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June 25, 2021

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VIA E-MAIL

Tina Mitchell
Planner
Planning & Development
Development Review Division
624 West Foster Road, Suite C
Santa Maria, CA 93455
tmitchell@countyofsb.org

RE: Hydrology Reports for Suarez Outdoor Cannabis Cultivation Project (2225 Foothill, Cuyama), 19LUP-00000-00327

Dear Ms. Mitchell:

Attached please find two technical reports drafted by Certified Hydrologist, Mr. Jordan Kear, which provide technical support for the use of two groundwater offset sources, which will be used for the Suarez Outdoor Cannabis Cultivation Project (2225 Foothill, Cuyama), 19LUP-00000-00327.

Best regards,

Amy Steinfeld

Attachments: (a) March 2021 Report; and (b) June 2021 Report.

22821116.1

TO: Moe Essa

FROM: Kear Groundwater
P.O. Box 2601
Santa Barbara, CA 93120-2601

DATE: March 22, 2021

SUBJECT: *Analysis of Projected New Well Pumping Regimes*
2225 Foothill Road, Cuyama Valley, Santa Barbara County, California

Dear Mr. Essa,

Kear Groundwater (KG) presents this letter detailing the projected water level interference under a range of anticipated pumping regimes by the future new well at 2225 Foothill Road (APN 149-160-033), Cuyama Valley, Santa Barbara County, California. We conducted this analysis to estimate potential significant acute effects of groundwater production at the property. Santa Barbara County Environmental Health issued a new well construction permit (No. 4497) on June 22, 2020 to install the new 16-inch-diameter mild-steel casing to 1200 feet below ground surface (bgs) at the 2225 Foothill property. A 30-inch outer-diameter steel conductor casing was installed and sealed to 55 ft bgs on December 17, 2020.

The new agricultural well will target freshwater-bearing bedrock strata within the weakly-consolidated Tertiary-aged Morales Formation to its total depth. The Cuyama Basin Groundwater Sustainability Agency (CBGSA) specifies key aquifer parameters of the Morales in its groundwater sustainability plan, including a range of hydraulic conductivities between 1.6 to 9.9 ft per day and specific yields (equivalent to storativity for unconfined aquifers) between 0.06 to 0.25 for existing wells screened exclusively in the formation (Woodard & Curran, 2019).

Using the low-end formation values (1.6 ft/day conductivity and 0.06 storativity), KG modeled and calculated various scenarios to estimate the effect of theoretical pumping by the new well (at various rates) on proximal existing wells. KG evaluated the potential effects through various pumping cycles and durations via the Theis distance-drawdown equations, which are well-established in hydrogeologic literature.

Theis estimated drawdown, s (in ft), as:

$$s = \frac{Q}{4\pi T} W(u)$$

where Q is production rate (in gpd), T is transmissivity (in ft^2/day), and W(u) is the well function; u is solved by:

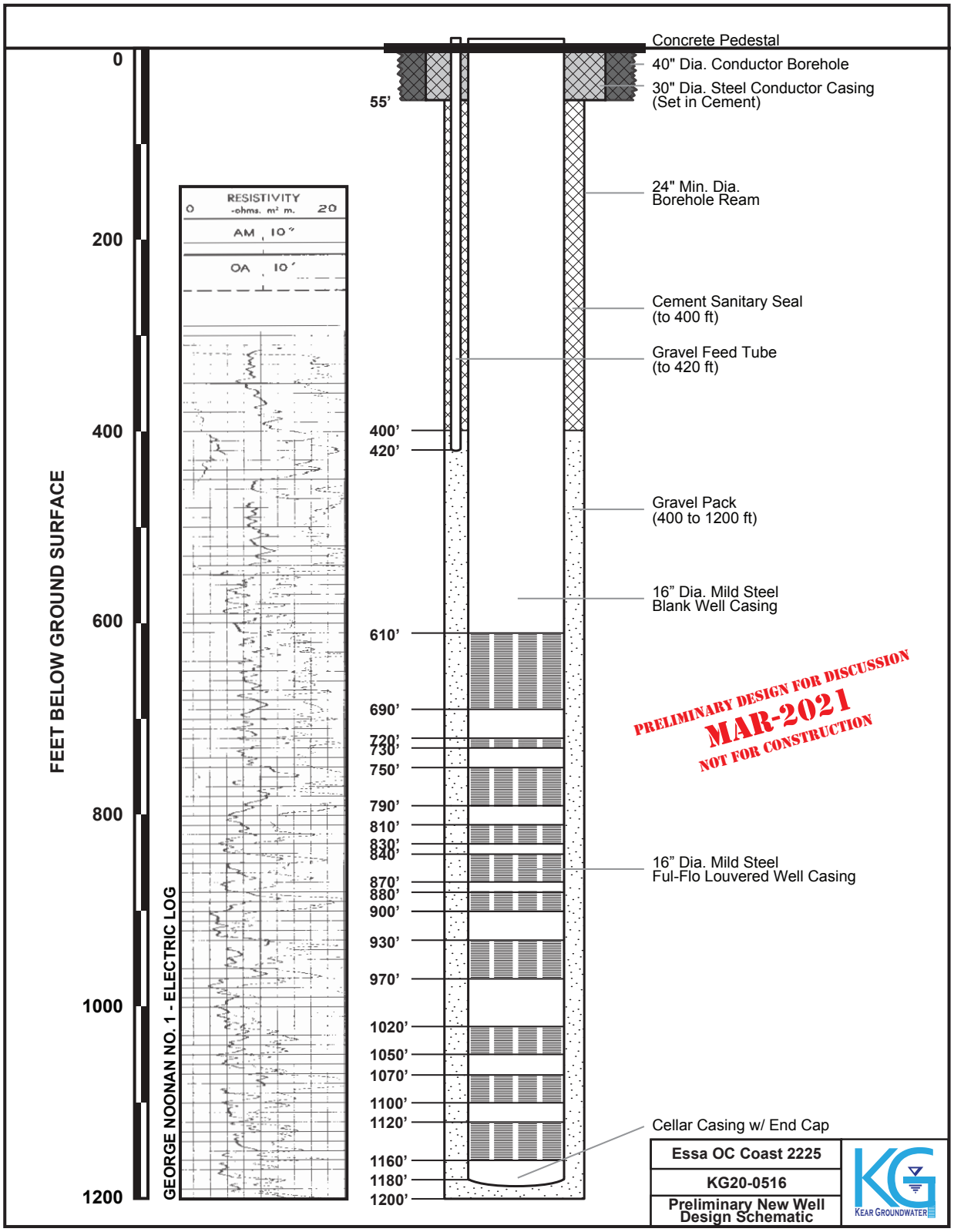
$$u = \frac{r^2 S}{4Tt}$$

where r is the radial distance (in ft), S is storativity, and t is pumping time (in days). For the calculations herein, the pumping time is assumed to remain at 0.5 days across all rates.

Transmissivity is a product of aquifer thickness and hydraulic conductivity. The preliminary design schematic for the new well is presented on the next page, with perforation intervals based on the historic electric log from the nearby "George Noonan No. 1" oil well. The oil well appears to correspond to the water well designated State Well Number 09N/25W-06A01S per the USGS National Water Information System, with static water level data available from the mid-1960s.

The local saturated aquifer thickness is estimated to be about 340 ft (of the total 1200 ft to be penetrated by the well); thus, the low-end tranmissivity of the Morales Formation is locally estimated to be about 544 ft^2/day (or 4069 gpd/ft). For comparison, the CBGSA reports an average transmissivity of 4900 gpd/ft estimate from two wells screened in both the older alluvium and Morales Formation. The base of freshwater extends much deeper than the base of the new well, as the weakly-consolidated Morales Formation reaches upwards of 5000 ft thickness in the basin (Woodard & Curran, 2019). The formation, consisting of thick-bedded sequences of clay, silt, sand, and gravel deposited in a fluvial environment, is at least 4000 ft thick underneath the parcel based on the George Noonan No. 1 oil well.

Once operational, KG recommends high-frequency water level monitoring via data logger deployment in both the new well and the existing on-parcels wells (unless dry). Site-specific and detailed testing would establish actual (not estimated) aquifer parameters.



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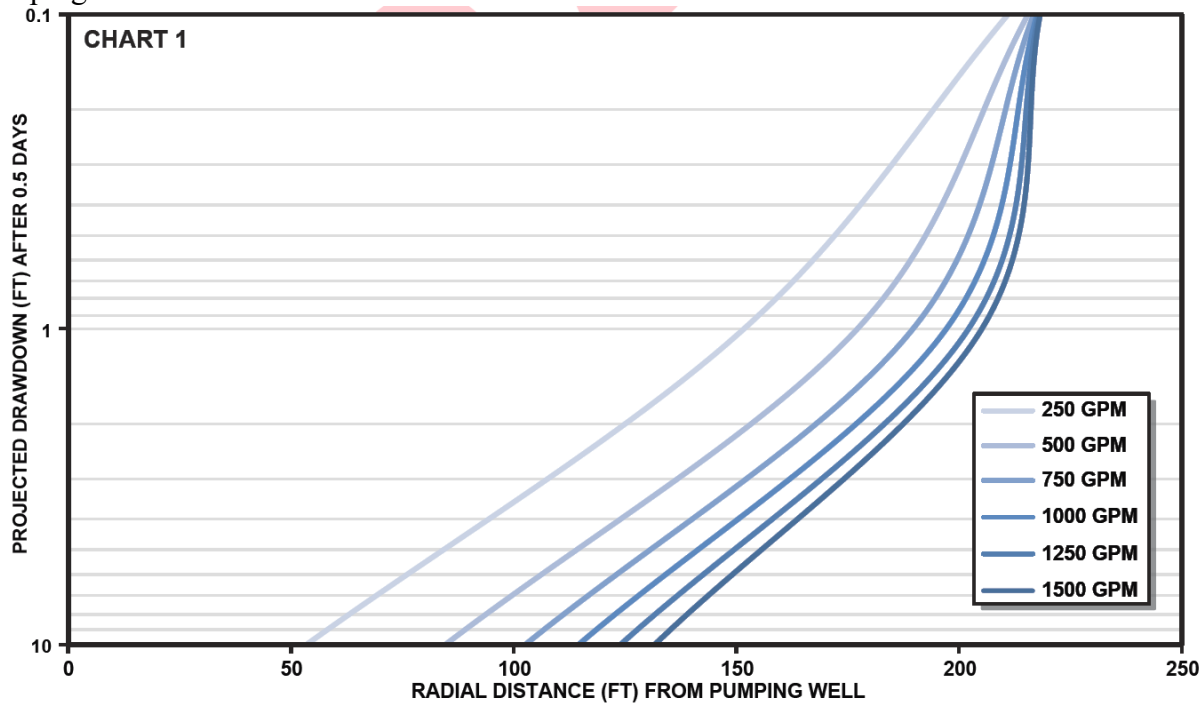
KG modeled a radius of "no influence," herein defined as <0.1 ft drawdown, for 0.5 days of pumping at rates of 250, 500, 750, 1000, 1250, and 1500 gpm. Ultimately, the radii of "no influence" from the new well range between 211.0 horizontal ft at 250 gpm and 218.2 ft at 1500 gpm. Figure 1 presents the aerial map with the new well and radii, demonstrating the significant separation between the pumping well's cone of depression and proximal existing offsite water wells (all >~2000 ft away).

The higher pumping rates induce more relative drawdown than lower rates as radial distance decreases. For example, at an observation point 100 ft horizontally separated from the new well, a half-day pumping at 250 gpm would induced about 3.5 ft of drawdown and 1500 gpm would induce about 21.2 ft; at a point 200 ft horizontally separated, the induced drawdown ranges between about 0.2 and 1.3 ft. This drawdown pattern is typical of deep basins with unconfined upper aquifers and those with relatively thin sand/shale sequences. Chart 1 presents the projected drawdown (logarithmically from 0.1 to 10 ft) with linear radial distance from the new well across all pumping rates. Note that a rate of 350 gpm is a most likely 12-hour maximum, with at least equal time of recovery between pumping cycles and effectively zero pumping between November and March.



Based on the planned cultivation area of 34.7 acres with an average water demand potentially as high as 3 acre-ft per irrigated acres, the cannabis operation at the 2225 Foothill Road parcel will require about 104.1 acre-ft per year. Coupled with 1.14 acre-ft for landscaping, the total project demand is 105.24 acre-ft per year.

KG understands that this future water usage for cannabis irrigation at the parcel will be offset by the fallowing of historically water-intensive agricultural land at a separate property elsewhere in the basin, importantly located near the delineated Ventucopa Management Area (one of two in the basin where the most overdraft has occurred). That property is situated immediately adjacent to the Cuyama River before it enters the main valley floor, and groundwater extraction by its wells has a more direct impact on the recharge to the basin. By removing production from the intensely pumped Ventucopa Area to the 2225 Foothill property, this decentralization of groundwater extraction would result in a net benefit to the basin, particularly away from a main area of recharge (south of the Santa Barbara Canyon Fault, where water levels are as much as 100 ft higher than those to the north [e.g., USGS, 2013]).

The Ventucopa property has historically grown mostly alfalfa, at usage rate of 4.02 acre-ft of water per irrigated acre. Therefore, about 26.18 acres need to be fallowed to fully offset the 104.1 acre-ft projected future cannabis demand (in addition to 1.14 acre-ft in landscape irrigation) at the 2225 Foothill property. KG understands that the "Field #0" to be fallowed comprises about 28.5 total acres (shown on Figure 2). The total water savings due to fallowing would be about 114.57 acre-ft per year, or 9.33 acre-ft above the estimated total future water demand. Further, pumped water appears to be stored in a large (about 5.22 acre-ft capacity) surface reservoir at that property, with significant resultant losses to evaporation prior to irrigation, and also distributed via inefficient linear irrigation lines; the offset program will improve these inefficiencies by input reduction and engineering controls.

In sum, groundwater production for the cannabis project will have a net cumulative benefit on the water resources of the basin and no significant material acute effect on nearby water wells.

Best Regards,

Jordan Kear
Principal Hydrogeologist
Professional Geologist No. 6960
California Certified Hydrogeologist No. 749

Timothy Becker
Professional Geologist No. 9589

References

R.R. Everett, D.R. Gibbs, R.T. Hanson, D.S. Sweetkind, J.T. Brandt, S.E. Falk, and C.R. Harich (USGS). (**2013**). Geology, Water-Quality, Hydrology, and Geomechanics of the Cuyama Valley Groundwater Basin, California, 2008-12. United States Geological Survey Scientific Investigations Report 2013-5108.

CBGSA, Woodard & Curran (**2019**). Final groundwater sustainability plan, December 2019.

SAN LUIS OBISPO CO.

SANTA BARBARA CO.

Cuyama River

Central Basin Management Area

10N/25W-32N03S

2001 Well

1991 Well

NEW WELL LOCATION

FOOTHILL ROAD

APN 149-160-033

George Noonan No. 1

09N/25W-06A01S

Radii of No Influence (<0.10 ft Drawdown) after 0.5 Days Pumping at New Well

FOOTHILL ROAD

1991 Well

NEW WELL

250 GPM
500 GPM
750 GPM
1000 GPM
1250 GPM
1500 GPM

100 ft

LEGEND

- 2225 Foothill Parcel (Santa Barbara County)
- *Central Basin Management Area (CBGSA GSP, Figure ES-14)*
- County Boundaries
- Intermittent River, Ephemeral Creeks (USGS NHD)
- Existing Water Wells (Cuyama Valley Basin Data Management System)

FIGURE 1

Essa OC Coast 2225

KG20-0516

Aerial Map

KEAR GROUNDWATER

Aerial Image/Inset:
Google Earth (30-Aug-2018)

1000 0 2000 FEET

0 1 MILE

N

TO: Moe Essa

FROM: Kear Groundwater
P.O. Box 2601
Santa Barbara, CA 93120-2601

DATE: June 4, 2021

SUBJECT: *Hydrogeologic Overview and Potential Riparian Impact Assessment*
2225 Foothill Road, New Cuyama, Santa Barbara County, California

Dear Mr. Essa,

This memorandum provides a summary of Kear Groundwater's (KG) hydrogeologic evaluation and review of potential riparian impacts due to groundwater usage from an existing groundwater well at the 2225 Foothill Road property (APN 149-160-033), located nearly 7 miles southeast of New Cuyama in northeastern Santa Barbara County, California (Figures 1, 2, 3).

