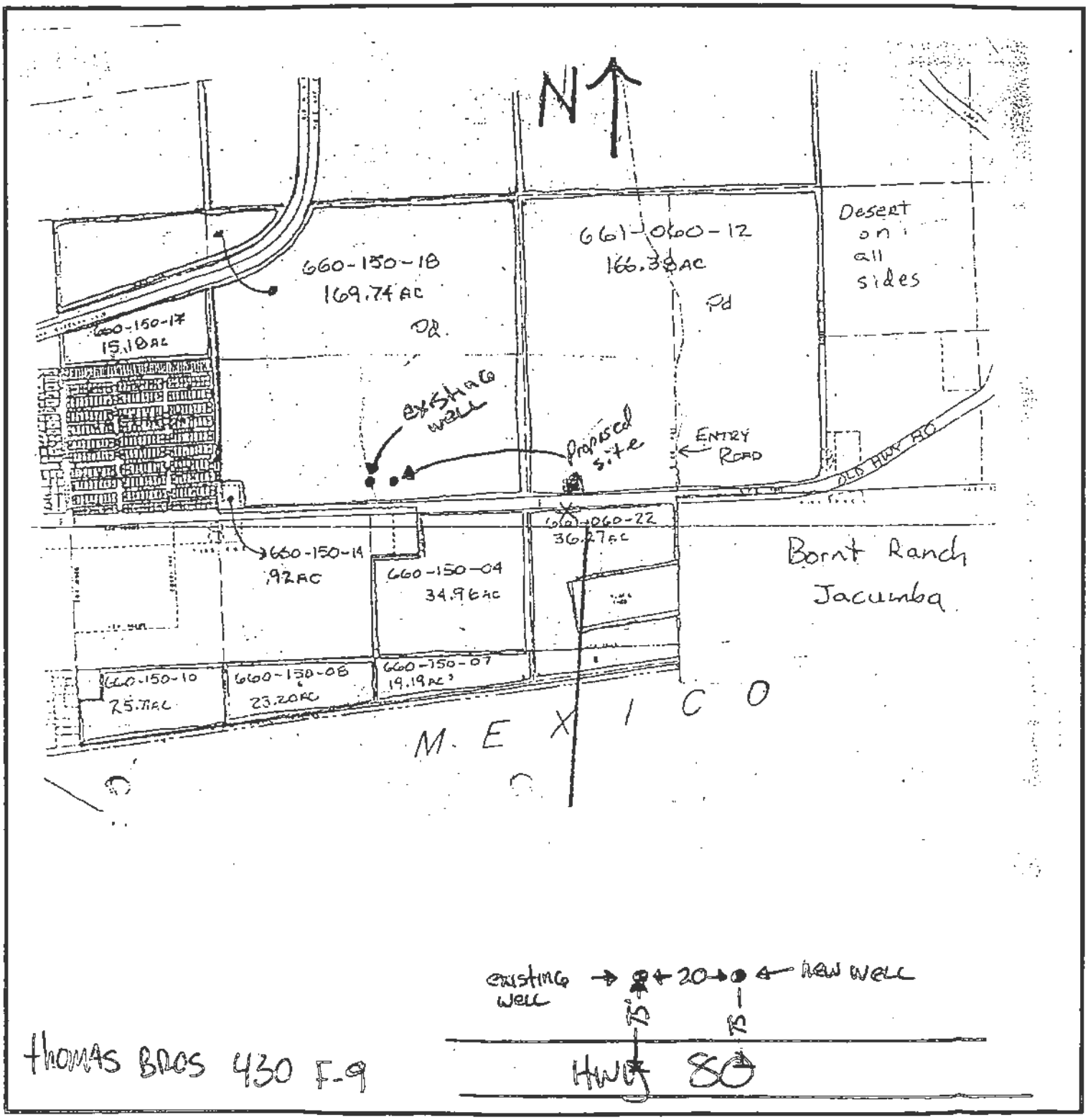
Specialist: [signature] Date: 7-13-07

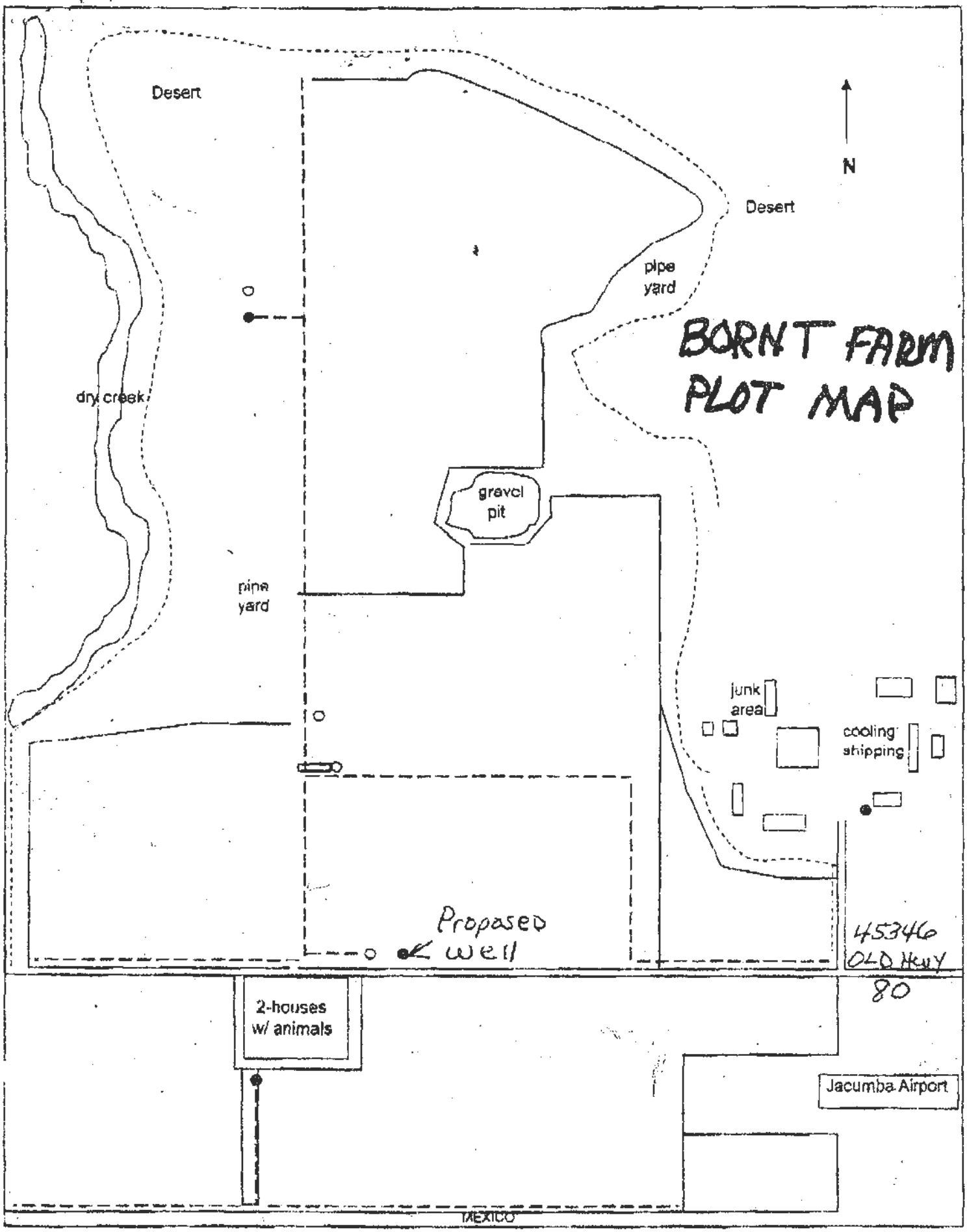
COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH

Control #: LWEL-18415
Assessor's Parcel Number: 660-150-16

LOCATION

Indicate below the vicinity and exact location of well with respect to the following items: Property lines, water bodies or water courses, drainage pattern, easements, roads, existing wells, sewers and private sewage disposal systems and other potential contamination sources, including dimensions.



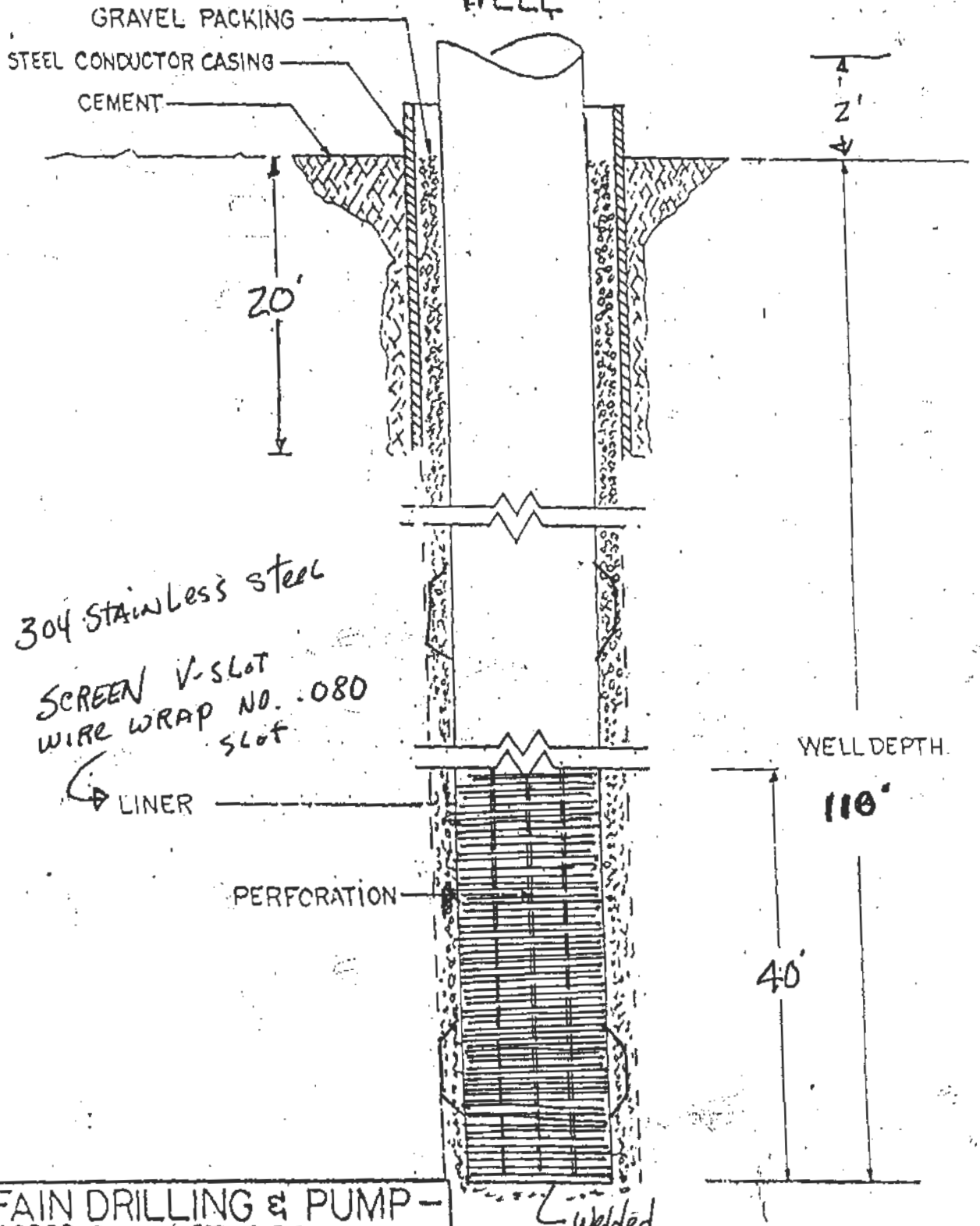

Desert
N
Desert
pipe yard
BORNT FARM PLOT MAP
dry creek
gravel pit
pipe yard
junk area
cooling shipping
Proposed well
45346 OLD HWY 80
2-houses w/ animals
Jacumba Airport
MEXICO

Lwel 18415

"AS BUILT"

WELL

BORT FARMS



-FAIN DRILLING & PUMP-
12029 OLD CASTLE RD.
VALLEY CENTER CA.

STEEL CONDUCTOR 24" X 21'
STEEL LINER 14" X 113'
GRAVEL SIZE 5/16 X 7

BY Joe R. Fain 7/30/07
JOE FAIN-OWNER

Rec 9/24/07

QUADRUPLICATE
For Local Requirements

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 1089727

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page 1 of 1
Owner's Well No. One 2007
Date Work Began 7/18/07, Ended 7/23/07
Local Permit Agency DEH
Permit No. EMBR 19415 Permit Date 7/13/07

The information in this grayed area has been blocked from public viewing pursuant to section 13752 of the Water Code and the Information Practice Act of 1977, to protect personal information.

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Rotary FLUID Gel

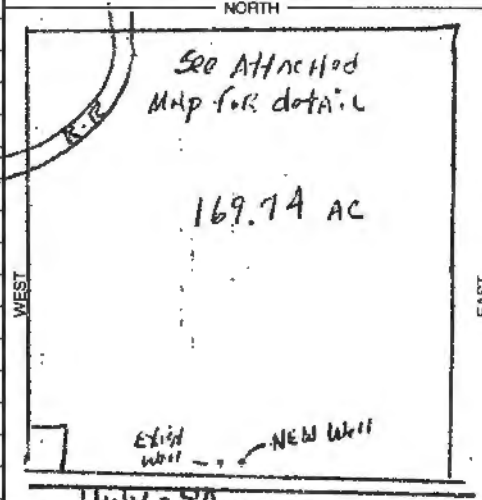
DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
		ALLUVIAL FILL AS FOLLOWS:
0	9	Sand, fine grained -- brown color
9	24	Clay - Dark color
24	70	Sand, fine grained
70	113	Sand, medium to coarse grained with some boulders

TOTAL DEPTH OF BORING 113 (Feet)
TOTAL DEPTH OF COMPLETED WELL 114 (Feet)

WELL LOCATION

Address Old Hwy 80
City Jacumba
County San Diego
APN Book 660 Page 150 Parcel 18
Township 18 S Range 8 E Section 8
Lat ___ DEG. ___ MIN. ___ SEC. N
Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH

NORTH


SOUTH

*Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
X Domestic ___ Public
X Irrigation ___ Industrial
___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 50+ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 40 (Ft.) & DATE MEASURED 7/23/07
ESTIMATED YIELD * 2000 (GPM) & TEST TYPE airlift
TEST LENGTH 6 (Hrs.) TOTAL DRAWDOWN 60 (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	20	32	X				Steel	23.5	.250	
0	73	24	X				Steel	13.5	.250	
73	113	24		X			Steel S.S. 304	13.5	.250	.080

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
20	113		pea	gravel	5/16x7

ATTACHMENTS (✓)

___ Geologic Log
X Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
✓ Other Site Map

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME FAIN DRILLING & PUMP CO INC
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 12029 Old Castle Rd. CITY Valley Center STATE Ca ZIP 92082
Signed [signature] DATE SIGNED 7-30-07
C-57 LICENSED WATER WELL CONTRACTOR C-57 LICENSE NUMBER 327289

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
WELL PERMIT APPLICATION

DEH USE ONLY
PERMIT # W 20411
WELL COMPUTER # —
FEE: 462.
WATER DIST: _____

1. Property Owner: BURNT FARMS (Leasee) Phone: 760-356-2233
   2307 E. Hwy 98 (Mailing Address) HOLTVILLE (City) 92250 (Zip)
2. Well Location - Assessors Parcel Number 660-150-21
   OLD Hwy 80 (Site Address) JACUMBA (City) _____ (Zip)
3. Well Contractor - Well Driller JOE EDWARDS Company Name: FAIN DRILLING
   12029 Old Castle Rd (Mailing Address) Valley CENTER (City) 92082 (Zip)
   Phone#: 760-749-0701 C-57#: 328287 ☐ Cash Deposit ☑ Bond Posted
4. Use: ☑ Private ☐ Public ☐ Industrial ☐ Cathodic ☑ Other AG-well only
5. Type of Work: ☑ New ☐ Reconstruction ☐ Destruction Time Extension: ☐ 1st ☐ 2nd
6. Type of Equipment: Rotary
7. Depth of Well: Proposed: 300' Existing: 0
8. Proposed:

Casing	Conductor Casing	Filter/Filler Material	Perforations
Type: Steel	☑ Yes ☐ No	☑ Yes ☐ No	
Depth: 300' ±	Depth: 20 ft.	From: 20 To: 300	From: 200 To: 300'
Diameter 16" in.	Diameter 24" in.	Type: #6	From: _____ To: _____
Wall/Gauge: .250	Wall/Gauge: .250	Wall/Gauge: _____	From: _____ To: _____

9. Annular Seal: Depth: 20 ft. Sealing Material: CEMENT
   Borehole diameter: 32 in. Conductor diameter: 24 in. Annular Thickness 4 in.
10. Date of Work: Start: Oct 26-09 Complete: Nov-8-09

On sites served by public water, contact the local water agency for meter protection requirements.

I hereby agree to comply with all regulations of the Department of Environmental Health, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well construction, repair, modification and destruction. Immediately upon completion of work, I will furnish the Department of Environmental Health with a complete and accurate log of the well. I accept responsibility for all work done as part of this permit and all work will be performed under my direct supervision.

Contractor's Signature: Joe R. Fain Date: Oct-21-09

DISPOSITION OF APPLICATION (Department of Environmental Health Use only)

☑ **Approved** ☐ **Denied** Special Conditions: Grading and clearing associated with access to, or the construction, maintenance or destruction of water wells, may require additional permits from the County of San Diego and/or other agencies. _____

Specialist: Roger Hans Date: 11-2-09

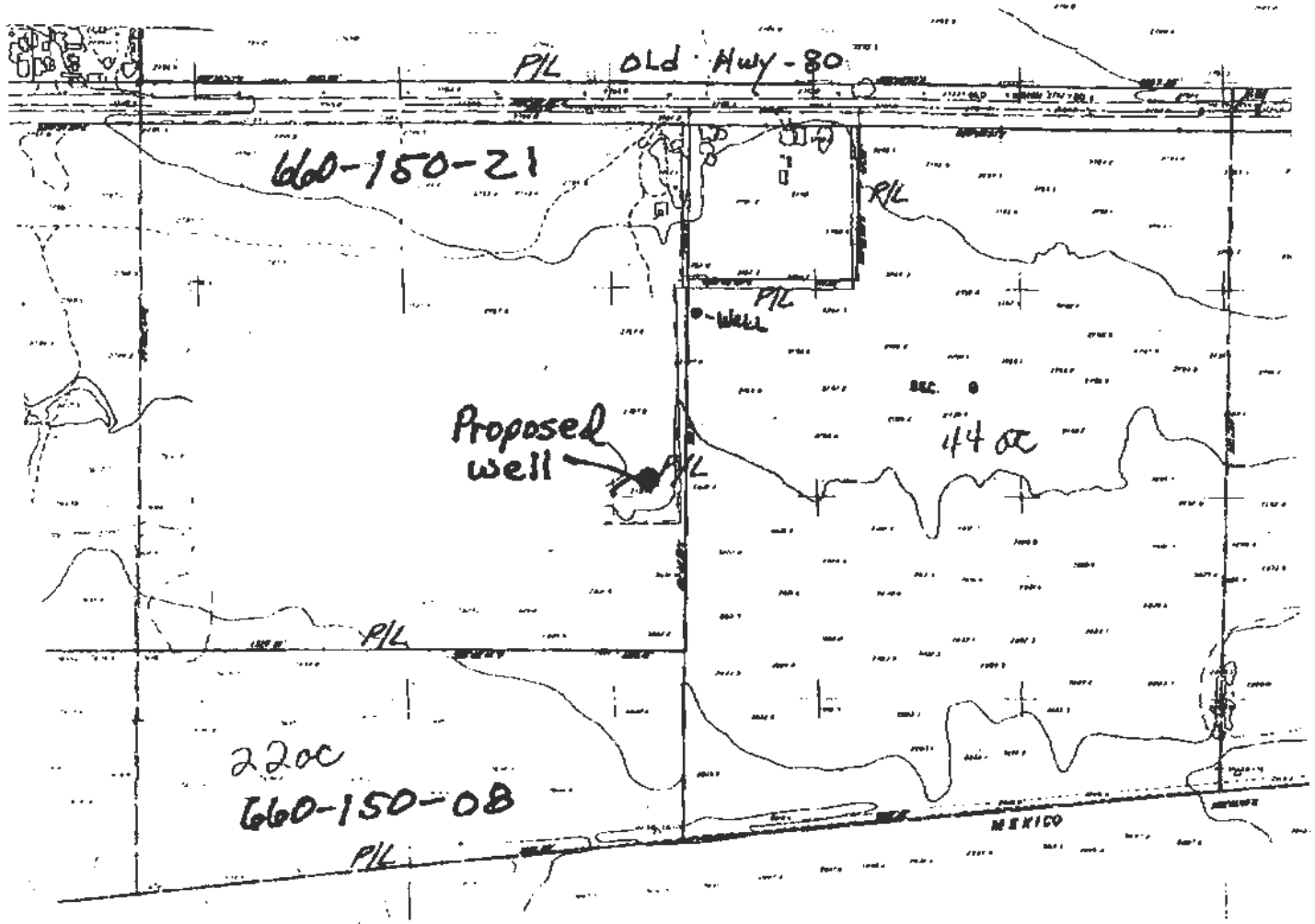
COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH

Control #: LWEL-20411

Assessor's Parcel Number: 660-150-21

LOCATION

Indicate below the vicinity and exact location of well with respect to the following items: Property lines, easements, water bodies or water courses, drainage pattern, roads, existing wells, sewers and private sewage disposal systems and other potential contamination sources, including dimensions.



BORING MAP

1" = 400 Ft.

N

Rec'd 9-8-11

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. e0135671

Page one of one

Owner's Well Number Test Hole

Date Work Began 11/04/2009 Date Work Ended 11/6/2009

Local Permit Agency DEH

Permit Number LWEL20411 Permit Date 11/2/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Direct Rotary Drilling Fluid Bentonite mud

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
		Alluvial Fill As Follows:
0	10	Silty Sand
10	80	Sandy Clay W/ Small Aggregate
80	150	Clay W/ Small lenses of Aggregate
150	310	Multi Colored Meta Volcanics
		Test Hole Destroyed

Total Depth of Boring 310 Feet

Total Depth of Completed Well 0 Feet

The information in this grayed area has been blocked from public viewing pursuant to section 13752 of the Water Code and the Information Practice Act of 1977, to protect personal information.

Well Location

Address Old Hwy 80

City Jacumba County San Diego

Latitude 32 Deg. 36 Min. 905 Sec. N Longitude 116 Deg. 10 Min. 772 Sec. W

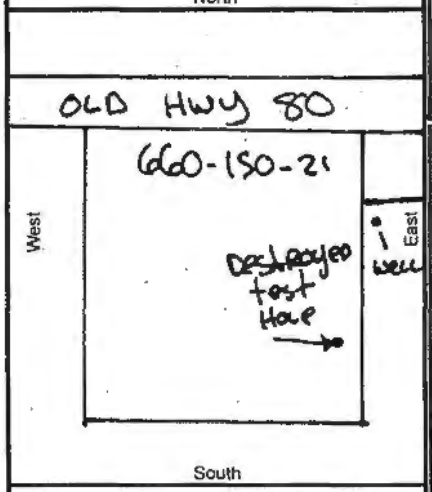
Datum Decimal Lat. Decimal Long.

APN Book 660 Page 150 Parcel 04

Township 18-s Range 8-e Section 8

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
◉ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
		NONE						

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	5	Fill	
5	25	Cement	
25	75	Bentonite	
75	310	Fill	

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Site Map

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Fain Drilling & Pump Co., Inc.
Person, Firm or Corporation

12029 Old Castle Rd. Valley Center CA 92082
Address City State Zip

Signed Joe R. Fain 12/2/2009 328287
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
WELL PERMIT APPLICATION

DEH USE ONLY
PERMIT #: LWEL 20435
WELL COMPUTER #:
FEE: 460
WATER DIST:

(Lessee)

1. Property Owner: BORNT FARMS Phone: 619-766-4213
2307 E. Hwy 98 (Mailing Address) Holtville (City) 92250 (Zip)

2. Well Location - Assessors Parcel Number 660-150-04
Old Hwy 80 (Site Address) JACUMBA (City) (Zip)

3. Well Contractor - Well Driller Joe Edwards Company Name: Fain Drilling
12029 old Castle Rd (Mailing Address) Valley Center (City) 92082 (Zip)
Phone#: C-57#: ☐ Cash Deposit ☐ Bond Posted

4. Use: ☒ Private ☐ Public ☐ Industrial ☐ Cathodic ☐ Other
5. Type of Work: ☒ New ☐ Reconstruction ☐ Destruction Time Extension: ☐ 1st ☐ 2nd
6. Type of Equipment: Rotary
7. Depth of Well: Proposed: 200-300' Existing: ~~0~~
8. Proposed:

Casing	Conductor Casing	Filter/Filler Material	Perforations
Type: Steel	☒ Yes ☐ No	☒ Yes ☐ No	
Depth: 200-300	Depth: 20 ft.	From: 20 To: 200'	From: 160 To: 200' ±
Diameter 14 in.	Diameter 24 in.	Type: Rea - #6	From: To:
Wall/Gauge: .250	Wall/Gauge: .250	Wall/Gauge:	From: To:

9. Annular Seal: Depth: 20 ft. Sealing Material: Cement
Borehole diameter: 32 in. Conductor diameter: 24 in. Annular Thickness 4 in.
10. Date of Work: Start: 11-6-09 Complete: 11-12-09

On sites served by public water, contact the local water agency for meter protection requirements.

I hereby agree to comply with all regulations of the Department of Environmental Health, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well construction, repair, modification and destruction. Immediately upon completion of work, I will furnish the Department of Environmental Health with a complete and accurate log of the well. I accept responsibility for all work done as part of this permit and all work will be performed under my direct supervision.

Contractor's Signature: J. R. Fain Date: 11-6-09

DISPOSITION OF APPLICATION (Department of Environmental Health Use only)

☒ **Approved** ☐ **Denied** Special Conditions: Grading and clearing associated with access to, or the construction, maintenance or destruction of water wells, may require additional permits from the County of San Diego and/or other agencies.

Specialist: Date: 11/10/09

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH

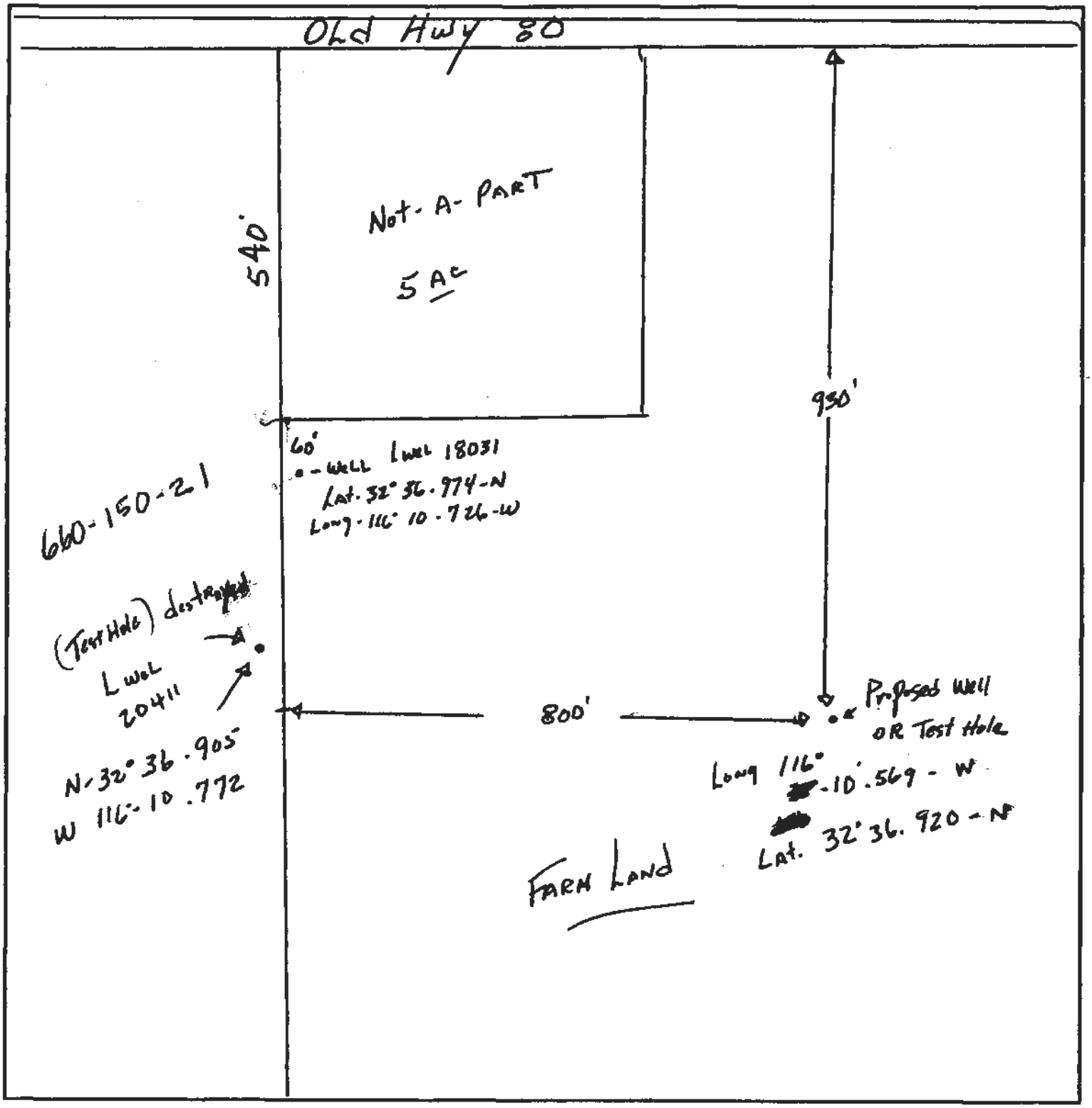
Control #: 20435

Assessor's Parcel Number: 660-150-04

LOCATION

[redacted]

Indicate below the vicinity and exact location of well with respect to the following items: Property lines, easements, water bodies or water courses, drainage pattern, roads, existing wells, sewers and private sewage disposal systems and other potential contamination sources, including dimensions.



Rec'd 9-8-11 OK

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. e0135668

Page one of one

Owner's Well Number Test Hole

Date Work Began 11/10/2009 Date Work Ended 11/12/2009

Local Permit Agency DEH

Permit Number LWEL20435 Permit Date 11/10/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Direct Rotary Drilling Fluid Bentonite mud

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
		Alluvial Fill As Follows:
0	7	Silty Sand
7	68	Cemented Sand
68	81	Fine to Med Sand W/ Lenses of Clay
81	98	Cemented Sand & Gravel
98	138	Sticky Brown Clay
138	153	Grey Clay W/ Lenses of Small Aggregate
153	180	Grey Volcanics
		Test Hole Destroyed

Total Depth of Boring 180 Feet

Total Depth of Completed Well 0 Feet

Well Owner

The information in this grayed area has been blocked from public viewing pursuant to section 13752 of the Water Code and the Information Practice Act of 1977, to protect personal information.

Well Location

Address Old Hwy 80

City Jacumba County San Diego

Latitude 32 Deg. 36 Min. 920 Sec. N Longitude 116 Deg. 10 Min. 569 Sec. W

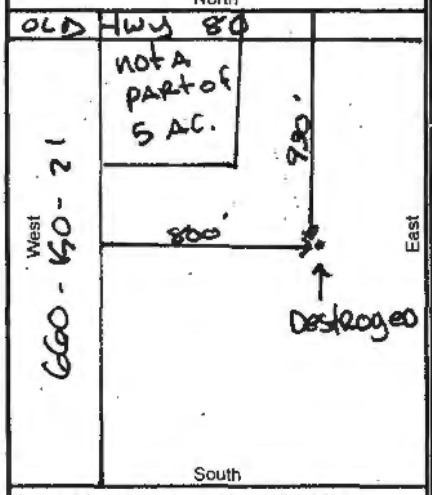
Datum Decimal Lat. Decimal Long.

APN Book 660 Page 150 Parcel 04

Township 18-s Range 8-e Section 8

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
◉ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
	NONE							

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	5	Fill	
5	25	Cement	
25	180	Fill	

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Site Map

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Fain Drilling & Pump Co., Inc.
Person, Firm or Corporation

12029 Old Castle Rd. Valley Center CA 92082
Address City State Zip

Signed Joe R. Fain 12/16/2009 328287
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
WELL PERMIT APPLICATION

DEH USE ONLY
PERMIT # WEL 20450
WELL COMPUTER #
FEE:
WATER DIST:

1. Property Owner: "LESSEE" BORNT FARMS Phone: 619 744-4213
   2307 E. Hwy 98 (Mailing Address) Holtville (City) 92250 (Zip)
2. Well Location - Assessors Parcel Number 660-150-18
   N/of OLD Hwy 80 (Site Address) JACUMBA (City) 91934 (Zip)
3. Well Contractor - Well Driller Joe EDWARDS Company Name: FAIN DRILLING
   12029 Old Castle Rd (Mailing Address) Valley Center (City) 92082 (Zip)
   Phone#: 760-749-0701 C-57#: 328287 ☐ Cash Deposit ☒ Bond Posted
4. Use: ☒ Private ☐ Public ☐ Industrial ☐ Cathodic ☐ Other
5. Type of Work: ☒ New ☐ Reconstruction ☐ Destruction Time Extension: ☐ 1st ☐ 2nd
6. Type of Equipment: Rotary
7. Depth of Well: Proposed: 100' Existing: -0-
8. Proposed:

Casing	Conductor Casing	Filter/Filler Material	Perforations
Type: STEEL	☒ Yes ☐ No	☒ Yes ☐ No	
Depth: 100	Depth: 20 ft.	From: 20 To: 100	From: 60 To: 160
Diameter 14 in.	Diameter 24 in.	Type:	From: To:
Wall/Gauge: .250	Wall/Gauge: .250	Wall/Gauge:	From: To:

9. Annular Seal: Depth: 20 ft. Sealing Material: Cement
   Borehole diameter: 32 in. Conductor diameter: 24 in. Annular Thickness 4+ in.
10. Date of Work: Start: 11-13-09 Complete: 11-18-09

On sites served by public water, contact the local water agency for meter protection requirements.

I hereby agree to comply with all regulations of the Department of Environmental Health, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well construction, repair, modification and destruction. Immediately upon completion of work, I will furnish the Department of Environmental Health with a complete and accurate log of the well. I accept responsibility for all work done as part of this permit and all work will be performed under my direct supervision.

Contractor's Signature: Joe R Fain Date: 11-13-09

DISPOSITION OF APPLICATION (Department of Environmental Health Use only)

☒ **Approved** ☐ **Denied** Special Conditions: Grading and clearing associated with access to, or the construction, maintenance or destruction of water wells, may require additional permits from the County of San Diego and/or other agencies.

Specialist: Date: 11-13-09

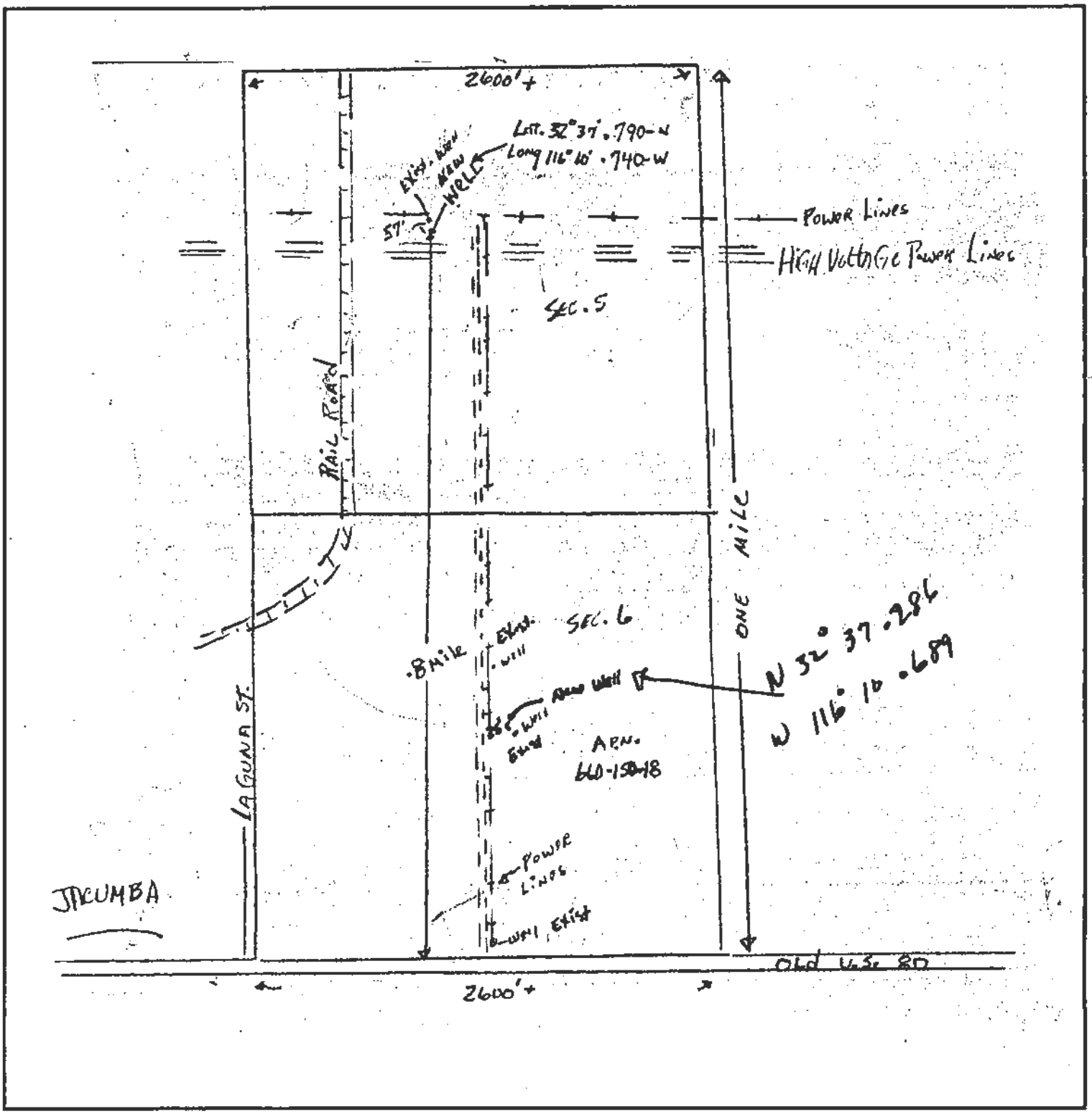
COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH

Control #: 20450

Assessor's Parcel Number: 660-150-18

LOCATION

Indicate below the vicinity and exact location of well with respect to the following items: Property lines, easements, water bodies or water courses, drainage pattern, roads, existing wells, sewers and private sewage disposal systems and other potential contamination sources, including dimensions.