Our objective was to perform a review of available hydrogeologic information and existing on-parcel groundwater resources, as well as to evaluate the potential hydrologic impacts on nearby water quality, aquatic habitat, riparian habitat, wetlands, and springs, as related to the diversion of water associated with cannabis cultivation, in compliance with the State Water Resources Control Board's (SWRCB) Cannabis Cultivation Policy per the California Water Code (Section 13149). SWRCB and the Department of Fish and Wildlife (DFW) may apply these requirements to groundwater extractions where determined to be reasonably necessary. For example, the SWRCB currently prohibits cannabis cultivators from utilizing surface water or groundwater supplies that impact surface water supplies during the dry season (April to October). This is referred to as the "forbearance period." We conducted an initial field visit on February 20, 2020 to document the existing well conditions and observable infrastructure as well as collect water samples for laboratory analyses.

SWRCB defines groundwater as any water found beneath Earth's surface; however, there is a distinction between "percolating groundwater" in a groundwater basin versus groundwater that

acts as a "subterranean stream" flowing within a known and defined channel. Ultimately, KG has found that water usage for cannabis cultivation at the 2225 Foothill Road parcel is unlikely to "substantially affect instream flows," when present along the local drainages (which is a rare occurrence), and that the existing active well extracts exclusively "percolating groundwater" within a bedrock aquifer at depth. Therefore, the groundwater extracted via existing or postulated wells at the 2225 Foothill Road parcel should not be limited via the current surface water regulatory framework for cannabis cultivation operations during forbearance periods. Groundwater regulations are discussed below.

Based on the planned cultivation area of 34.7 acres with an average water demand potentially as high as 3 acre-feet per irrigated acres, the cannabis operation at the 2225 Foothill Road parcel will require about 104.1 acre-ft per year. Coupled with 1.14 acre-ft for landscaping, the total project demand is 105.24 acre-ft per year.

KG understands that this future water usage for cannabis irrigation at the parcel will be offset by the partial fallowing of historically water-intensive agricultural land at a separate property elsewhere in the basin, importantly located within the delineated Central Basin Management Area where declining groundwater levels are the most severe. That property is situated immediately adjacent to the Cuyama River, and groundwater extraction by its wells has a more direct impact on the recharge to the basin. By removing the pumping from the intensely pumped Central Area to the 2225 Foothill property region, a benefit of decentralization of groundwater extraction will be realized. Thus, the cumulative impact on the water resources of the basin will be less acute under full project implementation.

A summary of our efforts, findings, conclusions, and more detailed recommendations follows.

Existing and Future On-Parcel Groundwater Wells

Per documents available from our Public Record Review Request to the County's Environmental Health Services Division (Appendix A), two permitted wells exist on the property (Figure 1). KG understands that only one of the two wells is currently active, and that the active and historical production rates of both wells are unknown.

The earlier well ("1991 Well") permit application is dated December 4, 1991. Per the County field investigation record, Gungle Drilling (Gungle) drilled a 20-inch-diameter borehole to 840 feet below ground surface (bgs) and installed a 10-inch-diameter steel well casing perforated from 561 to 840 ft bgs. Gungle poured the cement sanitary seal in the annular space between the borehole and the well casing from ground surface to 66 ft bgs. During our 20 February 2020 reconnaissance, this well was observed to have a tack-welded steel cap, and was dry to a depth of about 350 ft where our sounder tape became hung up on likely sheet scale, fill material or other impediment.

The later well ("2001 Well," Photograph 1) permit application is dated June 12, 2001. Per the Well Completion Report, Whitten Pumps Inc. (Whitten) first drilled a 40-inch-diameter conductor borehole and installed a 25-inch-diameter conductor casing to 22 ft bgs. Whitten then drilled a 24-inch-diameter borehole to 950 ft bgs and installed a 10-inch-diameter steel well casing perforated from 610 to 935 ft bgs. Whitten apparently poured the cement sanitary seal in the annular space between the borehole/conductor casing and the well casing from ground surface to 22 ft bgs. Per communication dated October 16, 2001, the County informed the land owner that a Single Parcel Water System (SPWS) permit is required to utilize the well for domestic/potable water purposes. As of March 2020, KG could not locate a SPWS permit on file for the property.

KG collected a sample from the pressurized hose bib just south of the well ostensibly connected to the tank filled via the active/"2001" on February 20, 2020 and submitted it to AGQ Labs (AGQ) in Oxnard for water quality testing (Appendix B for quality report). AGQ reported a total

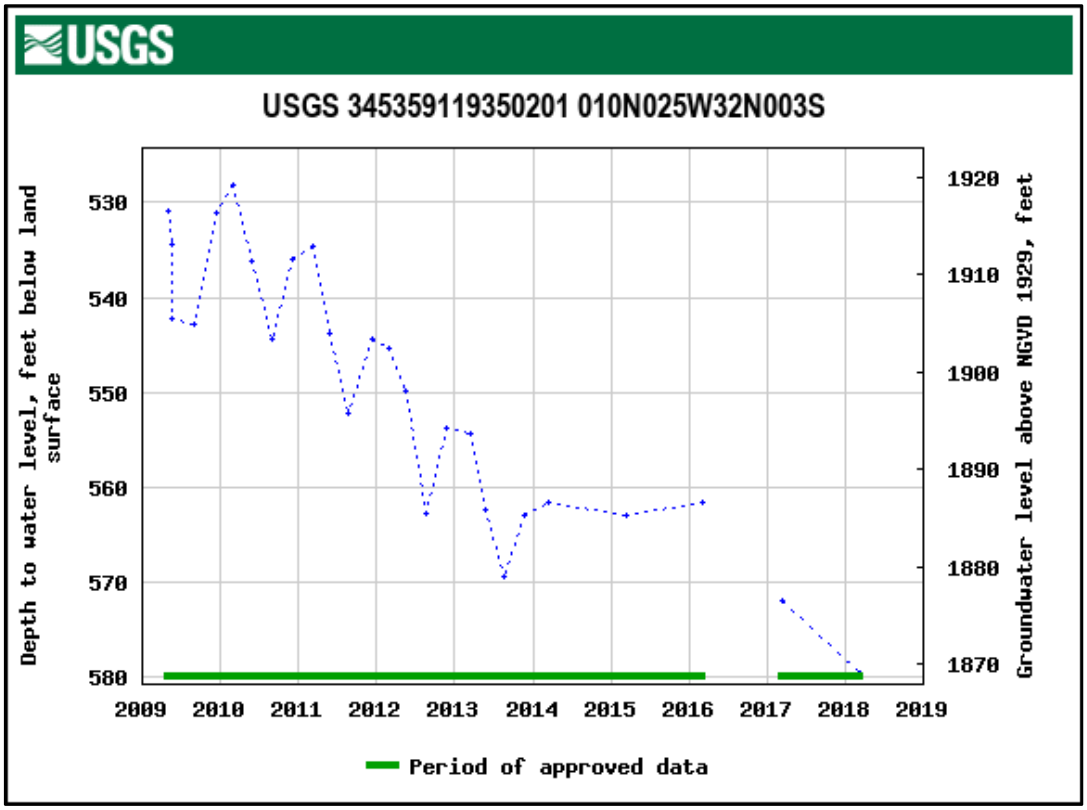
dissolved solids (TDS) concentration of 1226 mg/L and an electrical conductivity of 1915 µS/cm, with a calcium-sulfate water character. This is consistent with the typical historical water quality of wells of similar depths in the area.

Sustainable production rates from the existing wells on the property are currently unknown. Nearby wells similar in depth and construction to the currently-equipped produce hundreds of gallons per minutes when new, but production tends to decline as wells age. KG recommends conducting a pumping test on 2001 Well to determine its current sustainable production rate and whether chemical and/or mechanical rehabilitation presents an economic method to achieve desired production rates. The 1991 Well may be assessed via video survey to determine the current condition of the casing. Rehabilitation options including chemical and mechanical reconditioning, or installing a liner or inner casing and gravel pack within the existing casing may restore limited production capacity in the thirty-year-old well.

Photograph 1. The active/2001 Well at 2225 Foothill Road (KG, 20-Feb-2020).

Given limited space between the pump column, power cable, and internal diameter of the well casing, a water level was not obtainable from the 2001 well during our field reconnaissance. However, based on USGS-reported water level monitoring from Well 10N/25W-32N3, an 805-ft deep well located some 600 ft north of the 2001 well, a 600-ft depth to water is a reasonable estimate. In the -32N3 well, water level data from 2009-2018 show a steady decline (with seasonal variations) from around 530 ft in 2009 to 580 ft in 2018. A USGS-generated hydrograph is presented below.

Well 10N/25W-32N3 is north of Foothill Blvd, in a more heavily irrigated portion of the basin and in the Central Management area as defined by the CBGSA and the Central Subbasin as defined by the USGS. The hydrograph is shown herein as a local worst-case scenario, though the 2225 property is in a lower-intensity, lower-density portion of the basin, in what the USGS defines as the Sierra Madre foothill subbasin and potentially south of the Reheboth fault.



New/Ongoing Well Construction

Agricultural development totaling 34.7 acres of cannabis cultivation will likely require additional pumping capacity (estimated at 104.1 acre-ft per year), aided by onsite water storage. Landscape irrigation will add another 1.14 acre-ft per year, for a projected demand of 105.24 acre-ft per year. The existing 2001 well may be capable of increased production, but must be tested to determine capacity.

Given the need for a higher production rate at the property, KG recommended drilling a new water well that is optimized for agricultural demand but may be subject to regulatory permissibility in the near future (with the Cuyama Basin Groundwater Sustainability Agency or the County of Santa Barbara which has jurisdiction over new wells), in addition to continuing water level decline. The new agricultural well is to target freshwater-bearing bedrock strata within the weakly-consolidated Tertiary-aged Morales Formation to the total recommended depth of 1200 ft bgs.

The new agricultural well is located about 82 ft west-southwest of the inactive 1991 Well.

Santa Barbara County Environmental Health issued a well construction permit (No. 4497) on June 22, 2020 to install the new 16-inch-diameter mild-steel casing to 1200 ft bgs at the 2225 Foothill property (Appendix C). Pacific Coast Well Drilling (PCWD) is to construct the well at quoted cost of around $350,000 (Appendix D).

On December 17, 2020, Myers Bros. Well Drilling, Inc. (Myers) under subcontract from PCWD, auger-drilled a 40-inch-diameter conductor borehole from ground surface to 54 ft bgs and then installed a 30-inch outer-diameter steel conductor casing into 55 ft bgs. The annulus was sealed with about 14.5 cubic yards of 10.3-sack sand-slurry cement up to ground surface under KG personnel inspection (summary letter attached as Appendix E). Effectively, this well construction project has commenced.

Subterranean Stream vs. Percolating Groundwater

SWRCB has permitting authority over surface streams and groundwater classified as subterranean streams, pursuant to the California Water Code. Groundwater classified as percolating groundwater is not subject to provisions concerning the appropriation of water. The legal classification of groundwater as a subterranean stream requires evidence that the water flows through a known and defined channel, where (1) a subsurface channel is present, (2) the channel is relatively impermeable bed and banks, (3) the channel's course is known or capable of being determined by reasonable inference, and (4) groundwater is flowing in the channel. Percolating groundwater includes all water that passes beneath ground surface *without* a definite channel and not shown to be supplied by a definite flowing stream.

The delineation of the bed and banks of a subterranean stream should consider all available pertinent information, primarily geology, soils and topography. Importantly, the geologic contact between the relatively-impermeable bedrock formation and relatively-unconsolidated recent alluvial deposits, where clearly associated with and in reasonable proximity of a stream, can be considered the known and defined bed and banks of the subterranean stream (e.g., Stetson Engineers Inc., 2008).

Hydrogeologic Overview

The 78.27-acre 2225 Foothill Road property is situated along the northern foothills of the Sierra Madre Mountains in southern Cuyama Valley, entirely within the delineated Cuyama Valley Groundwater Basin ("Cuyama Basin," Department of Water Resources, Bulletin 118, Basin Number 3-13). Aquifers in the Cuyama Basin are generally stored within the young, unconsolidated surficial alluvium deposits and the older, underlying terrestrial deposits (primarily the Morales Formation). Historically, most of the water pumped from the basin was from the alluvium, where large-capacity wells can yield several thousands of gpm. Well yield and specific capacities generally tend to decrease with depth.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) of 2014 is a three-bill package (AB 1739, SB 1168, and SB 1319) that sets the framework for statewide long-term sustainable groundwater management by local authorities. SGMA requires the formation of new groundwater sustainability agencies (GSAs) tasked with assessing the conditions in their local basins and adopting locally-based sustainable management plans. SGMA provides local GSAs with tools and authority to (1) require registration of groundwater wells, (2) measure and manage extractions (including limiting the amount of water pumped by individual well owners), (3) require reports and assess fees, and (4) request revisions of basin boundaries, including establishing new sub-basins. SGMA is being implemented by the DWR and the SWRCB, with technical support from the USGS.

As part of its California Statewide Groundwater Elevation Monitoring (CASGEM) Program, the DWR designated the 242,114-acre Cuyama Basin as a "High" priority during the final 2018 basin prioritization. The basin was identified by the DWR to be in "critical condition of overdraft" by 1980. The USGS estimates that groundwater use for irrigation in the basin is twice the average annual recharge (simulated from 1946 to 2010).

GSAs responsible for high- and medium-priority basins must adopt long-term groundwater sustainability plans (GSPs) by January 31, 2022 (or 2020 if in critical overdraft). Plans will be evaluated every five years. GSAs have until 2040 to achieve groundwater sustainability, or the use of the resource without causing one of six undesirable results (also known as sustainability indicators): chronic groundwater level declines, groundwater storage reduction, seawater intrusion, water quality degradation, land subsidence, and depletions of interconnected surface water.

The Cuyama Basin GSA (CBGSA or GSA) formed in 2017 by a Joint Powers Agreement between the Santa Barbara County Water Agency and the three other counties that intersect the basin (San Luis Obispo, Ventura, and Kern), as well as the Cuyama Community Services District

(CCSD), and the Cuyama Basin Water District (CBWD). The 11-member CBGSA Board of Directors (Board) is the decision-making body, which also appoints a 9-member Standing Advisory Committee (SAC) of community members that serve in an advisory capacity. CCSD was formed in 1977 and provides water service and wastewater collection and treatment for the New Cuyama townsite. CBWD was formed in 2016 as a public agency to represent landowners in the Main Basin and Ventucopa areas (funded through annual assessments to all landowners in its boundaries with irrigated land).

The CBGSA, with the consultants Woodard & Curran, released its final GSP section in December 2019. As noted above, this property is located within the Cuyama Basin and subject to the recently adopted Cuyama GSP. The Cuyama GSP describes the GSA's approach to achieve sustainable groundwater management for the Cuyama Basin by 2040. The GSP describes existing basin conditions, identifies undesirable results, and develops water budgets, projects, and management actions to ensure the Cuyama Basin achieves sustainable management. As of the date of this writing, the entire Cuyama GSP is available at: http://cuyamabasin.org/resources#final-gsp.

The Cuyama GSP estimates that average annual overdraft is 26,000 acre-ft per year (i.e., the amount groundwater pumping exceeds groundwater recharge from precipitation and other sources). The sustainable yield for the Cuyama Basin is estimated to be 20,000 acre-ft per year (i.e., where the amount groundwater pumping equals the amount of groundwater recharge). In order to achieve sustainable groundwater management, the GSP proposes to reduce groundwater pumping by 40,000 acre-ft per year. Based on current information, groundwater pumping in the Cuyama Basin may have to be reduced by as must as 50 to 67 percent. The focus of this reduction in groundwater pumping will be around the central portion of the Cuyama Basin in the Central Basin Management Area, where declining groundwater levels are the most severe.

The GSA has adopted a preliminary schedule for Central Basin pumping reduction and will complete the pumping allocation plan by 2022. Individual pumpers will receive an allocation that sets the amount of groundwater they can extract. Pumping reductions are scheduled to begin in

2023 and to be fully implemented by 2038. The GSP proposes a ramp-down approach with 5 percent reductions each in 2023 and 2024, followed by 6.5 percent annual reductions between 2025-2038.