*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0135665

Page one of one

Owner's Well Number Test Hole

Date Work Began 11/13/2009 Date Work Ended 11/23/2009

Local Permit Agency DEH

Permit Number LWEL20450 Permit Date 11/13/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Direct Rotary Drilling Fluid Bentonite mud

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
		Alluvial Fill As Follows:
0	40	Fine to Med Grained Sand
40	80	Sandy Clay W/ Lenses of Small Aggregate
80	100	Sandy Clay
100	110	Meta Volcanics
		Test Hole Destroyed

Total Depth of Boring 110 Feet

Total Depth of Completed Well 0 Feet

The information in this grayed area has been blocked from public viewing pursuant to section 13752 of the Water Code and the Information Practice Act of 1977, to protect personal information.

Well Location

Address Old Hwy 80

City Jacumba County San Diego

Latitude 32. 37 286 N Longitude 116. 10 689 W (Deg. Min. Sec.)

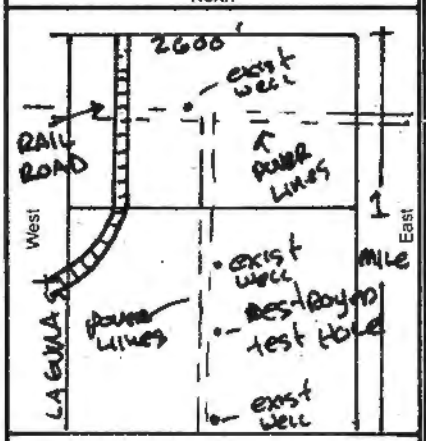
Datum Decimal Lat. Decimal Long.

APN Book 660 Page 150 Parcel 18

Township 18-s Range 8-e Section 8

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG".

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
◉ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
	NONE							

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	5	Fill	
5	25	Cement	
25	110	Fill	

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Site Map

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

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Signed Joe R. Fain 12/20/2009 328287
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

LEIGHTON AND ASSOCIATES, INC.
Geotechnical and Environmental Engineering Consultants

LIMITED EVALUATION OF LIQUEFACTION AND CONSOLIDATION POTENTIAL, PHASE 1, JACUMBA VALLEY RANCH DEVELOPMENT, SAN DIEGO COUNTY, CALIFORNIA

January 21, 1991

UPDATED EVALUATION OF CONSOLIDATION POTENTIAL, PHASE 1, JACUMBA VALLEY RANCH DEVELOPMENT, SAN DIEGO COUNTY, CALIFORNIA

February 27, 1991

Project No. 4900381-05

PREPARED FOR:

JACUMBA VALLEY PARTNERSHIP
2423 Camino Del Rio South, Suite 212
San Diego, California 92108

3934 MURPHY CANYON ROAD, SUITE B205, SAN DIEGO, CALIFORNIA 92123

(619) 292-8030 • (800) 447-2526
FAX (619) 292-0771

LEIGHTON AND ASSOCIATES, INC.
Geotechnical and Environmental Engineering Consultants

January 21, 1991

Project No. 4900381-05

To: Jacumba Valley Ranch
2423 Camino Del Rio South, Suite 212
San Diego, California 92108

Attention: Mr. Karl Turecek

Subject: Limited Evaluation of Liquefaction and Consolidation Potential, Phase 1, Jacumba Valley Ranch Development, San Diego County, California

Introduction

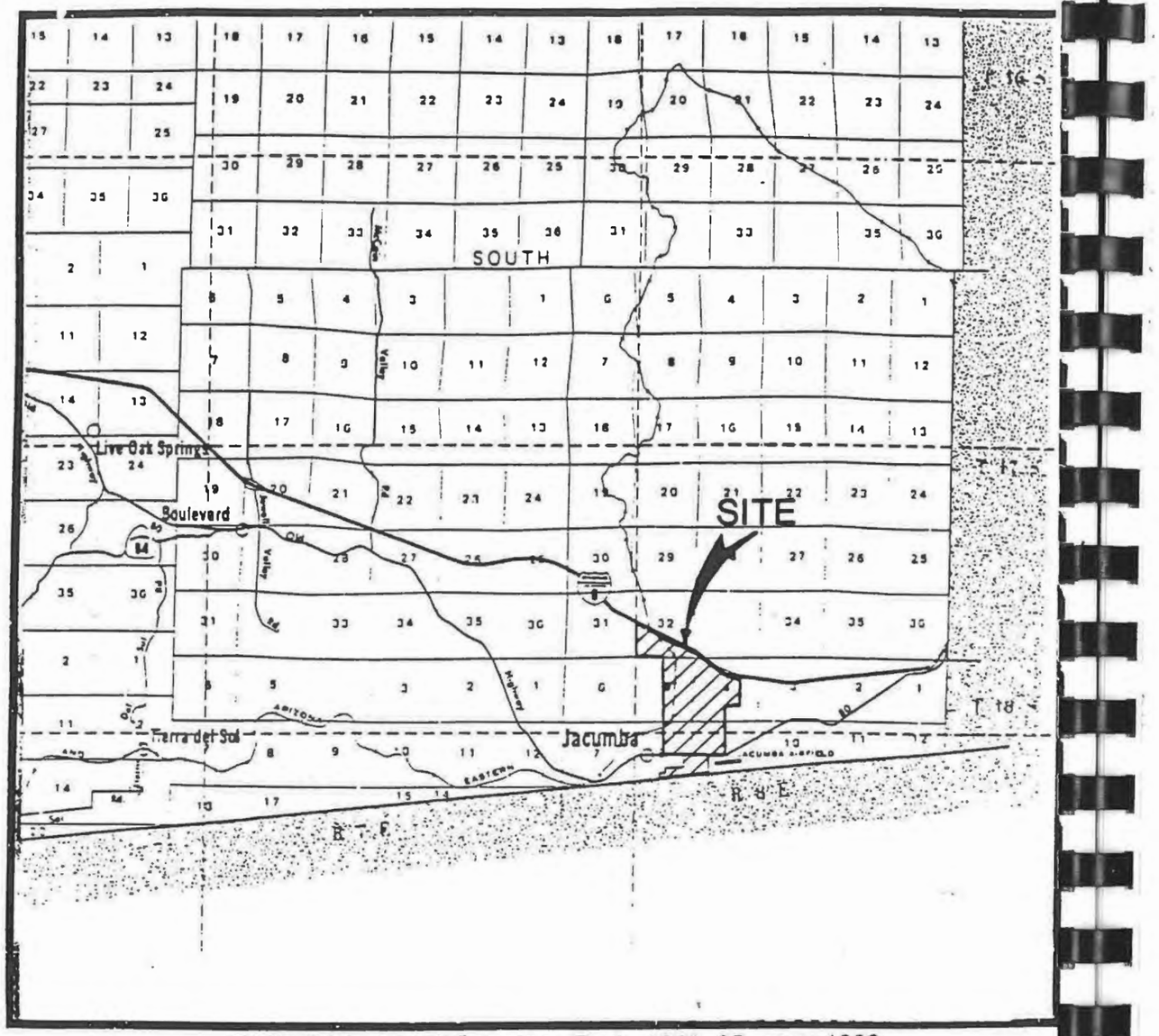
In accordance with your request, we have performed a limited geotechnical evaluation of the liquefaction and consolidation potential in the first phase of the proposed development. Plans for this phase include an 18-hole golf course, waste water treatment plant, hotel, school, congregate care center, and retail and commercial structures, along with associated streets, utilities, and drainage channels. We have concentrated our evaluation principally in areas underlain by alluvium (Qal and Qfn on Plate 1) as these are the areas thought most likely to be subject to liquefaction and consolidation. We understand that a maximum of 4 feet of fill is proposed in some areas. In addition, we have performed a limited evaluation of the soil in the drainage areas for use as structural fill and have evaluated drainage channel slope stability.

Accompanying Maps and Appendices

Figure 1 - Site Location Map - Page 2
Plate 1 - Geotechnical Map - In Pocket
Appendix A - References
Appendix B - Boring and Trench Logs
Appendix C - Laboratory Test Results

3934 MURPHY CANYON ROAD, SUITE B205, SAN DIEGO, CALIFORNIA 92123

(619) 292-8030 • (800) 447-2626
FAX (619) 292-0771



BASE MAP: Aerial-Foto Map Book, 1986-87, page 1009
Original by Aerial Graphics.

N

0 2.2 4.4
scale miles

JACUMBA VALLEY RANCH

Figure 1

SITE LOCATION MAP

Project No. 4900381-05

LEIGHTON and ASSOCIATES INCORPORATED

Scope of Services

Our scope of services to date has included:

- Logging and sampling 13 small-diameter borings and 6 backhoe trenches.
- Field and laboratory testing to evaluate pertinent engineering properties of the soil samples.
- Geotechnical evaluation of data obtained during our investigation.
- Preparation of this report presenting the results of our evaluation.

Field Investigation

On December 11 through 14, 1990, 13 small-diameter borings were excavated on site. The borings were excavated to a maximum depth of approximately 50 feet or until bedrock was encountered (whichever was shallower) with a truck-mounted Mobil B-61 drill rig with 8-inch hollow stem augers. The borings were sampled and logged by a geologist from our firm. Borings were sampled with a Standard Penetration Test (SPT) split spoon sampler and a Modified California ring sampler. Bulk and relatively undisturbed ring samples were collected for visual classification and laboratory testing. Ground water levels at the time of drilling are recorded on the logs. On December 18, 1990, 6 backhoe trenches were excavated on site by Jacumba Valley Ranch. The trenches were logged and sampled by a geologist from our firm. The approximate locations and logs of the borings and trenches are presented on Plate 1 and in Appendix B, respectively.

Seismicity

As discussed in our Land Use Feasibility Study (Appendix A, Reference 5), the seismic hazard thought most likely to impact the subject site is ground shaking produced by a large earthquake on one of the major active regional faults. A maximum probable event on the Elsinore fault (considered the design earthquake for this site) is expected to produce a peak horizontal bedrock acceleration of 0.30g and a repeatable ground acceleration of 0.20g. The effects of seismic shaking can be reduced by adhering to the Uniform Building Code or state-of-the-art design parameters of the Structural Engineers Association of California.

Liquefaction Potential

During an earthquake, ground shaking may cause loss of soil strength (liquefaction) in loose saturated sandy soils, resulting in excessive settlement damage and/or possible failure of surface structures. The likelihood of liquefaction depends on the intensity and duration of the ground shaking, the

soil characteristics, and the depth to ground water. A simplified analytical method, based on empirical correlations, relating the field occurrence of liquefaction to the earthquake magnitude and acceleration, cyclic shear resistance of the soils, and Standard Penetration Test (SPT) results (Appendix A, Reference 7) was used to evaluate the liquefaction potential of the recent alluvium (Qal) and older alluvium (Qfn). The formational materials (Tjl, Tja, Tmg) are not considered to have a significant liquefaction potential. The Geotechnical Map (Plate 1) shows the approximate extent of these units.

The ground water levels we encountered in our borings ranged from approximately 5 to 40 feet below the existing ground surface. We believe that these levels are likely to be significantly lower than historic high ground water conditions due to the ongoing drought. In our evaluation, we have assumed ground water levels 5 feet higher than those actually encountered.

The soils encountered in the upper portions of the alluvium were generally described as medium dense, silty fine to medium sand and stiff, sandy to clayey silt. Standard Penetration Test (SPT) blow count values (in the upper 30 feet) ranged from 19 to 49 with an average blow count of 31 blows per foot. Based on the results of our investigation, the calculated factor of safety against liquefaction is greater than 1.5, indicating a low potential for liquefaction at the site due to the design earthquake. Further, the addition of up to 4 feet of fill soils in selected areas across the site should reduce the potential for liquefaction in those areas receiving fill.

Dynamic Settlement

Dynamic settlement due to earthquake shaking was evaluated in the alluvial areas using the method described by Tokimatsu and Seed (Appendix A, Reference 9). The design earthquake (which has an estimated return period of 100 years) may induce a total settlement at the site on the order of 3/4 to 1 inch. Differential settlement of the alluvium due to earthquake-induced dynamic settlement is estimated to be on the order of 1/4 to 1/2 inch across 100 feet of ground surface. The addition of fill soils should reduce the potential for dynamic settlement.

Consolidation

Consolidation of soils is a relatively long-term process that may occur when pore pressures in soil of relatively low permeability (such as a silty or clayey soil) increase upon loading (due to additional fill placement, structures, etc.). Settlement of granular soils (sands and gravels) is the term used for the process of relatively short-term soil densification due to application of a load. Hydroconsolidation may also occur when a soil undergoes wetting or saturation after a load is applied. Consolidation, settlement, and hydroconsolidation may result in soil densification and ground subsidence.

The potential for long-term consolidation of the soils at the site is considered low due to the relatively high blow counts, the limited quantities of highly clayey materials encountered in our borings and trenches, and the relatively minor fill loads anticipated.

The potential for settlement of the existing granular alluvial soils was evaluated based on consolidation test results (Appendix C) and the assumption that no more than 4 feet of fill soils (above existing grades) will be added at the site. The building loads are assumed to be typical for this type of relatively light construction. Larger loads may be anticipated for the waste water treatment plant.

To reduce the potential for settlement, we recommend that portions of the alluvial soils under the proposed structures be removed and recompacted and that construction be delayed for a period of time after the addition of fill soils so that differential settlement may be reduced to tolerable limits. The following preliminary recommendations are based on a maximum total and differential settlement of 1 inch and 1/2 inch, respectively.

Type of Structure	Estimated Depth of Removal and Recompaction (feet below existing grade)
1- and 2-Story, School, Hotel Congregate Care, and Residential Structures	2 - 4
Waste Water Treatment Plant	3 - 5

The above values are preliminary and should be refined based on actual building loads and site-specific geotechnical investigations.

Thickness of Proposed Fill (above existing grade) in feet	Delay of Building Construction after Grading (months)
≤2	0
≤3	1
≤4	2

We do not believe these delays should pose significant constraints to construction provided that a phased construction approach can be accomplished.

To reduce the potential for hydroconsolidation of alluvial soils, the base of the removal area should be thoroughly wetted after removal of the existing soils and prior to recompaction. Specific grading recommendations will be provided in the geotechnical investigation reports.

Suitability of Material In Drainages for Use as Fill Soils

Based on our visual evaluation and laboratory testing of samples obtained from the five backhoe trenches located in the existing drainages, (one of the backhoe trenches was located outside of the drainage areas for purposes of evaluating rippability and other properties) this material should be generally suitable as structural fill. Visual evaluation generally indicates a very low expansion potential for the majority of this material. However, laboratory testing (Appendix C) indicates a medium expansion potential for the siltier portions. Soils with a medium expansion potential are generally not desirable within 3 feet of finish grade. The material generally varied from a fine sandy silt to a fine to coarse sand with gravels and cobbles. Scattered roots were noted in some of the near-surface soils. The clean, sandy portions may have a moderate to high erosion potential. This material is anticipated to have an adequate bearing capacity (for lighlty loaded structures) when compacted as fill soils.

Drainage Channel Slope Stability

We understand that unlined drainage channels are proposed to conduct storm water across the site. We further understand the proposed channel walls (up to 5 feet in height) are to be constructed at inclinations of approximately 5:1 (horizontal to vertical). Based on direct shear tests performed on remolded representative soil samples, these slopes should be grossly stable at the proposed inclinations. Channel erosion protection is generally under the purview of the civil engineer as evaluation of erosion and scour is based on water quantity and flow velocity. We have provided grain-size analyses of representative samples (Appendix C) for this evaluation. Clean, fine sand (without a significant portion of silt or clay to act as a binding agent) should be avoided in use as a channel liner unless adequately protected from erosion and scour.

Summary

Based on the results of our limited evaluation, it is our opinion that the proposed development is feasible from a geotechnical standpoint provided that the concerns presented herein are addressed into the project design.

We note that additional geotechnical investigation is recommended to provide site-specific foundation and grading recommendations.

If you have any questions regarding our report, please do not hesitate to contact this office. We appreciate this opportunity to be of service.

Respectfully submitted,

LEIGHTON AND ASSOCIATES, INC.

Douglas F. Roff, CEG 1480
Project Geologist

Gene Custenborder, CEG 1319
Chief Geologist

Joseph G. Franzone, RCE 39552
Chief Engineer

DFR/GC/JGF/jss

Distribution: (6) Addressee
(6) Brian F. Mooney Associates
Attention: Mr. Brian F. Mooney

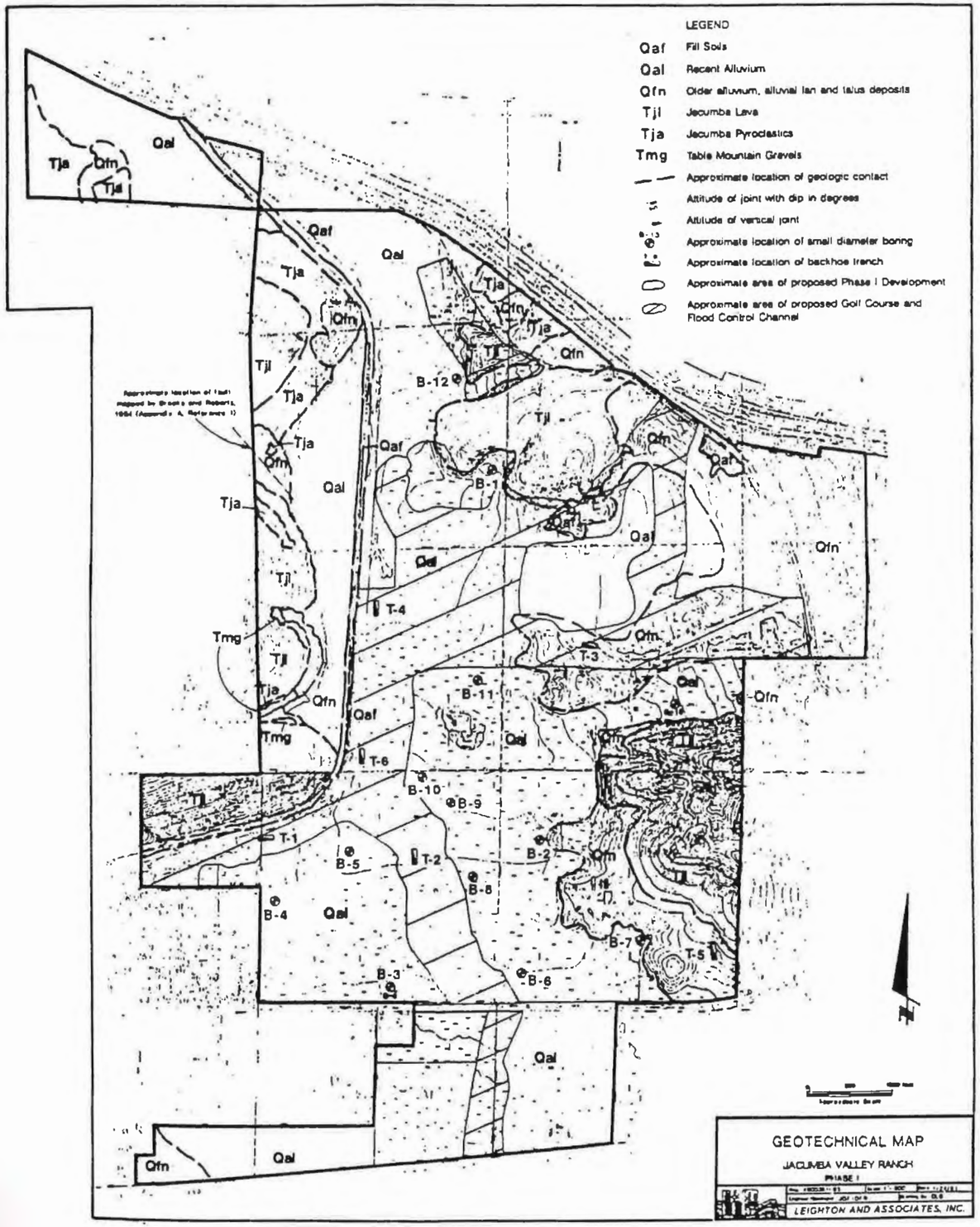

LEGEND
Qaf Fill Soils
Qal Recent Alluvium
Qfn Older alluvium, alluvial fan and talus deposits
Tjl Jacumba Lava
Tja Jacumba Pyroclastics
Tmg Table Mountain Gravels
Approximate location of geologic contact
Attitude of joint with dip in degrees
Attitude of vertical joint
Approximate location of small diameter boring
Approximate location of backhoe trench
Approximate area of proposed Phase I Development
Approximate area of proposed Golf Course and Flood Control Channel
B-1
B-2
B-3
B-4
B-5
B-6
B-7
B-8
B-9
B-10
B-11
B-12
T-1
T-2
T-3
T-4
T-5
T-6
GEOTECHNICAL MAP
JACUMBA VALLEY RANCH
PHASE I
LEIGHTON AND ASSOCIATES, INC.

Plate 1

APPENDIX A

REFERENCES

1. Brooks, B. and Roberts, E., 1954, Geology of the Jacumba Area, San Diego and Imperial Counties, California Division of Mines and Geology, Bulletin 170, Map Sheet 23.

2. Greensfelder, R.W., 1974, Maximum Credible Rock Acceleration from Earthquakes in California: California Division of Mines and Geology, Map Sheet 23.

3. Hart, E.W., 1988, Fault-Rupture Hazard Zones in California: California Division of Mines and Geology. Special Publication 42.

4. Jennings, C.W., 1975, Fault Map of California, California Division of Mines and Geology, California Geologic Data Map Series, Map No. 1.

5. Leighton and Associates, 1990, Geotechnical Land-Use Feasibility Study, Jacumba Valley Ranch Development, San Diego County, California, Project No. 4900381-01, dated April 27.

6. Ploessel, M.R., and Slosson, J.E., 1974, Repeatable High Ground Acceleration from Earthquakes: California Geology, Vol. 27, No. 9, P. 195-199.

7. Seed, Idriss, and Arango, 1983, Evaluation of Liquefaction Potential Using Field Performance Data, ASCE, Vol. 109, No. 3, March.

8. Strand, R.G. 1962, Geologic Map of California - San Diego - El Centro Sheet, California Division of Mines and Geology.

9. Tokimatsu and Seed, 1987, Evaluation of Settlement in Sands due to Earthquake Shaking, ASCE, Vol. 113, No. 8, August.

10. Weber, F.H., 1963, Geology and Mineral Resources of San Diego County. California, California Division of Mines and Geology, County Report 3.

EXPLANATION OF GEOTECHNICAL TRENCH LOG

Project Name: _____ Logged By: _____			ENGINEERING PROPERTIES			
Project Number: _____ Elevation: _____ TRENCH NO. _____						
Equipment: _____ Location: _____			U.S.C.S.	Sample No.	Moisture (%)	Density (% Compaction)
GEOLOGIC ATTITUDES	DATE: DESCRIPTION:	GEOLOGIC UNIT				
	FILL A few desiccation cracks at surface up to 1/4- to 1/2-inch wide	Qaf				
	0-4' Light brown, slightly damp, loose to medium dense, silty very fine- to medium grained sand; abundant chunks of light gray silty/very fine-grained sandy clay, several wood and thin roots, porous, several subangular cobbles (1)		SM	① @ 0-1'		
				K-1 @ 3'	12.6	118.7 (89)
	POINT LOMA FORMATION @4' Gray, slightly damp, very stiff, fine sandy siltstone/claystone; with thick interlaminae or very thin lenses of light yellow-brown, silty fine-grained sandstone, highly fractured and blocky, several roots along fractures (2)	Kp	MH/CH	J-1 @ 5'	24.2	115.0
c: Sharp						
b:N82E/28S	(3) Light yellowish brown fined grained sandstone, continuous along wall					
J:N5E/62W	(4) Light joint system, spacing 4 to 6 inches, iron oxide					

Bulk Sample

Field Density Test in accordance with ASTM 2937-83

Percent of Maximum Density

Single relatively undisturbed ring sample

Attitudes Strike/Dip
(B) = Bedding
(C) = Contact
(J) = Joint
(F) = Fracture
(CS) = Clay Seam

Date _____ Drill Hole No. _____ Sheet __ of __

Project _____ Job No. _____

Drilling Co. _____ Type of Rig _____

Hole Diameter _____ Drive Weight _____ Drop _____ in.

Elevation Top of Hole _____ Ref. or Datum _____

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
								Logged by _____
								Sampled by _____
0								
		j:N10W/ 20E					SM	Attitudes: Strike/Dip
								(b) = Bedding
								(c) = Contact
								(j) = Joint
							ML	(f) = Fracture
5		b:Hori- zontal						(F) = Fault
								(cs) = Clay Seam
								(s) = Shear
			1	14	106.2	14.9	CL	Relatively undisturbed drive sample (Modified California Sampler) - Number to left represents Sample Number
		c:N80W/ 10N	①					Bulk Sample (with sampling interval)
10		f:N-S/ 65W						
			2	15		15.8	SP	Standard Peretration Test (Split-Spoon Sampler)
			N.R.	18				Sample not recovered
15		s:N50E/ 40W						Graphic Log:
								silt
								sand
							CL/ CH	clay
20								contact
		cs:N30W/ 20E						fracture
								shear clay seam
					♀			zone with calcareous cement
								roots
		F:N10E/ 70W						♀ seep
25								ground water table
					▼			clast
								Total Depth = 28' (depth of hole
30								

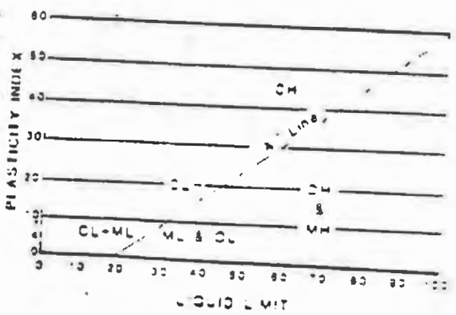
500A (2/77) Leighton & Associates

COARSE GRAINED SOILS (More than 1/2 of soil > no. 200 sieve size)	GRAVELS (More than 1/2 of coarse fraction > no. 4 sieve size)	GW Well graded gravels or gravel-sand mixtures, little or no fines
		GP Poorly graded gravels or gravel-sand mixtures, little or no fines
		GM Silty gravels, gravel-sand-silt mixtures
		GC Clayey gravels, gravel-sand-clay mixtures
	SANDS (More than 1/2 of coarse fraction < no. 4 sieve size)	SW Well graded sands or gravelly sands, little or no fines
		SP Poorly graded sands or gravelly sands, little or no fines
		SM Silty sands, sand-silt mixtures
		SC Clayey sands, sand-clay mixtures
FINE GRAINED SOILS (More than 1/2 of soil < no. 200 sieve size)	SILTS & CLAYS LL < 50	ML Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL Organic silts and organic silty clays of low plasticity
	SILTS & CLAYS LL > 50	MH Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH Inorganic clays of high plasticity, fat clays
		OH Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS		Pt Peat and other highly organic soils

CLASSIFICATION CHART
(Unified Soil Classification System)

CLASSIFICATION:	RANGE OF GRAIN SIZES U.S. Standard Sieve Size	Grain Size in Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	305 to 76.2
GRAVEL	3" to No. 4	76.2 to 4.76
coarse	3" to 3/4"	76.2 to 19.1
fine	3/4" to No. 4	19.1 to 4.76
SAND	No. 4 to No. 200	4.76 to 0.074
coarse	No. 4 to No. 10	4.76 to 2.00
medium	No. 10 to No. 40	2.00 to 0.420
fine	No. 40 to No. 200	0.420 to 0.074
SILT & CLAY	Below No. 200	Below 0.074

GRAIN SIZE CHART



PLASTICITY CHART

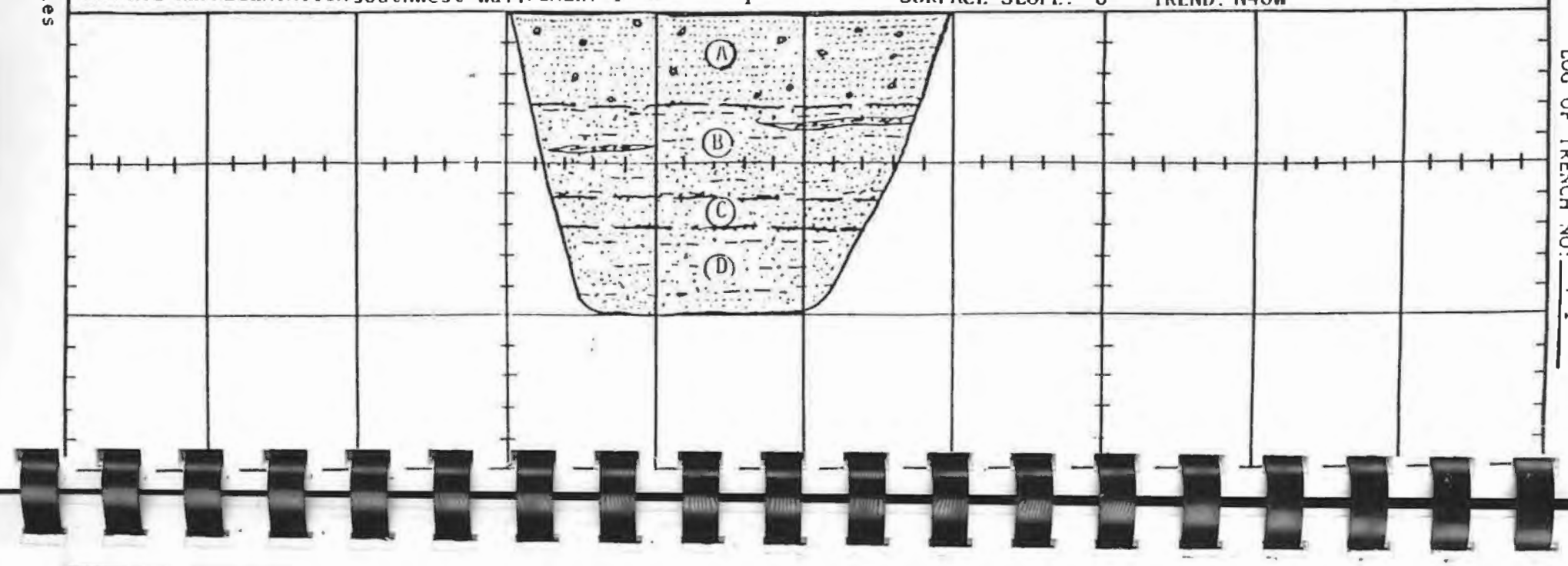
METHOD OF SOIL CLASSIFICATION

Leighton & Associates

					ML	② @ 8'-10'

Total Depth = 10 feet
No Ground Water Encountered at Time of Trenching
Backfilled: 12/18/90

GRAPHIC REPRESENTATION southwest wall SCALE: 1" = 1' SURFACE SLOPE: 0° TREND: N40W



LOG OF TRENCH NO: T-1

SOI-A - (3/77)

Leighton & Associates

Project Name: Jacumba Valley Ranch
Project Number: 4900381-05
Equipment: Case 680C Backhoe
Logged By: DLL
Elevation: ±2,775'
Location: See Plate 1
TRENCH NO. T-2

GEOLOGIC ATTITUDES	DATE: 12/18/90 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	ALLUVIUM					
	(A) @0'-1': Dark brown and olive-brown, moist, medium dense, fine sandy silt/silty fine sand; sparse roots, slightly porous, micaceous	Qal	ML/SM	① @ 0'-3'		
	(B) @1'-1.4': Light brown, moist, medium dense, silty fine sand		SM			
	(C) @1.4'-3': Mottled dark olive-brown and brown, moist to wet, medium dense, fine sandy silt; few roots, abundant red-brown stringers (infilled borrows?), abundant caliche stringers		ML			
	(D) @3'-6': Mottled olive-brown and orange-brown, moist to wet, medium dense, fine sandy silt micaceous, slightly porous		ML	② @ 4'-6'		
	@6'-10': Becomes fine sandy silt/silty fine sand		ML/SM			

Total Depth - 10 feet
Ground Water Seepage Encountered at 6 feet at time of trenching

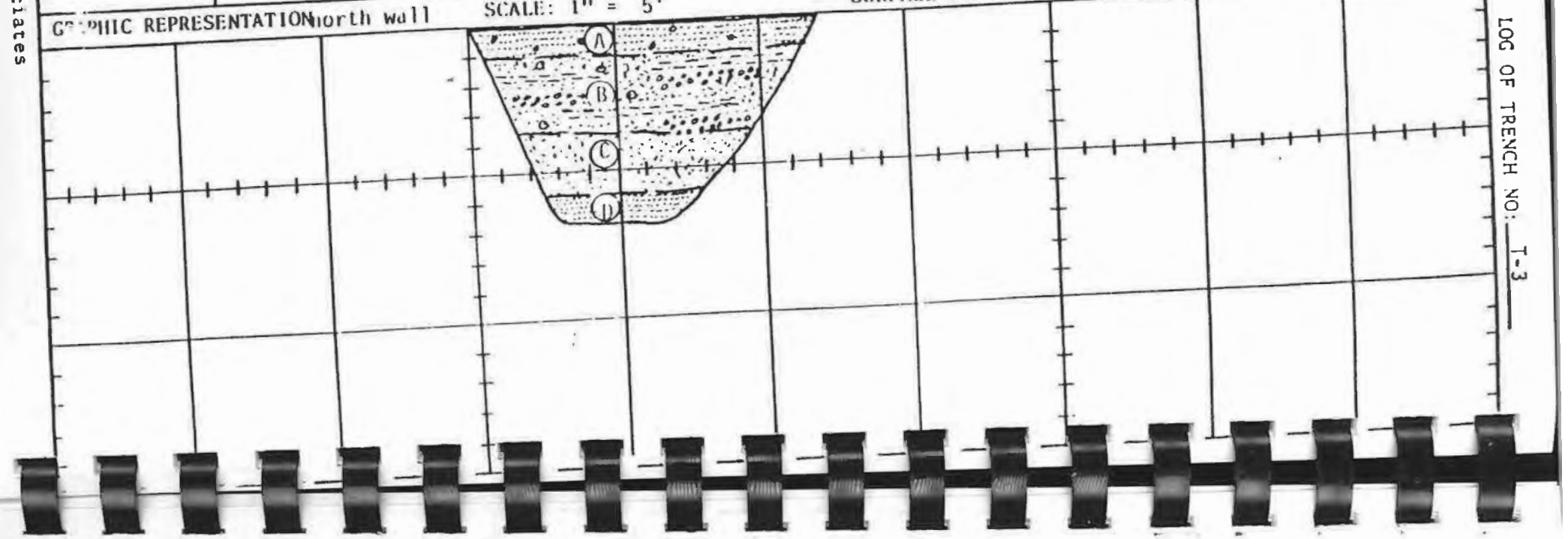
GRAPHIC REPRESENTATION southwest wall SCALE: 1" = 1' SURFACE SLOPE: 0° TREND: N45W

Leighton & Associates

Project Name: Jacumba Valley Ranch	Logged By: DLL	TRENCH NO. T-3
Project Number: 4900381-05	Elevation: ±2,755'	
Equipment: Case 680C Backhoe	Location: See Plate 1	

GEOLOGIC ATTITUDES	DATE: 12/18/90 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	ALLUVIUM	Qal				
	(A) @0'-3.5': Dark brown to black, moist to wet, medium dense, fine to medium sandy silt; porous, abundant roots and rootlets, micaceous		ML	(1) @ 0'-3'		
	(B) @3.5'-5': Mottled dark olive-brown and brown, and orange brown, wet to saturated, dense, very silty fine sand/fine sandy silt; porous, few roots, some medium-coarse grained constituents		SM-SP	5'-7'		
	(C) @3.5'-6': Gray-brown, dry to damp, loose, fine to very coarse sand; few pebbles					
	(D) @6'-7': Gray-brown, dry to damp, loose, very coarse sand; finely bedded					
	Total Depth - 7 feet No Ground Water Seepage Encountered at Time of Trenching Backfilled: 12/18/90					