This property (2225 Foothill) is not within the Central Basin Management Area and thus will not be subject to the proposed Central Basin Management Area pumping reductions. However, it would be prudent to track changes to the management area boundary or an expansion of the allocation management action to the entire basin.

The GSP also proposes to evaluate two projects: (1) cloud seeding to increase rainfall enhancement primarily in the southeast Corner of the Basin; and (2) capture and recharge high stormwater flood flows from the Cuyama River. Both projects are estimated to contribute 4,000 acre-ft per year, respectively. The other proposed projects and management actions include additional water supply transfers/exchanges; improve drinking water supplies for local communities; a basin-wide economic analysis and adaptive management. These projects may be implemented to improve groundwater basin conditions and groundwater pumpers would be expected to pay the costs associated with implementing these projects.

SGMA Groundwater Extraction Fees

To fund the GSA and implementation of the GSP, the GSA has established a groundwater extraction fee. The groundwater extraction fee applies to all groundwater extractors, unless a property owner extracts less than 1.5 acre-ft per year per well for commercial uses or less than 2 acre-ft per year per well for domestic uses. The extraction fee is calculated by taking the GSA's fiscal year budget and a delinquency rate of 10 percent and dividing the current estimated extraction amount. The CBGSA recommended a groundwater extraction fee of $46 per acre-ft to cover the Fiscal Year 2021-2022 administration costs (July 1, 2021 through June 30, 2022), up from $44 in FY 2020-2021. Along with payment, groundwater extractors (including extractors that are exempt from the fee requirements) must submit a form detailing their groundwater extractions. As of the date of this writing, copies of these forms and the entire Groundwater

Extraction Fee report is available at: https://cuyamabasin.org/assets/pdf/Groundwater-Extraction-Report-FY20-21-final.pdf.

Stratigraphy and Hydrogeology

The Cuyama Basin and its local low-lying valleys are filled with Quaternary-aged alluvium of fluvial origin, with sediment derived from the weathering and erosion of the surrounding mountains. The alluvium and stream channel deposits are comprised of unconsolidated mixture of gravels, sands, silts, and clays of various thicknesses. Groundwater is stored in coarser-grained aquifers separated by finer-grained aquitards. Surficial deposits are generally separated into recent, active (Holocene-aged; Qa) surficial deposits and older, dissected (Pleistocene-aged; Qoa) deposits, with the younger alluvium tending to be coarser-grained in Cuyama Valley. Alluvial deposits gradually thin toward the foothills before pinching out, where they become either too thin or unsaturated for sustained groundwater development.

Unconsolidated surficial sediments are unconformably underlain by older, Tertiary-aged sedimentary formations throughout the parcel. From youngest to older, these sedimentary bedrock formations include the Pliocene weakly-consolidated valley fill deposits of the Morales Formation (Tmo, alluvial clay, sand, gravel, and conglomerate), the late Miocene moderately-consolidated shallow marine deposits of the Santa Margarita Formation (Tsm, sandstone), the middle Miocene well-consolidated deeper marine deposits of the Monterey Shale (Tm, shale), and the early Miocene well-consolidated shallow marine deposits of the Vaqueros Sandstone (Tvq).

Appreciable volumes of groundwater are available within the older sedimentary formations, especially where partially cemented, unconsolidated, or highly fractured, which increases porosity. The weakly-consolidated Morales Formation reaches upwards of 5000 ft thickness in the basin, consisting of thick-bedded sequences of clay, silt, sand, and gravel that were deposited in a fluvial environment. The formation is at least 3500 ft thick underneath the parcel based on the records from a nearby oil well (Chevron U.S.A. Inc.'s "Humble-Lundstrom No. 48-2"),

located about 2.6 miles southwest of the parcel's southwestern corner. The great thickness of the target formation offsets to some degree the declining water levels in the Basin.

Groundwater Recharge

The 2225 Foothill Road property is entirely located within the Cuyama River watershed (Figure 1). The river starts in Ventura County and flows generally northwest, then west, then southwest before encountering Twitchell Dam (constructed by the United States Bureau of Reclamation for flood control/water conservation measures between 1956 and 1958) and pooling behind it in Twitchell Reservoir. Outflows from the dam then reach a point of confluence with the Sisquoc River, near the town of Garey, the other main tributary of the Santa Maria River. The Cuyama River forms the general boundary between San Luis Obispo County and Santa Barbara County in the area.

The property is situated between two ephemeral drainages flowing north out of the Sierra Madre range. West of the property, Castro Canyon Creek is an ephemeral stream that runs about 7 miles northward to the Cuyama River; its original channel has been largely disrupted in the modern era as the creek enters the main basin and its agricultural land. Goode Canyon ephemerally drains a small basin southeast of the property. Per the Federal Emergency Management Agency's (FEMA) National Flood Hazard Layer (NFHL), only a small strip in the western portion of the 2225 Foothill Road parcel is within the 100-year (1% annual chance) flood hazard zone, part of a small unnamed drainage subparallel to the two larger canyons.

Recharge to local alluvial groundwater aquifers is primarily derived from seepage along the Cuyama River as well as percolation of precipitation directly on the valley floor. Average precipitation around Cuyama Basin ranges between 7 and 15 inches per year (about 10 inches per year directly at the subject parcel per Santa Barbara County rainfall isohyet maps). There is also a recharge component from diffuse movement of groundwater through the surrounding units in the mountain block, including the percolation of shallow alluvial groundwater into fractured bedrock aquifer material, in addition to minor residential/agricultural return flows. Generally, per

recent USGS studies, the groundwater is very old in the Cuyama Basin, indicating (along with groundwater level hydrographs that do no correlate with rainfall patterns) limited recharge.

Groundwater movement across the Cuyama Valley is generally towards the northwest, parallel to the Cuyama River, with substantial component of flow northward from the Sierra Madre Mountains. Around the subject property, groundwater flow is inhibited away from the foothills by the northwest-southeast-trending South Cuyama Fault. Local groundwater discharge, where not pumped by wells or taken up by flora, is likely towards shallow alluvial deposits or surface flows, when present.

In the Cuyama Basin, groundwater withdrawals (primarily for agricultural land irrigation) have resulted in water-level declines of as much as 150 ft in west-central portion and 300 ft in the northeastern portion since the 1940s. This trend has continued in recent years, with about 90 ft of water level decline recorded in some wells near the river (per the USGS National Water Information System).

Structural and Petroleum Geology

The 2225 Foothill Road property is situated within the Coast Ranges geomorphic province. The Coast Ranges consists of northwest-southeast-trending mountain ranges and valleys that are subparallel to the San Andreas Fault. Models indicate that the San Andreas system and central California Coast Ranges accommodate northwest-directed motion relative to the North American plate of nearly 40 mm per year, mainly by strike-slip faulting.

Regional crustal deformation is largely taken up locally by generally northwest-southeast-trending faults and associated folds around the property. These include the reverse-slipping/southwest-dipping South Cuyama Fault, part of a semi-continuous system with the Ozena Fault that forms the northern edge of the Sierra Madre Mountains and the southern edge of the downfolded Cuyama Valley. Miocene-aged formations are thrusted northward over the older alluvium/Morales Formation along the South Cuyama Fault. The Morales Formation dips

gently to the north/basin center.

The administrative boundary of the South Cuyama Oil Field is about 4 miles due west of the 2225 Foothill Road parcel. The primarily petroleum reservoir is stored within the Vaqueros Sandstone more than 4000 ft bgs, with some gas pools in the Santa Margarita Formation at depths as shallow as 1800 ft bgs. Records available from Division of Oil, Gas, and Geothermal Resources (DOGGR) indicate that the few scattered nearby oil wells were mostly drilled in the mid-1900s, did not produce commercially-viable shows of oil or gas, and were promptly abandoned.

Land Subsidence

Aquifer systems experience some degree of deformation in response to changes in stress. As water levels decline, stress increases on the mineral grains (effective stress) and decreases within the pore fluid (pore pressure) (Borchers and Carpenter, 2014). Increased effective stress causes some compression of the aquifer system skeleton and, if the stresses are large enough, some irreversible inelastic compaction of the aquifer system. Inelastic compaction is most common where thick packages of silt strata become completely dewatered. The aggregate result of inelastic compaction within the full thickness of the system is expressed as subsidence at the land surface. Subsidence also occurs as an elastic phenomenon. This is more common in clayey sedimentary environments where rebound of ground surface occurs when dewatered strata are re-wetted and expand clay-based mineralogic sediment.

There are five subsidence-monitoring stations throughout the Cuyama Basin. Since deployment in 2000, only one location (along the Cuyama River just east of New Cuyama) has measured land subsidence, with about 12 inches over the 19+-year record (CBGSA, 2019). The subsidence at generally follows a seasonal pattern. The seasonal pattern is possibly related to water level drawdowns during the summer, and elastic rebound occurring during winter periods. The station is apparently situated near a production well and may be locally influenced by it.

Percolating Groundwater Usage for Cannabis Cultivation

Based on our hydrogeologic review, the existing well at the subject parcel extracts exclusively "percolating groundwater" within an aquifer system stored in the Morales Formation that is significantly removed from the ephemeral surface water systems along the local reach of Castro Canyon Creek and Goode Canyon. Percolating groundwater extraction for cannabis cultivation is unlikely to acutely "substantially affect instream flows" when rarely present in the creeks. Therefore, the 2225 Foothill Road property should not be subject to the current regulatory framework for cultivation operations during forbearance periods.

Additionally, KG understands that the 105.24 total acre-ft per of estimated water demand at the parcel will be offset by the fallowing of water-intensive agricultural land at a separate property, located in the Central Basin Management Area with the most historical overdraft. The separate property is also immediately west of the Cuyama River. The property has historically grown mostly alfalfa for dairy cows, at usage rate of 4.02 acre-ft of water per irrigated acre. Therefore, about 26.18 acres need to be fallowed to fully offset the 104.1 acre-ft projected future cannabis demand (in addition to 1.14 acre-ft in landscape irrigation) at the 2225 Foothill property.

KG understands that the parcel (APN 149-150-017) comprises 120.0 total acres (shown on Figure 2) and up to its full extent to could be fallowed, representing a total water savings of 482.4 acre-ft per year from the Central Basin Management Area.

Summative Recommendations

Based on our review of the data and information, the groundwater resources underlying the 2225 Foothill Road property appear to be capable of supporting all planned agricultural operations, but must be developed and adaptively managed in response to hydrologic conditions and GSA oversight. The existing wells at the property are about 20 to 30 years old, only one of which is currently active but is equipped with a pump incapable of supporting planned agriculture. The well(s) must be tested with a higher capacity pump to quantify capacity in contributions to the operations. The deeper, modern well will be designed, drilled, and constructed to optimize yield from the basin. Additionally, any future groundwater extraction for cannabis cultivation will be more than offset by the fallowing of historically water-intensive farmland in one of the two delineated management areas of the basin. Between modern irrigation efficiency, reduced overall demand, and decentralization of pumping as a result of this project, a net benefit to the basin will be realized.

Please do not hesitate to contact us with any questions.

Best Regards,

Jordan Kear
Principal Hydrogeologist
Professional Geologist No. 6960
California Certified Hydrogeologist No. 749

Timothy Becker
Professional Geologist No. 9589

References

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (**1992**). California Oil & Gas Fields, Volume II – Southern, Central Coastal and Offshore California Oil and Gas Fields.

Dibblee, T.W., and Minch, J.A., ed. (**2005a**). Geologic map of the Ballinger Canyon quadrangle, San Luis Obispo, Santa Barbara, Ventura, & Kern Counties, California: Dibblee Geological Foundation, Dibblee Foundation Map DF-170.

Dibblee, T.W., and Minch, J.A., ed. (**2005b**). Geologic map of the Cuyama quadrangle, San Luis Obispo & Santa Barbara Counties, California: Dibblee Geological Foundation, Dibblee Foundation Map DF-176.

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Stetson Engineers Inc. (**2008**). Approach to delineate subterranean streams and determine potential streamflow depletion areas, Technical Memorandum: Policy for Maintaining Instream Flows in Northern California Coastal Streams.

Everett, R.R., Gibbs, D.R., Hanson, R.T., Sweetkind, D.S., Brandt, J.T., Falk, S.E. and Harich, C.R. (**2013**). Geology, water-quality, hydrology, and geomechanics of the Cuyama Valley Groundwater Basin, California, 2008-2012, USGS Scientific Investigations Report 2013–5108: Prepared in cooperation with the County of Santa Barbara.

Sweetkind, D.S., Faunt, C.C., and Hanson, R.T. (**2013**). Construction of 3-D geologic framework and textural models for Cuyama Valley groundwater basin, California: U.S. Geological Survey Scientific Investigations Report 2013– 5127.

Hanson, R.T., and Sweetkind, D. (**2014**). Cuyama Valley, California hydrologic study—An assessment of water availability: U.S. Geological Survey Fact Sheet 2014-3075.

J.W. Borchers and M. Carpenter, Luhdorff and Scalmanini Consulting Engineers (**2014**). Land subsidence from groundwater use in California, prepared by LSCE with support by the California Water Foundation.

CBGSA, Woodard & Curran (**2019**). Final groundwater sustainability plan, December 2019.

Statement of Limitations

The services described in this report were performed in a manner consistent with our agreement with the client and in accordance with generally accepted professional consulting principles and practices. Opinions and recommendations contained in this report apply to conditions existing at certain locations when services were performed and are intended only for the specific purposes, locations, time frames, and project parameters indicated. We cannot be responsible for the impact of any changes in standards, practices, or regulations after performance of services.

Hydrogeologic analyses for this report relied solely on available background data obtained from the property owner, Santa Barbara County, the CBGSA, the State of California, and/or published geologic reports. No independent subsurface exploration or geophysical surveying was conducted by our firm for this study. No guarantee of water quantity or quality from an attempted well, nor sustained production from an existing well, can be offered. Because the efforts to implement recommendations contained herein rely on the skill of outside contractors, our liability is limited to the dollar value of our professional efforts. Professional hydrogeologic review of pilot hole data is imperative to implementing the recommendations of this report.

Any discussions of fault activity herein are offered as they relate to groundwater resource development only. This report does not substitute a geotechnical analysis to support earthwork or construction. Discussions of water rights presented herein reflect professional hydrogeologic experience and are not intended to replace qualified legal opinions as should be solicited from a California-licensed attorney specializing in water rights.

Any use of this report by a third party is expressly prohibited without a written, specific authorization from the client. Such authorization will require a signed waiver and release agreement.