GRAPHIC REPRESENTATION north wall SCALE: 1" = 5' SURFACE SLOPE: 0° TREND: N70W



LOG OF TRENCH NO: T-3

501-A - (3/77)

Leighton & Associates

Project Name: Jacumba Valley Ranch	Logged By: DLL	TRENCH NO. T-4
Project Number: 4900381-05	Elevation: ±2,755'	
Equipment: Case 680C Backhoe	Location: See Plate 1	

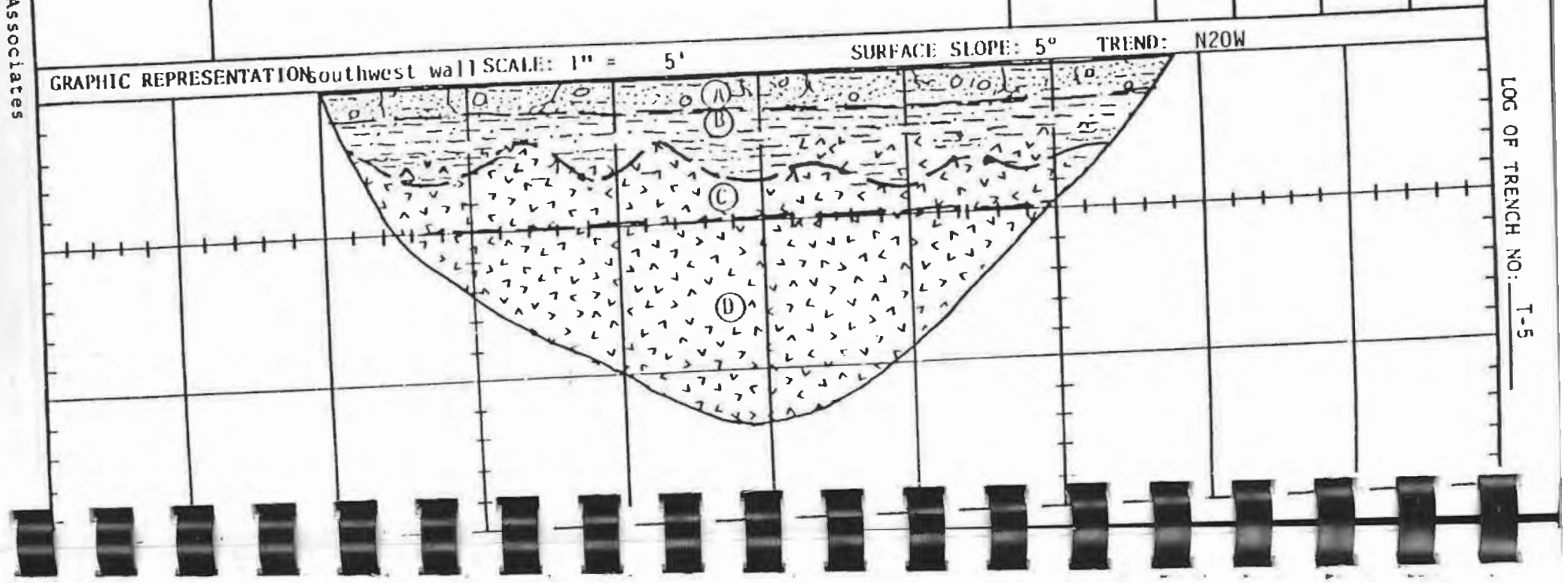
GEOLOGIC ATTITUDES	DATE: 12/18/90 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	ALLUVIUM	Qal				
	(A) @0'-3.5': Dark brown to black, moist to wet, medium dense, fine to medium sandy silt; porous, abundant roots and rootlets, micaceous		ML	(1) @ 0'-3'		
	(B) @3.5'-5.5': Mottled dark olive-brown and brown, and orange brown, wet to saturated, dense, very silty fine sand/fine sandy silt; porous, few roots, some medium-coarse grained constituents		ML/SM			
	(C) @5.5'-7.0': Dark brown to olive-brown, saturated, medium dense, fine to medium sandy silt; micaceous		ML			
	Total Depth - 7 feet Ground Water Seepage Encountered at 4 feet at Time of Trenching Backfilled: 12/18/90					

GRAPHIC REPRESENTATION southwest wall SCALE: 1" = 5' SURFACE SLOPE: 0° TREND: N25W

GEOLOGIC ATTITUDES	DATE:	DESCRIPTION:	GEOLOGIC UNIT
		JACUMBA LAVA	
	Ⓑ @1'-2':	Brown, dry, loose to medium [illegible] medium sandy silt; trace of clay, slightly desiccated	
	Ⓒ @2'-5':	Mottled pinkish white, dry, dense rhyolitic tuff bed; intermixed with volcanic clasts and zones and pods of alluvium; very weathered, slightly desiccated, slightly friable	Tjl

ENGINEERING PROPERTIES			
U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	1'-2'		

GRAPHIC REPRESENTATION Southwest wall SCALE: 1" = 5' SURFACE SLOPE: 5° TREND: N20W



LOG OF TRENCH NO: T-5

Leighton & Associates

501-A - (3/77)

Project Name: Jacumba Valley Ranch Logged By: DLL

Project Number: 4900381-05 Elevation: TRENCH NO. T-6

Equipment: Case 680C Backhoe Location:

GEOLOGIC ATTITUDES	DATE:	DESCRIPTION:	GEOLOGIC UNIT
		ALLUVIUM	Qal
	Ⓐ @0'-2':	Alternating gray, dry, loose, fine to coarse sand and gray, dry, loose silt; silt layers 1/4-inch to 1-inch thick	
	Ⓑ @2'-2.5':	Gray, dry, loose, fine sand; finely laminated cross bedding, concoidal lenses of fine to coarse sand, manganese lamanae	
	Ⓒ @2.5'-5':	Brown, damp, medium dense, silty fine to medium sand; grades to brown, damp, medium dense, fine to medium sand	
c:sharp, horizontal	Ⓓ @5'-8':	Dark brown, wet to saturated, medium dense, fine to medium sandy silt, grades to silty, fine sand; slightly porous, minor roothairs	
		Total Depth = 8 feet Ground Water Seepage Encountered at 7 feet	

ENGINEERING PROPERTIES			
U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
ML & SM	① @ 2'-5'		
SP			
SM & SW			
ML & SW	② @ 5'-8'		

GRAPHIC REPRESENTATION south wall SCALE: 1" = 5' SURFACE SLOPE: 0° TREND: N80E

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GEOTECHNICAL BORING LOG

Date 12/11/90 Drill Hole No. B-1 Sheet 1 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,760' Ref. or Datum mean sea level

Logged by DLL

Sampled by DLL

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
0								ALLUVIUM
5			1	22		23.8	ML	@5': Brown, dry, very stiff, slightly fine sandy silt @7': Becomes clayey
10			2	22		▽		@10': Dark brown, moist to wet, very stiff clayey silt slightly micaceous
15			3	28				@15': Dark brown, saturated, very stiff, clayey silt; some fine grains, rare pebbles
20			4	41			SC	@20': Dark brown, saturated, dense, clayey fine to coarse sand; numerous pebbles
25			5	37				@25': Dark brown, saturated, dense, slightly clayey fine to very coase sand; numerous pebbles to 1" diameter
30								

500A (2/88)

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GEOTECHNICAL BORING LOG

Date 12/11/90 Drill Hole No. B-1 Sheet 2 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,760' Ref. or Datum mean sea level

Logged by DLL

Sampled by DLL

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
30			6	38			SW	@30': Brown-gray, wet, dense, fine to coarse sand; numerous red, fine-grained volcanics
35			7	50/2"			SM/GM	@35': Brown, saturated, very dense, silty fine to very coarse sand/silty to sandy gravel (volcanic gravel) Refusal at 36.5 feet due to bedrock
40								Total depth = 36.5 feet Ground water encountered at 11 feet at time of drilling

500A (2/88)

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GEOTECHNICAL BORING LOG

Date 12/11/90 Drill Hole No. B-2 Sheet 1 of 1

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,778' Ref. or Datum mean sea level

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
								Logged by DLL Sampled by DLL
0								ALLUVIUM
5			1	17		▽	SM	@5': Olive-brown, wet, medium dense, silty fine to medium sand; slightly micaceous
10			2	24			ML	@10': Olive-brown to light orange-brown, wet, medium dense, fine sandy silt, micaceous
15			3	28			ML/SM	@15': Mottled brown, olive-tan and orange brown, wet, medium dense, silty very fine sand/very fine sandy silt; few root hairs, micaceous
20			4	41			SM	@20': Mottled brown, olive-brown and orange-brown, wet, dense, silty fine sand; contact to brown, saturated, dense, sandy gravel
25			5	50/7"				JACUMBA LAVA @25': Mottled pinkish white, wet, very dense volcanic rock
								Total depth = 27 feet (refusal on bedrock) Ground water encountered at 6 feet at time of drilling
30								

500A (2/75)

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GEOTECHNICAL BORING LOG

Date 12/11/90 Drill Hole No. B-3 Sheet 1 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,790' Ref. or Datum mean sea level

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
								Logged by DLL Sampled by DLL
0								ALLUVIUM
5			1	31			SM	@5': Brown, moist, dense, silty fine sand; few rootlets
10			2	30	102.4	21.2		@10': Mottled orange-brown and brown, wet, dense, silty fine sand; few rootlets, slightly micaceous
15			3	35			ML/SM	@15': Mottled orange-tan and brown, wet, dense, silty very fine sand/very fine sandy silt; some carbon-stained flecks
20			4	61	98.3	31.5	ML	@20': Mottled orange-brown and brown, wet to saturated, very dense, fine sandy silt
25			5	39			SM	@25': Light brown, wet, dense, silty fine to medium sand; contact to dark brown, wet, dense, silty, fine sand; more silty than above contact
30								

500A (2/75)

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GEOTECHNICAL BORING LOG

Date 12/11/90 Drill Hole No. B-3 Sheet 2 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,790' Ref. or Datum mean sea level

Logged by DLL

Sampled by DLL

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
30			6	20	(N.R.)		SM	@30': Brown, saturated, medium dense, silty fine sand; slightly micaceous
35								
40			7	70			ML/SM	@40': Mottled brown and orange-brown, wet, very dense, silty fine sand/fine sandy silt; slightly micacous, carbon-stained pods
45								
50			8	84	(N.R.)		SM	@50': Brown, saturated, dense, silty fine sand
								Total depth = 51 feet Ground water encountered at 12 feet at time of drilling
55								

500A (2/77)

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GEOTECHNICAL BORING LOG

Date 12/12/90 Drill Hole No. B-4 Sheet 1 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,786' Ref. or Datum mean sea level

Logged by DLL

Sampled by DLL

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
0								ALLUVIUM
5			1	41	98.2	18.6	SM	@5': Brown, moist, dense, silty fine to coarse sand; micaceous
								@7': Becomes siltier
10			2	33			SM & SW	@10': Dark brown, wet, dense, slightly silty fine to medium sand and gray, wet, fine to coarse sand; micaceous
15			3	78	106.4	24.5	SM	@15': Brown, saturated, very dense, silty, fine to medium sand
20			4	35				@20': Gray, wet, dense, slightly silty fine to coarse sand; some interbeds of brown, clayey silt (up to 2" thick)
25			5	36			CL SW	@25': Red-brown, wet, very stiff, silty clay/clayey silt; gradational contact with gray, saturated, dense, fine to coarse sand
30								

500A (2/77)

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GEOTECHNICAL BORING LOG

Date 12/12/90 Drill Hole No. B-4 Sheet 2 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,786' Ref. or Datum mean sea level

Logged by DLL

Sampled by DLL

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
30			6	36	(N.R.)			
35								
40			7	82			SW	@40': Gray, saturated, very dense, fine to coarse sand
45								
50							SM	@50': Light brown, saturated, dense to very dense, slightly silty, fine to medium sand
			8	50				
								Total depth = 51.5 feet Ground water encountered at 9 feet at time of drilling
55								

GEOTECHNICAL BORING LOG

Date 12/12/90 Drill Hole No. B-5 Sheet 1 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,777' Ref. or Datum mean sea level

Logged by DLL

Sampled by DLL

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
0								ALLUVIUM
5			1	24		23.6	SM	@5': Mottled brown and red-brown, wet, medium dense, very silty fine sand; micaceous
10			2	26		▽	ML	@9': Becomes clayey @10': Mottled red-brown and brown, wet, very stiff, fine sandy silt; trace of clay, few carbonized flecks
15			3	41			CL-SM	@15': Mottled red-brown and brown, wet, dense interbedded silty clay/very silty fine sand; some carbonized thin (1/16" thick) beds, silty clay is finely laminated
20			4	49			SW	@20': Brown, wet, dense fine to medium sand; few coarse grains, micaceous
25			5	28			SM/ML SW	@25': Mottled red-brown, wet, medium dense, fine sandy silt/silty fine sand; trace of clay, some finely laminated clay layers. Sharp contact with brown, fine to medium sand with trace of silt (2 samples obtained
30								

GEOTECHNICAL BORING LOG

Date 12/12/90 Drill Hole No. B-5 Sheet 2 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,777' Ref. or Datum mean sea level

Logged by DLL

Sampled by DLL

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
30			6	38			ML-SM	@30': Mottled red-brown and brown, wet, dense, clayey silt to silty fine sand
40			7	38			SW	@40': Brown, saturated, dense, fine to medium sand; trace of silt
50			8	67				@50': Brown, saturated, very dense, fine to coarse sand; trace of silt
								Total depth = 51.5 feet Ground water encountered at 9 feet at time of drilling
55								

GEOTECHNICAL BORING LOG

Date 12/12/90 Drill Hole No. B-6 Sheet 1 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,788' Ref. or Datum mean sea level

Logged by DLL

Sampled by DLL

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
0								ALLUVIUM
5			1	19		8.5	SM	@5': Light brown, moist, medium dense, silty fine sand; micaceous
10			2	42	105.7	10.8		
15			3	48			SW	@15': Brown, wet, dense, fine to coarse sand; micaceous, trace of silt
20			4	76		(N.R.)		
25			5	20			CL/ML	@25': Mottled red-brown and brown, wet, very stiff, silty clay/clayey silt; trace of fine sand
30								

GEOTECHNICAL BORING LOG

Date 12/12/90 Drill Hole No. B-6 Sheet 2 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,788' Ref. or Datum mean sea level

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
								Logged by DLL Sampled by DLL
30			6	47	93.7 (Partial recovery)	28.1		@30': Same as at 25'
35								
40			7	64 (N.R.)				
45								
50			8	47			CL/ ML	@50': Mottled olive-brown, wet, hard clayey silt/silty clay
								Total depth = 51.5 feet Ground water encountered at 11.5 feet at time of drilling
55								

500A (2/??)

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GEOTECHNICAL BORING LOG

Date 12/13/90 Drill Hole No. B-7 Sheet 1 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,792' Ref. or Datum mean sea level

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
								Logged by DLL Sampled by DLL
0								ALLUVIUM
5			1	26	97.5	11.8	SM	@5': Brown, damp to moist, medium dense, very silty, fine to medium sand; micaceous trace of clay, rare pebbles
10			2	22				@10': Light reddish brown, moist, medium dense, very silty fine to medium sand; slightly micaceous; trace of clay, moderate volcanic pebbles
15			3	43	112.1	15.2	SC/ SM	@15': Light reddish brown, moist, medium dense, clayey to silty, fine to coarse sand
20			4	66				JACUMBA LAVA @20': Mottled red, white and black, saturated, very dense, very weathered volcanic rock
25			5	89 (N.R.)				
30								

500A (2/??)

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GEOTECHNICAL BORING LOG

Date 12/13/90 Drill Hole No. B-7 Sheet 2 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,792' Ref. or Datum mean sea level

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION Logged by DLL Sampled by DLL
30			5	50/2" (N.R.)				@30': Black, slightly weathered basaltic volcanic rock
								Total depth = 33 feet Ground water encountered at 9 feet at time of drilling
35								

500A (2/77)

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GEOTECHNICAL BORING LOG

Date 12/13/90 Drill Hole No. B-8 Sheet 1 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,781' Ref. or Datum mean sea level

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION Logged by DLL Sampled by DLL
0								ALLUVIUM
5			1	28	93.8	27.3	SM	@5': Olive-brown and orange-brown, wet, medium dense, silty fine sand; few rootle slightly micaceous
10			2	50			ML/SM	@10': Mottled orange-brown and olive-brow saturated, dense, silty fine sand/fine sandy silt; some carbonized thin (1/16" thick) layers
15			3	28	95.4	30.7		@15': Mottled orange-brown and olive-brown, saturated, clayey silt/silty clay; some carbonized flecks and staining, few medium-sized grains
20			4	48			SM	@20': Light brown and olive-brown, wet, dense, silty fine sand; micaceous, some brown, silty/clayey layers up to 1/2" thi
25			5	34	113.9	16.8		@25': Light brown, wet, dense, slightly silty, fine to coarse sand
30								

500A (2/77)

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GEOTECHNICAL BORING LOG

Date 12/13/90 Drill Hole No. B-8 Sheet 2 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,781' Ref. or Datum mean sea level

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
								Logged by DLL Sampled by DLL
30			6	35			ML/ MH	@30': Mottled olive, olive-brown, and orange-brown, wet, hard clayey silt, trace of fine sand, micaceous, some thin clay layers
35								
40			7	20 (N.R.)				
45								
50			8	100			SM	@50': Brown, wet, very dense, very silty, fine to medium sand; approximately 5 percent coarse grains, micaceous
								Total depth = 51.5 feet Ground water encountered at 8.5 feet at time of drilling
55								

500A (2/77)

Leighton & Associates

GEOTECHNICAL BORING LOG

Date 12/13/90 Drill Hole No. B-9 Sheet 1 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,774' Ref. or Datum mean sea level

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
								Logged by DLL Sampled by DLL
0							CL/ ML	ALLUVIUM @0': Dark brown, moist to wet, very stiff, silty clay/clayey silt
5			1	20		▽	CL/ ML	@5': Mottled dark olive-brown and orange-brown, wet, very stiff, clayey silt/silty clay; trace of fine sand
10			2	24	(N.R.)			
15			3	72	74.0	36.9	CL	@15': Mottled orange-brown and brown, saturated, very dense, fine sandy clay
20			4	32			SM	@22': Brown, wet, dense, very silty fine sand; micaceous, sharp contact to red-brown and brown, silty clay/clayey silt
25			5	21	(N.R.)		CL/ ML	

500A (2/77)

Leighton & Associates

GEOTECHNICAL BORING LOG

Date 12/13/90 Drill Hole No. B-9 Sheet 2 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,774' Ref. or Datum mean sea level

Logged by DLL

Sampled by DLL

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
30			6	46			ML/SM	@30': Brown, wet, dense, silty very fine sand/very fine sandy silt; micaceous, grades to:
35							CL/ML	orange-brown and brown, silty clay/clayey silt
40			7	52	80.1	20.6	ML/CL	@40': Mottled olive-brown and orange-brown wet, hard, silty clay/clayey silt
45								
50			8	44			CL/SC	@50': Mottled orange-brown and brown, wet, dense, fine to medium sandy clay/clayey sand
55								Total depth = 51.5 feet Ground water encountered at 7 feet at time of drilling

500A (2/77)

Leighton & Associates

GEOTECHNICAL BORING LOG

Date 12/13/90 Drill Hole No. B-10 Sheet 1 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,770' Ref. or Datum mean sea level

Logged by DLL

Sampled by DLL

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
0								ALLUVIUM
5			1	23		▽	CL/ML	@5': Mottled olive-brown and orange-brown, wet, very stiff silty clay/clayey silt; micaceous trace of fine sand
10			2	29	88.7	34.2	ML/SM	@12': Mottled olive-brown and orange-brown saturated, medium dense, fine sandy silt/silty fine sand; micaceous
15			3	37			SM	@15': Mottled olive-brown and orange-brown wet, dense, silty fine sand; sample has one 3" thick layer of olive-brown and brown, laminated clay and silt
20			4	38	87.8	34.0	SC/SM	@20': Light brown, saturated, dense, silty and clayey fine to medium sand; micaceous
25			5	43			CL/SM	@25': Mottled olive-brown and red-brown wet, dense, fine sandy clay to silty clayey sand
30								

500A (2/77)

Leighton & Associates

GEOTECHNICAL BORING LOG

Date 12/13/90 Drill Hole No. B-10 Sheet 2 of 2-

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,770' Ref. or Datum mean sea level

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
								Logged by DLL
								Sampled by DLL
30			6	50/2"	(N.R.)			
35								
40			7	68			ML/ SM	@40': Brown, wet, very dense, very fine sandy silt/silty very fine sand
								Total depth = 41.5 feet Ground water encountered at 6 feet at time of drilling
45								

GEOTECHNICAL BORING LOG

Date 12/14/90 Drill Hole No. B-11 Sheet 1 of 2-

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,766' Ref. or Datum mean sea level

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
								Logged by DLL
								Sampled by DLL
0								ALLUVIUM
5			1	22			ML	@5': Mottled olive-brown and orange-brown, wet, medium dense, fine sandy silt; micaceous, trace of clay
10			2	36	112.1	19.1	SM& CL	@10': Brown, saturated, dense, silty fine to coarse sand and brown, saturated stiff, slightly sandy clay
15			3	30			CL	@15': Mottled olive-brown and orange-brown, wet, very stiff to hard, fine sandy clay; micaceous
20			4	55	(N.R.			
25			5	32				@25': Mottled red-brown and olive-brown, saturated, hard, slightly silty clay; numerous carbonized flecks, micaceous, some caliche stringers and pods
30								

GEOTECHNICAL BORING LOG

Date 12/14/90 Drill Hole No. B-11 Sheet 2 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,766' Ref. or Datum mean sea level

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
								Logged by DLL Sampled by DLL
30			6	70 (N.R.)			CL	@30': Brown, saturated, hard, clay
35								
40			7	50/4"			SW	@40': Brownish gray, wet, very dense, fine to coarse sand
45								
50			8	50/3"	117.6	14.0	SC	@50': Light reddish brown, saturated, very dense, clayey, fine to coarse sand
								Total depth = 51 feet Ground water encountered at 5 feet at time of drilling
55								

500A (2/--)

Leighton & Associates

GEOTECHNICAL BORING LOG

Date 12/14/90 Drill Hole No. B-12 Sheet 1 of 1

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole Ref. or Datum mean sea level

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
								Logged by DLL Sampled by DLL
0							SM	ALLUVIUM @0': Brown, damp, medium dense, silty fine to coarse sand
5			1	20		8.4	SM/SW	@5': Brown, damp, medium dense, trace to slightly silty, fine to medium sand; few gravels, approximately 5 to 10 percent coarse grains
10			2	21				@10': Same as at 5' but fine to very coarse grained and wet
15			3	26			SW	@15': Gray-brown, wet, medium dense, fine to coarse sand
20			4	50/5"				JACUMBA LAVA @20': Red and black, very dense, weathered volcanic rock
								Total depth = 22 feet (Refusal on Bedrock) Ground water encountered at 13.5 feet at time of drilling
25								
30								

500A (2/--)

Leighton & Associates

GEOTECHNICAL BORING LOG

Date 12/14/90 Drill Hole No. B-13 Sheet 1 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,791' Ref. or Datum mean sea level

Logged by DLL

Sampled by DLL

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
0								ALLUVIUM
5			1	23		7.0	ML/SM	@5': Brown, damp, medium dense, fine sandy silty/silty fine sand; few pebbles
10			2	41		4.3	SW	@10': Brown, damp, dense, fine to medium sand; few thin (1/4" thick) silt layers, some pebbles More pebbles with depth
15			3	75		2.2		@15': Brown, damp, very dense, fine to coarse sand; some pebbles
20			4	50/4"		2.3		@18': Abundant pebbles to 2" diameter
25			5	30/6"		2.2	SM	@26': Becomes silty sand
30								

500X (2/77)

Leighton & Associates

GEOTECHNICAL BORING LOG

Date 12/14/90 Drill Hole No. B-13 Sheet 2 of 2

Project Jacumba Valley Ranch Job No. 4900381-05

Drilling Co. Layne Environmental Type of Rig Mobile B-61

Hole Diameter 8" Drive Weight 140 lbs. Drop 30 in.

Elevation Top of Hole ±2,791' Ref. or Datum mean sea level

Logged by DLL

Sampled by DLL

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
30			6	38			SM	@30": Brown, damp, dense, silty fine to medium sand; rare pebbles, one 1/2" thick clay layer
35								
40			7	81			SW	@40': Brown, wet, very dense, fine to mediu sand; few pebbles, approximatley 5 to 10 percent coarse grains
45								
50			8	34				@50': Same as at 40' but dense
55								Total depth = 51.5 feet Ground water encountered at 40 feet at time of drilling

500X (2/77)

Leighton & Associates

APPENDIX C

LABORATORY TESTING PROCEDURES

Moisture and Density Tests: Moisture content and dry density determinations were performed on relatively undisturbed samples obtained from the test borings and/or trenches. The results of these tests are presented in the boring and/or trench logs. Where applicable, only moisture content was determined from "undisturbed" or disturbed samples.

Classification Tests: Typical materials were subjected to mechanical grain-size analysis by wet sieving from U.S. Standard brass screens (ASTM D422-65). Hydrometer analyses were performed where appreciable quantities of fines were encountered. The data was evaluated in determining the classification of the materials. The grain-size distribution curves are presented in the test data and the Unified Soil Classification is presented in both the test data and the boring and/or trench logs.

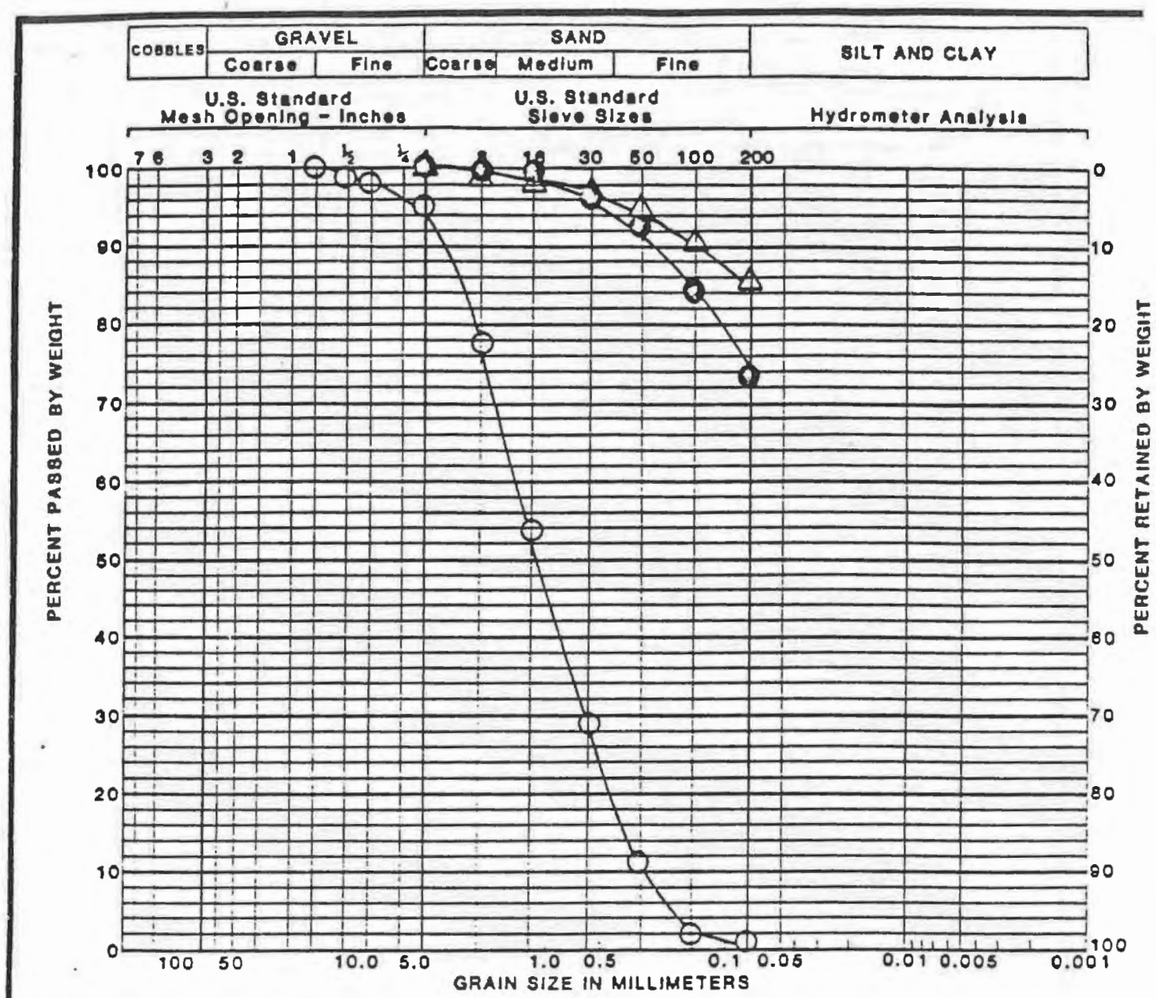
Direct Shear Tests: Direct shear tests were performed on selected remolded and/or undisturbed samples which were soaked for a minimum of 24 hours under a surcharge equal to the applied normal force during testing. After transfer of the sample to the shear box, and reloading the sample, pore pressures set up in the sample due to the transfer were allowed to dissipate for a period f approximately 1 hour prior to application of shearing force. The samples were tested under various normal loads, a different specimen being used for each normal load. The samples were sheared in a motor-driven, strain-controlled, direct-shear testing apparatus at a strain rate of 0.05 inch per minute. After a travel of 0.300 inch of the direct shear machine, the motor was stopped and the sample was allowed to "relax" for approximately 15 minutes. The "relaxed" and "peak" shear values were recorded. It is anticipated that, in a majority of samples tested, the 15 minutes relaxing of the sample is sufficient to allow dissipation of pore pressures set up in the samples due to application of shearing force. The relaxed values are therefore judged to be a good estimation of effective strength parameters. The test results were plotted on the "Direct Shear Summary".

Maximum Density Tests: The maximum dry density and optimum moisture content of typical materials were determined in accordance with ASTM D1557-78 (five layers). The results of these tests are presented in the test data.

APPENDIX C (Cont'd.)

Expansion Index Tests: The expansion potential of selected materials was evaluated by the Expansion Index Test, U.B.C. Standard No. 29-2. Specimens are molded under a given compactive energy to approximately the optimum moisture content and approximately 50 percent saturation or approximately 90 percent relative compaction. The prepared 1-inch thick by 4-inch diameter specimens are loaded to an equivalent 144 psf surcharge and are inundated with tap water until volumetric equilibrium is reached. The results of these tests are presented in the test data.

Consolidation Tests: Consolidation tests were performed on selected, relatively undisturbed samples recovered from the sampler. Samples were placed in a consolidomter and loads were applied in geometric progression. The percent consolidation for each load cycle was recorded as the ratio of the amount of vertical compression to the original 1-inch height. The consolidation pressure curves are presented in the test data. Where applicable, time-rates of consolidation were also recorded. A plot of these rates can be used to estimate time of consolidation.



SYMBOL	SAMPLE LOCATION	LL*	PL*	PI*	SOIL TYPE
○	T-1 (1) @ 0 - 3'				SW
◉	T-1 (2) @ 8' - 10'				ML
△	T-2 (1) @ 0 - 3'				ML

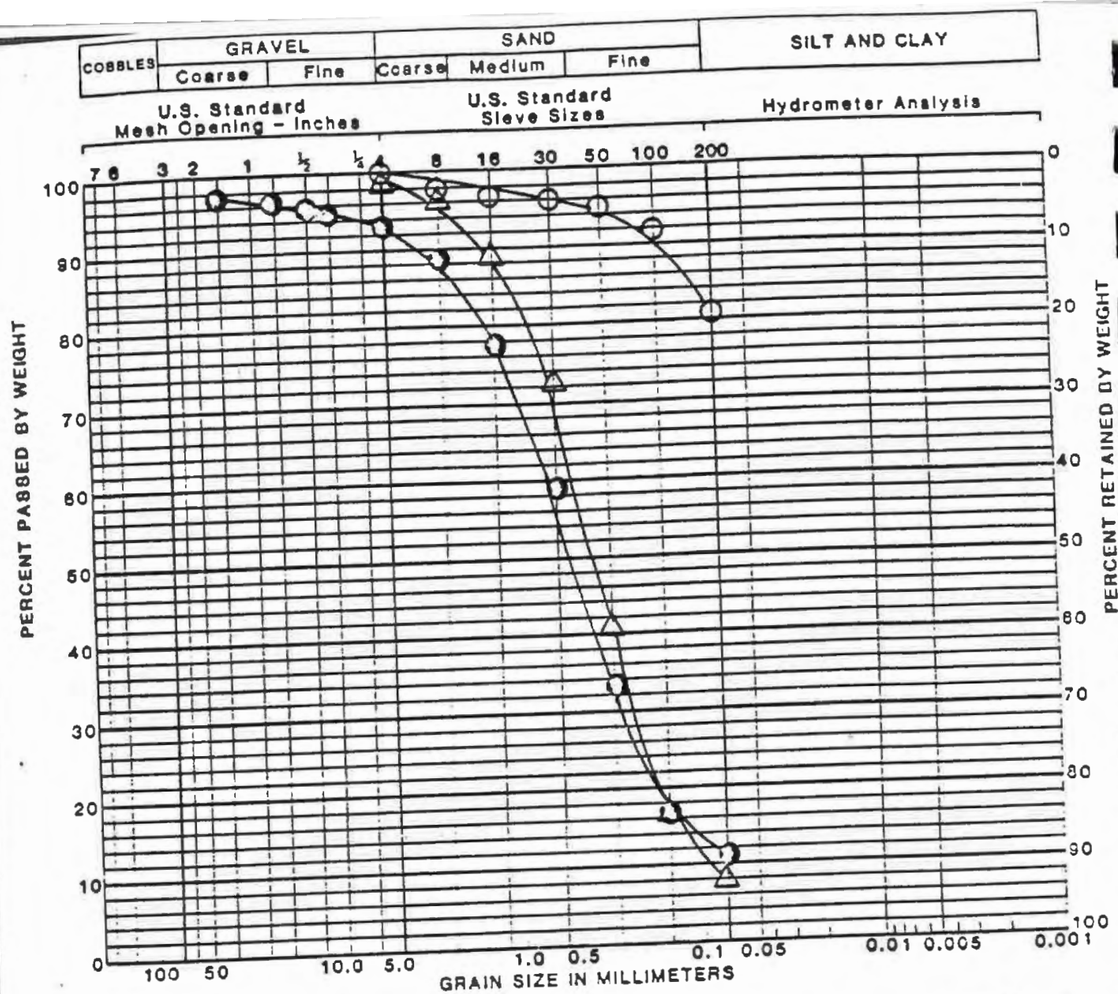
*LL Liquid Limit
*PL Plastic Limit
*PI Plasticity Index

Based on ASTM D422-72

LEIGHTON AND ASSOCIATES

Project No. 4900381-06
JACUMBA VALLEY RANCH

GRAIN SIZE ANALYSIS



SYMBOL	SAMPLE LOCATION	LL*	PL*	PI*	SOIL TYPE
○	T-2 (2) @ 4' - 6'				ML
●	T-3 (1) @ 1' - 3'				SM-SW
△	T-3 (2) @ 5' - 7'				SM-SW

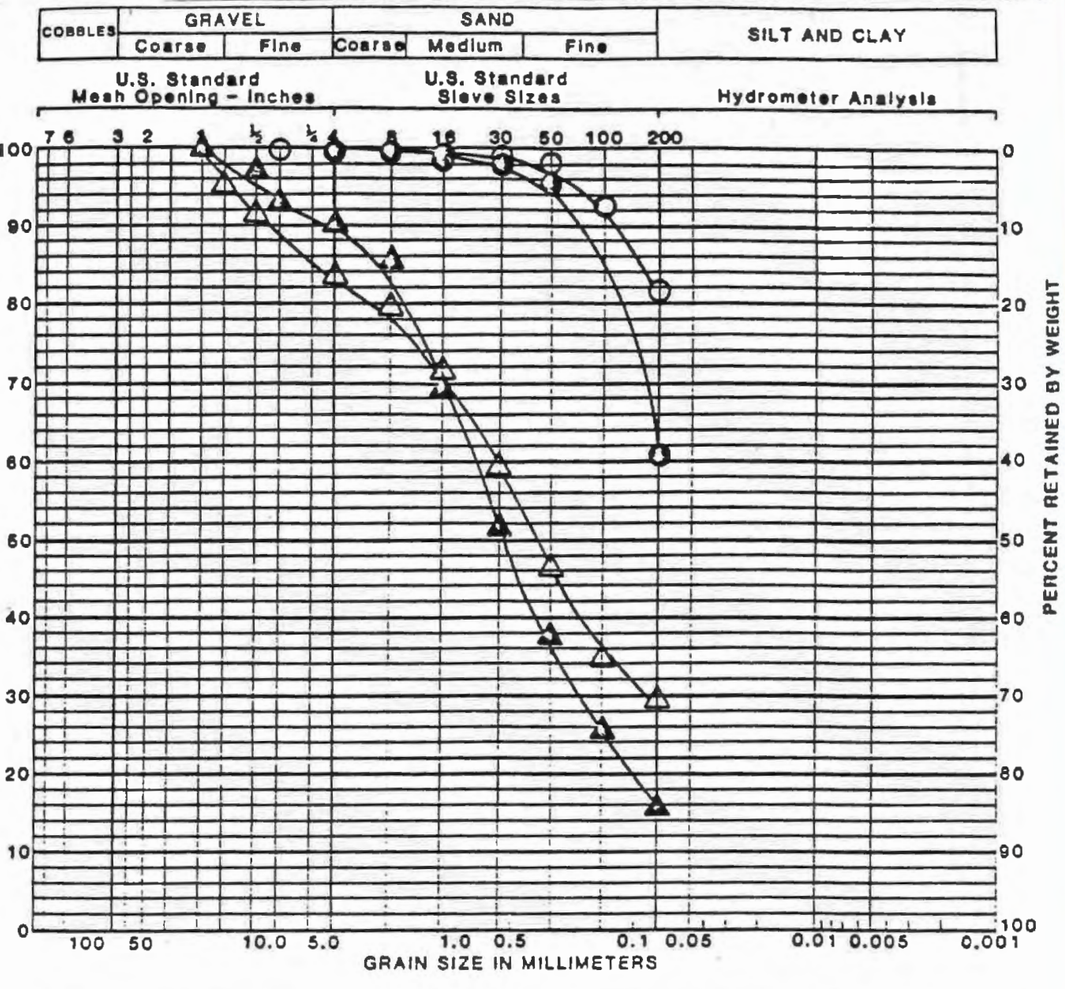
*LL Liquid Limit
*PL Plastic Limit
*PI Plasticity Index

Based on ASTM D422-72

LEIGHTON and ASSOCIATES

Project No. 4900381-03
JACUMBA VALLEY RANCH

GRAIN SIZE ANALYSIS



SYMBOL	SAMPLE LOCATION	LL*	PL*	PI*	SOIL TYPE
○	B-2 (2) @ 10'-11.5'				ML
●	B-3 (4) @ 20'-21.5'				ML
△	B-7 (3) @ 15'-16'				SC/SM
▲	B-8 (5) @ 25'-26'				SM

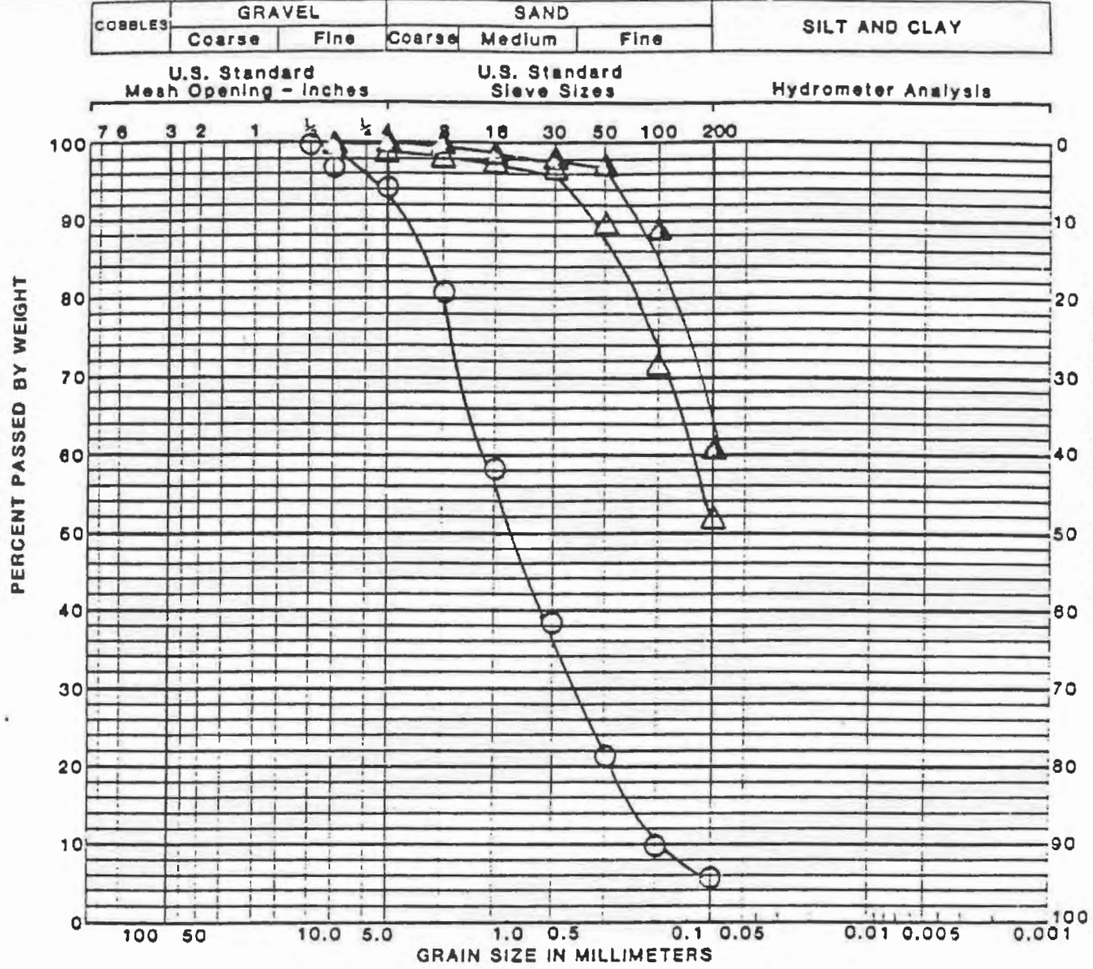
*LL Liquid Limit
*PL Plastic Limit
*PI Plasticity Index

Based on ASTM D422-72

LEIGHTON and ASSOCIATES

Project No. 4900381-03
JACUMBA VALLEY RANCH

GRAIN SIZE ANALYSIS



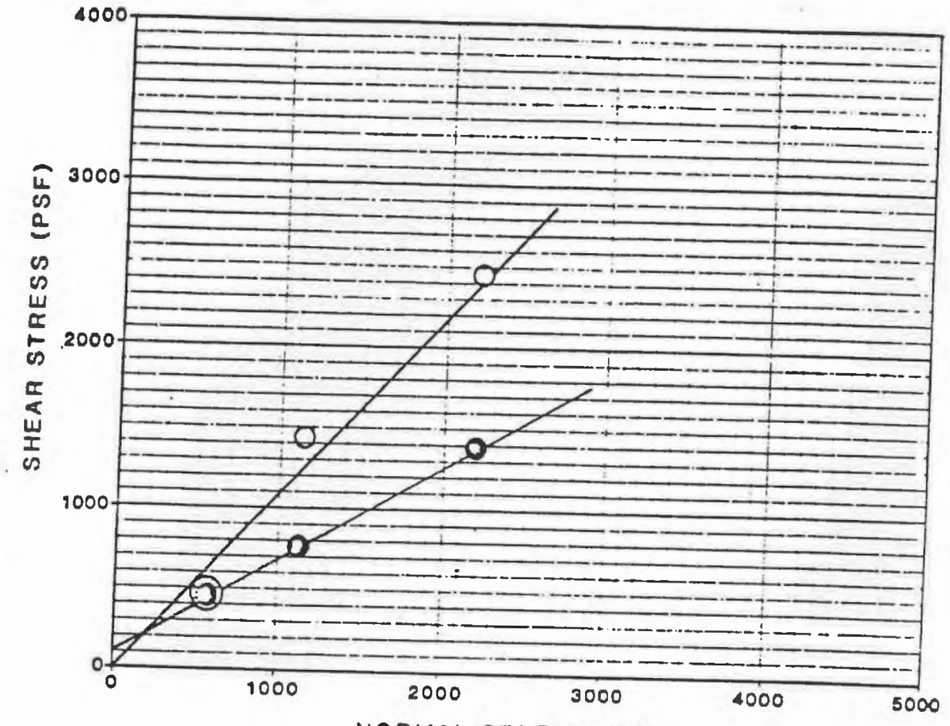
SYMBOL	SAMPLE LOCATION	LL*	PL*	PI*	SOIL TYPE
△	B-9 (4) @ 20'- 21.5'				CL
▲	B-11 (1) @ 5'-6.5'				ML
○	B-12 (3) @ 15'-16.5'				SW

*LL Liquid Limit
*PL Plastic Limit
*PI Plasticity Index

Based on ASTM D422-72

Project No. 4900381-03
JACUMBA VALLEY RANCH

GRAIN SIZE ANALYSIS



DESCRIPTION	SYMBOL	BORING NUMBER	SAMPLE NUMBER	DEPTH (FEET)	COHESION (PSF)	FRICTION ANGLE	SOIL TYPE
Remolded to 90% of Maximum Dry	○	T-1	1	0 - 3'	0	48°	SW
Density at Opt Moisture Content	●	T-2	1	0 - 3'	130	30°	SM-ML

Based on ASTM D3080-79

Project No. 4900381-03
JACUMBA VALLEY RANCH

DIRECT SHEAR TEST RESULTS

EXPANSION INDEX TEST RESULTS

SAMPLE NO.	SAMPLE LOCATION	INITIAL MOISTURE (%)	COMPACTED DRY DENSITY (PCF)	FINAL MOISTURE (%)	VOLUMETRIC SWELL (%)	EXPANSION INDEX	EXPANSIVE POTENTIAL
②	T-2 @ 4'-6'	14.0	96.6	31.3	6.6	66	Medium
①	T-4 @ 0'-3'	11.5	104.6	24.0	5.1	51	Medium

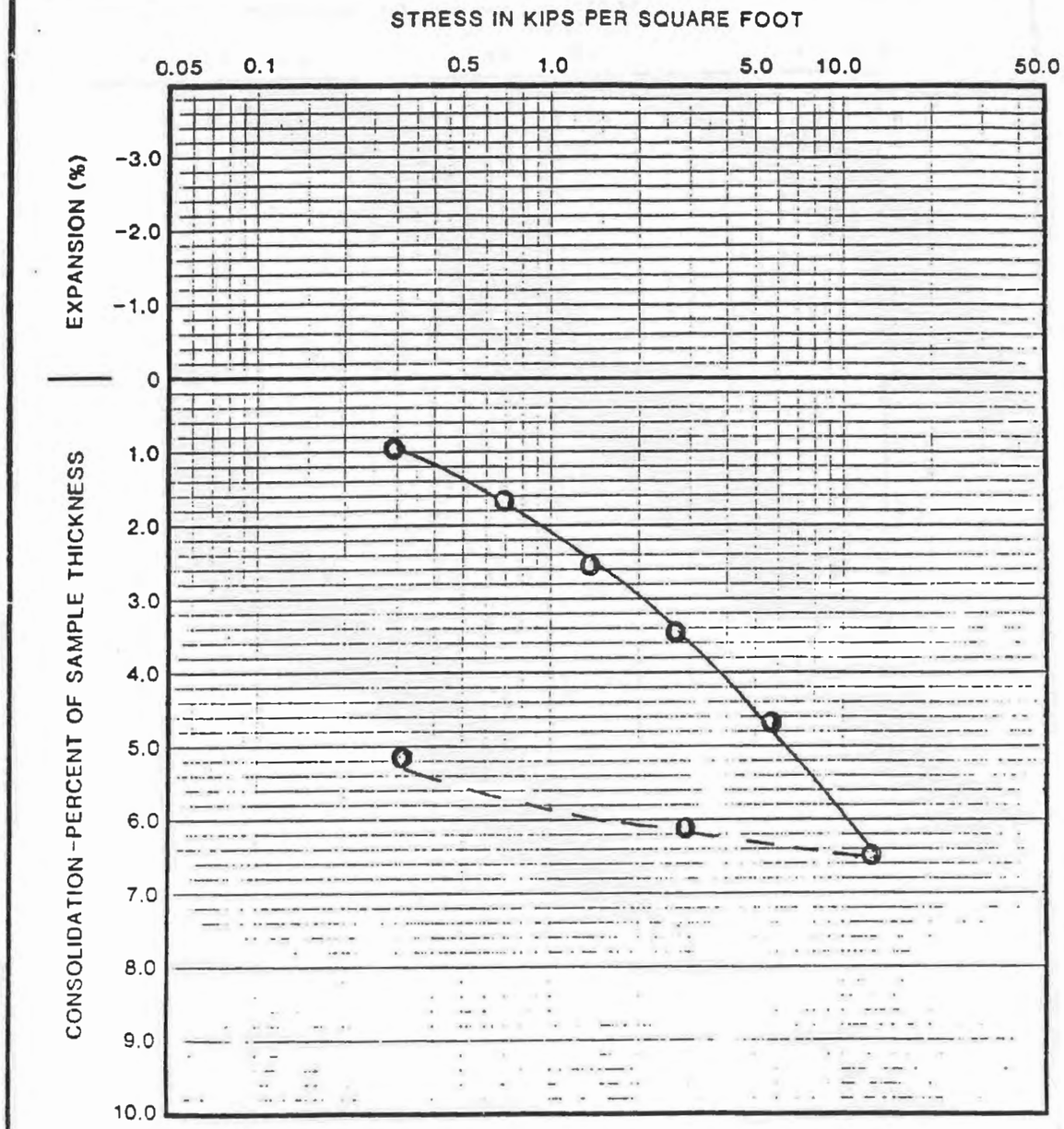
MAXIMUM DENSITY TEST RESULTS

SAMPLE NO.	LOCATION	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)
①	T-1 @ 0'-3'	115.5	14.5
①	T-2 @ 0'-3'	107.0	20.0
②	T-2 @ 4'-6'	110.0	14.0

Project No.4900381-05

JACUMBA VALLEY RANCH

EXPANSION INDEX AND MAXIMUM DENSITY TEST RESULTS



○ FIELD MOISTURE

● SATURATED

—— LOADING

– – – REBOUND

BORING NO.: B-3

SAMPLE NO.: 2

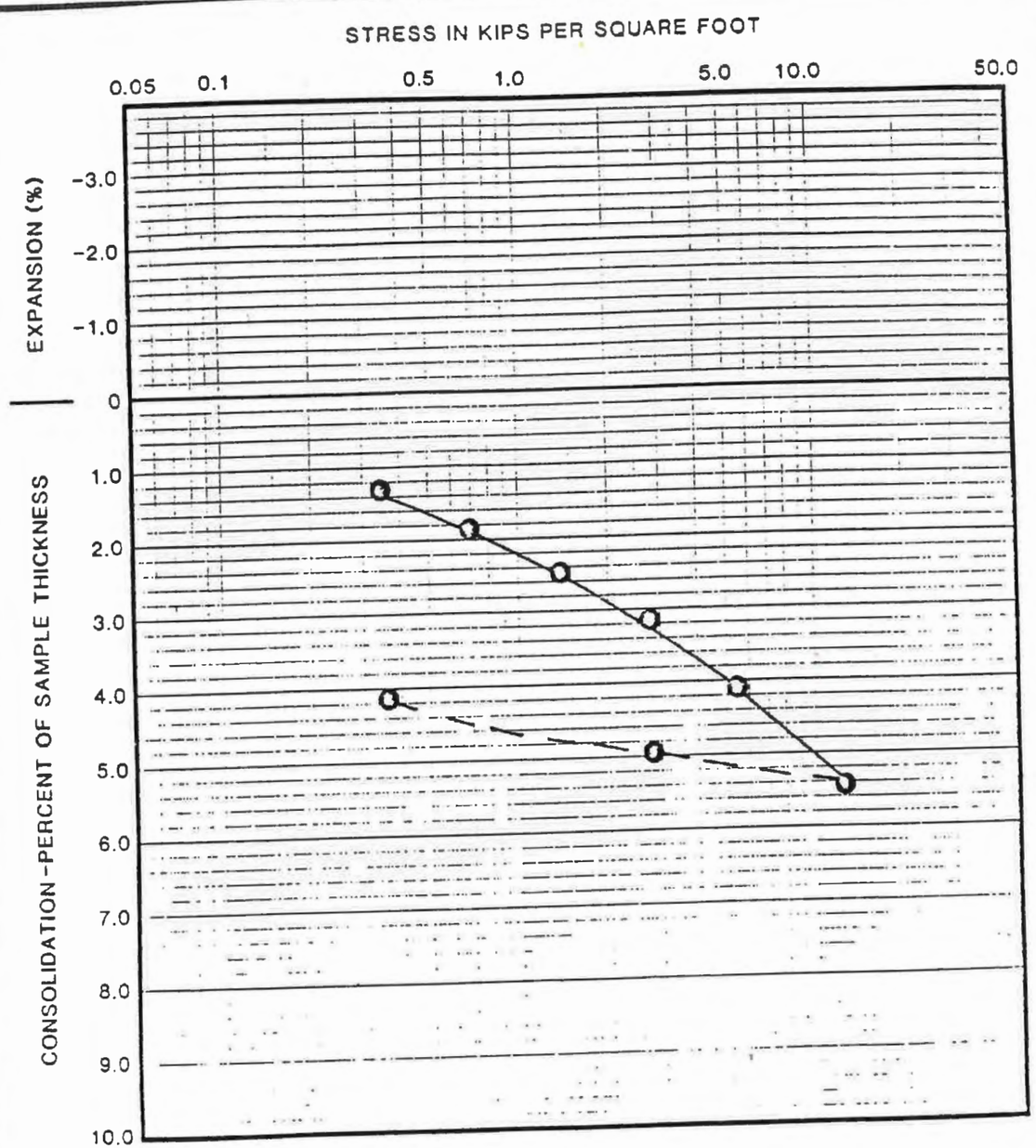
DEPTH (FT): 10-11

SOIL TYPE: SM

Project No. 4900381-05

JACUMBA VALLEY RANCH

CONSOLIDATION TEST RESULTS

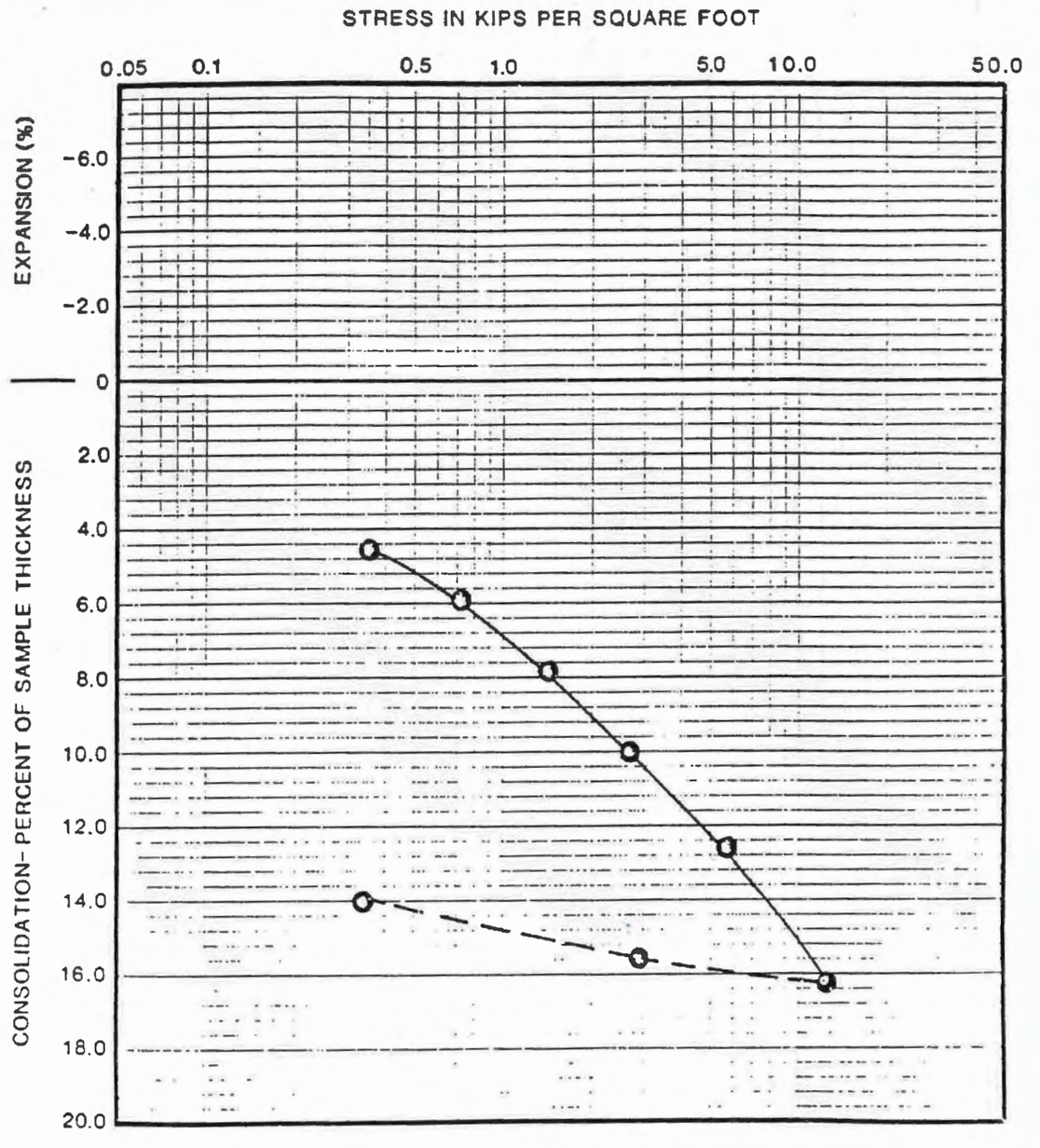


○ FIELD MOISTURE
● SATURATED
—— LOADING
– – – REBOUND

BORING NO.: B-6
SAMPLE NO.: 2
DEPTH (FT): [illegible]
SOIL TYPE: [illegible]

Project No. 4900381-06
JACUMBA VALLEY RANCH

CONSOLIDATION TEST RESULTS

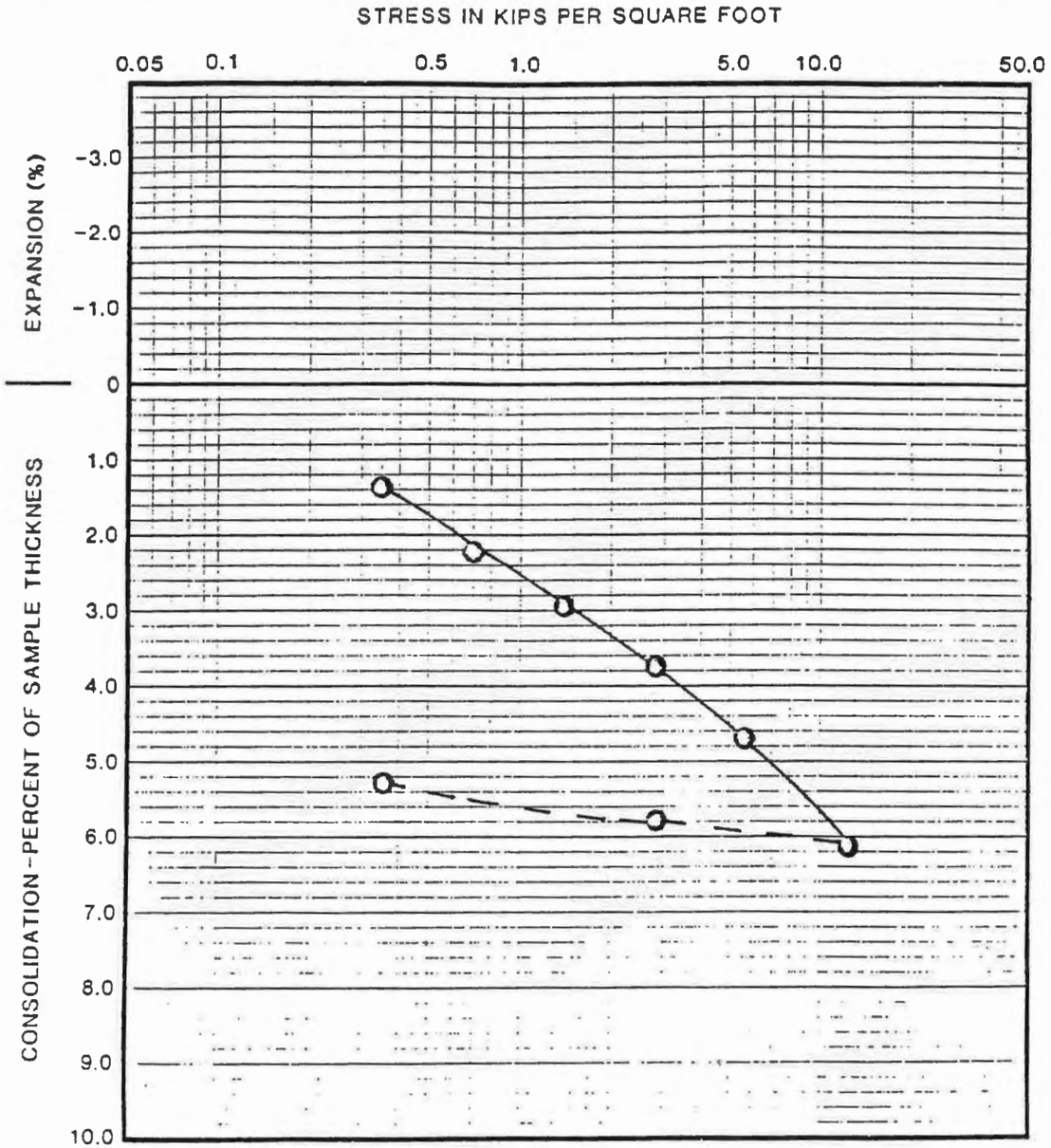


○ FIELD MOISTURE
● SATURATED
—— LOADING
– – – REBOUND

BORING NO.: B-10
SAMPLE NO.: 2
DEPTH (FT): 10-11'
SOIL TYPE: CL/ML

Project No. 4900381-06
JACUMBA VALLEY RANCH

CONSOLIDATION TEST RESULTS



LEIGHTON AND ASSOCIATES, INC.
Geotechnical and Environmental Engineering Consultants

MAR 0 7 1991

February 27, 1991

Project No. 4900381-05

To: Jacumba Valley Ranch
2423 Camino del Rio South, Suite 212
San Diego, California 92108

Attention: Mr. Karl Turecek

Subject: Updated Evaluation of Consolidation Potential, Phase 1, Jacumba Valley Ranch Development, San Diego County, California

Reference: Leighton and Associates, Inc., 1991, Limited Evaluation of Liquefaction and Consolidation Potential, Phase 1, Jacumba Valley Ranch Development, San Diego County, California, Project No. 4900381-05, dated January 21

In accordance with your request, we performed an updated evaluation of the consolidation potential at the subject development. We understand that fills in Residential Area A are proposed to be up to approximately 20 feet thick (above existing grades). Our referenced report provided recommendations based on your previous assumption that the thickness of additional fill would be approximately 4 feet. In order to evaluate the consolidation potential due to the weight of the proposed fill soils (up to 20 feet thick), we have performed laboratory time-rate consolidation tests on ring samples collected as part of our previous study. We chose representative samples near the areas of proposed fills as shown on the computer printout prepared by F.J. Willert Contracting Company, Inc. Based on our laboratory data (attached), we recommend the following delays after the completion of grading until the construction of settlement-sensitive structures in order to reduce the total and differential settlement to approximately 1 inch and 1/2 inch, respectively.

Thickness of Proposed Fill Above Existing Grade (feet)	Delay of Construction after Grading (months)
≤ 2	0
≤ 3	1
≤ 4	2
≤ 5	3
≤10	4
≤15	6
≤20	8

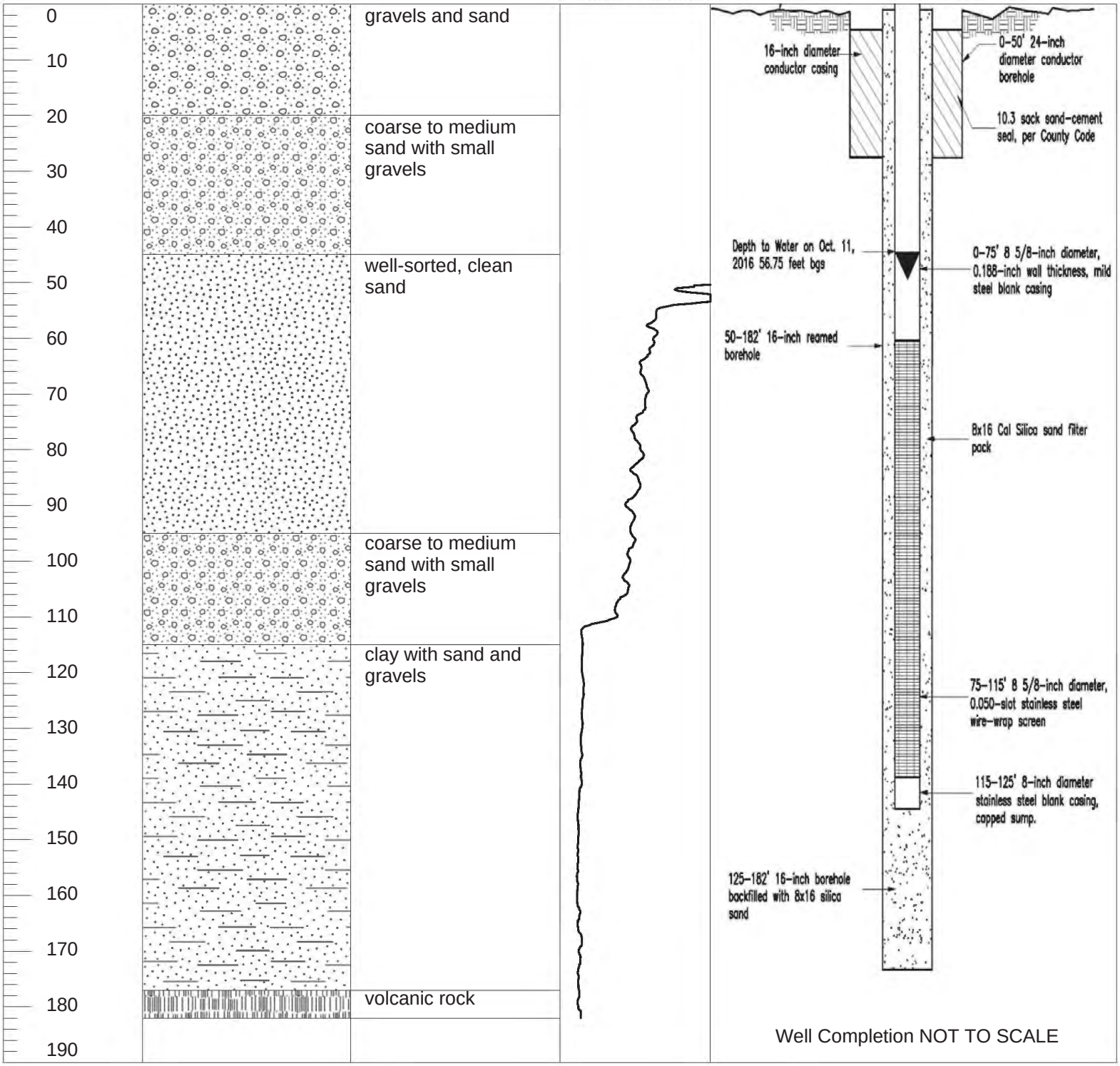
Maximum settlement of the existing soils below the areas of thickest proposed fill soils (approximately 20 feet thick) is estimated to range from 4 to 6 inches.

3934 MURPHY CANYON ROAD, SUITE B205, SAN DIEGO, CALIFORNIA 92123

(619) 292-8030 • (800) 447-2626
FAX (619) 292-0771

DUDEK

LOG OF JCSD HIGHLAND CENTER WELL



Project Name: Highland Center Well

Project Number: 9286

Drilling Company: Fain Drilling and Pump Company

Drilling Method: Mud Rotary

Drilling Start Date: September 28, 2016

Drilling Finish Date: September 29, 2016

Pilot Borehole Diameter: 15.75-inch

Total Borehole Depth: 182 feet

Boring Location: Jacumba Hot Springs, CA

Latitude: 32°37'2.94"N

Longitude: 116°11'4.19"W

Surface Elevation (ft msl): 2,805'

Additional Information:

prepared October 2016

Logs from wells that penetrate the alluvium in the center of the valley are presented in Table 3. See Figure 8 (page 28) for the location of the wells.

The alternating layers of clay and gravelly sand in the well logs appear to be lacustrine deposits. Similar deposits, of rhythmic layers of silty-clay and fine to medium sand, occur in the stream cut banks at the north end of Jacumba Valley. There are abundant small gastrapod shells in these deposits. Above the lacustrine sediments the well records generally show a fining upward trend.

The wells on the western edge of Jacumba penetrate the alluvium to a depth of 18 meters (County of San Diego, Department of Public Health, personal communication, 1980).

Well J3A		Well J4	
Depth (Meters)	Lithology	Depth (Meters)	Lithology
- 9.1	Clay and silt	-12.2	Layers of clay and gravel
-15.2	Coarse sand and gravel	-18.3	Gravel and boulders

In general, the lithology of the Quaternary alluvium varies both with depth and laterally, as would be expected in an alluviated valley in the arid southwest.

Table 3

Logs for Wells J1 and J2[a] and Wells K1 and K2[b]

Depth (Meters)	Lithology	Depth (Meters)	Lithology
	Well J1		Well J2
0-3.0	Soil and clay	0-3.0	Soil and clay
-11.6	Clay	-11.6	Clay
-12.2	Fine sand	-12.2	Fine sand
-15.2	Medium sand	-15.2	Medium sand
-26.8	Coarse sand and small gravel	-26.8	Coarse sand and small gravel
-30.5	Coarse sand and coarse gravel	-30.5	Coarse sand and small gravel
-36.6	Layers clay and coarse sand	-36.6	Layers clay and coarse sand
-37.8	Volcanic formation	-42.7	Layers clay and coarse sand
	Well K1		Well K2
0-1.5	Clay and topsoil	0-6.1	Clay and silt
-9.1	Silt and fine sand	-6.4	Cobbles
-12.2	Fine sand	-12.2	Fine sand
-13.7	Sand	-13.7	Sand
-15.2	Boulders and sand	-15.2	Rocks and sand
-19.2	Sand and gravel	-21.3	Sand and gravel
-19.5	Black silt and clay	-28.0	Rocks and sand
-20.7	Sand and gravel	-31.4	Large rocks and sand
-21.3	Black silt and clay		
-29.9	Sand and gravel		

Table 3 (Continued)

Depth (Meters)	Lithology	Depth (Meters)	Lithology
	Well K1		Well K2
-31.4	Boulders and cobbles		
-32.3	Sand and gravel		
-33.5	Red clay		

[a]Taken from County of San Diego, Department of Public Health, personal communication, 1980.

[b]Taken from William Ketchum, personal communication, 1980.