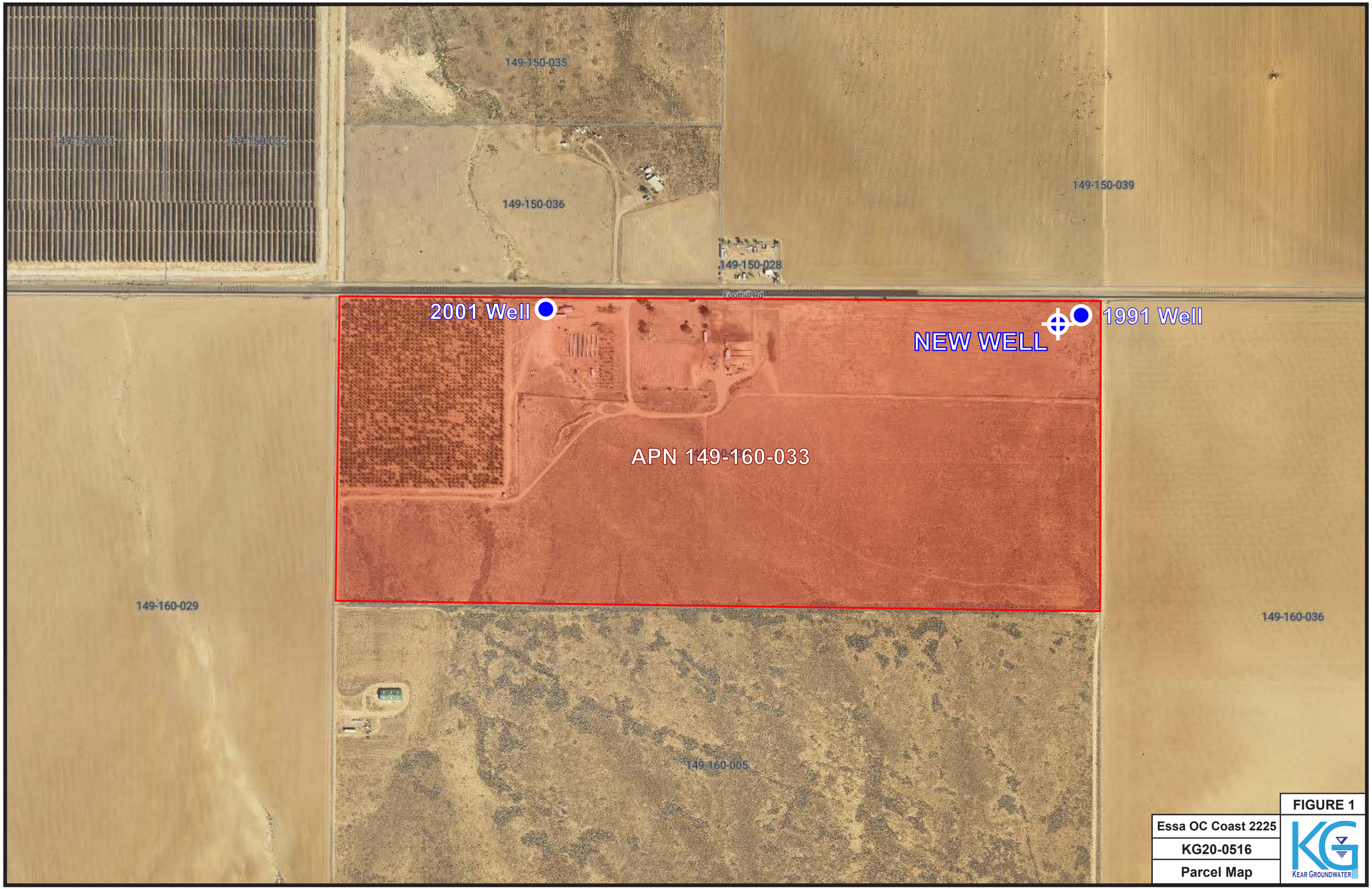


FIGURE 1

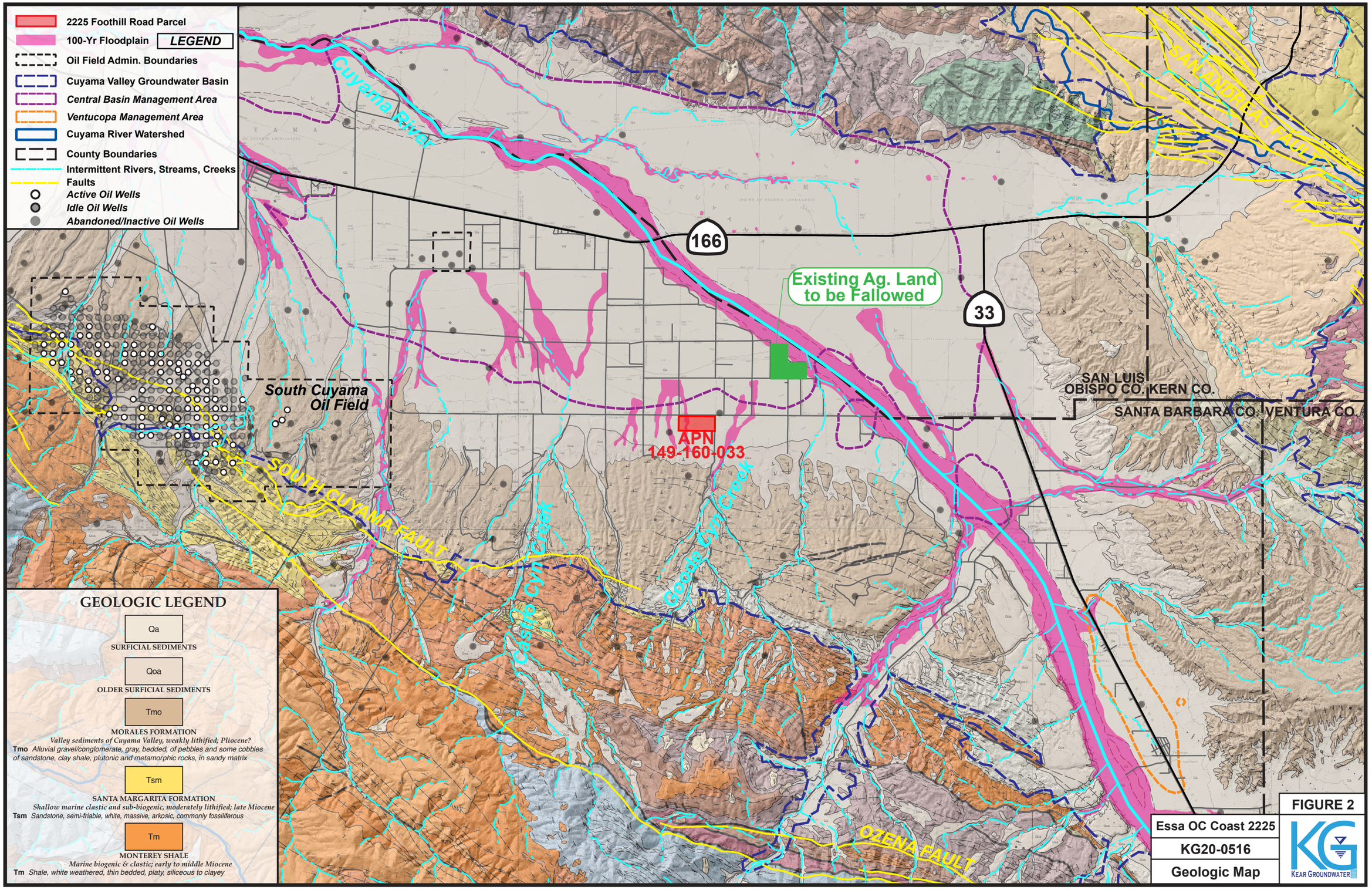
Essa OC Coast 2225
KG20-0516
Parcel Map

KEAR GROUNDWATER

Parcel Lines: Santa Barbara County
Base Map: SB County Aerial Photography 2018

0 — 0.25 — 0.5 mile

N

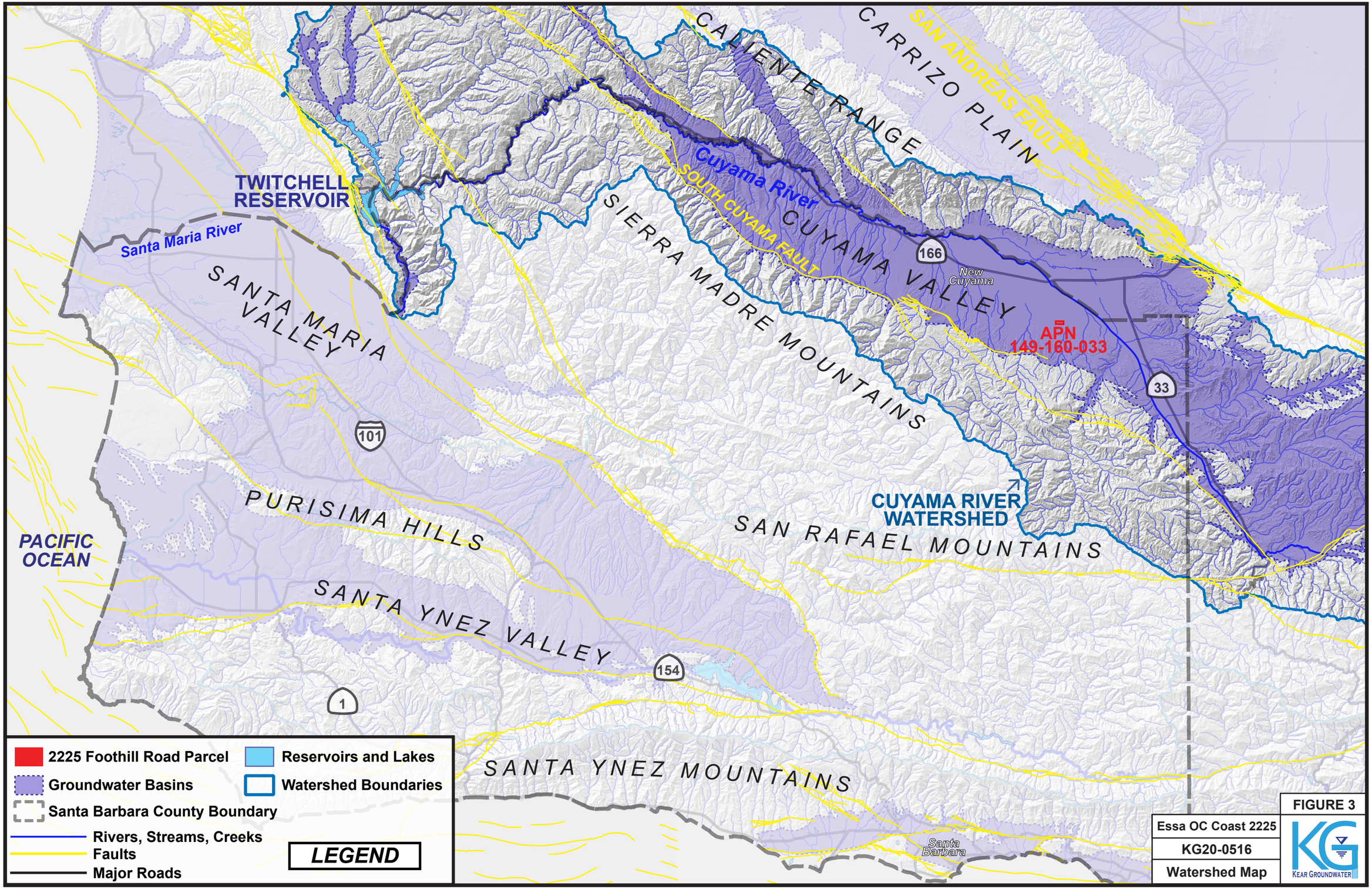


Faults: USGS EHP
Oil Wells/Fields: DOGGR
Shaded Relief: Modified from USGS NED
Geologic Basemap: Dibblee (2005a,b,c; 2006; 2007a,b)

Floodplains: FEMA NFHL
Groundwater Basins: DWR Bulletin 118
Rivers, Streams, Creeks: CDFW
Watersheds: USGS NHD

0 5000 10,000 ft

N



Faults: USGS EHP
Shaded Relief: Modified from USGS NED

Groundwater Basins: DWR Bulletin 118
Rivers, Streams, Creeks: CDFW
Watersheds, Waterbodies: USGS NHD

FIGURE 3
Essa OC Coast 2225
KG20-0516
Watershed Map

KEAR GROUNDWATER

APPENDIX A

1991 Well/2001 Well Documents

Santa Barbara County
PUBLIC Health
DEPARTMENT

Environmental Health Services
225 Camino del Remedio ♦ Santa Barbara, CA 93110
805/681-4900 ♦ FAX 805/681-4901
2125 S. Centerpointe Pkwy., #333 ♦ Santa Maria, CA 93455-1340
805/346-8460 ♦ FAX 805/346-8485

PUBLIC RECORD REVIEW REQUEST

Requestor's Name (Please Print): Joanna Kaufman Agency/Affiliation: BHFS

Address: 1021 Anacapa St, 2nd Floor Santa Barbara, CA 93101
(Number) (Street) (City, State) (Zip code)

Daytime Phone Number: 805-882-1426 Fax Number: 805-965-4333

Email: jkaufman@bhfs.com

☐ Business/Property Owner ☒ Agent of Business/Property Owner

Describe, in detail, the public record(s) being requested for review or photocopy:
Address of location being requested: 2011 Foothill Rd, New Cuyama, 2225 Foothill Rd, 262 Castro Canyon Rd
APN of location: 149-160-001, 149-160-033, 149-140-074
Other details about the location and the type of record being requested:
Any septic, well, and/or water records related to the property.

RESPONSIBILITY STATEMENT

I have read and understand the Public Records Review Guidelines on the back of this page and agree to abide by them.

Joanna Kaufman (PRINT NAME) _____ (SIGNATURE) 02/05/20 (DATE)

FOR COUNTY USE BELOW THIS LINE

ACTION	DATE	INITIAL	NOTES/INFORMATION
REQUEST RECEIVED			
SUPERVISOR REVIEW	02/18/2020	M	OK to release
RETURNED TO CLERICAL			
REQUESTOR CONTACTED # 1			
REQUESTOR CONTACTED # 2			
DATE/TIME REVIEW SCHEDULED			
DATE/TIME MATERIAL REVIEWED			

Number of Copies: _____ *@ .35¢ each =* _____ *Postage Fee* _____ *Total: $* _____

Amount Paid $ _____ *Date:* _____ *Check #:* _____ *Receipt #:* _____

209

Permit No. 8950

Page 1 of 2 pages
3

WELL PERMIT APPLICATION

TO: Environmental Health Division
Santa Barbara County Health Care Services

Date / /

Name of Well Owner HAROLD WATSON & JEANNE M. WATSON

Mailing Address 1427 W 228th ST Torrance Ca 90501 (213) 328 4177
Street, P.O. City State Zip Code Telephone

Well Site Location: Vicinity Map Attached ☐ (Check)

Assessor's Parcel No. 149-160-33-5 Street Address FOOTHILL RD CUYAMA VALLEY

Township 9 NORTH Range 25 WEST Section 5 Rancho

Name of Well Driller JOHN GUNGLE / Don Sides

Company Name GUNGLE DRILLING D&R Drilling Co 8025 34th St. W. P.O. Box 2022 Rosamond Ca 93560

Business Address 409 PILOT AVE. BAKERSFIELD 93308 Date of Work

Contractor's License No. 542006 / 458044 -C57 Start 10/1/91 Finish 10/15/91

12-4-91

OTHER WATER SOURCE: Public ☐ Private ☐ None ☒

Permit Type (Check)		Well Use (Check)		Drilling Method (Check)	
Construction	☒	Domestic	☒	Rotary	☒
Repair/Modification	☐	Agriculture	☒	Cable	☐
Destruction	☐	Cathodic	☐	Other	☐
Inactivation	☐	Test	☐		

Proposed Depth 600 ft.

Well Bore Diam ~~22~~ 20 in.

Casing Information

Type: Steel ☒ PVC ☐ Other ☐

Wall/Gage 1/4 in.

Diameter 10 ~~12~~ in.

Annular Seal Depth ~750 ft.

Sealing Material (Check)

Neat Cement ☐ Clay ☐

Cement Grout ~~☒~~ Concrete ☒

Additional Work Description:

For Department Use Only

Application Disposition:

Approved ☒

Denied ☐

Comments

I hereby agree to comply with all regulations of the County of Santa Barbara pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish County Health Care Services a complete well log upon completion of well construction.

Signed Harold Watson Applicant 9/20/91

$450.00 Fee paid on 9/20/91

Receipt No. X125986 - Vicky

Name S. Ray

Date 9-26-91

S.B. ☐ Sol. ☐

S.M. ☒ Lom ☐

WHEN SIGNED BY HEALTH CARE SERVICES, THIS APPLICATION IS A PERMIT. HEALTH OFFICER SHALL BE NOTIFIED PRIOR TO ALL SEALING OPERATIONS. NOTE: PERMIT EXPIRES ONE YEAR FROM DATE ISSUED.

Permit No. 8950
Page 3 of 3 pages
APN # 149-160-33

ENVIRONMENTAL HEALTH DIVISION
SANTA BARBARA COUNTY HEALTH CARE SERVICES
WELL PERMIT FIELD INVESTIGATION RECORD

Well Permit Application Received: Date 9/20/91

Site Investigation By H. Ruiz Date 9/30/91

Findings: (Check applicable boxes and give clearance)

- ☐ Overhead Power Lines
- ☐ Sewer Lines
- ☐ Leach Field
- ☐ Cesspool/Drywell
- ☐ Animal Enclosure
- ☐ Creek or Watercourse
- ☐ Petroleum Tank or Pipeline
- ☐ Other

No usable sources of Contamination to wellsite - APN # checked ok w/assessors office - No land use concerns.