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 1089727

Page 1 of 1
Owner's Well No. One - 2007
Date Work Began 7/18/07, Ended 7/23/07
Local Permit Agency DEH
Permit No. LWEL 18415 Permit Date 7/13/07

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Rotary FLUID Gel

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
		ALLUVIAL FILL AS FOLLOWS:
0	9	Sand, fine grained - brown color
9	24	Clay - Dark color
24	70	Sand, fine grained
70	113	Sand, medium to coarse grained with some boulders

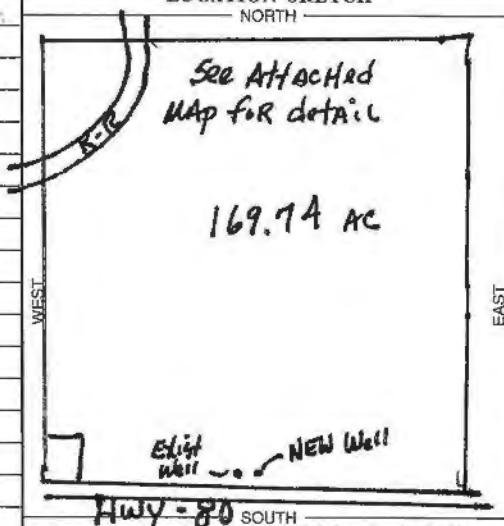
TOTAL DEPTH OF BORING 113 (Feet)
TOTAL DEPTH OF COMPLETED WELL 114 (Feet)

WELL OWNER

WELL LOCATION

Address Old Hwy 80
City Jacumba
County San Diego
APN Book 660 Page 150 Parcel 18
Township 18 S Range 8 E Section 8
Lat ___ DEG. ___ MIN. ___ SEC. N Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)
X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)
WATER SUPPLY
X Domestic ___ Public
X Irrigation ___ Industrial
___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 50+ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 40 (Ft.) & DATE MEASURED 7/23/07
ESTIMATED YIELD * 2000 (GPM) & TEST TYPE airlift
TEST LENGTH 6 (Hrs.) TOTAL DRAWDOWN 60 (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	20	32	X				Steel	23.5	.250	
0	73	24	X				Steel	13.5	.250	
73	113	24		x			Steel S.S. 304	13.5	.250	.080

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
20	113		pea	gravel	5/16x7

ATTACHMENTS (✓)

___ Geologic Log
X Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
✓ Other Site Map

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

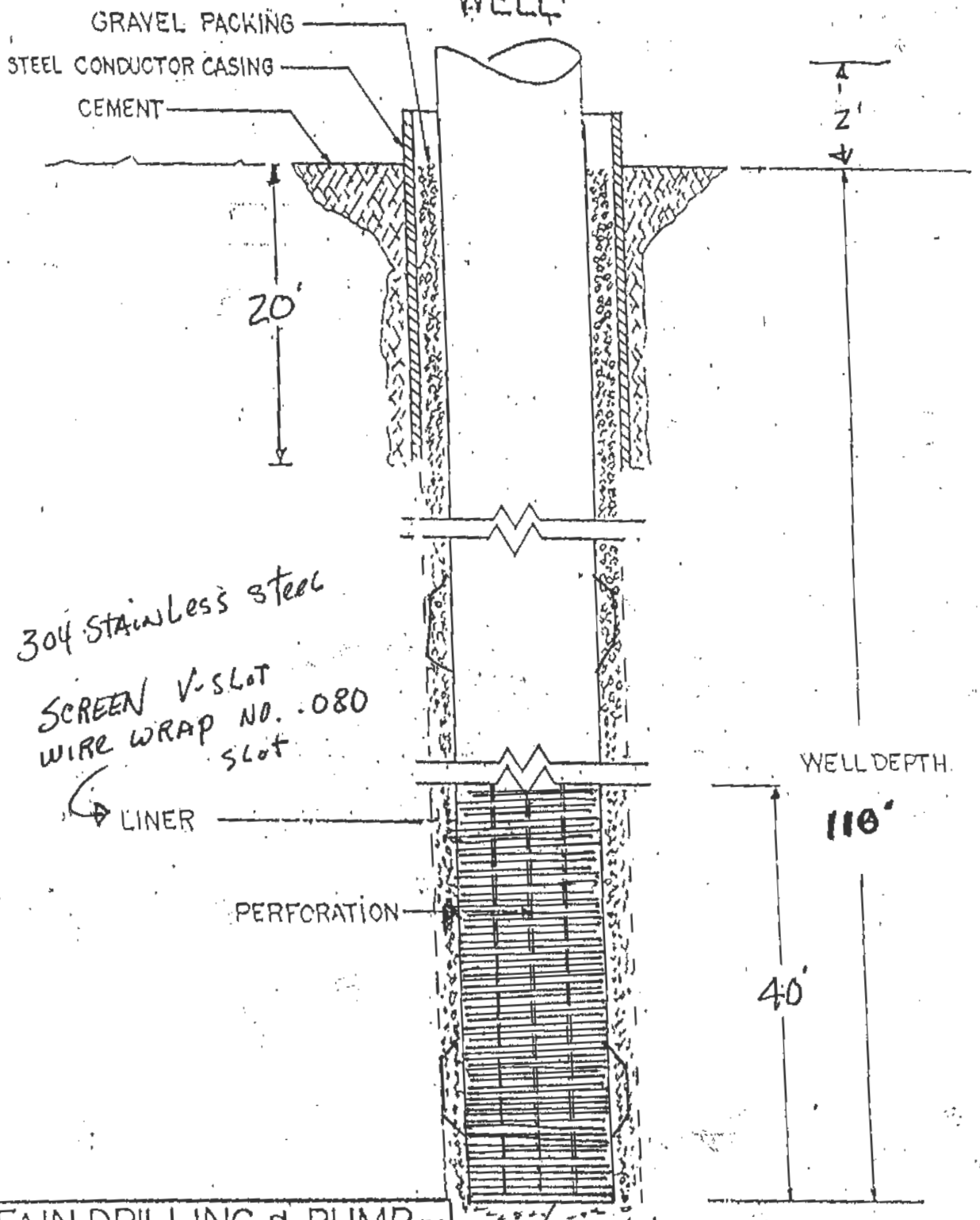
NAME FAIN DRILLING & PUMP CO INC (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 12029 Old Castle Rd. Valley Center, Ca 92082 CITY STATE ZIP
Signed Joe R. Fain C-57 LICENSED WATER WELL CONTRACTOR
DATE SIGNED 7-30-07
C-57 LICENSE NUMBER 328287

DWR 188 REV. 05-03
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM
OSP 03 78838

1089727

Lwel 18415

"AS BUILT" WELL

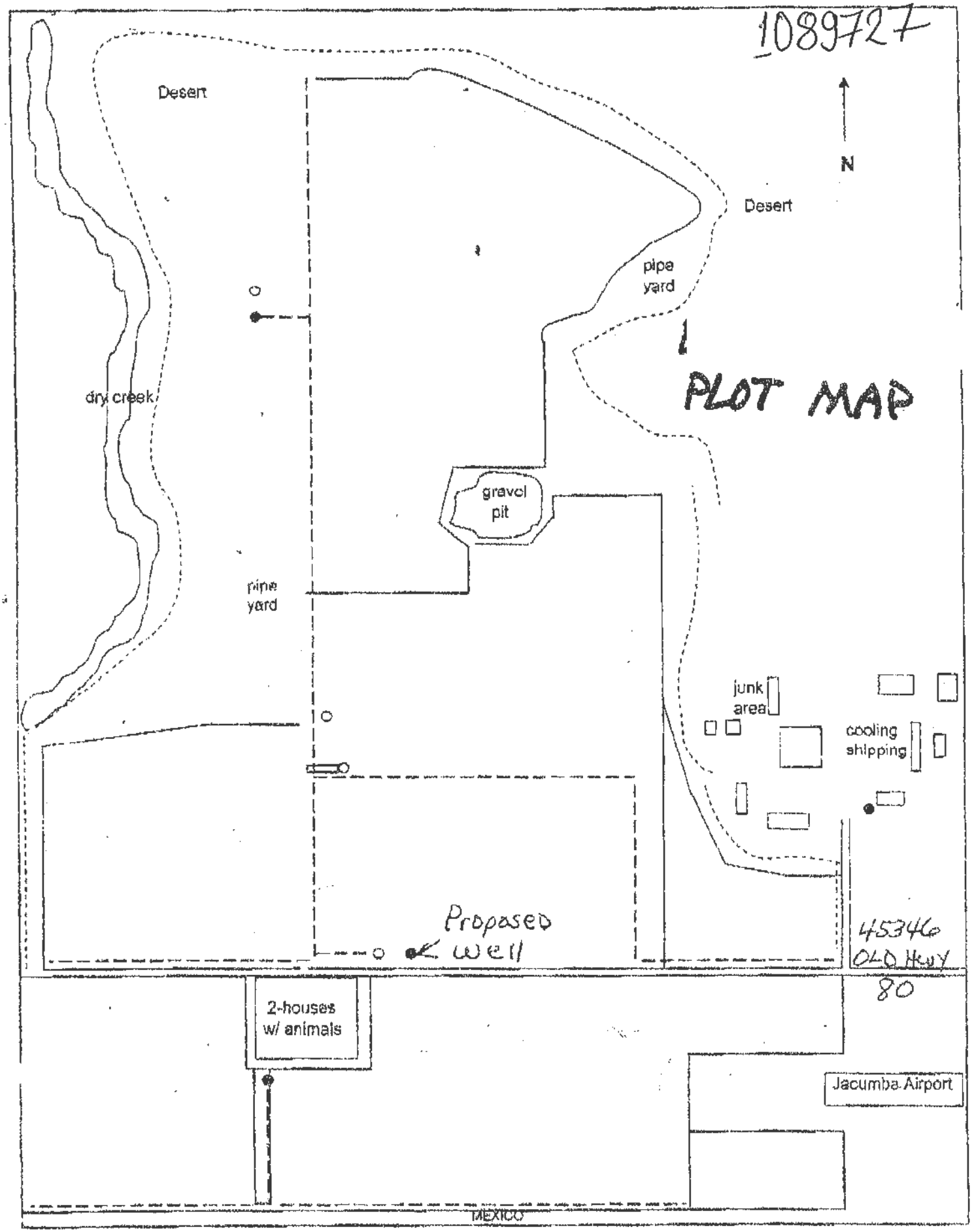


-FAIN DRILLING & PUMP-
12029 OLD CASTLE RD.
VALLEY CENTER CA.

STEEL CONDUCTOR 24" X 21'
STEEL LINER 14" X 113'
GRAVEL SIZE 5/16 X 7

BY: Joe R. Fain 7/30/07
JOE FAIN-OWNER

1089727


Desert
N
Desert
pipe
yard
dry creek
PLOT MAP
gravel
pit
pipe
yard
junk
area
cooling
shipping
Proposed
well
45346
OLD Hwy
80
2-houses
w/ animals
Jacumba Airport
MEXICO

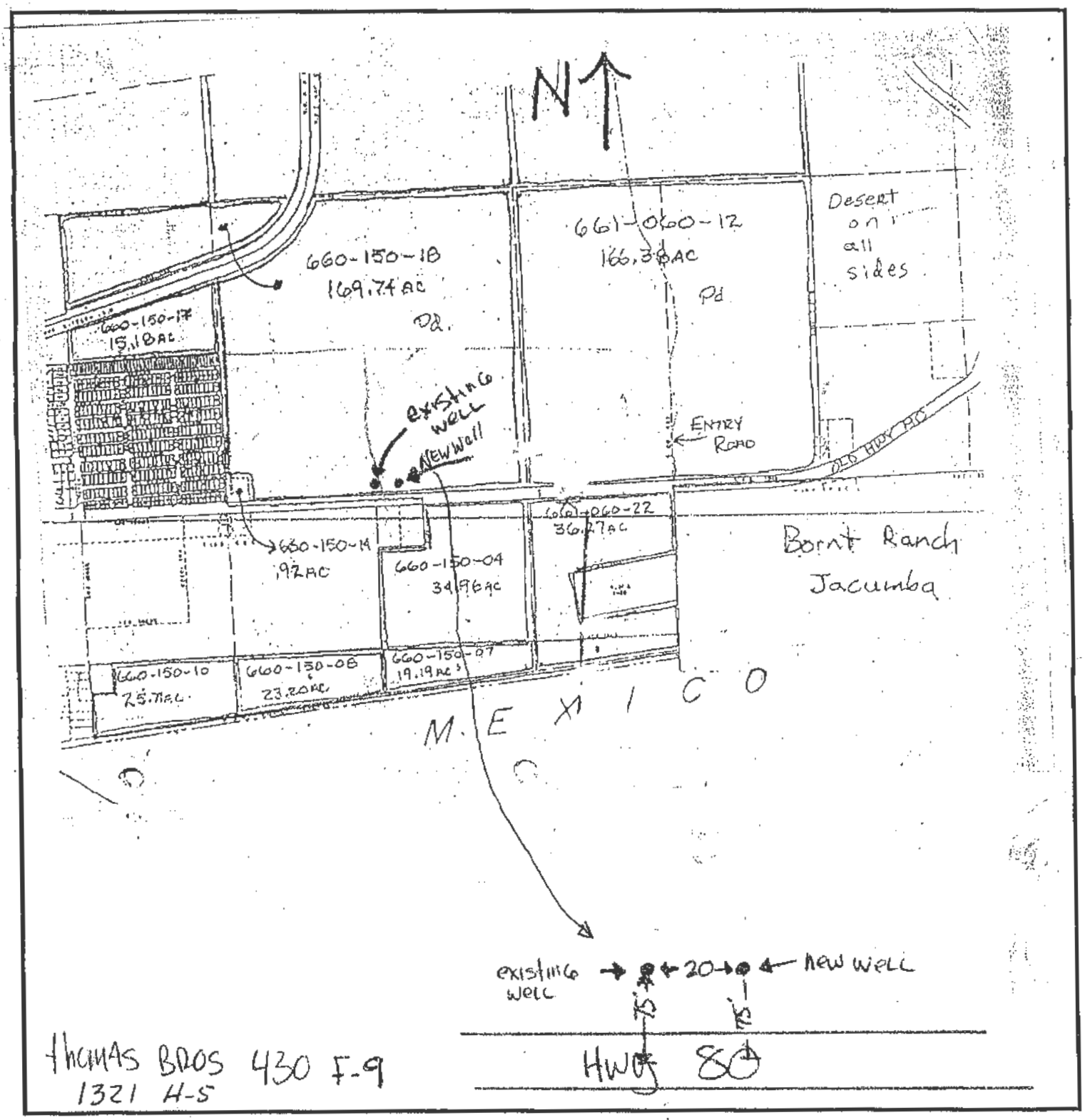
COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH

Control #: LWEL - 18415
Assessor's Parcel Number: 660 -150-18

1089727

LOCATION

Indicate below the vicinity and exact location of well with respect to the following items: Property lines, water bodies or water courses, drainage pattern, easements, roads, existing wells, sewers and private sewage disposal systems and other potential contamination sources, including dimensions.



Owner's Copy

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 0909529

Page 1 of 1

Owner's Well No. One

Date Work Began 1/17/05, Ended 1/25/05

Local Permit Agency San

Permit No. 16419 Permit Date 1/25/05

OWN USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Rotary FLUID Gel

DEPTH FROM SURFACE FL	to FL	DESCRIPTION *Describe material, grain size, color, etc.*
0	11	Clayey sand and silt fine grains
11	56	& Grey clayey sand fine to coarse medium grained
56	76	Coarse sand and gravel
76	99	sandstone, no coarse with gravel and boulders
99	112	Clay weathered rock

TOTAL DEPTH OF BORING 112 (Feet)

TOTAL DEPTH OF COMPLETED WELL 100 (Feet)

WELL OWNER

Name Borrit Farms

Mailing Address 2307 East Hwy 98

City Holtville State Ca Zip 92250

WELL LOCATION

Address n/o Hwy 80 & East Hwy 98

City Jacumba

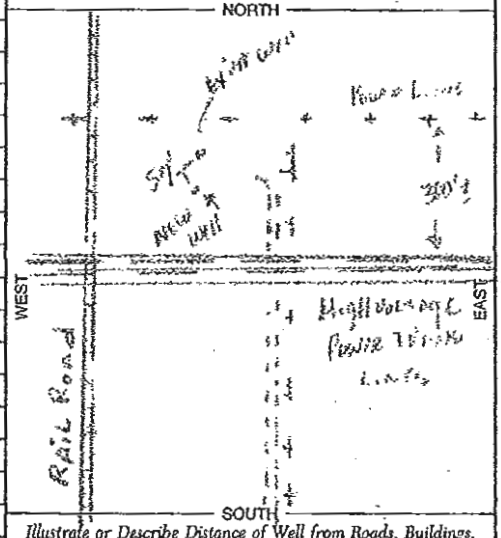
County San Diego

APN Book 660 Page 020 Parcel 05

Township 18-S Range 8-E Section 5

Lat 32 DEG. 37 MIN. 790 SEC. N Long 116 DEG. 10 MIN. 740 SEC. W

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ___ Public
X Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 12 (FL) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 9 (FL) & DATE MEASURED 1-26-05

ESTIMATED YIELD * 2000 (GPM) & TEST TYPE Air Lift

TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN 90 (FL)

** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE FL	to FL	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	20	32	X				Steel A-53	23.5	.250	
0	40	22	X				Steel A-139	13.5	.250	
40	100	22		X			304 S.S.	13.5	.150	.080

ANNULAR MATERIAL

DEPTH FROM SURFACE FL	to FL	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	✓			
0	100				Sil. #7

ATTACHMENTS (✓)

___ Geologic Log
X Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
X Other Site map

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Rain Drilling & Pump Co. Inc. (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 12629 Old Castle Rd. Valley Center CITY Ca STATE 92082 ZIP

Signed [signature] C-57 LICENSED WATER WELL CONTRACTOR

1-25-05 DATE SIGNED

322227 C-57 LICENSE NUMBER

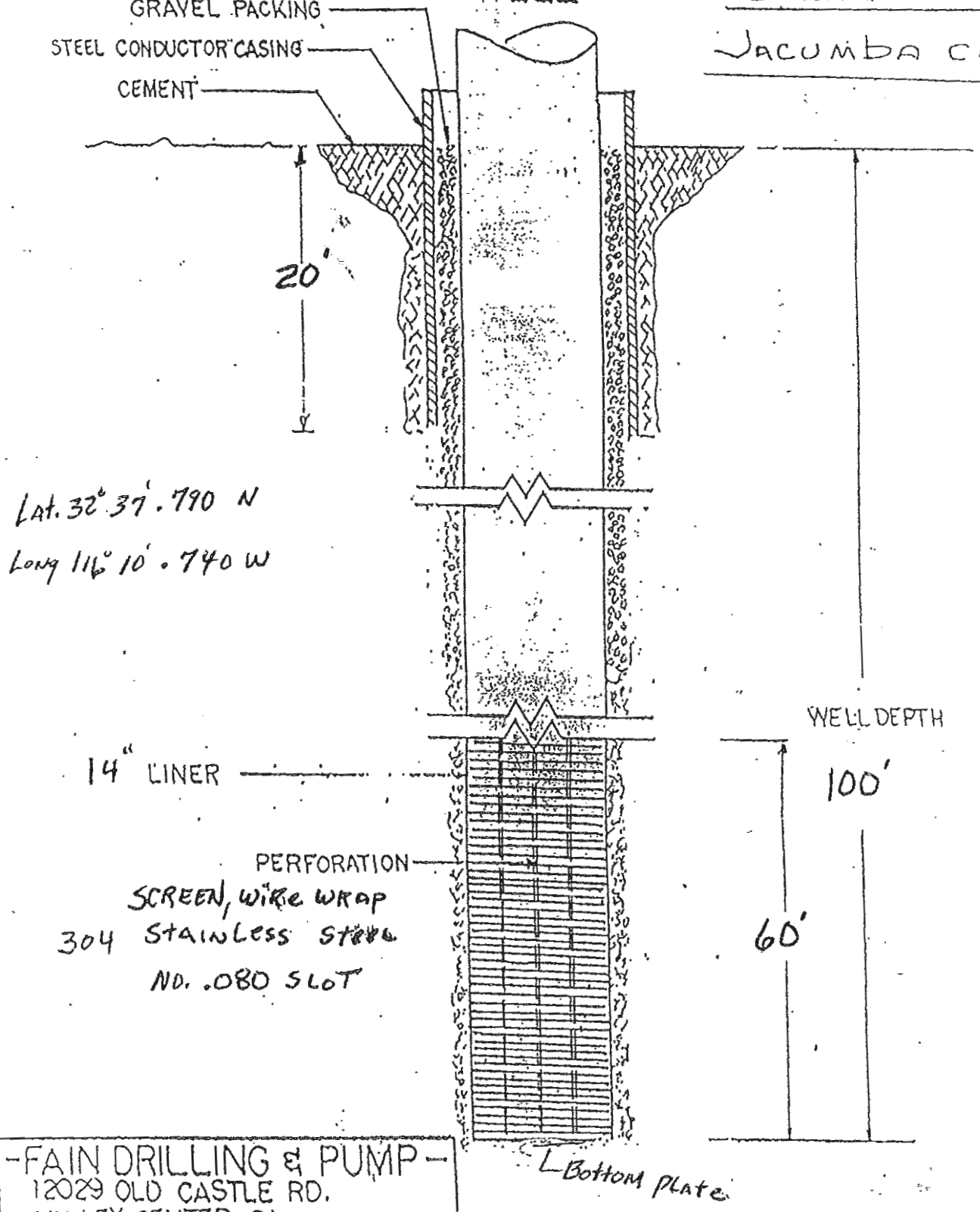
DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

"AS BUILT" WELL

BORN T. FARMS

JACUMBA CA.



Lat. 32° 37' .790 N

Long 116° 10' .740 W

SCREEN, WIRE WRAP
304 STAINLESS STEEL
NO. .080 SLOT

-FAIN DRILLING & PUMP-
12029 OLD CASTLE RD.
VALLEY CENTER CA.

STEEL CONDUCTOR 24" X 20'
STEEL LINER 14" X 100'
GRAVEL SIZE 5/16 X 7

BY: 1-26-05

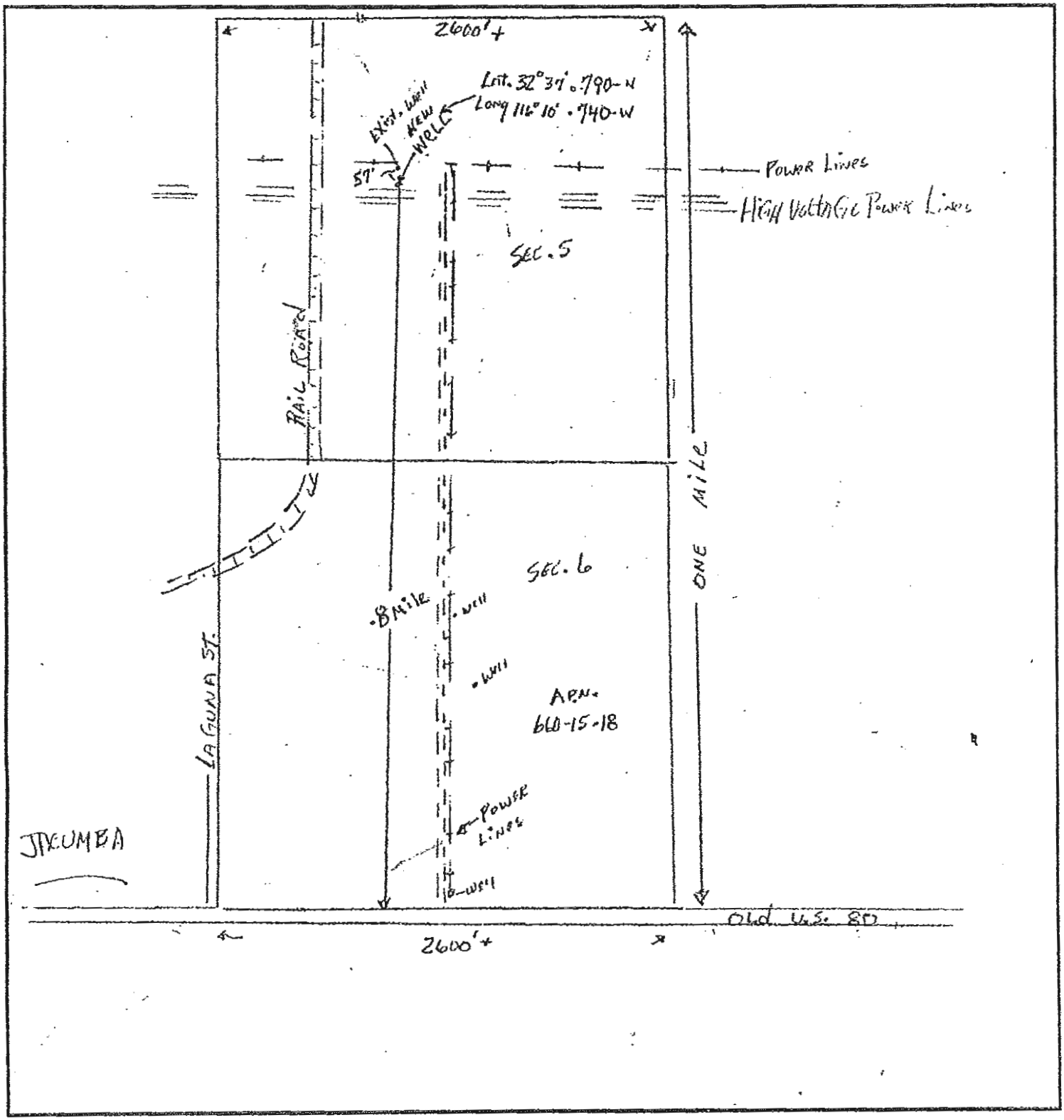
JOE FAIN-OWNER

NTY OF SAN DIEGO
PARTMENT OF ENVIRONMENTAL HEALTH

Control #: Lisel 116419
Assessor's Parcel Number: 660-020-05

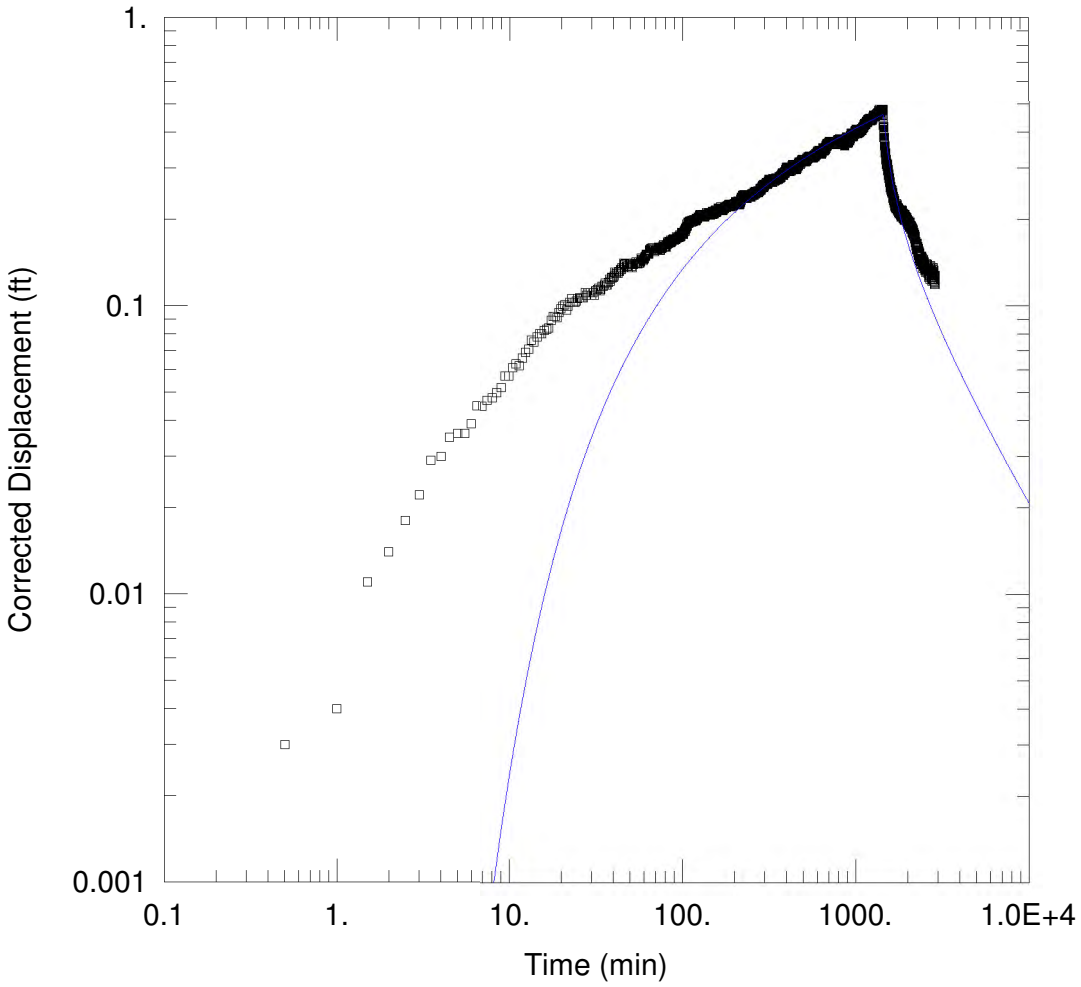
LOCATION

Indicate below the vicinity and exact location of well with respect to the following items: Property lines, water bodies or water courses, drainage pattern, easements, roads, existing wells, sewers and private sewage disposal systems and other potential contamination sources, including dimensions.



APPENDIX ~~D~~ E

Well #2 Aquifer Test AQTESOLV Data



WELL TEST ANALYSIS

Data Set: P:\...\Well1_CurveMatching.aqt
Date: 01/09/19 Time: 14:59:52

PROJECT INFORMATION

Company: Dudek
Location: Jacumba
Test Well: Well 2
Test Date: 12/14/2018

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Well 2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
▫ Well 1	305	0

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 3.629E+4 ft^2/day
S = 0.02876
Kz/Kr = 1.
b = 40. ft

Diagnostic Statistics

Estimation complete! Parameter change criterion (ETOL) reached.

Aquifer Model: Unconfined
Solution Method: Theis

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
T	3.629E+4	103.2	+/- 202.3	351.5	ft^2/day
S	0.02876	0.0001907	+/- 0.0003737	150.8	
Kz/Kr	1.	not estimated			
b	40.	not estimated			ft

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = T/b = 907.2 ft/day (0.3201 cm/sec)
Ss = S/b = 0.0007189 1/ft

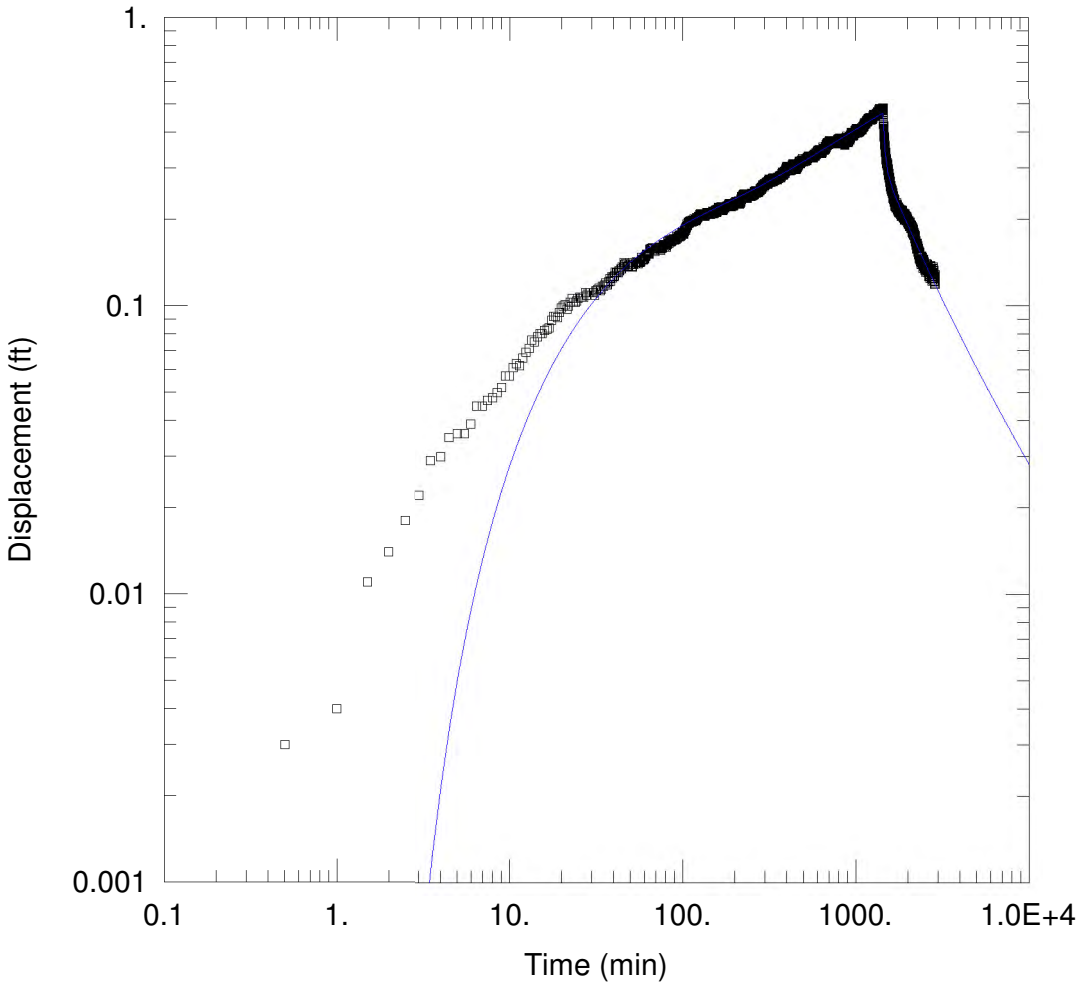
Parameter Correlations

	T	S
T	1.00	-0.81
S	-0.81	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . . 3.952 ft^2
Variance . . . . . 0.0006863 ft^2
Std. Deviation . . . . . 0.0262 ft
Mean . . . . . 0.008754 ft
No. of Residuals 5760
No. of Estimates 2



WELL TEST ANALYSIS

Data Set: P:\...\Well1_CurveMatching.aqt
Date: 02/12/19 Time: 09:57:48

PROJECT INFORMATION

Company: Dudek
Location: Jacumba
Test Well: Well 2
Test Date: 12/14/2018

AQUIFER DATA

Saturated Thickness: 40. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Well 2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
▫ Well 1	305	0

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 2.641E+4 ft^2/day
Sy = 0.04672
S = 0.00826
ß = 0.2076

Diagnostic Statistics

Estimation complete! Parameter change criterion (ETOL) reached.

Aquifer Model: Unconfined
Solution Method: Neuman

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
T	2.641E+4	62.34	+/- 122.2	423.7	ft^2/day
S	0.00826	6.918E-5	+/- 0.0001356	119.4	
Sy	0.04672	0.0002334	+/- 0.0004574	200.2	
ß	0.2076	0.0009584	+/- 0.001878	216.6	

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = T/b = 660.4 ft/day (0.233 cm/sec)
Ss = S/b = 0.0002065 1/ft

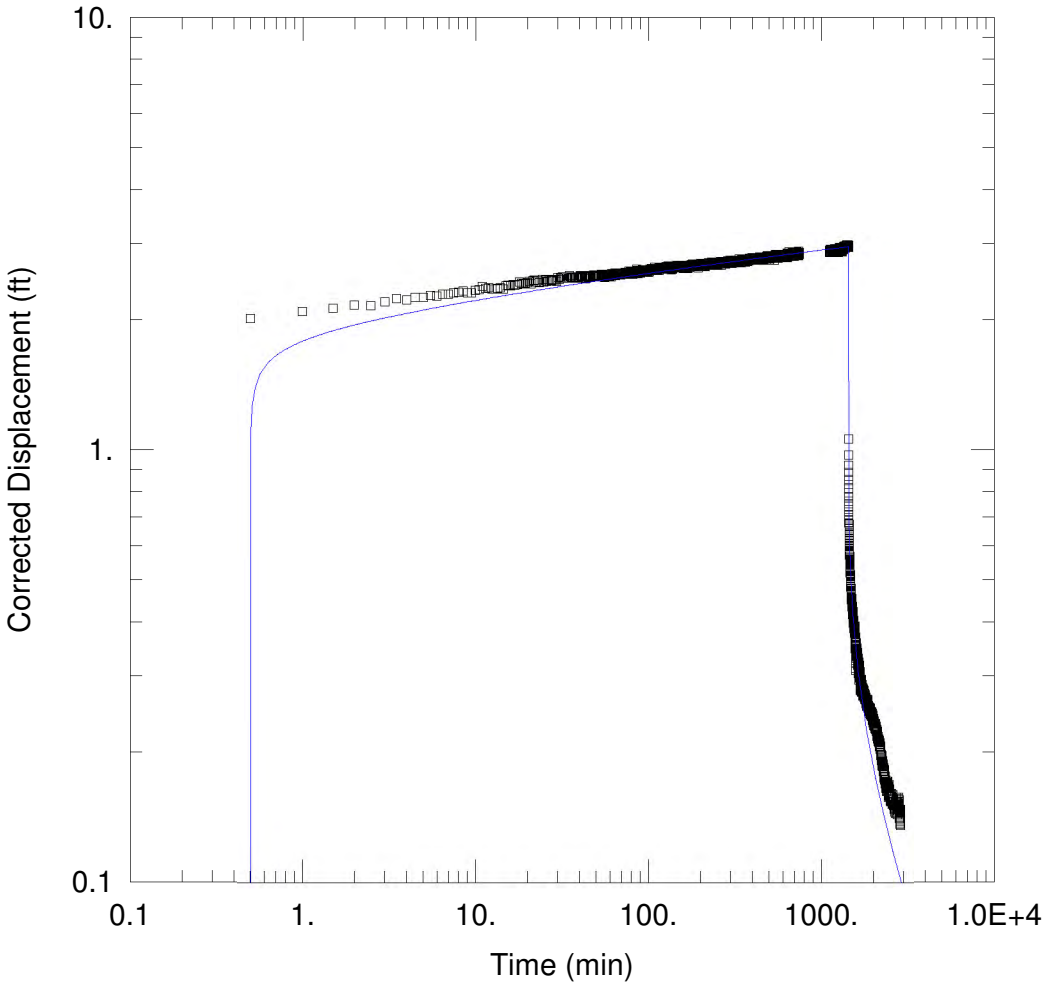
Parameter Correlations

	T	S	Sy	ß
T	1.00	-0.31	-0.95	0.02
S	-0.31	1.00	0.11	-0.69
Sy	-0.95	0.11	1.00	0.11
ß	0.02	-0.69	0.11	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . . 0.3775 ft^2
Variance . . . . . 6.558E-5 ft^2
Std. Deviation . . . . . 0.008098 ft
Mean . . . . . -0.0002177 ft
No. of Residuals 5760
No. of Estimates 4



WELL TEST ANALYSIS

Data Set: P:\...\Well2_CurveMatching.aqt
Date: 01/09/19 Time: 15:02:12

PROJECT INFORMATION

Company: Dudek
Location: Jacumba
Test Well: Well 2
Test Date: 12/14/2018

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Well 2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
▫ Well 2	0	0

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 3.305E+4 ft^2/day
S = 0.000136
Kz/Kr = 1.
b = 40. ft

Diagnostic Statistics

Estimation complete! RSS criterion (RTOL) reached.