Application ~~Reviewed and~~ Approved: By H. Ruiz Date 9/30/91

Work Investigation Record

Date 4/22/92

Well Site #: 1/11

Casing Information

Type: Steel ☒ PVC ☐ Other ☐ ____

Class/Gage/NSF: A252 10 3/4" dia 1/4" thick

ASTM#: ____

Diameter: 10 3/4" Total Depth: 840'

Casing Schedule

0'	560'	=	plain
561	840	=	perforated
____	____	=	____
____	____	=	____
____	____	=	____
____	____	=	____
____	____	=	____

Borehole

Total Depth of Well: 840'

Annular Seal Depth: 66'

Well Bore Diameter: 20"

Sealing Material: 6 sack cement/sand slurry

Amount: 5 yds

Method of Pour: Pumped

Use of Tremie: 40' pipe

Driller(s): Jungle Drilling

Comments: Footing in place + well capped 5/7/92

Final Inspection and Approval/Denial: By J. Davies Date 5/8/92

Notice of Work Acceptance/Rejection Sent to Well owner On 5/8/92

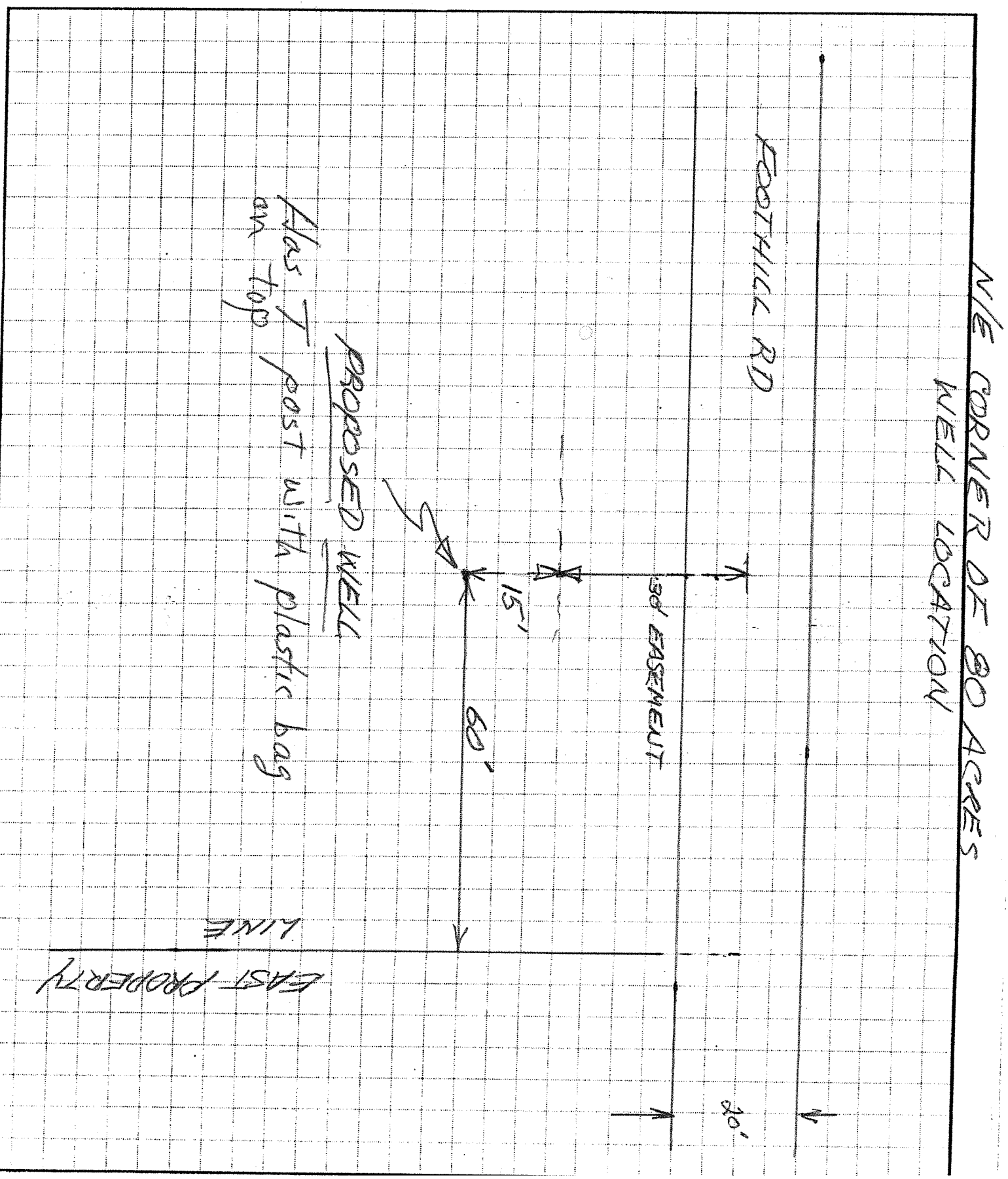
W-320P Rev. 12/89

WELL PERMIT APPLICATION

Plot Plan (¼" = 20')

Permit No. 8950
Page 3 of 23
APN # 149-160-33

Indicate below the exact location of the proposed well with respect to the following items: Property lines, sewer lines and sewage disposal systems, animal enclosures, watercourses, flood plain, drainage pattern, existing wells, access roads, easements, and well site elevation. Include dimensions.

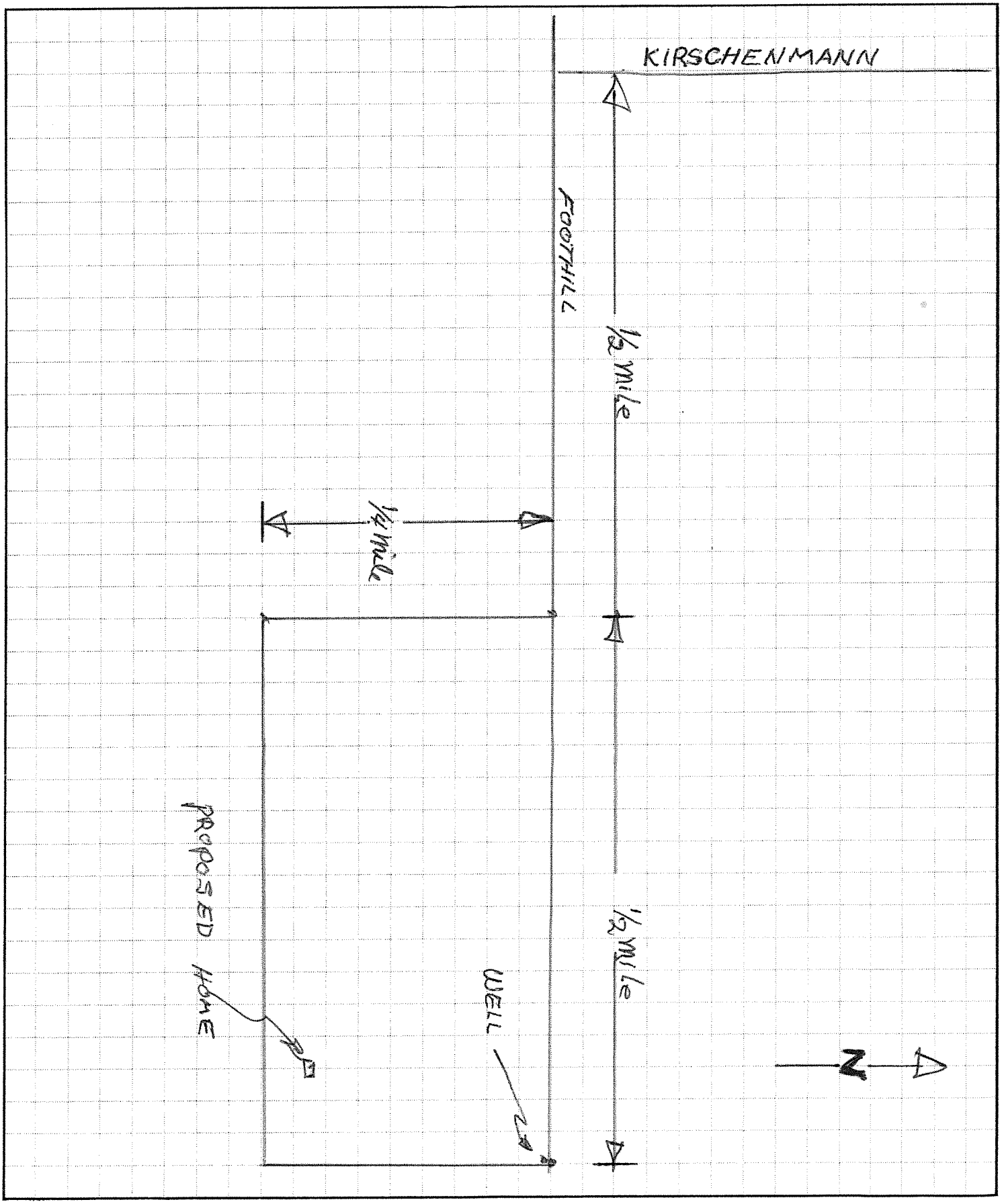


WELL PERMIT APPLICATION

Plot Plan (¼" = 20')

Permit No. 8950
Page 2 of 3
APN# 149-160-33

Indicate below the exact location of the proposed well with respect to the following items: Property lines, sewer lines and sewage disposal systems, animal enclosures, watercourses, flood plain, drainage pattern, existing wells, access roads, easements, and well site elevation. Include dimensions.



HCS-562

Santa Barbara County
PUBLIC Health
DEPARTMENT

Environmental Health Services

2125 S. Centerpointe Pkwy., #333 ◆ Santa Maria, CA 93455-1340
805/346-8460 ◆ FAX 805/346-8485

October 16, 2001

Harold Watson
1427 W. 228th Street
Torrance, Ca. 90501

Dear Mr. Watson:

Subject: **Completion Report for Water Well Permit #0102155**
(Assessor's Parcel Number: #149-160-033)

This Department has reviewed the construction of the subject water well as related to the approval of the location of the well and the placement of the annular seal in the upper portion of the bore around the well casing. This work has been completed in conformity with the requirements of the Water Well Standards of the State Department of Water Resources, as adopted by the Santa Barbara County Water Well Ordinance.

If water from this well is intended to be utilized for domestic or drinking purposes, it will first be necessary to obtain a Water System Permit from this Department. The permit is required for any water system that will provide water to a dwelling unit or to any structure utilized for commercial or manufacturing purposes which requires potable water for human consumption or use.

Please contact the undersigned at the office indicated on this letterhead if you have any questions, or if you need a Water Permit application and a copy of the instructions for completing the form, and for providing the necessary specifications on the system.

Sincerely,

Rick Furtado

Richard Furtado, R.E.H.S.
Environmental Health Specialist

PC: Assessor's Office

Permit No. SR0102155

Page 1 of 2 pages

WELL PERMIT APPLICATION

TO: Environmental Health Division
Santa Barbara County Health Care Services

Date 6/12/01

Name of Well Owner HAROLD WATSON

Mailing Address 1427 W. 228th ST. (Street, P.O.) TORRANCE (City) CA (State) 90501 (Zip Code) 661-248-6970 (Telephone)

Well Site Location: Vicinity Map Attached ☒ (Check)

Assessor's Parcel No. 149-160-33 Street Address Foothill Rd., Cuyama

Township 9N Range 25W Section 5 Rancho

Name of Well Driller WHITTEN PUMPS INC. (661) 725-0250

Company Name WHITTEN PUMPS INC.

Business Address 502 COUNTYLINE RD DEVARO Date of Work

Contractor's License No. 148282 Start 6/18/01 Finish 6/30/01

OTHER WATER SOURCE: Public ☐ Private ☒ None ☐

Permit Type (Check)		Well Use (Check)		Drilling Method (Check)	
Construction	☒	Domestic	☐	Rotary	☒
Repair/Modification	☐	Agriculture	☒	Cable	☐
Destruction	☐	Cathodic	☐	Other	☐
Inactivation	☐	Test	☐		

Proposed Depth 900 ft.

Well Bore Diam 24 in.

Casing Information

Type: Steel ☒ PVC ☐ Other ☐

Wall/Gage 250 in.

Diameter 12 3/4 in.

Annular Seal Depth 50 ft.

Sealing Material (Check)

Neat Cement ☐ Clay ☐

Cement Grout ☒ Concrete ☐

22' conductor casing (30") sealed 6/18/01 R.F.

RECEIVED
JUN 18 2001
SANTA BARBARA COUNTY
ENVIRONMENTAL HEALTH SERVICES

Additional Work Description: 7' ROUND PUMP BASE

For Department Use Only

Application Disposition:

Approved ☒

Denied ☐

Comments

I hereby agree to comply with all regulations of the County of Santa Barbara pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish County Health Care Services a complete well log upon completion of well construction.

Signed J. L. Woodard (Applicant) 6/12/01

$328 Fee paid on 06/18/01

Receipt No. 1638304 ck# 59178

PAID BY: Whitten Pumps Inc.

Name Rich Furtado

Date 6/18/01 (OK 6-20-01)

S.B. ☐ Sol. ☐

S.M. ☒ Lom ☐

WHEN SIGNED BY HEALTH CARE SERVICES, THIS APPLICATION IS A PERMIT. HEALTH OFFICER SHALL BE NOTIFIED PRIOR TO ALL SEALING OPERATIONS. NOTE: PERMIT EXPIRES ONE YEAR FROM DATE ISSUED.

H-96 Rev. 6-84

OK 7/10/01

SR# 102155

ENVIRONMENTAL HEALTH DIVISION
SANTA BARBARA COUNTY HEALTH CARE SERVICES
WELL PERMIT FIELD INVESTIGATION RECORD

Well Permit Application Received: Date 6/13/01 (fax)

Site Investigation By R. Furtado Date 6/18/01

Findings: (Check applicable boxes and give clearance)

☐ Overhead Power Lines_____ ☐ Animal Enclosure_____

☐ Sewer Lines_____ ☐ Creek or Watercourse _____

☐ Leach Field_____ ☐ Petroleum Tank or Pipeline_____

☐ Cesspool/Drywell_____ ☐ Other_____

Assessor - OK

Setbacks - OK

Application Reviewed and Approved: By R. Furtado Date 6/18/01

Work Investigation Record

Date 6/18/01 and 10/12/01

Well Site #: 1

Casing Information

Type: Steel ☒ PVC ☐ Other ☐ _____

Class/Gage/NSF: _____

ASTM#: _____

Diameter: 30" Total Depth: 22'

Casing Schedule * Conductor casing

SEE THE ATTACHED DRILLER'S REPORT.

0'	22'	=	CONDUCTOR
0	610	=	BLANK
610	935	=	SCREEN
		=	
		=	
		=	
		=	

Borehole

Total Depth of Well: 900' proposed

Annular Seal Depth: Conductor casing 22'

Well Bore Diameter: 24" proposed

Sealing Material: 6-sack cement

Amount: 3.5 yds³

Method of Pour: gravity

Use of Tremie: no

Driller(s): "Butch" Grogan
Whitten Pumps, Inc.

Comments: 6/18/01 - 22' steel conductor casing sealed R.F.

Final Inspection and (Approval)/Denial: By R. Furtado Date 10/12/01

Notice of Work (Acceptance)/Rejection Sent to Well owner On 10/16/01 R.F.

W-320P Rev. 12/89 10/12/01 - well is capped with pump and working. R.F.