Aquifer Model: Unconfined
Solution Method: Theis

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
T	3.305E+4	107.4	+/- 210.6	307.6	ft^2/day
S	0.000136	7.934E-6	+/- 1.555E-5	17.14	
Kz/Kr	1.	not estimated			
b	40.	not estimated			ft

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = T/b = 826.3 ft/day (0.2915 cm/sec)
Ss = S/b = 3.399E-6 1/ft

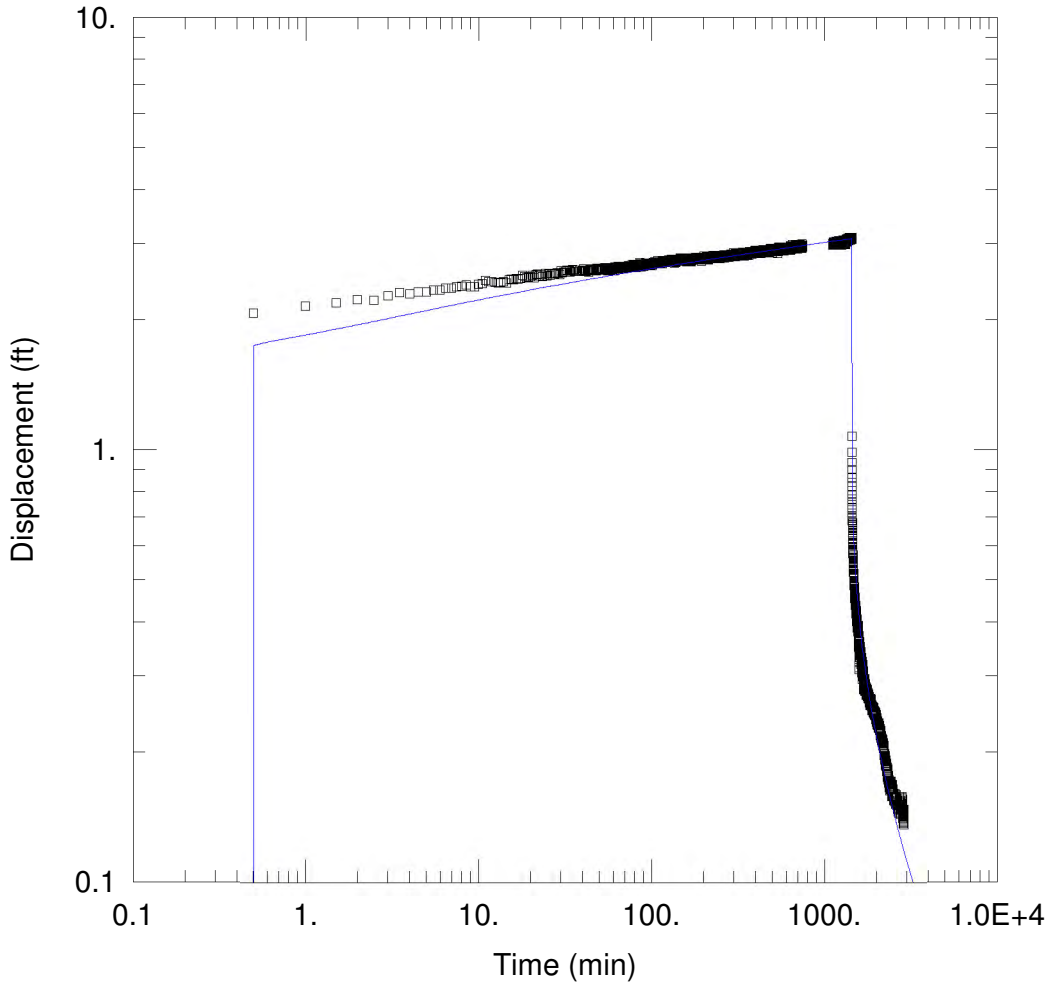
Parameter Correlations

	T	S
T	1.00	-0.99
S	-0.99	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . . 11.52 ft^2
Variance . . . . . 0.002314 ft^2
Std. Deviation . . . . . 0.04811 ft
Mean . . . . . 0.01864 ft
No. of Residuals 4980
No. of Estimates 2



WELL TEST ANALYSIS

Data Set: P:\...\Well2_CurveMatching_Neuman.aqt
Date: 02/13/19 Time: 11:40:44

PROJECT INFORMATION

Company: Dudek
Location: Jacumba
Test Well: Well 2
Test Date: 12/14/2018

AQUIFER DATA

Saturated Thickness: 40. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Well 2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
Well 2	0	0

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 2.831E+4 ft^2/day
S = 1.0E-10
Sy = 0.001
ß = 1.0E-5

Diagnostic Statistics

Estimation complete! Parameter change criterion (ETOL) reached.

Aquifer Model: Unconfined
Solution Method: Neuman

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
T	2.831E+4	93.	+/- 182.3	304.4	ft^2/day
S	1.0E-10	0.0002303	+/- 0.0004513	4.343E-7	
Sy	0.001	0.0002364	+/- 0.0004633	4.23	
ß	1.0E-5	3.438E-6	+/- 6.739E-6	2.908	

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = T/b = 707.8 ft/day (0.2497 cm/sec)
Ss = S/b = 2.5E-12 1/ft

Parameter Correlations

	T	S	Sy	ß
T	1.00	-0.01	-0.21	0.05
S	-0.01	1.00	-0.98	-0.69
Sy	-0.21	-0.98	1.00	0.67
ß	0.05	-0.69	0.67	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . . 14.1 ft^2
Variance . . . . . 0.002833 ft^2
Std. Deviation . . . . . 0.05322 ft
Mean . . . . . 0.003024 ft
No. of Residuals 4980
No. of Estimates 4

APPENDIX ~~E~~ F

Well #3 Aquifer Test Report

Prepared for

Jacumba Valley Ranch, LLC
2423 Camino Del Rio South, #212
San Diego, California 92108

JACUMBA VALLEY RANCH PROPERTY WELL #3 AQUIFER TEST REPORT JACUMBA, CA

November 2012

Prepared by

10875 Rancho Bernardo Road, Suite 200
San Diego, California 92127
(858) 674-6559

Geosyntec consultants

engineers | scientists | innovators

Project Number: SC0636

Prepared for
Jacumba Valley Ranch, LLC
2423 Camino Del Rio South, #212
San Diego, California 92108

JACUMBA VALLEY RANCH PROPERTY
WELL #3 AQUIFER TEST REPORT
JACUMBA, CA

November 2012

Prepared by
Geosyntec Consultants
10875 Rancho Bernardo Road, Suite 200
San Diego, California 92127
(858) 674-6559

_____ _____11/27/2012__
Veryl Wittig Date
California Professional Geologist No. 7115
California Certified Hydrogeologist No. 723

Project Number: SC0636

Geosyntec consultants

TABLE OF CONTENTS

TABLES

FIGURES

TABLE OF CONTENTS (Continued)

APPENDICES

1. INTRODUCTION

1.1 Terms of Reference

This report was prepared by Geosyntec Consultants, Inc. (Geosyntec) for Jacumba Valley Ranch, LLC (JVR) based on our understanding of the proposed use of groundwater as a source of construction water for the SDG&E East County Substation Project (ECSP). This report documents the activities performed to conduct a 72-hour constant-rate aquifer test on Well #3 on the JVR property (San Diego Assessor's Parcel No. 660-020-05-00; the site) located in Jacumba, California, to evaluate the use of Well #3 as a source of construction water. This report was prepared by Mr. Ryan Gray, PG and has been reviewed by Mr. Veryl Wittig, PG, CHG, in accordance with the peer review policy of the firm.

1.2 Background

It is our understanding that the site production well (Well #3) is proposed for use during construction. The total estimated Project water demand over the 16 month construction period is approximately 153 acre-feet. Construction activities are projected to require pumping at a rate of up to 350 gpm, 24-hours per day for limited periods over a duration of 6 months to meet the peak water demands during grading construction for the East County (ECO) Substation (up to approximately 500,000 gallons per day). Construction water use will increase during the first month of grading activities to the peak demand that will take place over a period of approximately four months. Water use will taper off to approximately 100,000 gallons per day after about 6 months and will continue at a lower rate for the remaining 12 months of the ECSP. This report conservatively evaluates the effect of groundwater pumping at the peak rate continuously 24 hours per day for a period of 6 months (approximately 276 acre-feet, which exceeds the anticipated total Project demand).

1.3 Site Location

The site is located in southeastern San Diego County in the community of Jacumba, approximately 74 miles east of San Diego (Figure 1). The area immediately surrounding the site consists of open, native land, agricultural, and rural residential properties. The site has historically been used for agricultural purposes, though current operations consist of an aggregate washing facility in the northeastern portion of the site.

Numerous wells exist on the large parcels which comprise the site. The following 4 wells were selected for the constant-rate aquifer test based on their anticipated yield and accessibility (Figure 2): Well #3 (pumping well), Daley Well (observation well; approximately 60 feet north), Mid-Valley Well (observation well; approximately 0.6 miles south), and Well #2 (observation well; approximately 0.85 miles south). Due to the age of the agricultural wells onsite, construction details were only available for Well #3.

This production well was constructed with 14-inch steel casing to a total depth of 100 feet below ground surface (ft bgs), with a 60 foot screened interval reaching the total depth of the well. Based on the total depths measured in the observation wells (Table 1) it is assumed that all wells are hydraulically connected to the unconfined alluvial aquifer within which Well #3 is screened. It is our understanding that no domestic supply water wells (not owned or operated by JVR) exist within 0.5 miles of the groundwater production well proposed for use during construction.

1.4 Objectives

The objectives of the work described herein were to provide JVR with the professional services necessary to prepare a groundwater study to assess the existing condition and proposed use of the underlying groundwater/aquifer and all existing onsite wells (with owner's permission). The objectives of the groundwater study are to:

- Evaluate aquifer properties and aquifer storage;
- Estimate short- and long-term well water supplies from the proposed pumping well;
- Document the proposed pumping well (Well #3) is capable of producing the total amount of water to be supplied for construction;
- Estimate of short- and long-term impacts from the use of Well #3 on local groundwater production (short-term extraction for construction water and ongoing O&M water), and on other wells in the Project area; and
- Assess the potential for subsidence brought on by Project-related water use in the area.

To achieve the project objectives, Geosyntec performed the following scope of work:

- Performed ambient groundwater monitoring;
- Conducted a 72-hour constant-rate aquifer test;
- Performed analysis of aquifer test data; and
- Prepared this Report.

2. GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

2.1 General

The site lies in the Jacumba Valley Groundwater Basin (Basin Number 7-47) located in the southeastern Peninsular Ranges. The average annual rainfall for this area ranges from approximately 14 to 16 inches, with main water bearing deposits located in the alluvium and the Table Mountain Formation (DWR, 2004).

The Holocene alluvium is an unconfined aquifer consisting mostly of gravel, sand, and clay, which are estimated to range from 100 feet to 150 feet thick. Wells completed in these deposits can reportedly produce more than 1,000 gpm with a specific yield estimated to range from 5% up to 25% (DWR, 2004).

The Table Mountain Formation is Tertiary age and consists of medium- to coarse-grained sandstone and conglomerate that unconformably overlies crystalline basement rocks (DWR, 2004). This unit lies below and is separated from the Holocene alluvium by Tertiary age Jacumba volcanics, which creates semi-confined to confined conditions in the lower aquifer (DWR, 2004). The Table Mountain Formation is estimated to be up to 600 feet thick with a specific yield estimated to range from 5% to 10% (DWR, 2004).

Numerous studies indicate the groundwater in storage in the alluvial aquifer ranges from approximately 3,200 to 16,000 acre/feet (DWR, 2004). Groundwater storage in the Table Mountain Formation aquifer has been estimated to range from 84,000 to 169,000 acre/feet (DWR, 2004). In 2009, the County of San Diego, Department of Planning and Land Use (DPLU), prepared a County wide General Plan Update Report which estimated the basin wide storage to be approximately 32,600 acre-feet throughout the approximate 16,000 acres which comprise the basin (DPLU, 2009).

The Jacumba Valley Groundwater Basin is be recharged through infiltration of water from the Boundary Creek and Flat Creek drainages (DWR, 2004). Recharge has been estimated to range from approximately 1,456 acre-feet per year (DPLU, 2009) to 2,700 acre-feet per year (DWR, 2004). Groundwater usage within the basin has been estimated to be 165 acre-feet per year (DPLU, 2009). Based on these data and current conditions, which are substantially similar to those present during the cited studies, the rate of recharge to the Jacumba Valley Groundwater Basin exceeds the use.

2.2 Groundwater Elevations and Flow Direction

Groundwater levels were measured in each groundwater well prior to transducer deployment on 6 November 2012 (Table 1). The depth to groundwater in supply wells at the site ranged from 41.44 ft bgs in the Daley Well to 60.24 ft bgs in Well #2. Based on pre-aquifer test groundwater elevations, groundwater flow beneath the site is estimated to be northerly, with a hydraulic gradient ranging from approximately 0.001 to 0.005 feet per foot (ft/ft) (Figure 2).

3. AQUIFER TESTING AND ANALYSIS

3.1 Constant-Rate Discharge Test

From 6 November to 10 November 2012, a constant-rate aquifer test was performed to address the aquifer test objectives. The aquifer test consisted of an ambient phase, pumping phase, and recovery phase. Data obtained from the constant-rate aquifer test are provided electronically in Appendix A. The following procedures for each phase of data collection were used during the constant-rate discharge test.

3.1.1 Ambient Phase

Prior to the start of the pumping test, Geosyntec deployed pressure transducers in the Daley Well and the Mid-Valley Well and measured each well's total depth and depth to groundwater (Table 1). After synchronizing each transducer and confirming the transducers were recording correctly, collection of ambient groundwater level data was performed for an approximate 24-hour period.

Current groundwater uses at the site consist of pumping from Well #3 at approximately 450 gpm for 8 to 10 hours per day, 5 days per week. Pumping in Well #3 was halted 4 days prior to commencing the ambient monitoring phase.

Data collection during the ambient monitoring phase was performed at 10 minute (linear) at the two closest observation wells (Daley Well and Mid-Valley Well). Manual water level measurements were collected at the start and end of the ambient data collection phase and transducer data was downloaded prior to the start of the pumping phase of the test. Manual water level measurements were also obtained in Well #2, where no transducer was deployed. Ambient monitoring of the pumping well (Well #3) was not performed because of ongoing modifications to the depth and configuration of the sounding tube at this location. Based on the proximity to the nearest observation well (Daley well, 60 ft north) it is believed that data from this location were representative of pre-pumping conditions in the vicinity of Well #3.

3.1.2 Pumping Phase

At the conclusion of the ambient monitoring period, Geosyntec deployed a pressure transducer in Well #3, and each transducer was synchronized and re-programmed to begin data collection a few seconds prior to the start of the pump test as follows:

- Pumping well (Well #3): Logarithmic data collection.
- Observation wells (Daley Well and Mid-Valley Well): Linear data collection (10 minute intervals).

During the operation of the constant-rate pumping test, manual measurement of the water levels in the observation wells (including Well #2) were performed at regular intervals and the discharge rates were frequently recorded. Minor adjustments to the pump discharge rate were made to maintain a relatively consistent target discharge rate of 350 gpm.

3.1.3 Recovery Phase

At the end of the 72-hour pumping period final manual water level measurements were obtained and data from each transducer was downloaded. Prior to pump shutdown each transducer was synchronized and re-programmed to begin data collection a few seconds prior to the end the pumping phase as follows:

- Pumping well: Logarithmic data collection.
- Observation wells: Linear data collection.
    - Daley Well: 5 minute intervals at the Daley well.
    - Mid-Valley Well: 10 minute intervals.

Manual measurements consistent with the frequencies performed during the pumping phase were conducted until adequate recovery data was collected from each location where drawdown was observed.

3.2 Analysis of Aquifer Test Data

3.2.1 Observed and Projected Drawdown

At the conclusion of the pumping test, measured levels of drawdown ranged from 4.07 feet in the Daley well (northern observation well) to 7.30 feet in Well #3 (pumping well). No groundwater elevation changes outside of diurnal variations were observed in either of the southern observation wells, indicating that the 72-hour aquifer test had no influence on wells outside of 0.5 miles from the pumping well. Following review of the 72-hour drawdown data, the projected 6-month drawdown for the Daley Well and Well #3 are estimated to range from approximately 9 feet to 12 feet, respectively (Figure 3).

Therefore, based on the static groundwater depth in Well #3 (approximately 42 ft bgs), the projected drawdown after 6 months of pumping at a continuous rate of 350 gpm (12 feet), and the reported pump inlet depth (approximately 86 ft bgs) the groundwater depth at 6 months of operation is estimated to be 54 ft bgs. Taking into account the maximum range of historical seasonal groundwater fluctuations (approximately 17 ft; Appendix B) in this area [DPLU, 2009], the total depth to groundwater in Well #3 could reach a levels of 71 ft bgs. Therefore, the available data indicates that Well #3 is capable of providing both short- and long-term water resources for Project construction.

A summary of the 72-hour observed and 6-month projected drawdowns are provided in Table 2. A graphical representation of the drawdown data obtained from Well #3 and the Daley Well, along with their respective 6-month projected drawdowns are provided on Figure 3.

3.2.2 Aquifer Properties

Drawdown data collected from the Daley Well and recovery data collected from Well #3 were analyzed using Aqtesolv™ software to calculate the aquifer transmissivity (T) and hydraulic conductivity (K) in the vicinity of the pumping well (Appendix C, Figures C-1 and C-2). Results of drawdown data analysis in the Daley Well using the Cooper-Jacob method estimated a transmissivity value of approximately 8,779 square feet per day (ft^2/day). Results of recovery data analysis in Well #3 using the Theis Approximation method estimated a transmissivity of 12,950 ft^2/day. These results were calculated using an aquifer thickness equivalent to 58 ft. (the saturated thickness of the screened interval of Well #3 at the start of testing), these transmissivity values equate to hydraulic conductivity (K = T/b) values ranging from approximately 151 feet per day (ft/day) to 223 ft/day, respectively.

Storage in the alluvial aquifer has been estimated to range from 3,200 acre-feet to 16,000 acre-feet (DWR, 2004). Based on the estimated current domestic demand [165 acre-feet per year (DPLU, 2009)], estimated minimal annual basin recharge of approximately 1,456 acre-feet per year (DPLU, 2009), and the projected peak temporary 6-month project demand (276 acre-feet), adequate water storage in the alluvial aquifer is available to meet existing demand and temporary project construction needs without adversely affecting the aquifer conditions in the short- or long-term.

Specific yield was estimated using the late-time drawdown data in the Cooper-Jacob Method (Figure B-3). A specific yield of 0.2349 (23.49 percent) was estimated from the Daley Well drawdown data, consistent with previously calculated values for the alluvial aquifer (DWR, 2004).

3.3 Aquifer Impact Analysis

Based on the aquifer test data and the 6-month projected drawdown data, Well #3 is a viable source for providing the projected water quantities for the 6-month project during construction. Using the projected 6-month drawdown data from Well #3 and the Daley Well (Figure 2), the estimated extent of the 6-month cone of depression resulting from the Project's temporary groundwater pumping activities was plotted (Figure 4).

Based on the projected aquifer drawdown, the temporary drawdown in the alluvial aquifer resulting from pumping to support the maximum construction water use rate over 6 months is expected to be limited to an area less than 300 feet surrounding the Well #3.

The limited extent of anticipated temporary drawdown and the absence of private domestic wells (not under the control of JVR) within this radius indicate that no permanent impacts to the aquifer or adverse effects to offsite domestic supply wells are anticipated to result during the proposed groundwater pumping activities.

Furthermore, the range of drawdown expected occur during the duration of Project activities (approximately 9.0 to 12.0 ft), are within the reported range of historical seasonal groundwater fluctuations in the Jacumba area [DPLU, 2009]. Therefore, pumping activities associated with the project are not expected to promote subsidence outside of any normal ranges that may occur in this area due to seasonal water level fluctuations.

4. SUMMARY AND CONCLUSIONS

4.1 Aquifer Testing

Drawdown data collected from the Daley Well and recovery data collected from Well #3 were analyzed using Aqtesolv™ software to calculate the aquifer transmissivity (T) and hydraulic conductivity (K) in the vicinity of the pumping well (Figures C-1 and C-2). Results of data analysis estimated transmissivity values of ranging from approximately 8,779 ft^2/day in the Daley Well to 12,950 ft^2/day in Well #3. These transmissivity values equate to hydraulic conductivity values of approximately 151 feet per day (ft/day) and 223 ft/day, respectively. A specific yield of 0.2349 (23.49 %) was estimated using the late time data in the Cooper-Jacob Method (Figure C-3).

The most recent study for the Jacumba Valley Groundwater Basin estimates groundwater in storage to be approximately 32,600 acre-feet (DPLU, 2009), though studies specific to the alluvial aquifer have estimated groundwater in storage to range from 3,200 acre-feet to 16,000 acre-feet (DWR, 2004), with an estimated minimum recharge of 1,456 acre-feet per year (DPLU, 2009). Based on these data and the estimated cumulative demand during project activities (165 acre-feet per year existing demand and projected 276 acre-feet temporary maximum project demand), there is adequate water storage and recharge in the alluvial aquifer to meet existing demand and temporary project construction needs without adversely affecting the aquifer conditions in the short- or long-term.

4.2 Aquifer Impact Analysis

Based on the data collected during the 72-hour constant-rate aquifer test at JVR production Well #3 and the apparent surplus of groundwater storage, the current pump configuration and aquifer conditions are adequate to support the proposed volume (276-acre-feet), extraction rate (350 gpm), and duration of maximum water use required by the Project (6 months). Following the short period of maximum water demand, lower volumes will be required (approximately 100,000 gallons per day) for Project related activities. These reduced volumes will lessen the horizontal and vertical limits of aquifer drawdown for Project activities to levels similar to those induced by JVRs current operations. Therefore, the groundwater pumping activities are not anticipated to cause adverse short- or long-term impacts to the aquifer, or nearby (within 0.5 miles) supply wells for the duration of the Project. Furthermore, the drawdown induced during the 6-months of maximum demand for Project construction is within reported historical seasonal groundwater fluctuations for the Jacumba area, and is not expected to induce subsidence outside of any normal occurrences.

5. RECOMMENDATIONS

This report documents the procedures and results of the 72-hour constant-rate aquifer test performed on Well #3 at the site located in Jacumba, California. The available data indicate that current pump and aquifer conditions are capable of supplying sufficient water and no adverse effects to the aquifer or surrounding supply wells are anticipated to result from the proposed pumping activities. Routine (monthly) monitoring of groundwater levels is recommended during project construction to document water levels in the accessible wells on the JVR property and monitor variations attributable to pumping in support of Project construction and seasonal groundwater fluctuation.

6. REFERENCES

DPLU (Department of Planning and Land Use), 2009. *County of San Diego Department of Planning and Land Use General Plan Update Groundwater Study, Figure 2-58*. May 18, 2009.

DWR (Department of Water Resources). 2004. *Hydrologic Region Colorado River, Jacumba Valley Groundwater Basin; California's Groundwater Bulletin 118.* February 27, 2004. Accessed 14 November 2012, at: http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/7-47.pdf

TABLES

Table 1
Summary of Static Groundwater Depths and Well Characteristics
Jacumba Valley Ranch Property
Jacumba, California

Geosyntec consultants

Well	Gauging Date	Approximate Elevation (ft msl)	Height of Reference Point (ft above ground)	Depth to Water (ft toc)	Depth to Water (ft bgs)	Approximate Groundwater Elevation (ft msl)	Total Depth (ft bgs)	Pump Inlet Depth (ft bgs)
Well #3	11/6/2012	2765	2.33[1]	44.24	41.91	2,723.09	100[2]	86.00
Daley Well	11/6/2012	2765	2.21	43.65	41.44	2,723.56	147.99	NA
Mid-Valley Well	11/6/2012	2789	1.71	52.73	51.02	2,737.98	89.99	NA
Well #2	11/6/2012	2800	1.46	61.70	60.24	2,739.76	112.77	NA

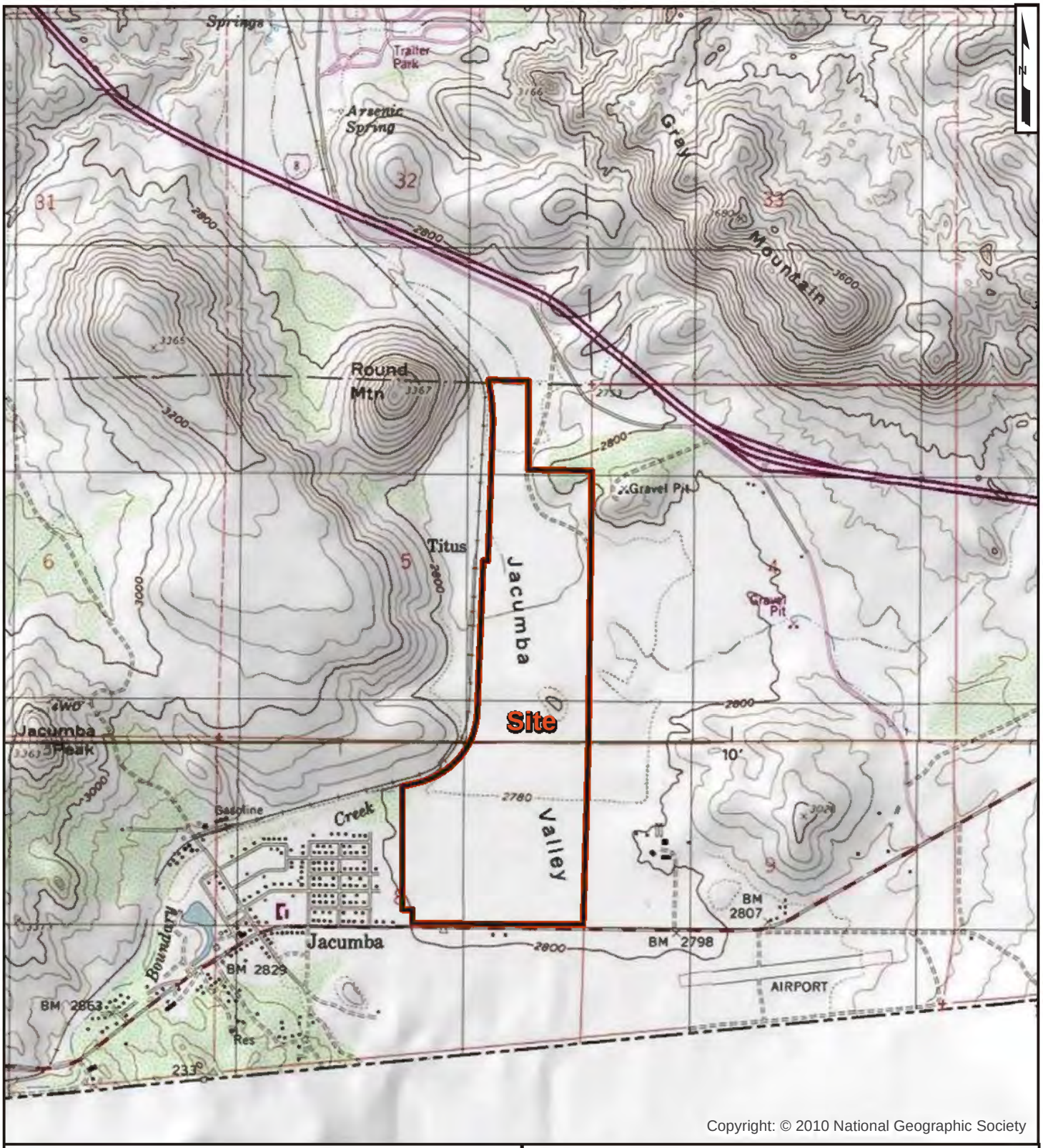
Notes:
1 - Measured before modifications to sounding tube.
2 - Obtained from construction log (Appendix A).
ft msl - feet above mean sea level (estimated based on online resources).
ft - feet
ft bgs - feet below ground surface
ft toc - feet below top of casing
NA - Not Applicable

Geosyntec consultants

Table 2
Summary of Observed and Projected Drawdown Data
Jacumba Valley Ranch Property
Jacumba, California

Constant Rate Discharge Test				
Parameter	**Pumping Well**	**Observation Well**		
	Well #3*	**Daley Well**	**Mid-Valley Well**	**Well #2**
Maximum Drawdown (ft) (72-Hours)	7.3	4.07	0	0
Projected Drawdown (ft) (6-Months)	12	9	0	0
Approx. Distance From Pumping Well	0	60 feet	0.6 Miles	0.85 Miles

FIGURES



2,000 1,000 0 2,000 Feet

Site Vicinity and Location Map

Jacumba Valley Ranch Property
Jacumba, California

Geosyntec consultants

San Diego	November 2012	Figure 1

Document Path: P:\GIS\FIGS\1VP_SiteMap.mxd

600 300 0 600 Feet

Legend

- Groundwater Monitor Well (Groundwater Elevation in Feet Above Mean Sea Level)
- 2738 Groundwater Elevation Countour (Contour Interval = 2 ft)
- 0.005 Approximate Groundwater Flow Direction and Hydraulic Gradient (ft/ft)
- Approximate Property Boundary

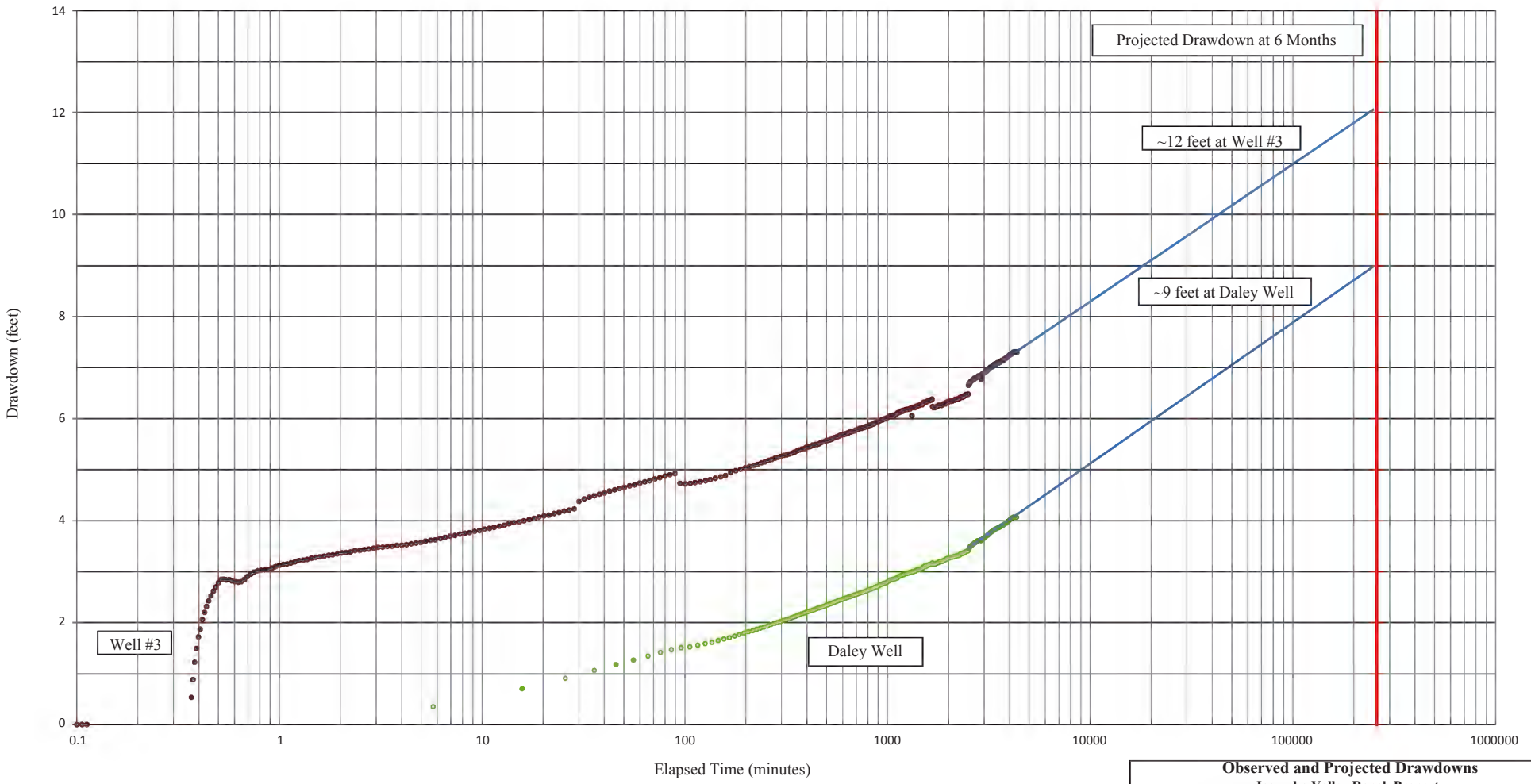
Groundwater Elevations and Flow Direction, 6 November 2012

Jacumba Valley Ranch Property
Jacumba, California

Geosyntec consultants

San Diego | November 2012

Figure 2

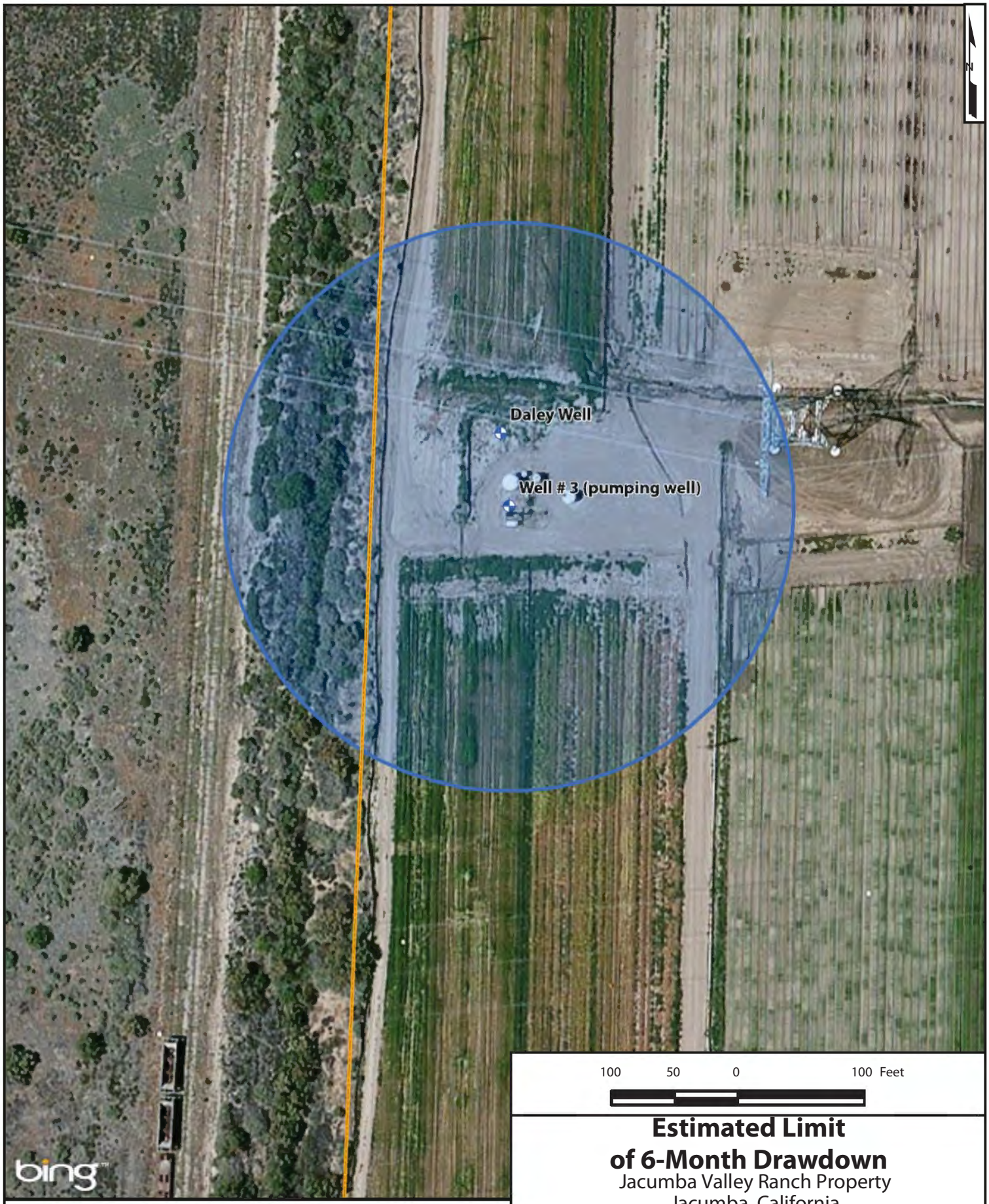


Observed and Projected Drawdowns
Jacumba Valley Ranch Property
Jacumba, California

Geosyntec consultants

SC0636 | November 2012

Figure 3



Legend

- Groundwater Well
- Estimated Limit of Projected Groundwater Drawdown
- Site Boundary

100 50 0 100 Feet

Estimated Limit of 6-Month Drawdown

Jacumba Valley Ranch Property
Jacumba, California

Geosyntec consultants

San Diego | November 2012

Figure 4

APPENDIX A

Constant-Rate Aquifer Test Data

APPENDIX B

DPLU GP Update Report Excerpts

Table C-37
Jacumba Valley Basin
Groundwater in Storage Calculations

600 Units were not on GP Update Map for Specific Plan Area - Included additional 300 afy manually in the calculations

Size (Acres)	16039
Modeled Maximum GW in Storage (AF)	32601
Modeled Average GW Recharge (AFY)	1456

Scenario	Estimated GW Demand (AFY)	Estimated Average GW in Storage	Estimated Minimum GW in Storage
Existing Conditions	165	100%	99%
Current General Plan Buildout	2295	54%	1%
Referral Map Buildout	1259	91%	74%
Draft Land Use Map Buildout	1258	91%	74%
Hybrid Map Buildout	1258	91%	74%
Environmentally Superior Buildout	1008	93%	81%
Cumulative Impacts Buildout	1258	91%	74%

Note: Future predicted change in the amount of groundwater in storage for scenarios is based upon historical precipitation from July 1971 to June 2005. Scenarios with estimated groundwater in storage at or below 50% at any time are considered to have a potentially significant impact to groundwater resources.