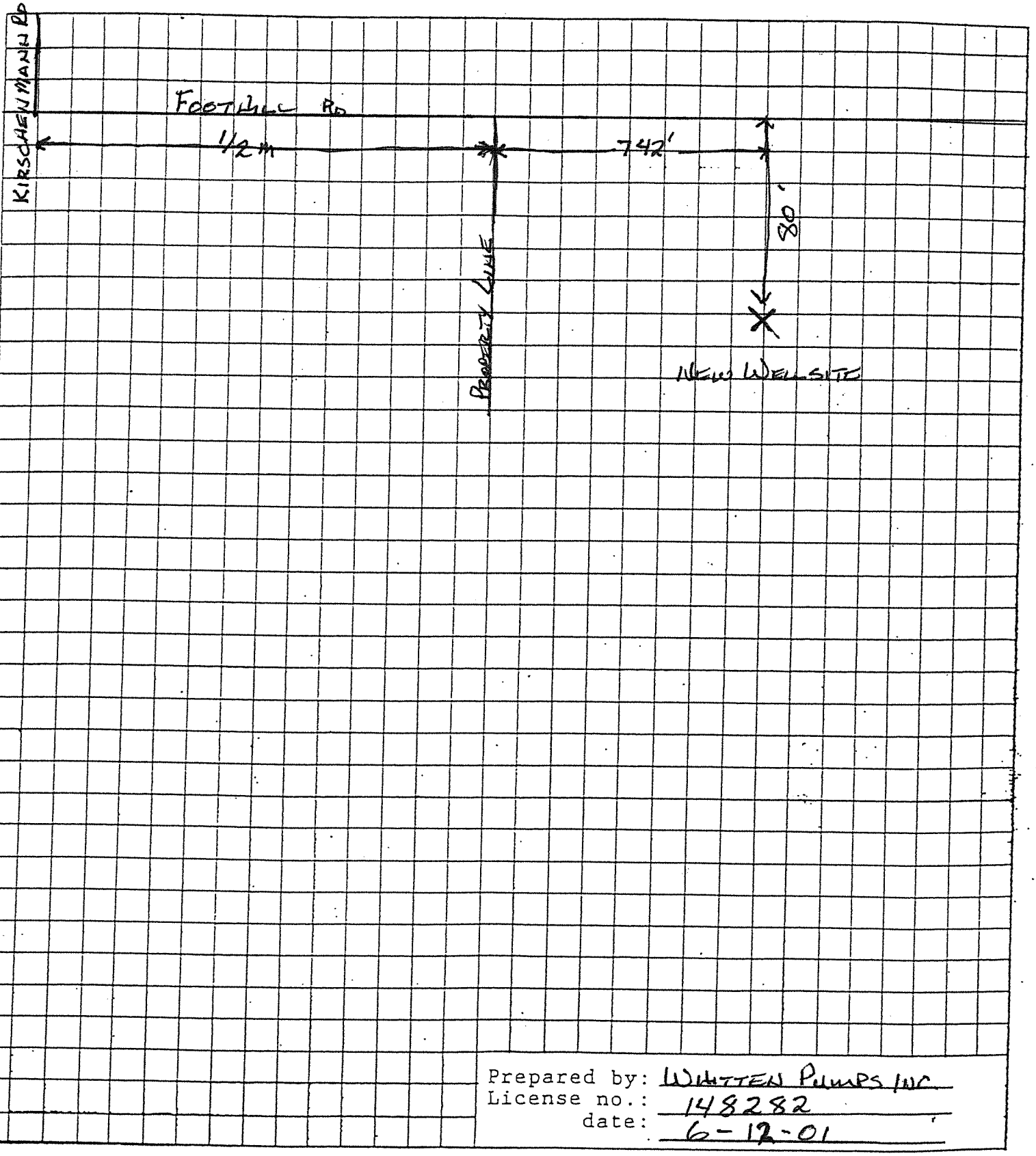
(FE 10.19.01)

WELL PERMIT APPLICATION

Plot Plan (¼" = 20')

Permit No. SB0102155

Indicate below the exact location of the proposed well with respect to the following items: Property lines, sewer lines and sewage disposal systems, animal enclosures, watercourses, flood plain, drainage pattern, existing wells, access roads, easements, and well site elevation. Include dimensions.



Prepared by: WHITTEN PUMPS INC

License no.: 148282

date: 6-12-01

QUADRUPLICATE
For Local Requirements

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page 1 of 1 Site location # 2225 Foothill Rd
Owner's Well No. ____ No. 783362
Date Work Began 6-13-01, Ended 7-6-01
Local Permit Agency SANTA BARBARA COUNTY HEALTH CARE SERVICE
Permit No. 0102135 Permit Date ____

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD ROTARY FLUID BENTONITE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	472	SAND AND ROCK
472	613	CLAY
613	675	SAND AND ROCK
675	760	HARD SAND
760	868	SAND AND ROCK
868	950	SANDY CLAY

TOTAL DEPTH OF BORING 935 (Feet)
TOTAL DEPTH OF COMPLETED WELL 950 (Feet)

WELL OWNER

Name HAROLD WATSON
Mailing Address 1427 W. 228TH ST.
City TORRANCE, State CA Zip 90501

WELL LOCATION

Address 3382FT. EAST OF KIRSHENMANN RD. AND
City 80FT SOUTH OF FOOTHILL RD.
County SANTA BARBARA
APN Book 149 Page 160 Parcel 033
Township 9N Range 25W Section 19
Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH

NORTH / 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")*

PLANNED 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 ___ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___
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	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	22	40			X		A252	25.25	.375"	
0	610	24	X				A53B	12.25	.250"	
610	935	24		X			A53B	12.25	.250"	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	22	X			
22	935				1/4" GRAVEL

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

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 WHITTEN PUMPS, INC.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

502 COUNTY LINE ROAD DELANO CA 93215
ADDRESS CITY STATE ZIP

Signed ___ 9/21/01 148282
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

APPENDIX B

Water Quality Report
AGQ Labs

ACCREDITED
Testing Laboratory
TL-509

Sample Code:	**A-20/019174**	Received at:	AGQ USA		
Analysis Type:	AR-US-0001 (NS)	Analysis Center:	AGQ USA		
Sample Type:	WATER SOURCE	Sampling Date/Hour:	02/20/2020	Reception Date:	02/22/2020
		Start Date:	02/24/2020	Finalized Date:	02/26/2020
				Contract:	US17-0718
Sampled By:	Client (*)				
		Third party:	----		
Description:	2225 FOOTHILL 1:30 PM				
Client:	KEAR GROUNDWATER	Address:	P.O. BOX 2601 SANTA BARBARA 93120		

PHYSICOCHEMICAL PROPERTIES

Parameter	Result	Units	Very low	Low	Normal	High	Very high	Technique	SOP
E.C.	1,915	µS/cm a 25°C		750	1,500			Potentiometry	PEC-002
pH	7.81			6.50	7.50			Potentiometric pH	PEC-001
* Dissolved Solids	1,226	mg/L						Calculated	PE-281
* Total Hardness	55.8	ºH						Calculated	PEC-039

CATIONS

Parameter	mg/L	meq/L	Very low	Low	Normal	High	Very high	Technique	SOP
Calcium	247	12.3		2.00	6.00			ICP-OES	PEC-009
Magnesium	91.6	7.54		0.50	2.50			ICP-OES	PEC-009
Potassium	5.47	0.14		0.00	0.25			ICP-OES	PEC-009
* Sodium	114	4.97		0.00	4.00			ICP-OES	PEC-009

ANIONS

Parameter	mg/L	meq/L	Very low	Low	Normal	High	Very high	Technique	SOP
Alkalinity	240	3.94		0.50	3.00			CFA	PE-336
Chlorides	< 10.0	< 0.282		0.000	4.00			CFA	PE-336
Nitrates	< 10.0	< 0.16		0.00	0.80			CFA	PE-336
* Sulphates	1,151	24.0		0.00	6.00			ICP-OES	PEC-009

RATIOS OF INTEREST

Parameter	Result	Units	Very low	Low	Normal	High	Very high	Technique	SOP
* SAR	1.57			0.00	10.0			Calculated	PEC-040

METALS

Parameter	Result	Units	Very low	Low	Normal	High	Very high	Technique	SOP
Iron	0.09	mg/L		0.00	0.50			ICP-OES	PEC-009
Manganese	0.11	mg/L		0.00	0.50			ICP-OES	PEC-009
Copper	< 0.05	mg/L		0.00	0.50			ICP-OES	PEC-009
Zinc	< 0.05	mg/L		0.00	0.50			ICP-OES	PEC-009
Boron	0.13	mg/L		0.00	0.80			ICP-OES	PEC-009

NOTE

Note: The results in this report reflect the state in which the sample was received by the laboratory. Total or partial reproduction of this report is prohibited without express written consent. The uncertainties are calculated and can be available upon request. A: Accredited subcontract, N: Non-accredited subcontract.

OBSERVATIONS:

DATE ISSUED: 02/26/2020

Jesus Murillo

*This parameter falls outside the current accreditation scope.

APPENDIX C

Santa Barbara County New Well Construction Permit

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 ◆ Santa Maria, CA 93455-1340 ◆ (805) 346-8460

WATER WELL PERMIT APPLICATION

Type of Permit *(Please check the appropriate box below)*

☒	Construction	$721	[4669]	New or Replacement well.
☐	Modification	$721	[4669]	Includes the deepening of a well, reperforation, sealing or replacement of well casing.
☐	Destruction	$761	[4668]	Abandonment: The complete filling of a well.

FOR OFFICE USE ONLY
Rec'd Date: 6/22/20
Rec'd By: Lupe
WP # 0004497
District # _____

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

- ☐ Property lines.
- ☐ Drainage pattern of the property.
- ☐ Access roads and easements (water, sewer, utility, roadway).
- ☐ Existing and/or proposed structures.
- ☐ Existing wells within a 100 foot radius of the proposed well.
- ☐ Animal or fowl enclosure, pens, paddocks, stockyards within a 100 foot radius of proposed well site
- ☐ Sewage disposal systems or works carrying or containing sewage or industrial wastes within a 200 foot radius of the proposed well.
- ☐ All perennial, seasonal, natural, or artificial water bodies or watercourses, including location of 100 year floodplain, if applicable.
- ☐ Also Required: the Supplemental Form on page 3, completed in full.

OWNER Info:

Well Owner Name (Required): Francisco N. Suarez, Jr. Primary Phone (714) 497-6097

Owner Mailing Address: 2225 Foothill Road (Street Number and Name) New Cuyama (City) CA/93254 (State/ Zip Code)

Complete this section if the person coordinating the project is other than the Well Owner (e.g., driller, contractor).

Project Coordinator/Certified Professional Name: Jordan Kear

Mailing Address: P.O. Box 2601 (Street Number and Name) Santa Barbara (City) CA/93120 (State / Zip Code)

Primary Phone: (805) 512-1516 Email: jordan@keargroundwater.com

WELL Location Info:

Well Location Address: 2225 Foothill Road (Street Number and Name) New Cuyama (City) CA/93254 (State / Zip Code)

Cross Street (or other information defining the Well location) if applicable: _____

Assessor's Parcel Number (APN): 1 4 9 – 1 6 0 – 0 3 3

Longitude: 119°34'44.18"W Latitude: 34°53'51.80"N Elevation: +2479'

A. Is parcel located within the service area of a public water system? ☒ No ☐ Yes (Identify): _____

A-1. If you answered **Yes** to question A.: Are you connected to the Public Water System (i.e., do you have a meter?) ☐ No ☐ Yes

A-2. If you answered **No** to the question A-1.: Is public water service available? ■ No ☐ Yes

Proposed Depth 1200 ft.
Well Bore Diam. 24 in.
Sealing Material (Check)
☐ Neat Cement ☐ Clay
☒ Cement Grout ☐ Concrete

Casing Information

Type: ☒ Steel ☐ PVC ☐ Other _____
Wall / Gauge 0.312 in. Diameter 16 in. Annular Seal Depth 400 ft.
Additional Work Description: _____

Note: A minimum 50 ft. annular seal is required for all wells.

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000), Division 3 of the Business and Professions Code (B&PC) as a well drilling contractor (C-57 license) and such license is in full force and effect.

TYSON RANDAL DAVIS (Print Name of Driller) — [signature] (Signature of Driller) — 19-Jun-2020 (Date)

Lic. No.: C57-927400 Primary Telephone (805) 434-3121 Other Phone: (805) 703-0746

Business Name: Pacific Coast Well Drilling Address P.O. BOX 184, TEMPLETON, CA, 93465

(Complete A *or* B)

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm that (check the applicable box):

- ☐ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.
- ☒ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier TRAVELERS PROPERTY CASUALTY COMPANY OF AMERICA Policy No. 5H184321

Applicant Signature [signature] Date 19-Jun-2020

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Workers' Compensation Laws of California.

Applicant Signature _____ Date _____

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

When signed by the Environmental Health Specialist, this application shall be deemed a permit only for the work described and is not a "permit for development" as that term is used in the California Subdivision Map Act. Please note additional permits (e.g., electrical installation, waste discharge requirements, land use clearance, grading) may also be required from other agencies. THIS PERMIT SHALL EXPIRE upon completion of the task authorized or one year from date of issuance, whichever occurs first. No changes from the approved plan are permitted without prior written approval by Environmental Health Services. Final clearance will not be issued until all fees are paid and a copy of the drillers log is submitted to Environmental Health Services.

I hereby agree to comply with all regulations of the County of Santa Barbara pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish Environmental Health Services a copy of a completed well log upon completion of well construction.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of Environmental Health Services to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Environmental Health Specialist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ✓ Receipt of driller's well log.

Signed Jordan Kear (Applicant (Print Name)) [signature] (Applicant's Signature) 19-Jun-2020 (Date)

APPLICATION DISPOSITION: ☒ **Approved** ☐ **Denied**

Signed Belinda Hay (Environmental Health Specialist) 06/24/20 (Date)

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: LUPE Date: 6/22/20 Amt: $ 721.00 Credit Card Trans No: _____ (last 4 digits)

Check No. 1532 Receipt No. 21266915

Permit Conditions: if depth of well exceeds 1,200-feet, maintain H_2S gas monitor at drill site at all times during well drilling activities.

Final Construction Approved by: _____ Date: _____

Final Clearance by: _____ Date: _____

☐ Copy Required at Assessor's Office ☐ Copy Required at Water District Office

Water Well Application

Supplemental Information

General:

If application is for Modification to an existing well, state the nature of modification:

☐ Deepening ☐ Sealing of well casing
☐ Reperforation ☐ Replacement of well casing

Intended Well Use: *(check all that apply)*

Check the well type from the list below.

☒ Irrigation ☐ Irrigation and Domestic* ☐ Domestic* Only

* *Indicate type of Domestic use:* ☒ Single Parcel ☐ Multi-Parcel ☐ State Small ☐ Public

What is the anticipated approximate water production (acre feet per year) for the proposed well?: ☐ <2; ☐ 2-10; ■ >10

Intended Water Use:

Do you intend to export any water off of the property? ■ No ☐ Yes

What other water sources are available on the property? ☐ Public ☒ Private ☐ None

Site Information:

Are there other wells on the property? ☐ No ■ Yes If yes, how many? TWO

What is the parcel size of the proposed well location? 78.27 acres ☒ square feet ☐

What is the Property Zoning Designation?

☐ AG-I ☒ AG II ☐ Residential ☐ Commercial ☐ Industrial ☐ Recreational

Is the proposed well location within the Coastal Zone? ■ No ☐ Yes

Within what Ground Water Basin is the proposed well located? *(check the box above the appropriate column)*

☐ South Coast Groundwater Basins	☐ Santa Ynez River Watershed	☐ North Coastal Groundwater Basins	☑ Cuyama Groundwater Basin
Carpinteria	*Santa Ynez Uplands*	*San Antonio*	
Montecito	*Santa Ynez Alluvial*	*Santa Maria*	
Santa Barbara	*Buellton Uplands*		
Foothill	*Lompoc Groundwater Basins*		
Goleta			

Terms for Permit:

Initial each statement below to indicate that you understand and agree; then sign bottom of this page.

JK I have read and understand all of the information on Page 2 of this application including, but not limited to, permit limitations.

JK I understand that this permit is only for the well construction, modification or destruction identified on this application.

JK I have read and understand that other permits may be required, including (but not limited to): land use; electrical; grading; waste discharge; etc.

Signed Jordan Kear (Applicant/Owner (Print Name)) _____ (Applicant/Owner Signature) 19-Jun-2020 (Date)

Procedures for Completing a Water Well Permit Application

The attached permit application is for the construction, modification, inactivation and destruction of ***water wells*** as defined and regulated by the County Well Standards Ordinance. A copy of this ordinance is available from the EHS office upon request.

STEP 1 – APPLICATION

Submit a completed application for a Water Well Permit. Please fill in all the blanks. An incomplete application may result in denial or delay in processing. The application must be signed, dated, and accompanied by the proper fee at the time of submittal.

STEP 2 – PLOT PLAN

A plot plan form is provided as part of your Water Well Permit application. The top of the plot plan lists those items that must be shown on the plan. All setback distances from the proposed well site(s) need to be accurately depicted with proper measurements.

STEP 3 – SITE EVALUATION

Following the submittal of an application and fee, an Environmental Health Services representative will review the application to ensure its completeness and conduct a site inspection of the proposed water well site. Often times, due to the remote or unknown location of the intended well site, a joint inspection with the property owner or owner's agent will be necessary. If a joint inspection is not possible, the proposed well site must be conspicuously marked (i.e. with flagged stake or pole). In the event that the first proposed well site is not acceptable or utilized, the applicant may wish to designate some alternative well sites on the application plot plan. Early selection of some alternative sites allows for these sites to also be evaluated during the initial site inspection, thereby eliminating unnecessary repeat trips to the site and inefficiencies in processing the application.

STEP 4 – PERMIT ISSUANCE

Once the application and proposed well site is determined to be satisfactory, the application may be approved. When approved and signed on the reverse side by the Environmental Health Services representative, this application shall be considered a permit to perform the proposed work. Note: Wells proposed that will be located in the Coastal Zone require a Coastal Zone permit prior to approval for construction.

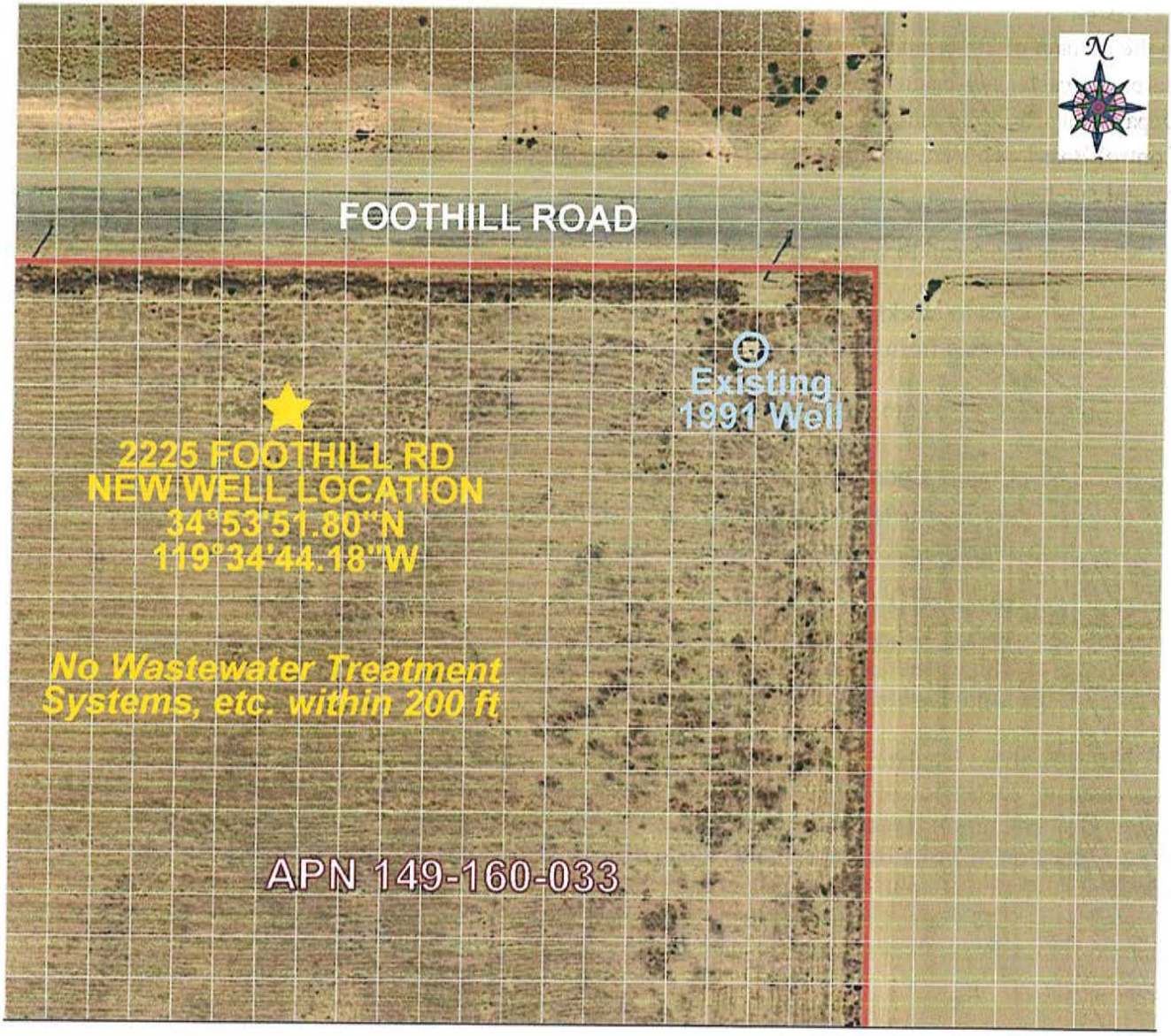
Well Permit Application Plot Plan

(Scale ¼" Block = 20 ft.)

Permit #: 4497

APN: 149-160-033

Indicate below the exact location of the proposed well with respect to the following items within 200 ft. of the proposed well: property lines, access roads and easements; existing/proposed structures (surface and subsurface); existing wells; existing/proposed industrial, hazardous, solid waste systems, works or tanks; petroleum product system works or tanks; animal enclosures and/or animal waste storage areas; agricultural operations; watercourses, 100-yr. flood plain and drainage patterns of the property; and well site elevations. Show the actual distance between the proposed well and these items.



Dept. Use Only: Site Reviewed By: Belinda Huy **Date:** 06/26/20

- ☒ Sewer (Sanitary, Storm or Bldg.) – 50 ft.
- ☒ Septic Tanks and / or Leachlines – 100 ft. (include 100% expansion area)
- ☒ Seepage Pit / Drywell – 150 ft. (include 100% expansion area)
- ☒ Water Bodies / Courses – 50 ft.
- ☒ Underground Petroleum Product Storage Tanks – 100 ft
- ☒ Other: _____

Santa Barbara County
PUBLIC Health
DEPARTMENT

Environmental Health Services
225 Camino del Remedio, Santa Barbara, CA 93110 (805) 681-4900 FAX (805) 681-4901
2125 S. Centerpointe Pkwy. #333, Santa Maria, CA 93455-1340 (805) 346-8460 FAX (805) 346-8485

Water Well Discharge Prohibitions

---------- *Fact Sheet* ----------

In the autumn of 2016, unauthorized discharges from two water production wells to creeks in the Santa Barbara Coastal sub-basins resulted in consultation between the Santa Barbara County Public Health Department, Environmental Health Services Division, and the Central Coast Regional Water Quality Control Board. This consultation clarified that all discharges to creeks or drainages in the Santa Barbara coastal sub-basins are a violation of the Basin Plan.

So what does this mean to water well drillers?

- Discharges to creeks and drainages, including discharges of drilling muds, drilling waters and/or water pumped from the well while it is being developed, are prohibited:
- Such discharges are violations of county and state regulations:
    - County Code Chapter 34 Section 34A.11.(7) *Drilling waste shall be controlled and may not be discharged so as to create conditions that violate water quality control board regulations, other state laws, federal regulations or local ordinances*;
    - Water Quality Control Plan, Central Coast Basin, Chapter 5, Section IV.B. Inland Waters, reads in part: "*Waste discharges to the following inland waters are prohibited: (4). All coastal surface streams and natural drainages that flow directly to the ocean within... the Santa Barbara Coastal Subbasins...*"

Violations of these regulations may result in enforcement including issuance of a stop work order and suspension or revocation of the well permit by Environmental Health Services. Additionally, both the Water Quality Control Board and Environmental Health Services may issue notices of violation and levy fines. Violation of Santa Barbara County Code Chapter 34A may result in enforcement with an administrative fine of up to $1,000.00 per each "one-time" action as provided in County Code Chapter 24A. The Water Quality Control Board may levy administrative fines up to $10.00 per gallon for violation of the Basin Plan's discharge prohibition per California Water Code Section 13385.

Santa Barbara County
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2125 S. Centerpointe Pkwy. #333, Santa Maria, CA 93455-1340 (805) 346-8460 FAX (805) 346-8485

Water Well Drilling – Requirements Related to Hydrogen Sulfide

---------- ***Fact Sheet*** ----------

Santa Barbara County Code Chapter 34A §11. - Hydrogen sulfide detection, reporting and mitigation.

(a) The licensed well drilling contractor performing the work on a well that will exceed one thousand two hundred feet in depth shall keep a properly maintained and calibrated hydrogen sulfide H_2S gas monitor at the drill site at all times during well drilling activities. The meter shall be in operation at all times during the well drilling activities. The meter shall be calibrated per manufacturer recommendations and at least prior to each new drilling operation or after each use. A calibration log shall be maintained and kept with the meter for inspection by administrative authority on request.

(b) If hydrogen sulfide gas is detected at levels exceeding 1.0 ppm for more than ten minutes or twenty ppm instantaneously, the licensed professional shall immediately contact Environmental Health Services, the Santa Barbara County Air Pollution Control District and the California Office of Emergency Services as required by Section 2631 of Title 19 of the California Code of Regulations. If the release poses a potential threat to public health off-site or the release may violate Santa Barbara County Air Pollution Control District (APCD) Rule 310 (Odorous Organic Sulfides) or Rule 303 (Nuisance) the licensed well drilling contractor or their designee shall immediately call 911 and report the release. If the release occurs outside normal business hours, the licensed professional driller or designee shall immediately report the release to 911.

(c) Mitigation measures shall be implemented immediately if the H_2S release exceeds limits established in subsection (b) or may violate APCD Rule 310 (levels at or beyond property line of 0.06 ppm or 0.03 ppm averaged over three minutes and ten minutes, respectively) or cause detectable odors at or beyond the fenceline (APCD Rule 303). Mitigation measures must result in prompt, effective and sustained reduction of H_2S to below levels on and off the property in accordance with subsections (a) and (b).

(d) Current phone numbers for the agencies specified in subsection (b) shall be maintained on the job site and all personnel are to be trained on appropriate emergency notification procedures.

(Ord. No. 5046, 6-19-2018)

APPENDIX D

Pacific Coast Well Drilling
New Well Cost Quote

PACIFIC COAST WELL DRILLING

P.O. Box 184, Templeton, CA 93465-0184
Ph (805) 434-5543 - Fax (805) 434-5570
Lic. #927400

Drill – Construct – Develop - Test

Quotation for Drilling Services

Job No: 3###

Customer: TBD
Customer Address:
City, State, Zip:

Date: 7/1/2020
Contact: Jordan Kear
Cell: (805) 512-1516
Email: jordan@keargroundwater.com
Alt. Contact:
Alt. Cell:
Alt. Email:

Project Name: Essa
Project Address: Kirschenmann Rd & Foothill Rd
City, State, Zip: Cuyama California 93252

Job Description: 1,200FT Completion, 16" MS Casing with Ful Flo Louvered Screen & Test Pumping
Note: Quote is for one well, PCWD will honor the same unit price for a 2nd well at the same project location.

Item	Qty	Unit	Description	Unit Price	Total
10	1	LS	County Well Permit	$1,200.00	$1,200.00
20	1	LS	Mob/Demob Drilling Equipment	$24,500.00	$24,500.00
30	0	LS	Mob/Demob Drilling Equipment Site to Site (if Applicable)	$12,500.00	$0.00
40	50	LF	Drill & Install 30" .312 Wall Conductor Casing	$175.00	$8,750.00
50	50	LF	Furnish Conductor Casing & Cement Seal	$195.00	$9,750.00
60	1,150	LF	Drill 16" Min Pilot Hole	$57.00	$65,550.00
70	1,150	LF	Backfill Pilot Hole (during Material Vendor Wait Time)	$5.00	$5,750.00
80	1	LS	Geophysical Logging - Standard E-Log	$3,250.00	$3,250.00
90	1,150	LF	Ream 24" Borehole	$39.00	$44,850.00
100	1	LS	Caliper Log	$2,950.00	$2,950.00
110	700	LF	Furnish & Install 16" .312 Wall Mild Steel Blank Casing	$52.00	$36,400.00
120	500	LF	Furnish & Install 16" .312 Wall Mild Steel Modified Ful Flo Screen	$114.00	$57,000.00
130	1	EA	Furnish & Install 16" Mild Steel Bullnose	$650.00	$650.00
140	71	CY	Furnish & Install 8x16 Cal-Silica Gravel Pack	$535.00	$37,985.00
150	50	LF	Install Annular Cement Seal	$109.00	$5,450.00
160	12	HR	Open Ended Air Lift	$425.00	$5,100.00
170	24	HR	Dual Swab Air Lift (Reverse Circulation)	$425.00	$10,200.00
180	1	LS	Furnish, Install & Remove Test Pumping Equipment	$14,500.00	$14,500.00
190	20	HR	Conduct Well Development by Test Pumping	$285.00	$5,700.00
200	24	HR	Conduct Aquifer Testing by Test Pumping	$285.00	$6,840.00
210	1	LS	Video Survey	$1,700.00	$1,700.00
220	1	LS	Well Disinfection	$2,000.00	$2,000.00
230	1	LS	Water Quality Testing	$300.00	$300.00

Rates for Contingency Items

		HR	Operational Hours	$550.00	$0.00
		HR	Standby Time	$450.00	$0.00
		HR	Slow Penetration/Lost Circulation/Artesian Control (Slow Penetration is defined as penetration rate of less than 10 ft/hr)	$550.00	$0.00

Total Estimated Contract Price:	$350,375.00

Terms Governing this Quote for Services ("Quote")

1. The quoted pricing pertains to depths and quantities set forth above. If final depths, quantities or conditions vary, alternative pricing will apply via Change Order.
2. This Quote is valid for 30 days from above date. If not accepted by the Custmer within 30 days, this Quote shall expire and be null and void.
3. Test pumping equipment includes up to 100 ft of temporary discharge piping. If more discharge piping is required, there shall be an additional cost.
4. Customer shall provide and maintain clear access to the well site and at least 200 ft by 200 ft level drilling pad required for operations.
5. Client will furnish continuous drilling water supply to the drilling location, 200 GPM Minimum.
6. A deposit of 25% shall be due prior to job scheduling. An additional 25% deposit shall be due at the earlier of matierals being ordered or mobilization to job site.
7. This Quote must be returned to PCWD and the first 25% deposit received in order to be placed on the job schedule for drilling.
8. Customer must agree to PCWD's standard Terms & Conditions (attached) prior to PCWD commencing any work.
9. By signing below, Customer accepts the Quote for Services contained herein and agrees to the forgoing Terms.

Pacific Coast Well Drilling, Inc.

7/1/2020

Wes Lockard - Project Manager — Date

Name: — Date

APPENDIX E

New Well Conductor Casing Seal Inspection Letter

KG20-0516

December 22, 2020

Belinda Huy
Santa Barbara County - Environmental Health Services
225 Camino del Remedio
Santa Barbara, California 93110

Re: New Well sanitary seal inspection, SBCPHD Well Permit WP#0004497, Suarez Property, 2225 Foothill Road, New Cuyama, California, APN 149-160-033

Dear Ms. Huy,

This letter presents a summary of Kear Groundwater's ("KG") witnessing of the cement annular seal around the conductor casing at the referenced well. The cement sealing was conducted on December 17, 2020 under permit WP 4497. As typically conducted, I witnessed the seal as a proxy inspector for County staff, unavailable at the time of the sealing.

The following is a summary of the operations witnessed. Photographs and cement weigh tickets for the annular sealing material are attached.

Date: 17 Dec 2020 SUAREZ New Well
Location: 34°53.863' N; 119°34.706' W

CONDUCTOR CASING

1:00pm	J. Kear Arrives,
1:02pm	Cal Portland cement truck 74012 and pumper arrive
1:03pm	Drill depth 54 ft, 40 inch bore. Myers Brothers Drilling. PCWD
1:04pm	Plumb and set 30" OD steel spiral weld casing.
	60ft w/5 ft stickup. Soft sands accept casing 1 ft deeper than bore depth
1:08pm	Begin 10.3-sack sand slurry pour, tremie at 42 ft.
1:25pm	Pause pumping, pull 21 ft of tremie
1:27pm	Second cement truck arrives (Cal Portland 76381)
1:32pm	Continue pumping
1:35pm	Complete pumping from truck 74012; brings cement to 3 ft below ground
1:36pm	Pull remnant tremie pipe
1:37pm	Pump from second truck, hose only into wet cement 3 ft bgs.
	No water encountered, no water displaced.
1:45pm	Stop pour, cement level with grade.
1:45pm	Tack Weld 32" diameter steel plate on top of 30" casing at 5 ft above grade.
1:55pm	Tower down. Cleaning up. new well 82 ft west southwest of dry inactive well
2:00pm	J Kear departs.