AF - Acre-Feet
AFY- Acre-Feet Per Year
GW - Groundwater

Change of GW in Storage - Referral Map Buildout

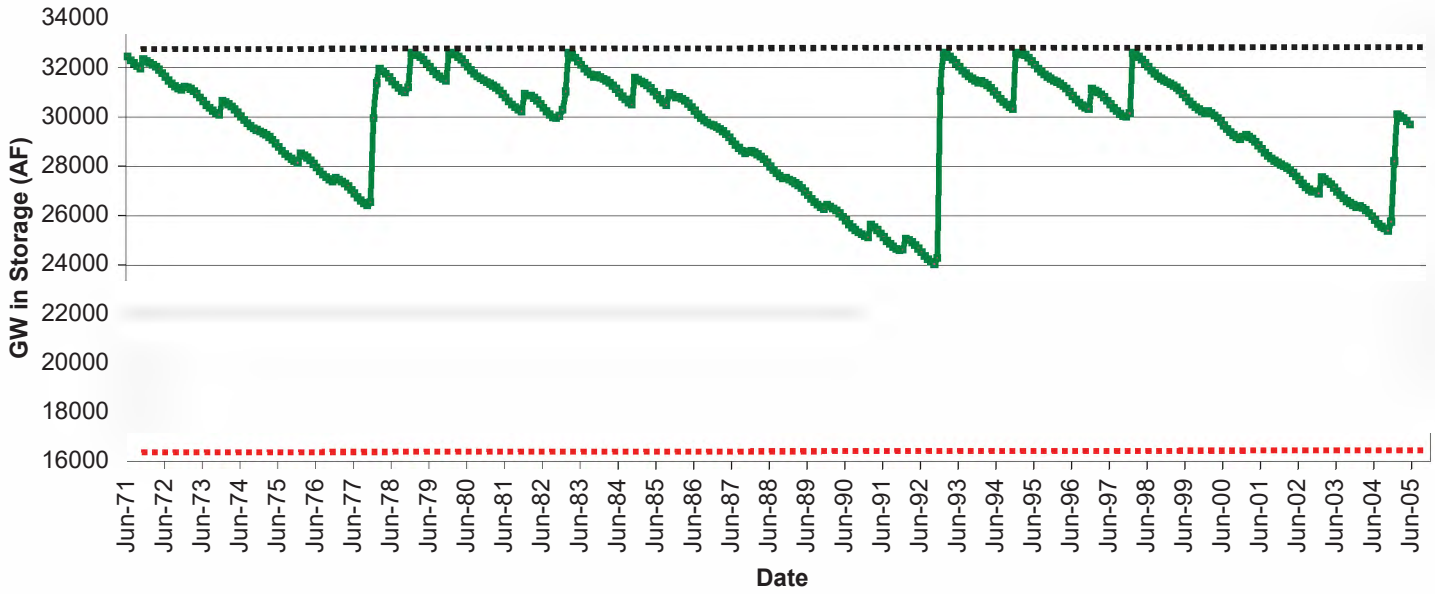
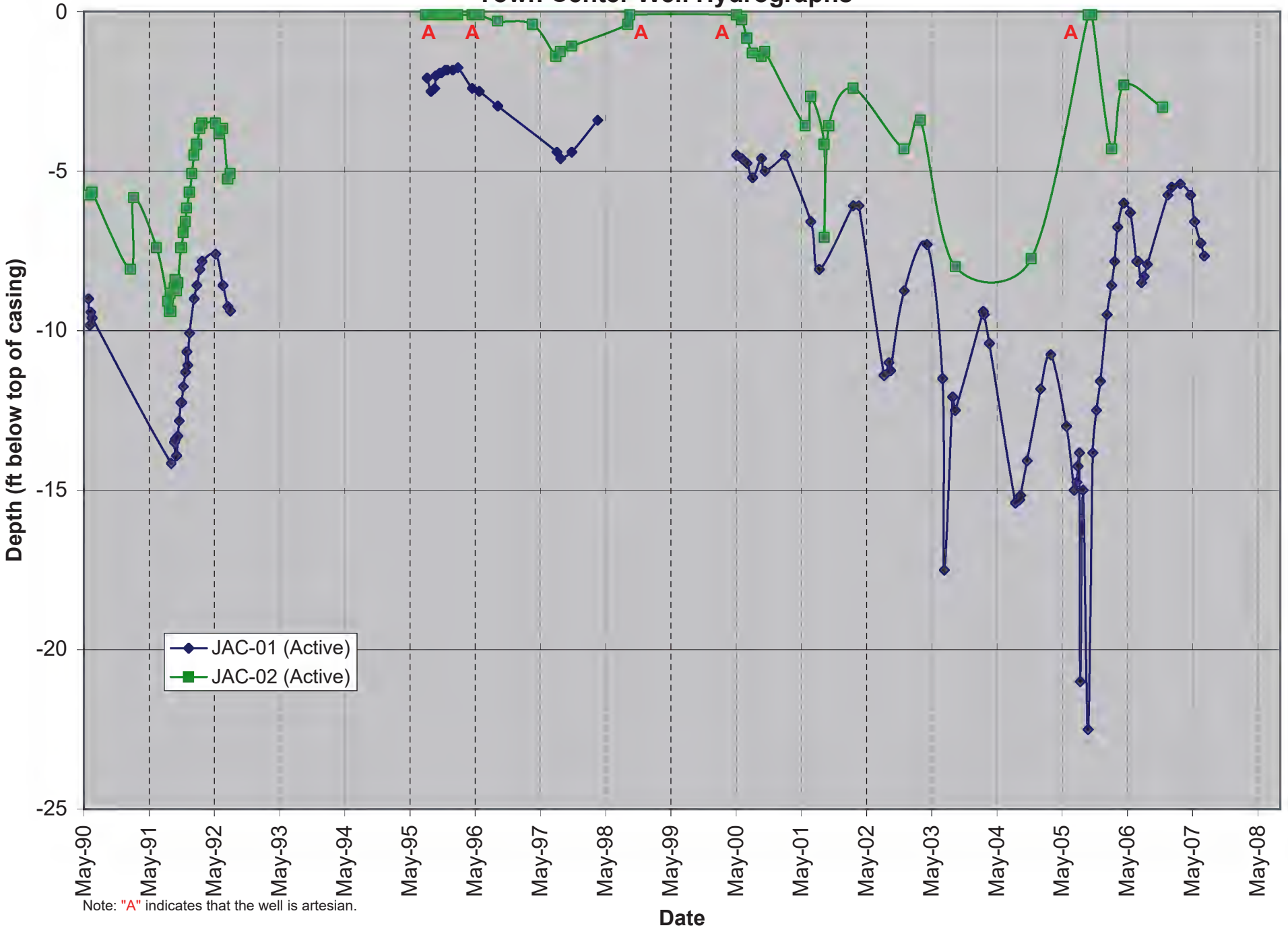


Figure 2-58: Jacumba Community Sponsor Group
Town Center Well Hydrographs



Note: "A" indicates that the well is artesian.

APPENDIX C

Aqtesolv™ Output Reports

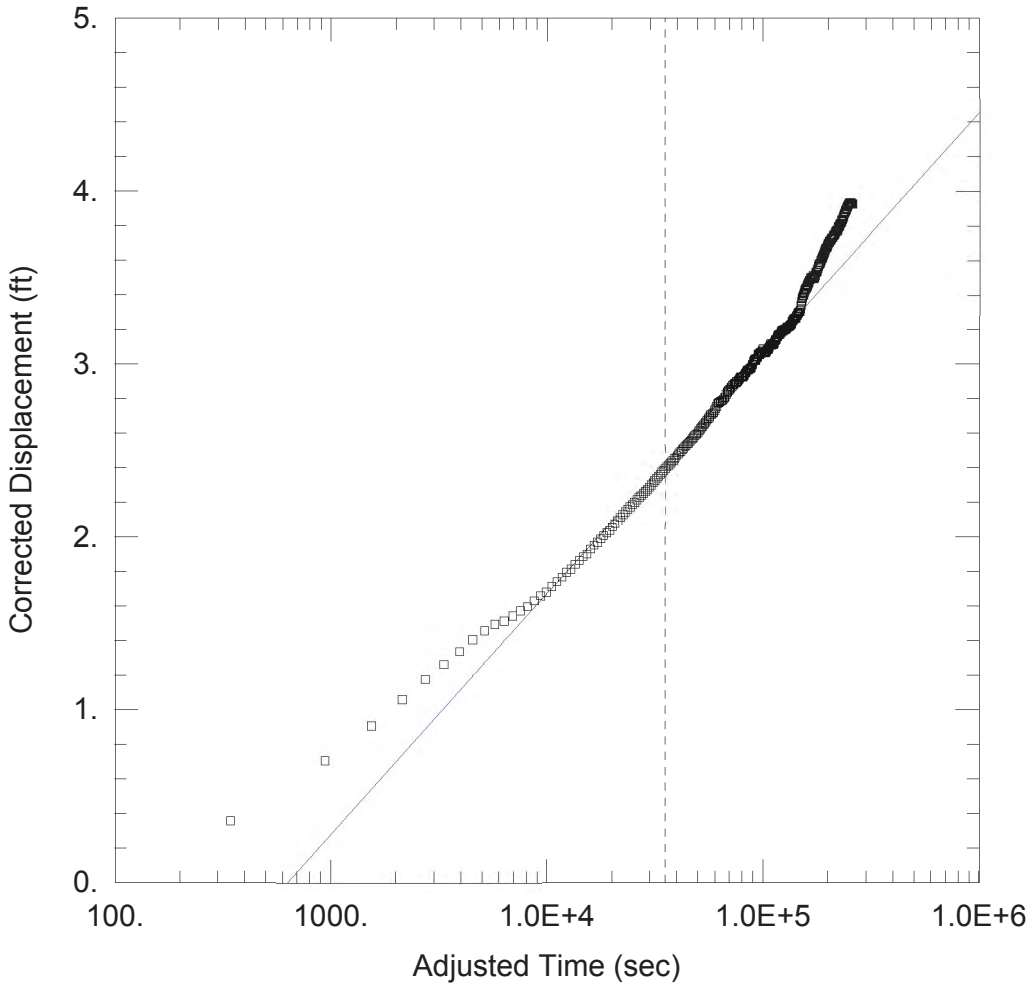


FIGURE C-1

Data Set: Q:\SC0636 JVR Aquifer Test\AQTESOLV\Daley Well.Drawdown.Figure C-1.aqt
Date: 11/21/12 Time: 10:35:10

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: JVR
Project: SC0636
Location: Jacumba
Test Well: Well #3
Test Date: 11/7/2012

AQUIFER DATA

Saturated Thickness: 58. ft Anisotropy Ratio (Kz/Kr): 1.174E-5

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Well #3	0	0
Daley Well	60	0

Observation Wells

Well Name	X (ft)	Y (ft)
▫ Daley Well	60	0

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 8778.5 ft^2/day S = 0.03976

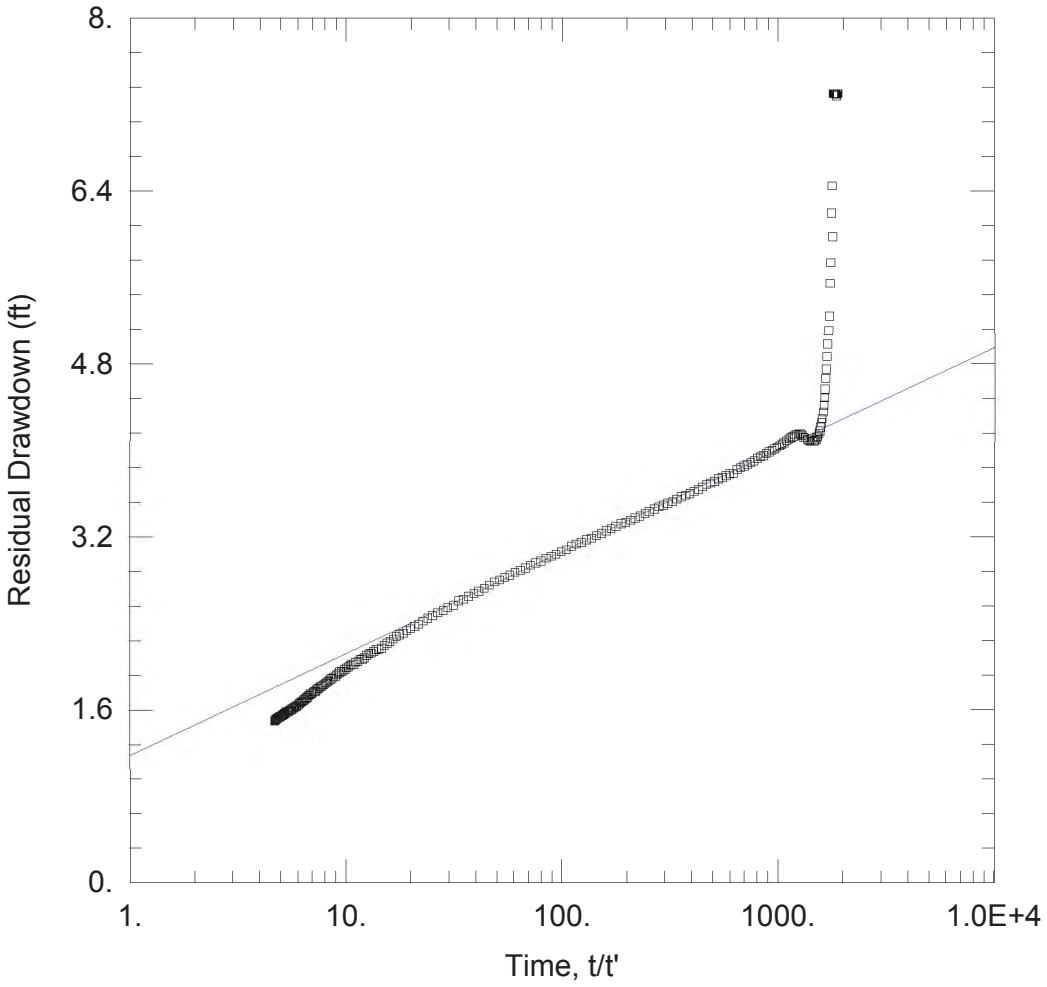


FIGURE C-2

Data Set: Q:\SC0636 JVR Aquifer Test\AQTESOLV\Well#3.Figure C-2.aqt
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PROJECT INFORMATION

Company: Geosyntec Consultants
Client: JVR
Project: SC0636
Location: Jacumba
Test Well: Well #3
Test Date: 11/7/2012

AQUIFER DATA

Saturated Thickness: 58. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Well #3	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
▫ Well #3	0	0

SOLUTION

Aquifer Model: Confined Solution Method: Theis (Recovery)

T = 1.295E+4 ft^2/day S/S' = 0.05601

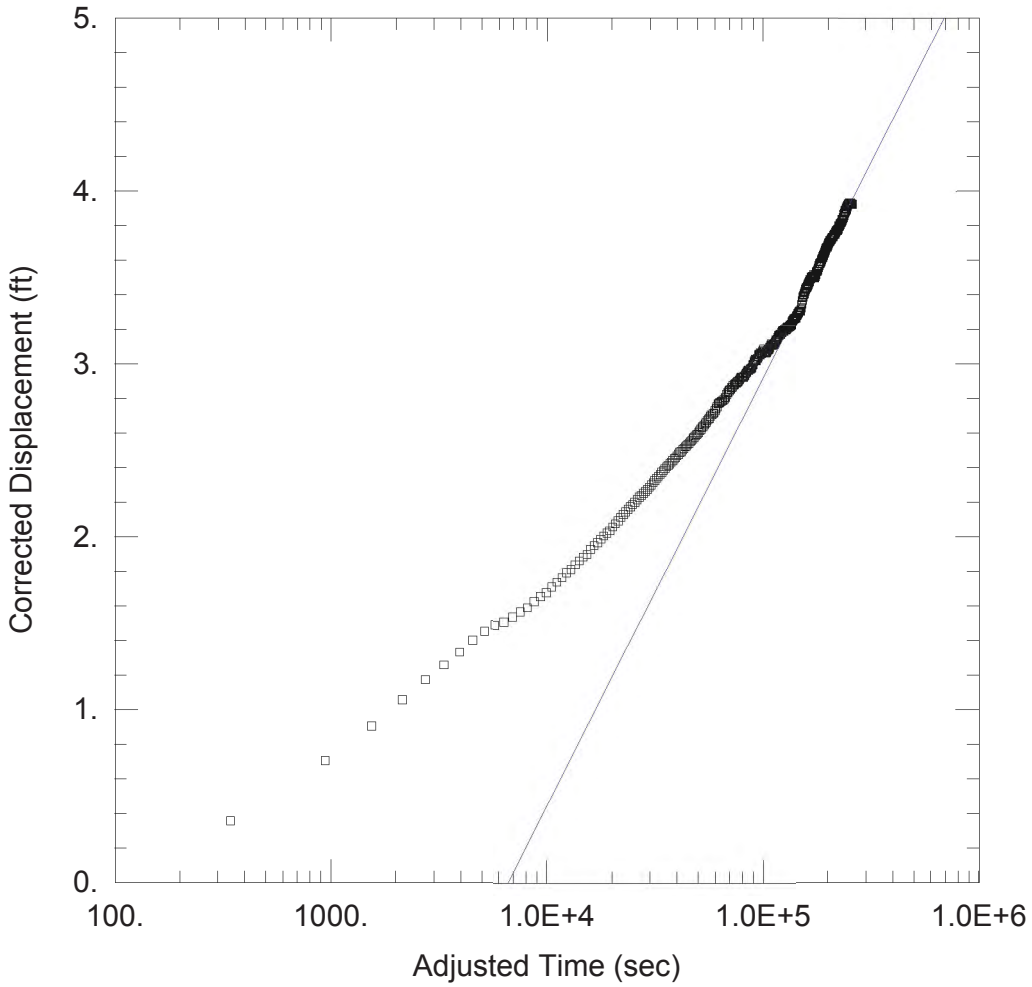


FIGURE C-3

Data Set: Q:\SC0636 JVR Aquifer Test\AQTESOLV\Daley Well.Drawdown.Figure C-3.aqt
Date: 11/21/12 Time: 10:30:35

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: JVR
Project: SC0636
Location: Jacumba
Test Well: Well #3
Test Date: 11/7/2012

AQUIFER DATA

Saturated Thickness: 58. ft Anisotropy Ratio (Kz/Kr): 1.174E-5

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Well #3	0	0
Daley Well	60	0

Observation Wells

Well Name	X (ft)	Y (ft)
▫ Daley Well	60	0

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 4923.3 ft^2/day S = 0.2349

APPENDIX ~~F~~ G

Groundwater Monitoring and Mitigation Report for the JVR Energy Park Project

Groundwater Monitoring and Mitigation Plan
for the JVR Energy Park Project
Jacumba Hot Springs, San Diego County, California

Lead Agency:

County of San Diego
Planning and Development Services
5510 Overland Avenue
San Diego, California 92123
Contact: Bronwyn Brown

Project Proponent:

JVR Energy Park LLC
17901 Van Karman Avenue, Suite 1050
Irvine, California 92614
Contact: Patrick Brown

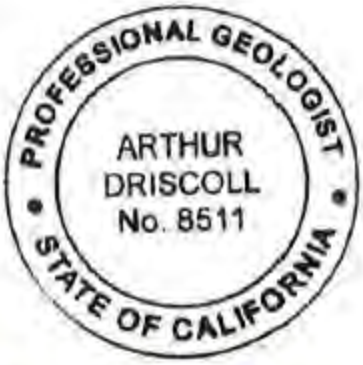
Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Trey Driscoll

July 2020

SIGNATURE PAGE

This draft Groundwater Monitoring and Mitigation Plan for the JVR Energy Park Project has been prepared under the direction of a professional geologist licensed in the State of California in accordance with Business and Professions Code Sections 6735, 7835, and 7835.1, and consistent with professional standards of practice.



Arthur Storer Driscoll, III (Trey)
PG No. 8511, CHG No. 936

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1 INTRODUCTION

The proposed JVR Energy Park Project (Proposed Project) is proposing the use of two on-site groundwater wells to supply water for construction, operations and maintenance, and decommissioning and dismantling of a 90-megawatt photovoltaic solar facility and 20-megawatt battery energy storage system. Dudek has prepared this Groundwater Monitoring and Mitigation Plan to provide protection of nearby groundwater-dependent habitat and to limit groundwater level decline in off-site groundwater wells caused by groundwater extraction by the Proposed Project.

As described in the Groundwater Resources Investigation Report for JVR Energy Park (Groundwater Investigation) (Dudek 2020), the Proposed Project is proposing to extract 140 acre-feet of groundwater for approximately 1 year of construction, 11 acre-feet per year for ongoing operations and maintenance, and 50 acre-feet for decommissioning and dismantling from on-site Well #2 and Well #3 (Figure 1, Well Interference and Potential Groundwater-Dependent Habitat).

Well #2 is located within Assessor's Parcel Number 660-150-18, located on the north side of Old Highway 80. Well #3 is located on the adjacent parcel to the north on Assessor's Parcel Number 660-020-02 (Figure 1). Both wells are located within the Project site.

The results of the Groundwater Investigation indicate that short-term pumping of Well #2 and Well #3 would result in a less-than-significant impact to groundwater storage. Additionally, the Groundwater Investigation analyzed the effects of Proposed Project pumping over a 90-day, 1-year, and 5-year period. Under the most conservative scenario (90 days of continuous groundwater extraction at a pumping rate of 352 gallons per minute), drawdown from Proposed Project pumping at the nearest off-site well and groundwater-dependent habitat would be 1.08 feet from pumping Well #2 and 3.66 feet from pumping Well #3 (Dudek 2020). Based on the findings of the Groundwater Investigation, the Proposed Project is unlikely to draw down the groundwater table to the detriment of groundwater-dependent habitat, which is typically a drop of 3 feet or more from historical low groundwater levels, or cause a significant impact to off-site groundwater users, which is typically a drop of 5 feet or more.[1]

This Groundwater Monitoring and Mitigation Plan establishes protective groundwater drawdown thresholds for off-site well interference and groundwater-dependent habitat. This Groundwater Monitoring and Mitigation Plan also describes the monitoring, mitigation, and reporting procedures by which the County of San Diego Planning and Development Services (PDS) can validate that the conditions and criteria for the Proposed Project's groundwater extraction activities are continually being upheld. A 5-year monitoring period is proposed to assess the impact of groundwater extractions.

[1] Current groundwater levels near Well #2 and Well #3 are at least 12 feet higher than the historical low groundwater level recorded in the Jacumba Valley alluvial aquifer. Well #2 and Well #3 pumping for the Proposed Project is not expected to draw down the groundwater table greater than 3 feet from the historical low.

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2 ESTABLISHMENT OF GROUNDWATER THRESHOLDS

According to the County of San Diego Guidelines for Determining Significance and Report Format Content Requirements – Groundwater Resources, Proposed-Project-related groundwater extraction would incur a significant well interference impact if, after a 5-year projection of drawdown, the results indicate a decrease in water level of 5 feet or more in the off-site wells (County of San Diego 2007). If site-specific data indicates alluvium or sedimentary rocks exist, which substantiate a saturated thickness greater than 100 feet in off-site wells, a decrease in saturated thickness of 5% or more in the off-site wells would be considered a significant impact (County of San Diego 2007). The County of San Diego's Guidelines for Determining Significance and Report Format and Content Requirements – Biological Resources defines a project-related drawdown of 3 feet below historical low groundwater levels as causing a significant impact to riparian habitat of a groundwater-sensitive natural community (County of San Diego 2010). The thresholds established below incorporate these guidelines and represent a basis for monitoring and mitigating potential groundwater impacts related to the Proposed Project.

2.1 Potential Off-Site Well Interference

As described in the Groundwater Investigation, alluvial aquifer production wells identified near Well #2 and Well #3 include Well Km, the Highland Center Well, the Park Well, and the Border Patrol Well (Figure 1). Additionally, monitoring wells identified near Well #2 and Well #3 include the Daley Well and the Central Irrigation Well.[2] These four production wells, Well #2 and Well #3, and two monitoring wells should be included in the groundwater-monitoring network.

The Highland Center Well, the Park Well, and Well #2 are already included in a groundwater-monitoring network for Jacumba Solar operations and maintenance groundwater extraction, and are equipped with pressure transducers. Pressure transducer data from these wells and manual measurements will be included in the Groundwater Monitoring and Mitigation Plan (Appendix A). The pressure transducers record the groundwater level in the wells at sub-daily, 15-minute intervals; the level is confirmed periodically through manual groundwater-level measurements recorded with a sounder.

Well Km is operated by the Jacumba Valley Ranch Water Company, which operates as a transient non-community water system. The Border Patrol Well, an inactive well with unknown condition, is enclosed in a locked pump house. The Proposed Project should identify and contact the owners of Well Km and the Border Patrol Well to attempt to gain access for ongoing groundwater level monitoring. If access is granted to monitor these wells, a pressure transducer should be installed

[2] Additional groundwater monitoring wells are identified in the Groundwater Investigation near Well #2 and #3, but these have been properly destroyed in accordance with County of San Diego and state requirements by the Jacumba Community Services District (JCSD) as part of its Domestic Water Supply System Improvements project. JCSD Wells #1, #2, #3, and #5 were properly destroyed.

in both wells. Manual measurements should be recorded periodically to confirm groundwater level measurement accuracy.

Groundwater wells that should be included in the groundwater-monitoring network and their distance to Well #2 and Well #3 are indicated in Table 1 and depicted in Figure 1.

Table 1
Alluvial Aquifer Wells Within 0.5-Mile Radius of Extraction Wells

Well Name	Owner/Status	Distance from Well #2 (feet)	Distance Well #3 (feet)
Production			
Well Km[a]	Small Water System/Active	2,453	3,548
Highland Center Well	JCSD/Active	1,817	4,835
Park Well	JCSD/Active	2,256	5,025
Border Patrol Well[a]	Federal/Inactive	1,892	6,235
Monitoring			
Daley Well	JVR/NA	4,460	60
Central Irrigation Well	JVR/NA	2,692	2,713

NA = Not applicable; JCSD = Jacumba Community Services District; JVR = Jacumba Valley Ranch

[a] Well Km and the Border Patrol Well are privately owned wells that will need access granted by their respective well owners before monitoring can occur.

Static groundwater-level measurements should be collected at each of the wells in the groundwater-monitoring network, if accessible, prior to the start of construction. Baseline groundwater levels should be established for Well Km, the Border Patrol Well, the Daley Well, and the Central Irrigation Well, provided the wells are accessible for monitoring.

Pre-construction baseline conditions for the Jacumba Valley alluvial aquifer were determined on January 18, 2017, which consisted of manually measuring groundwater levels and installing new pressure transducers into monitoring network wells. The County of San Diego PDS has requested that the baseline conditions established in January 2017 for the Highland Center Well, Park Monitoring Well, and JVR Well 2 be carried over to future projects. Baseline conditions from January 2017 for groundwater level threshold and current groundwater levels are presented in Table 2. Jacumba Community Services District Well 4 is not used as part of the mitigation plan for this Proposed Project due to its distance from the Project site.

Table 2
Baseline Conditions, Groundwater Level Threshold, and Current Groundwater Levels

Well ID	Baseline Groundwater Level Measurement (Feet BTOC) [a]	Threshold Condition (Drawdown, Feet)	Groundwater Level Threshold (Feet BTOC)	Current Groundwater Level Measurement (Feet BTOC / Date)
Highland Center Well	55.05	N/A	N/A	56.75 / May 12, 2020
Park Monitoring Well	57.71	N/A	N/A	59.18 / May 12, 2020
Gas Station Well	64.25	N/A	N/A	65.67 / May 12, 2020
JVR Well 2	55.40	N/A	N/A	59.27 / May 12, 2020
Central Irrigation Well	48.09	52.89	4.80 feet below baseline condition	48.09 / May 12, 2020

Source: Dudek 2020
Major Use Permit (MUP) established threshold conditions per MUP PDS2014-MUP-14-041 Sections 15, 29, and 30
BTOC = below top of casing; N/A = not applicable (no water level thresholds identified in the MUP)
[a] Measured on January 18, 2017

To protect off-site well users and comply with County of San Diego Guidelines, a maximum drawdown of 5 feet below the baseline groundwater levels will be allowed in accessible production wells. The nearest off-site production well is Well Km. If Well Km is not accessible for groundwater level monitoring, a maximum drawdown of 4.80 feet at the Central Irrigation Well below the groundwater level baseline will be allowed.[3]

If Well Km is accessible, a maximum drawdown of 5 feet at off-site production wells, Well Km, the Highland Center Well, the Park Well, and the Border Patrol Well, if accessible, should be established from the baseline groundwater level measurements.[4] Baseline groundwater level measurements and groundwater level thresholds for the Gas Station Well were established in January 2017 and are provided in Table 2.

Results of the off-site well interference analysis detailed in the Groundwater Investigation conclude that well interference is not anticipated to result in a significant impact. A groundwater-monitoring program will be implemented to establish a groundwater level baseline in the nearest off-site production wells or monitoring wells where applicable, and characterize change in groundwater levels due to Proposed Project groundwater extraction.

[3] Maximum drawdown measurements below baseline groundwater levels for monitoring wells in the absence of accessibility to Well Km were calculated based on groundwater extraction from Well #2 at a pumping rate of 1,850 gallons per minute for 90 days using the Theis drawdown equation (Driscoll 1986) with a transmissivity value of 26,410 square feet per day and a storativity value of 0.00826; equivalent to 5 feet of estimated drawdown at Well Km.

[4] The Jacumba Community Services District may supply groundwater for commercial sale to various renewable energy projects. If groundwater extraction for these projects occurs at the same time as Proposed Project groundwater extraction, thresholds at the Highland Center Well and the Park Well should not be applied to the Proposed Project because declining groundwater levels will be caused by pumping Jacumba Community Services District extraction wells, not from Proposed Project pumping.

2.2 Groundwater-Dependent Habitat

Groundwater-dependent vegetation habitat, mapped as mesquite bosque, is located approximately 1,820 feet from Well #2 and 140 feet from Well #3 (Figure 1). According to the Groundwater Investigation, the estimated drawdown at the nearest groundwater-dependent habitat after 90 days of Proposed Project groundwater extraction is 1.08 feet from pumping Well #2 and 3.66 feet from pumping Well #3. Current groundwater levels near Well #2 and Well #3 are at least 12 feet higher than the historical low groundwater level recorded in the Jacumba Valley alluvial aquifer. Based on this analysis, the Proposed Project is unlikely to draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of 3 feet or more from historical low groundwater levels.

Since historical groundwater-level measurements are available for groundwater wells on the Project site, a groundwater-dependent threshold can be applied in select wells. Historical well K1, located near the Central Irrigation Well, had a recorded historic low groundwater level of 60.7 feet below ground surface (bgs) in 1979 (Swenson 1981). Historical well K3, located near Well #2, had a recorded historical low groundwater level of 69.9 feet bgs in 1979 (Swenson 1981). Monitoring of the groundwater-dependent habitat would be required in the event that static groundwater levels in the Central Irrigation Well and Well #2 drop 3 feet below historical low groundwater levels, equivalent to 63.7 feet bgs and 72.9 feet bgs, respectively.[5] Groundwater-dependent habitat procedures are described in Section 3.2, Groundwater-Dependent Habitat Monitoring.

[5] Well #2 may be used as a groundwater extraction well for the Proposed Project. If Well #2 is regularly pumped, groundwater-level measurements may not be representative of static conditions. If a static groundwater-level measurement cannot be collected, the threshold for groundwater-dependent habitat should not be applied to Well #2.

3 MONITORING PROCEDURES AND MITIGATION CRITERIA

The groundwater-level monitoring, and if necessary groundwater-dependent habitat monitoring, procedures and mitigation criteria are outlined below and will be followed during pumping at Well #2 and Well #3. The groundwater monitoring program defined herein will be carried out under the direction of a Professional Geologist or Professional Engineer licensed in the State of California.

3.1 Groundwater Production and Groundwater Level Monitoring

Pressure transducers will be maintained in a network of four groundwater wells (the Daley Well, the Central Irrigation Well, the Highland Center Well, and the Park Well), as well as both Proposed Project production wells (Well #2 and Well #3). Additionally, Well Km and the Border Patrol Well will be included if property access is granted. The pressure transducers will be programed to record the water level sub-daily at 15-minute intervals. In addition, ambient barometric pressure and temperature will be recorded at 15-minute intervals with a barometric logger. Manual groundwater-level measurements may be required for Well Km and the Border Patrol Well if pressure transducers cannot be fitted in the wells due to lack of appropriately sized port or sounding tube.

Transducer data will be downloaded at all the instrumented wells for 1 month prior to the onset of Proposed-Project-related groundwater extraction. Transducer data will also be downloaded monthly during periods of pumping for construction water supply to the Proposed Project. Cumulative groundwater usage will be monitored at Well #2 and Well #3 using an instantaneous flow meter. Flow rate and volume measurements will be recorded daily during pumping for the Proposed Project.

3.2 Groundwater-Dependent Habitat Monitoring

The following monitoring program will be carried out for groundwater-dependent habitat if static groundwater levels in the Central Irrigation Well or Well #2 drop below the established threshold. The goal would be to determine if the Proposed Project's use of groundwater is affecting groundwater-dependent habitat.

3.2.1 Monitoring

Baseline data will be collected within a 0.5-mile radius of Well #2 and Well #3 (study area) (Figure 1). Potentially affected native trees within the study area will be evaluated for overall physical condition and attributes. The trees will be inventoried by an International Society of Arboriculture–Certified Arborist or Registered Professional Forester with specific experience evaluating riparian dominant species.

The baseline monitoring evaluations will include the following:

- Establishment of 18 equidistant plots or transects within the mesquite bosque and desert sink scrub habitat within 0.5 miles of Well #2 and Well #3. Sample plots/transects will include the range of existing habitat conditions, including elevation, slope and aspect, and proximity to roads and other land uses.
- Tagging of trees and recording species, tag number, trunk diameter at breast height (inches), height (feet), and dominance (i.e., whether the tree is under the canopy of another tree or forms the uppermost canopy) will occur. Slope, aspect, and elevation of each tree location, existing understory species (including proportion of natives to exotics); presence of debris and litter; and soil type, depth, and parent material will be noted for each tree or plot/transect.
- Assessment of tree status will occur, including documentation of the following:
    - Diameter at breast height measured at 4.5 feet aboveground (according to standard practices)
    - Number of stems
    - Overall tree height (based on ocular estimates)
    - Tree crown spread (measurement in each cardinal direction, based on ocular estimate)
    - Overall tree health condition (good, fair, poor, dead)
    - Overall tree structural condition (good, fair, poor, dead)
    - Pest presence (type, extent—minimal, moderate, high)
    - Disease presence (type, extent—minimal, moderate, high)
    - Other specific comments
- Assessment of seedling establishment and sapling tree densities and conditions.
- The data collection procedure will include full data collection at each plot/transect so that consistency is maintained among sampling plots.
- Creation of database using GIS or similar application.

3.3 Groundwater Mitigation Criteria

The following mitigation criteria will be established to protect groundwater resources and groundwater-dependent habitat in the Project area:

- If the groundwater levels in Well Km, the Highland Center Well, the Park Well, and the Border Patrol Well drop 5 feet below the baseline groundwater level as a result of pumping Well #2 or Well #3, groundwater extraction at from Well #2 and Well #3 will cease for Proposed Project water supply until the groundwater level at the well that experienced the threshold exceedance has increased above the threshold and remained there for at least 30 continuous days. Additionally, written permission from County of San Diego PDS must be obtained before production for the Proposed Project may be resumed. If Well Km is not accessible, than the well interference threshold will be 4.80 feet at the Central Irrigation Well below baseline groundwater level measurements to not exceed the maximum drawdown of 5 feet at Well Km.
- If static groundwater levels drops more than 63.7 feet below ground surface in the Central Irrigation Well or 72.9 feet below ground surface in Well #2, then monitoring of the groundwater-dependent habitat will be triggered.
- If the groundwater levels exceed 3 feet below historical low groundwater levels (63.7 feet bgs in the Central Irrigation Well and 72.9 feet bgs in Well #2) and the arborist or forester finds evidence of deteriorating riparian habitat health, there may be a temporary or permanent cessation of pumping at the Well #2 and/or Well #3.