Based on our witness and review, the sanitary seal at the Suarez Well around the 54-ft deep conductor casing is satisfactory, was installed in accordance with standard practices and State and County well standards and ordinances.

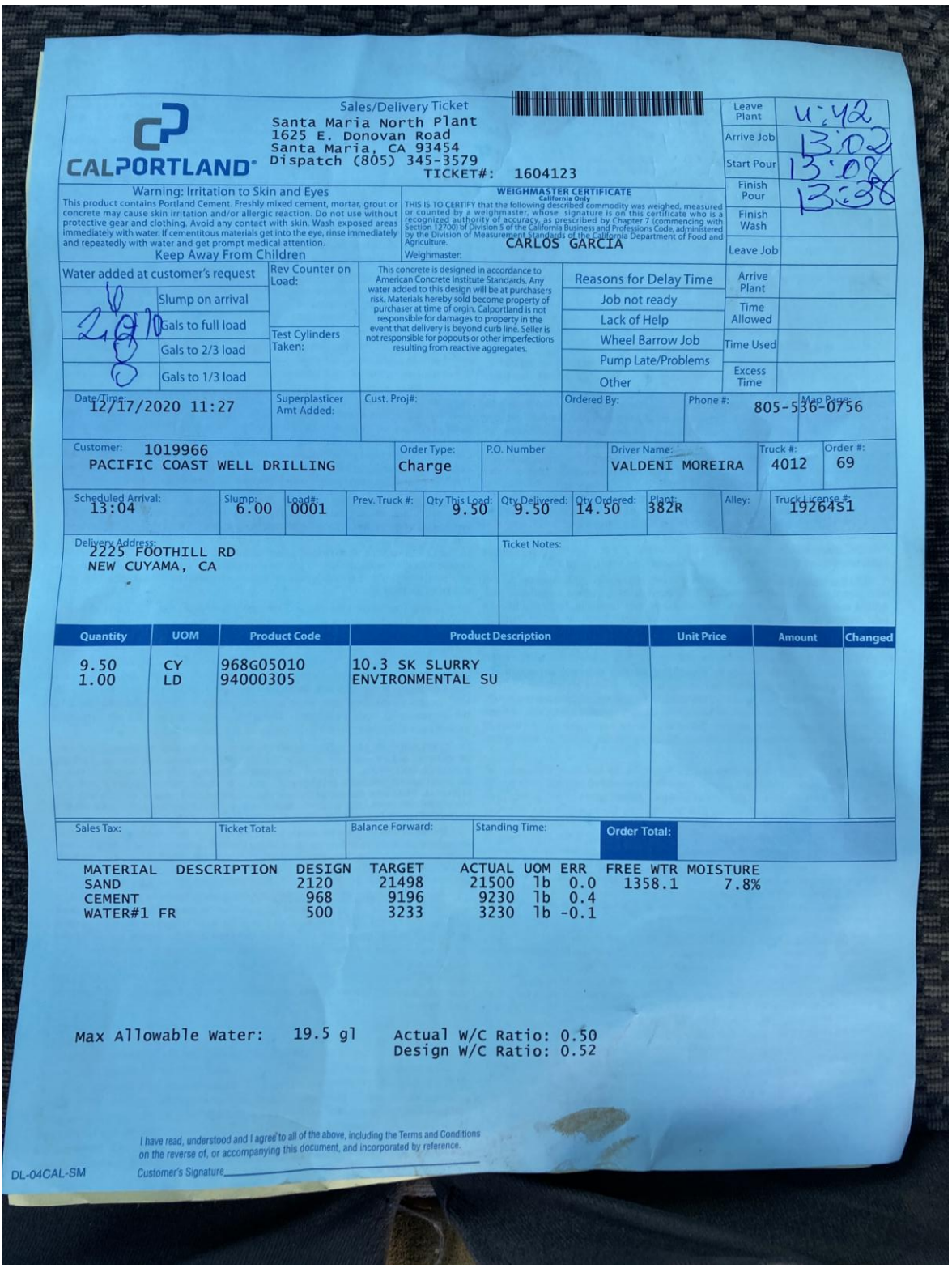
We understand that drilling of the pilot borehole and completion of the well will commence later this year.

Please do not hesitate to contact me with any questions.

Best Regards,

Jordan Kear
Principal Hydrogeologist
Professional Geologist No. 6960
California Certified Hydrogeologist No. 749

Attached: Cement Weigh Tickets
Photographs



CALPORTLAND

Sales/Delivery Ticket
Santa Maria North Plant
1625 E. Donovan Road
Santa Maria, CA 93454
Dispatch (805) 345-3579
TICKET#: 1604123

Leave Plant 4:42
Arrive Job 13:02
Start Pour 13:08
Finish Pour 13:38
Finish Wash
Leave Job

Warning: Irritation to Skin and Eyes
This product contains Portland Cement. Freshly mixed cement, mortar, grout or concrete may cause skin irritation and/or allergic reaction. Do not use without protective gear and clothing. Avoid any contact with skin. Wash exposed areas immediately with water. If cementitous materials get into the eye, rinse immediately and repeatedly with water and get prompt medical attention.
Keep Away From Children

WEIGHMASTER CERTIFICATE
California Only
THIS IS TO CERTIFY that the following described commodity was weighed, measured or counted by a weighmaster, whose signature is on this certificate who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.
Weighmaster: CARLOS GARCIA

Water added at customer's request
Slump on arrival 10
Gals to full load 210
Gals to 2/3 load
Gals to 1/3 load

Rev Counter on Load:
Test Cylinders Taken:

This concrete is designed in accordance to American Concrete Institute Standards. Any water added to this design will be at purchasers risk. Materials hereby sold become property of purchaser at time of orgin. Calportland is not responsible for damages to property in the event that delivery is beyond curb line. Seller is not responsible for popouts or other imperfections resulting from reactive aggregates.

Reasons for Delay Time
Job not ready
Lack of Help
Wheel Barrow Job
Pump Late/Problems
Other

Arrive Plant
Time Allowed
Time Used
Excess Time

Date/Time:	Superplasticer Amt Added:	Cust. Proj#:	Ordered By:	Phone #:	Map Page:
12/17/2020 11:27				805-536-0756	

Customer:	Order Type:	P.O. Number	Driver Name:	Truck #:	Order #:
1019966 PACIFIC COAST WELL DRILLING	Charge		VALDENI MOREIRA	4012	69

Scheduled Arrival:	Slump:	Load#:	Prev. Truck #:	Qty This Load:	Qty Delivered:	Qty Ordered:	Plant:	Alley:	Truck License #:
13:04	6.00	0001		9.50	9.50	14.50	382R		1926451

Delivery Address:
2225 FOOTHILL RD
NEW CUYAMA, CA

Ticket Notes:

Quantity	UOM	Product Code	Product Description	Unit Price	Amount	Changed
9.50	CY	968G05010	10.3 SK SLURRY			
1.00	LD	94000305	ENVIRONMENTAL SU			

Sales Tax:	Ticket Total:	Balance Forward:	Standing Time:	Order Total:

MATERIAL DESCRIPTION	DESIGN	TARGET	ACTUAL	UOM	ERR	FREE WTR	MOISTURE
SAND	2120	21498	21500	lb	0.0	1358.1	7.8%
CEMENT	968	9196	9230	lb	0.4		
WATER#1 FR	500	3233	3230	lb	-0.1		

Max Allowable Water: 19.5 gl

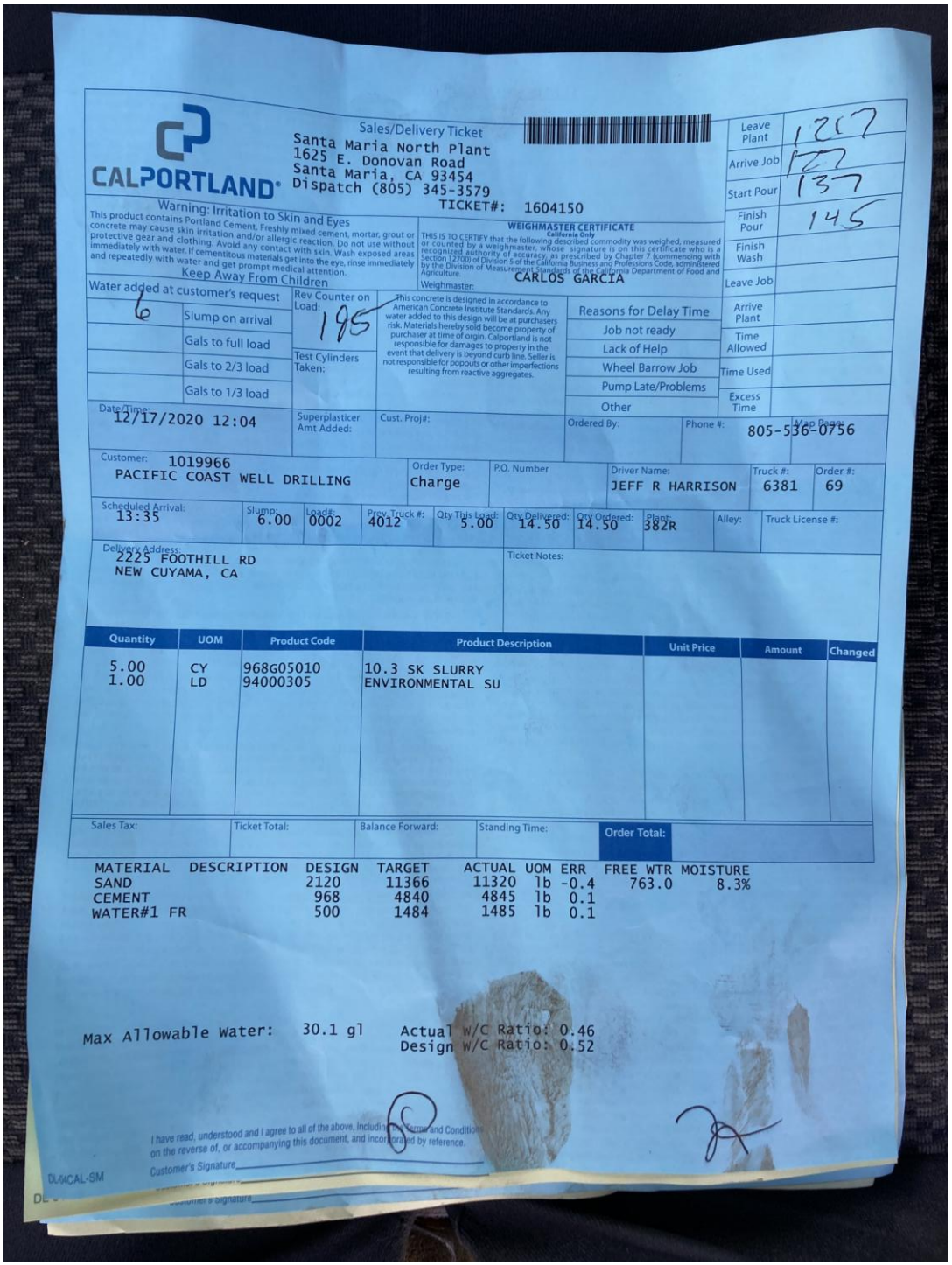
Actual W/C Ratio: 0.50
Design W/C Ratio: 0.52

I have read, understood and I agree to all of the above, including the Terms and Conditions on the reverse of, or accompanying this document, and incorporated by reference.

DL-04CAL-SM

Customer's Signature

Cement weigh ticket 1 of 2
SBCPHD Well Permit WP#0004497
Suarez Property, 2225 Foothill Road, New Cuyama, California, APN 149-160-033



CALPORTLAND®

Sales/Delivery Ticket
Santa Maria North Plant
1625 E. Donovan Road
Santa Maria, CA 93454
Dispatch (805) 345-3579
TICKET#: 1604150

Warning: Irritation to Skin and Eyes
This product contains Portland Cement. Freshly mixed cement, mortar, grout or concrete may cause skin irritation and/or allergic reaction. Do not use without protective gear and clothing. Avoid any contact with skin. Wash exposed areas immediately with water. If cementitous materials get into the eye, rinse immediately and repeatedly with water and get prompt medical attention.
Keep Away From Children

WEIGHMASTER CERTIFICATE
California Only
THIS IS TO CERTIFY that the following described commodity was weighed, measured or counted by a weighmaster, whose signature is on this certificate who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.
Weighmaster: CARLOS GARCIA

Leave Plant	1217
Arrive Job	1227
Start Pour	1337
Finish Pour	1445
Finish Wash	
Leave Job	
Arrive Plant	
Time Allowed	
Time Used	
Excess Time	

Water added at customer's request: 6
Slump on arrival
Gals to full load
Gals to 2/3 load
Gals to 1/3 load
Rev Counter on Load: 195
Test Cylinders Taken:

This concrete is designed in accordance to American Concrete Institute Standards. Any water added to this design will be at purchasers risk. Materials hereby sold become property of purchaser at time of origin. Calportland is not responsible for damages to property in the event that delivery is beyond curb line. Seller is not responsible for popouts or other imperfections resulting from reactive aggregates.

Reasons for Delay Time
Job not ready
Lack of Help
Wheel Barrow Job
Pump Late/Problems
Other

Date/Time: 12/17/2020 12:04
Superplasticer Amt Added:
Cust. Proj#:
Ordered By:
Phone #: 805-536-0756
Map Page:

Customer: 1019966
PACIFIC COAST WELL DRILLING
Order Type: Charge
P.O. Number
Driver Name: JEFF R HARRISON
Truck #: 6381
Order #: 69

Scheduled Arrival:	Slump:	Load#:	Prev. Truck #:	Qty This Load:	Qty Delivered:	Qty Ordered:	Plant:	Alley:	Truck License #:
13:35	6.00	0002	4012	5.00	14.50	14.50	382R		

Delivery Address:
2225 FOOTHILL RD
NEW CUYAMA, CA

Ticket Notes:

Quantity	UOM	Product Code	Product Description	Unit Price	Amount	Changed
5.00	CY	968G05010	10.3 SK SLURRY			
1.00	LD	94000305	ENVIRONMENTAL SU			

Sales Tax:	Ticket Total:	Balance Forward:	Standing Time:	Order Total:

MATERIAL	DESCRIPTION	DESIGN	TARGET	ACTUAL	UOM	ERR	FREE WTR	MOISTURE
SAND		2120	11366	11320	lb	-0.4	763.0	8.3%
CEMENT		968	4840	4845	lb	0.1		
WATER#1 FR		500	1484	1485	lb	0.1		

Max Allowable Water: 30.1 gl
Actual W/C Ratio: 0.46
Design W/C Ratio: 0.52

I have read, understood and I agree to all of the above, including the Terms and Conditions on the reverse of, or accompanying this document, and incorporated by reference.
Customer's Signature

DL4CAL-SM

Cement weigh ticket 2 of 2
SBCPHD Well Permit WP#0004497
Suarez Property, 2225 Foothill Road, New Cuyama, California, APN 149-160-033

Myers Brothers Drill Rig, casing installed, pumper and cement truck
SBCPHD Well Permit WP#0004497
Suarez Property, 2225 Foothill Road, New Cuyama, California, APN 149-160-033

Pumping cement via tremie
SBCPHD Well Permit WP#0004497
Suarez Property, 2225 Foothill Road, New Cuyama, California, APN 149-160-033

Pouring cement into pumper hopper
SBCPHD Well Permit WP#0004497
Suarez Property, 2225 Foothill Road, New Cuyama, California, APN 149-160-033

Finishing pour via hose after tremie removal
SBCPHD Well Permit WP#0004497
Suarez Property, 2225 Foothill Road, New Cuyama, California, APN 149-160-033

Welding 32" steel cap on top of 30" steel casing
SBCPHD Well Permit WP#0004497
Suarez Property, 2225 Foothill Road, New Cuyama, California, APN 149-160-033