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4 REPORTING REQUIREMENTS

A groundwater monitoring report will be completed by a Professional Geologist or Professional Engineer licensed in the State of California and will be submitted to County of San Diego PDS annually no later than 28 days following the end of the calendar year. Groundwater monitoring reports should be submitted for 5 years after Proposed Project construction has commenced. After 5 years, County of San Diego PDS should determine if continuous reporting is required based on the effects of groundwater extraction from the previous 5 years. The annual reports will include the following information:

- Groundwater level hydrographs and tabulated groundwater level data for each accessible well in the groundwater-monitoring network.
- Tabulated groundwater production volumes from Well #2 and Well #3.
- Documentation of any changes in well pumping or groundwater well conditions for wells in the groundwater-monitoring network.
- Documentation of groundwater-dependent habitat monitoring, if necessary, as described in Section 3.2.

If the baseline groundwater levels at the wells included in the groundwater monitoring network are exceeded by 5 feet, County of San Diego PDS will be notified via letter and email within 1 working day of the exceedance, or immediately after the exceedance is recognized. Additionally, if groundwater level thresholds at the off-site wells are exceeded by their respective thresholds, pumping of Well #2 and Well #3 will cease and County of San Diego PDS will be notified via letter and email within 1 working day, or immediately after the exceedance is recognized.

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5 REFERENCES

County of San Diego. 2007. *County of San Diego, Guidelines for Determining Significance and Report Format and Content Requirements: Groundwater Resources*. Land Use and Environment Group, Department of Planning and Land Use, Department of Public Works. March 19, 2007.

County of San Diego. 2010. *County of San Diego, Guidelines for Determining Significance: Biological Resources*. Land Use and Environment Group, Department of Planning and Land Use, Department of Public Works. Fourth Revision. September 15, 2010.

Driscoll, Fletcher G. 1986. *Groundwater and Wells*. St Paul, Minn: Johnson Division.

Dudek. 2020. *Draft Groundwater Resources Investigation Report JVR Energy Park.* Prepared for JVR Energy Park LLC. February 2019.

Swenson, G.A. 1981. *Master's Thesis San Diego State University – The Groundwater Hydrology of Jacumba Valley, California and Baja California*.

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6 LIST OF PREPARERS

This Groundwater Monitoring and Mitigation Plan was prepared Dudek Hydrogeologist Trey Driscoll, PG, CHG, a County-approved hydrogeologist, and Dudek Hydrogeologist Hugh McManus. Dudek Arborist Michael S. Huff prepared the monitoring program for the groundwater-dependent habitat.

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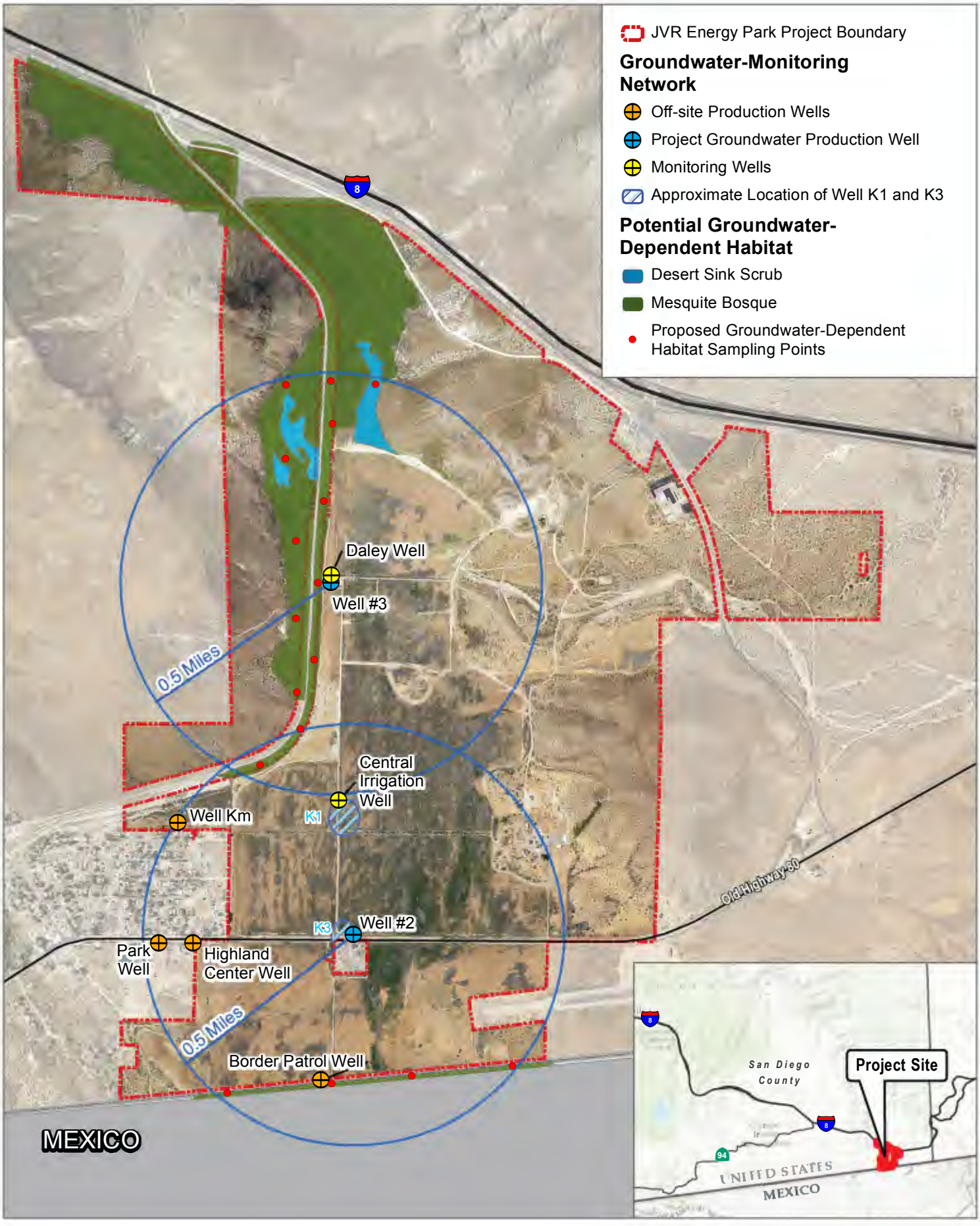

SOURCE: Dudek 2019

FIGURE 1

Well Interference and Potential Groundwater-Dependent Habitat

Groundwater Mitigation And Monitoring Plan - JVR Energy Park

DUDEK

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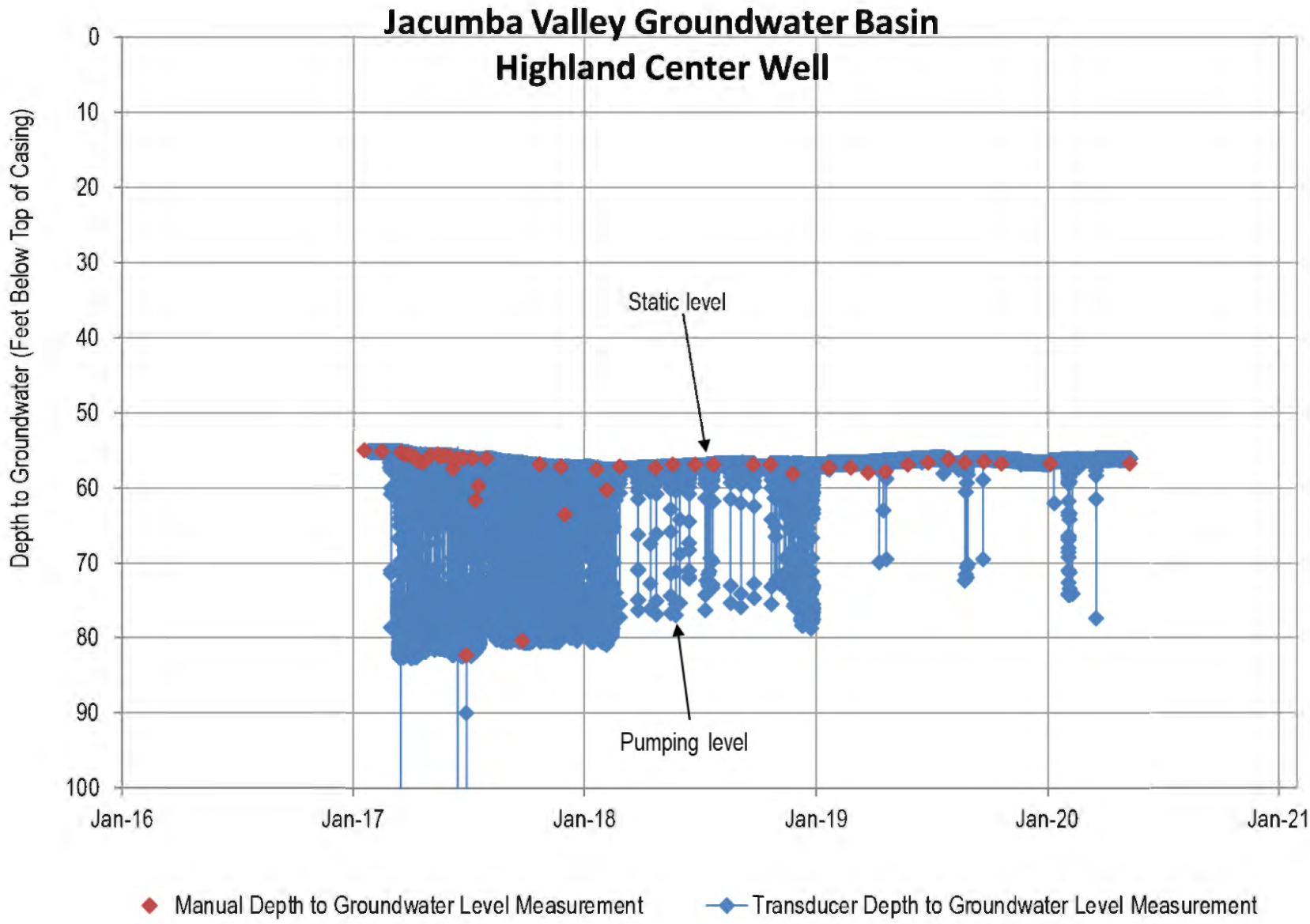
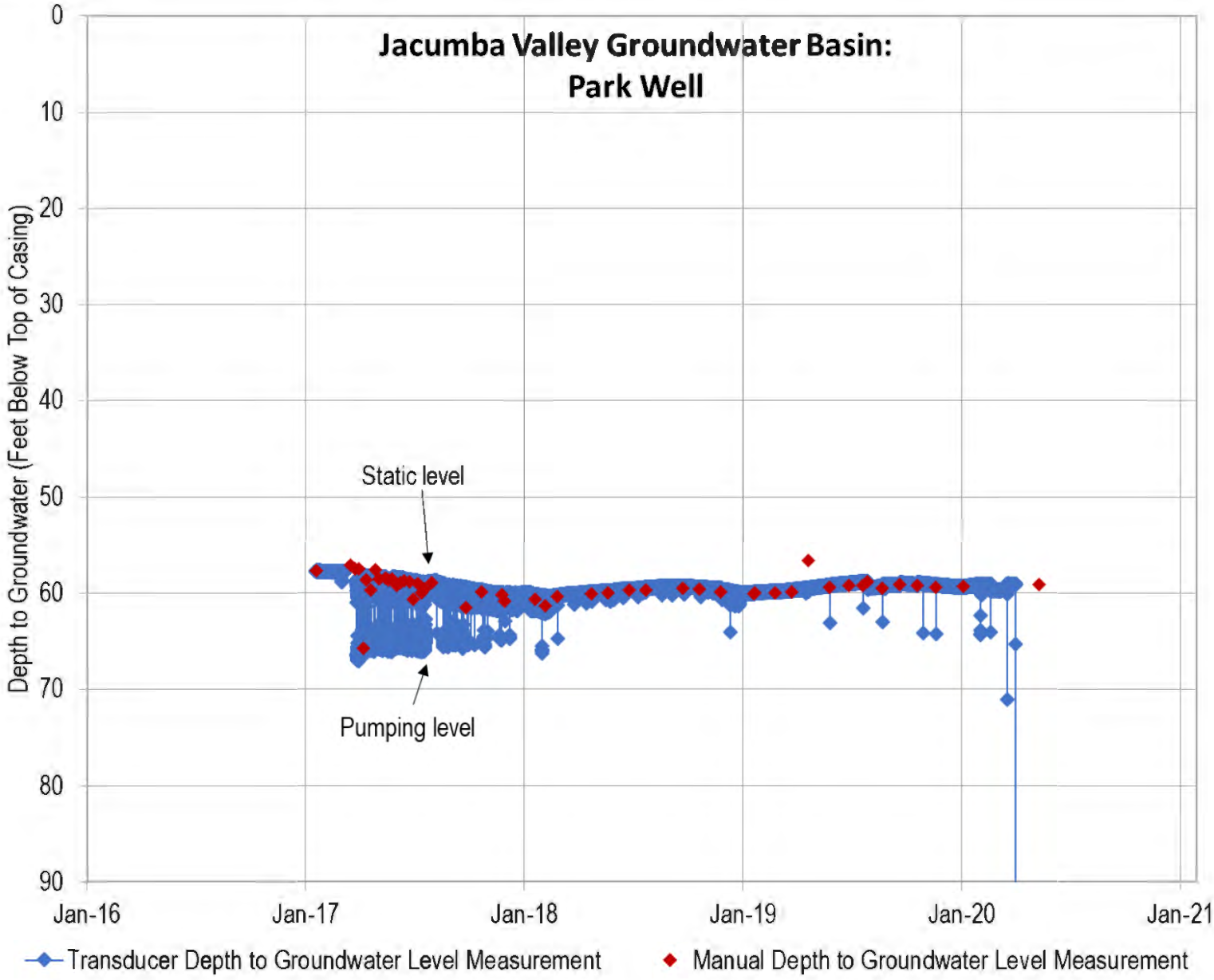
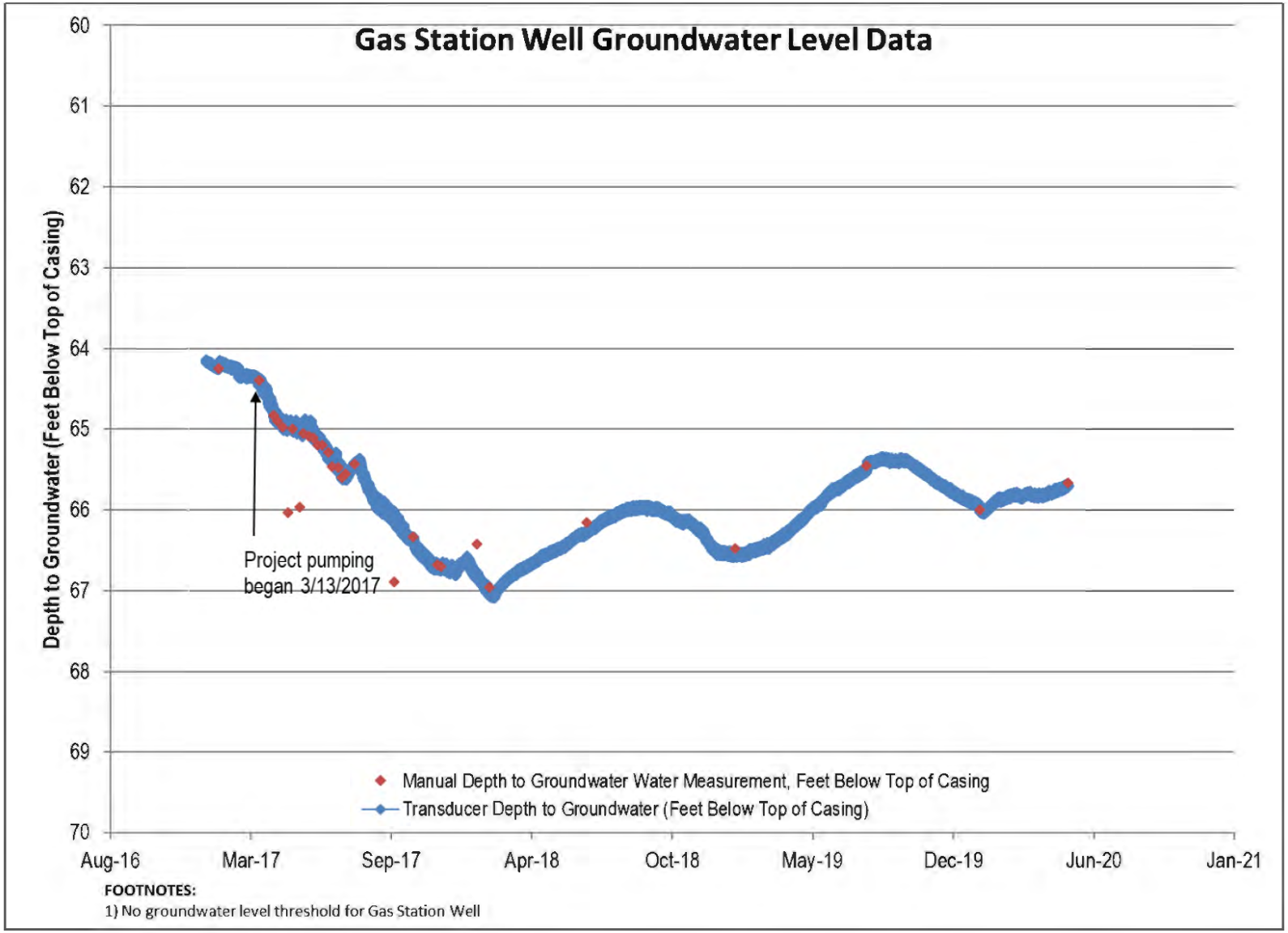
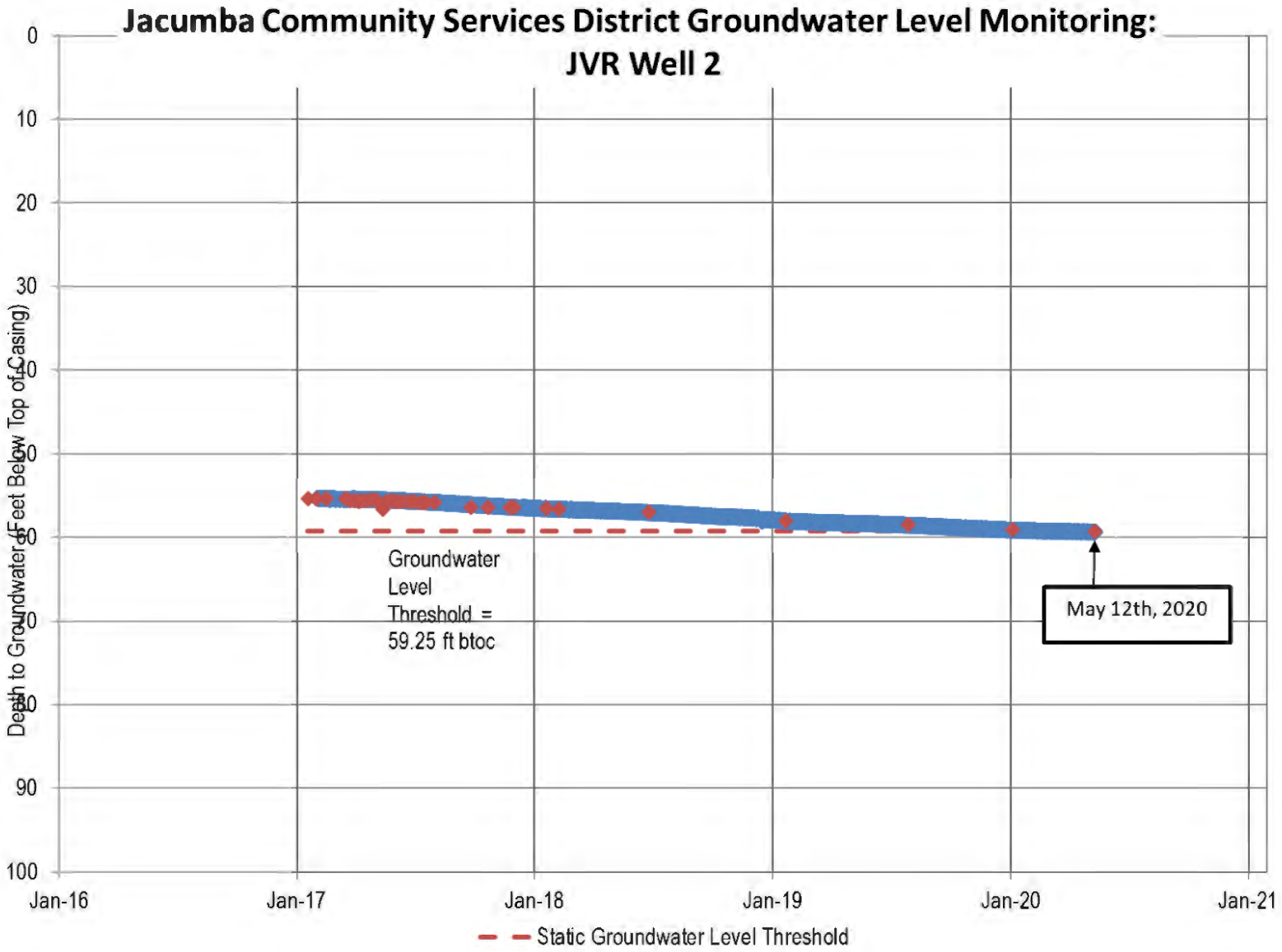
APPENDIX A

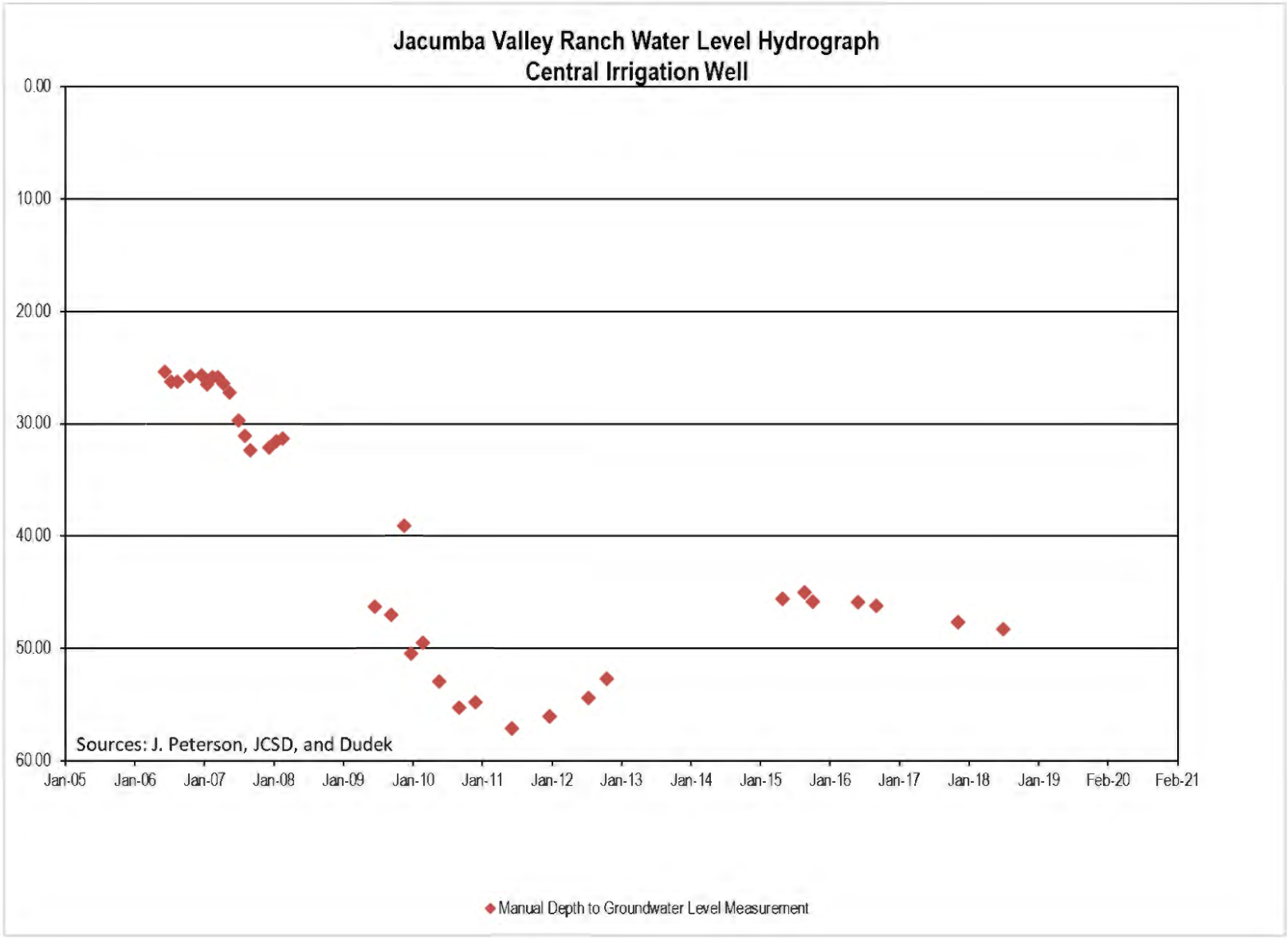
Groundwater Level Hydrographs


Jacumba Valley Groundwater Basin
Highland Center Well
Depth to Groundwater (Feet Below Top of Casing)
0
10
20
30
40
50
60
70
80
90
100
Static level
Pumping level
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Manual Depth to Groundwater Level Measurement
Transducer Depth to Groundwater Level Measurement


Jacumba Valley Groundwater Basin:
Park Well
Depth to Groundwater (Feet Below Top of Casing)
0
10
20
30
40
50
60
70
80
90
Static level
Pumping level
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Transducer Depth to Groundwater Level Measurement
Manual Depth to Groundwater Level Measurement


Gas Station Well Groundwater Level Data
Depth to Groundwater (Feet Below Top of Casing)
60
61
62
63
64
65
66
67
68
69
70
Project pumping began 3/13/2017
Manual Depth to Groundwater Water Measurement, Feet Below Top of Casing
Transducer Depth to Groundwater (Feet Below Top of Casing)
Aug-16
Mar-17
Sep-17
Apr-18
Oct-18
May-19
Dec-19
Jun-20
Jan-21
FOOTNOTES:
1) No groundwater level threshold for Gas Station Well


Jacumba Community Services District Groundwater Level Monitoring:
JVR Well 2
Depth to Groundwater (Feet Below Top of Casing)
0
10
20
30
40
50
60
70
80
90
100
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Groundwater Level Threshold = 59.25 ft btoc
May 12th, 2020
Static Groundwater Level Threshold


Jacumba Valley Ranch Water Level Hydrograph
Central Irrigation Well
0.00
10.00
20.00
30.00
40.00
50.00
60.00
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Feb-20
Feb-21
Sources: J. Peterson, JCSD, and Dudek
Manual Depth to Groundwater Level Measurement

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ATTACHMENT 3.
Sieve Test Results (UES)

Universal Engineering Sciences (UES)
1441 Montiel Road, Suite 115
Escondido, CA 92026
p. 760.746.4955 | TeamUES.com
LEA NO. 008

Report of Soil Sieve Analysis

Project Name: Jacumba Fire Station #43
Project Number: 4830.2400003.0000 **Lab Number:** 35558
Sampled By: D.D. **Date Sampled:** 2/20/2024
Tested By: E.T. **Date Tested** 3/12/2024

Sample Location:
TW-1 @ 55'

Sample Description:
Grey (SW)

Specifications:
N/A

Total Wet Wt:	693.9
Total Dry Wt:	681.2

Sieve Size	Wt. (Grams)	% Retained	% Passing		Specifications	Remarks
2 inch (50.8 mm)	0.0	0	100			
1-1/2 inch (38.1 mm)	0.0	0	100			
1 inch (25.4 mm)	0.0	0	100			
3/4 inch (19.1 mm)	0.0	0	100			
1/2 inch (12.7 mm)	3.5	1	99			
3/8 inch (9.5 mm)	3.5	1	99			
#4 (4.75 mm)	17.8	3	97			
#8 (2.36 mm)	151.6	22	78			
#16 (1.18 mm)	270.0	40	60			
#30 (0.6 mm)	366.4	54	46			
#50 (0.3 mm)	429.5	63	37			
#100 (0.15 mm)	485.3	71	29			
#200 (0.075 mm)	545.1	80.0	20.0			

Tested in Accordance with ASTM D1140, D6913

Reviewed By: Erik Campbell
Laboratory Manager

Date: March 20, 2024

Universal Engineering Sciences (UES)
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Escondido, CA 92026
p. 760.746.4955 | TeamUES.com
LEA NO. 008

Report of Soil Sieve Analysis

Project Name: Jacumba Fire Station #43
Project Number: 4830.2400003.0000 **Lab Number:** 35558
Sampled By: D.D. **Date Sampled:** 2/20/2024
Tested By: E.T. **Date Tested** 3/12/2024

Sample Location:
TW-1 @ 58'

Sample Description:
Grey (SC)

Specifications:
N/A

Total Wet Wt:	398.0
Total Dry Wt:	392.3

Sieve Size	Wt. (Grams)	% Retained	% Passing		Specifications	Remarks
2 inch (50.8 mm)	0.0	0	100			
1-1/2 inch (38.1 mm)	0.0	0	100			
1 inch (25.4 mm)	0.0	0	100			
3/4 inch (19.1 mm)	0.0	0	100			
1/2 inch (12.7 mm)	0.0	0	100			
3/8 inch (9.5 mm)	0.0	0	100			
#4 (4.75 mm)	0.0	0	100			
#8 (2.36 mm)	1.4	0	100			
#16 (1.18 mm)	6.5	2	98			
#30 (0.6 mm)	18.2	5	95			
#50 (0.3 mm)	29.8	8	92			
#100 (0.15 mm)	53.3	14	86			
#200 (0.075 mm)	157.3	40.1	59.9			

Tested in Accordance with ASTM D1140, D6913

Reviewed By: Erik Campbell
Laboratory Manager

Date: March 20, 2024

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LEA NO. 008

Report of Soil Sieve Analysis

Project Name: Jacumba Fire Station #43
Project Number: 4830.2400003.0000 **Lab Number:** 35558
Sampled By: D.D. **Date Sampled:** 2/20/2024
Tested By: E.T. **Date Tested** 3/12/2024

Sample Location:
TW-1 @ 61'

Sample Description:
Grey (SC)

Specifications:
N/A

Total Wet Wt:	383.6
Total Dry Wt:	376.9

Sieve Size	Wt. (Grams)	% Retained	% Passing		Specifications	Remarks
2 inch (50.8 mm)	0.0	0	100			
1-1/2 inch (38.1 mm)	0.0	0	100			
1 inch (25.4 mm)	0.0	0	100			
3/4 inch (19.1 mm)	0.0	0	100			
1/2 inch (12.7 mm)	0.0	0	100			
3/8 inch (9.5 mm)	0.0	0	100			
#4 (4.75 mm)	0.2	0	100			
#8 (2.36 mm)	10.0	3	97			
#16 (1.18 mm)	23.4	6	94			
#30 (0.6 mm)	37.1	10	90			
#50 (0.3 mm)	53.2	14	86			
#100 (0.15 mm)	96.9	26	74			
#200 (0.075 mm)	190.2	50.5	49.5			

Tested in Accordance with ASTM D1140, D6913

Reviewed By: Erik Campbell
Laboratory Manager

Date: March 20, 2024

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LEA NO. 008

Report of Soil Sieve Analysis

Project Name: Jacumba Fire Station #43
Project Number: 4830.2400003.0000 **Lab Number:** 35558
Sampled By: D.D. **Date Sampled:** 2/20/2024
Tested By: E.T. **Date Tested** 3/12/2024

Sample Location:
TW-1 @ 64'

Sample Description:
Grey (SM/SC)

Specifications:
N/A

Total Wet Wt:	542.5
Total Dry Wt:	514.4

Sieve Size	Wt. (Grams)	% Retained	% Passing		Specifications	Remarks
2 inch (50.8 mm)	0.0	0	100			
1-1/2 inch (38.1 mm)	0.0	0	100			
1 inch (25.4 mm)	0.0	0	100			
3/4 inch (19.1 mm)	0.0	0	100			
1/2 inch (12.7 mm)	0.0	0	100			
3/8 inch (9.5 mm)	0.0	0	100			
#4 (4.75 mm)	0.0	0	100			
#8 (2.36 mm)	24.2	5	95			
#16 (1.18 mm)	70.3	14	86			
#30 (0.6 mm)	139.6	27	73			
#50 (0.3 mm)	206.6	40	60			
#100 (0.15 mm)	292.1	57	43			
#200 (0.075 mm)	375.5	73.0	27.0			

Tested in Accordance with ASTM D1140, D6913

Reviewed By: Erik Campbell
Laboratory Manager

Date: March 20, 2024

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LEA NO. 008

Report of Soil Sieve Analysis

Project Name: Jacumba Fire Station #43
Project Number: 4830.2400003.0000 **Lab Number:** 35558
Sampled By: D.D. **Date Sampled:** 2/20/2024
Tested By: E.T. **Date Tested** 3/12/2024

Sample Location:
TW-1 @ 67'

Sample Description:
Grey (SM/SW)

Specifications:
N/A

Total Wet Wt:	517.4
Total Dry Wt:	516.8

Sieve Size	Wt. (Grams)	% Retained	% Passing		Specifications	Remarks
2 inch (50.8 mm)	0.0	0	100			
1-1/2 inch (38.1 mm)	0.0	0	100			
1 inch (25.4 mm)	0.0	0	100			
3/4 inch (19.1 mm)	0.0	0	100			
1/2 inch (12.7 mm)	0.0	0	100			
3/8 inch (9.5 mm)	7.4	1	99			
#4 (4.75 mm)	42.9	8	92			
#8 (2.36 mm)	208.6	40	60			
#16 (1.18 mm)	350.8	68	32			
#30 (0.6 mm)	434.6	84	16			
#50 (0.3 mm)	477.2	92	8			
#100 (0.15 mm)	498.4	96	4			
#200 (0.075 mm)	507.3	98.2	1.8			

Tested in Accordance with ASTM D1140, D6913

Reviewed By: 
Erik Campbell
Laboratory Manager

Date: March 20, 2024

Universal Engineering Sciences (UES)
1441 Montiel Road, Suite 115
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p. 760.746.4955 | TeamUES.com
LEA NO. 008

Report of Soil Sieve Analysis

Project Name: Jacumba Fire Station #43
Project Number: 4830.2400003.0000 **Lab Number:** 35558
Sampled By: D.D. **Date Sampled:** 2/20/2024
Tested By: E.T. **Date Tested** 3/12/2024

Sample Location:
TW-1 @ 70'

Sample Description:
Grey (SM)

Specifications:
N/A

Total Wet Wt:	539.2
Total Dry Wt:	535.9

Sieve Size	Wt. (Grams)	% Retained	% Passing		Specifications	Remarks
2 inch (50.8 mm)	0.0	0	100			
1-1/2 inch (38.1 mm)	0.0	0	100			
1 inch (25.4 mm)	0.0	0	100			
3/4 inch (19.1 mm)	0.0	0	100			
1/2 inch (12.7 mm)	0.0	0	100			
3/8 inch (9.5 mm)	0.0	0	100			
#4 (4.75 mm)	11.0	2	98			
#8 (2.36 mm)	115.0	21	79			
#16 (1.18 mm)	246.8	46	54			
#30 (0.6 mm)	343.7	64	36			
#50 (0.3 mm)	399.2	74	26			
#100 (0.15 mm)	445.7	83	17			
#200 (0.075 mm)	484.5	90.4	9.6			

Tested in Accordance with ASTM D1140, D6913

Reviewed By: Erik Campbell
Laboratory Manager

Date: March 20, 2024

Universal Engineering Sciences (UES)
1441 Montiel Road, Suite 115
Escondido, CA 92026
p. 760.746.4955 | TeamUES.com
LEA NO. 008

Report of Soil Sieve Analysis

Project Name: Jacumba Fire Station #43
Project Number: 4830.2400003.0000 **Lab Number:** 35558
Sampled By: D.D. **Date Sampled:** 2/20/2024
Tested By: E.T. **Date Tested** 3/12/2024

Sample Location:
TW-1 @ 73'

Sample Description:
Grey (SC/ML))

Specifications:
N/A

Total Wet Wt:	390.8
Total Dry Wt:	381.3

Sieve Size	Wt. (Grams)	% Retained	% Passing		Specifications	Remarks
2 inch (50.8 mm)	0.0	0	100			
1-1/2 inch (38.1 mm)	0.0	0	100			
1 inch (25.4 mm)	0.0	0	100			
3/4 inch (19.1 mm)	0.0	0	100			
1/2 inch (12.7 mm)	0.0	0	100			
3/8 inch (9.5 mm)	0.0	0	100			
#4 (4.75 mm)	3.0	1	99			
#8 (2.36 mm)	25.8	7	93			
#16 (1.18 mm)	59.1	16	84			
#30 (0.6 mm)	115.1	30	70			
#50 (0.3 mm)	161.8	42	58			
#100 (0.15 mm)	194.7	51	49			
#200 (0.075 mm)	227.4	59.7	40.3			

Tested in Accordance with ASTM D1140, D6913

Reviewed By: Erik Campbell
Laboratory Manager

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