LINDBERG GEOLOGIC CONSULTING
David N. Lindberg, CEG
Post Office Box 306
Cutten California 95534
(707) 442-6000

May 31, 2022 Project No: 0452.00

Mr. Elvecio Machado
3164 Somerset Lake
Lafayette, California 94549

Subject: Hydrologic Isolation of Existing Well from Surface Waters
33818 Highway 299, Willow Creek, APN: 316-071-004, WCR2017-001220

To Whom It May Concern:

As requested, Lindberg Geologic Consulting has assessed an existing permitted well on the above-referenced parcel to estimate its potential for hydrologic connectivity with any adjacent wetlands and or surface waters, and if pumping this well could affect surface waters in nearby water courses. Streams in the vicinity of this well drain to Willow Creek (Figure 1). A California-Certified Engineering Geologist visited this site on April 27, 2022, to observe the subject well and local site conditions. Based on our professional experience, our observations, and research, it is our opinion that this subject well has a low likelihood of being hydrologically connected to nearby surface waters in any manner that could affect adjacent wetlands and or surface waters in the vicinity. We understand that you plan to use water from this well to irrigate cannabis. We are not aware of the volume of water to be extracted or what the pumping schedule might be but expect that the applicant or agent can supply that information.

This well was drilled by Watson Well Drilling of Eureka, California, in April, 2017, under permit WCR2017-001220. Watson Well Drilling is a licensed well-drilling contractor (C-57 #1014048). Watson Well Drilling submitted the well completion report (DWR 188) on April 27, 2017 (attached). Watson Well Drilling estimated the yield of this well at 10 gallons per minute. The well location is shown approximately on the attached figures.

Borehole diameter was reported by the driller as 12-inches in the upper 20 feet, and 7.875 inches below that. Total drilled depth is 200 feet. A bentonite sanitary surface seal was installed from grade to 20 feet below the ground surface (bgs). From the surface to 20-feet, the well was cased with 8-inch diameter stainless-steel pipe. From the surface to 40-feet the well was cased with 6-inch diameter stainless-steel pipe. Below 40-feet to the total depth of 200-feet the casing was perforated with, 0.25-inch saw cut slot using a Holte perforator. From 20 feet to the total depth, the driller reported “non-annular fill”. Depth to first water was reported to be 90 feet below grade.

As reported on the Humboldt County WebGIS site, parcel 316-071-004 (Figure 2) encompasses approximately 585.13 acres. Based on our on-site GPS measurements, the subject well is located approximately at latitude 40.90619° north, and longitude 123.7333° west (±9’). We confirmed that this well, as reported by the driller, this well is in Section 16, T6N, R4E, HB&M (Figures 1 and 2).

Based on Google Earth satellite imagery, and the Humboldt County WebGIS mapping, this well is approximately 800 feet from Willow Creek the nearest mapped surface waters (Figure 1). Based on interpolation from the USGS Willow Creek topographic quadrangle map (Figure 1), and the Humboldt County WebGIS, well elevation is approximately 2,320 feet above sea level. At the nearest point to this well, the elevation of Willow Creek is approximately 2,040 feet. The elevation of the bottom of the well is approximately 2,120 feet which is higher than the elevation of Willow Creek tributaries at its nearest point, based on the Humboldt County WebGIS map.

No springs are mapped in Section 16 on the USGS Willow Creek topographic quadrangle map, and no springs are mapped on any of the contiguous sections (Figure 1). Therefore, we conclude that drawing water from the subject well will not affect any springs with a mile of the wellsite.

On the geologic map (Figure 4) by Falls and Hardin (2005), the subject property is mapped as underlain by a landscape-scale landslide, with several smaller landslides superimposed upon it. Falls and Hardin mapped the source area of these landslide deposits with "Undifferentiated Ultra mafic" rocks of Mesozoic age (ps). The ultramafic rocks are "seen as sporadic sheared lenses and sheet-like masses of peridotite and serpentinite. Larger bodies are serpentinized peridotite, while smaller bodies are largely serpentinite. No occurrences of asbestos have been noted in this unit." No attitudes were mapped in the ps by Falls and Hardin however, the Rogue formation (Jr) to the east of the ps, is shown to dip easterly at 39 degrees. The landslide deposits at the subject well site are derived from the underlying ultramafic rock and consist of sheared and fractured serpentinized peridotite in a large landslide mass.

Materials reported on the geologic log of the attached driller's well completion report include three feet of "over burden" over 197 feet of "Blue Sandstone with Green Serpentine". In the well cuttings, serpentinized peridotite would have an appearance consistent with blue sandstone and green serpentinite. These materials are well exposed in the highway road cuts below the well site.

We interpret the "blue sandstone with green serpentine" section of this profile from 90 to 200 feet to be sheared and fractured serpentinized peridotite, the water-bearing aquifer material in this well. At the well location, the elevation of the water-bearing aquifer unit at 90 feet depth is approximately 2,230 feet, while nearby Willow Creek flows at an elevation of 2,000 feet.

We interpret the earth materials encountered in the well boring as serpentinized peridotite landslide deposits as mapped by Falls and Hardin (2005). We interpret the underlying sequence of materials described by the driller (blue sandstone with green serpentine), as lithologies within the ps unit mapped by Falls and Hardin. Serpentinized peridotite is expected to have moderate to low hydraulic conductivity, while the disruption and deformation associated with landsliding (shearing and fracturing) may make these deposits more permeable. Given the relatively extensive areal distribution of the landslide ps, it could constitute a significant aquifer for use at this location. The "blue sandstone with green serpentine" is ps and the water bearing unit in this well.

A geologic cross section of the area after McLaughlin and Others (2000) shows generally the structural and stratigraphic relationships between the local geologic units (Figure 5). The rock units are shown dipping to the northeast and are likely bounded by thrust fault planes. On-site, no dip of the rock units could be observed in the sheared and fractured serpentinized peridotite landslide deposits because they are for the most part mantled with soil and hillslope colluvium and thickly vegetated. We interpret the rock contacts and landslide basal slip planes to be hydrologic boundaries of minimal permeability, due in part to grinding and shearing along the fault planes, which effectively separate rock units from each other, and limit groundwater flow between fault-bound units.

In our professional opinion, based on our experience, observations, and review of pertinent and available information, this well has a low potential of having any direct connection to surface waters. First water was encountered at 90-feet. This well is sealed through the upper 20 feet of any potential unconfined, near-surface aquifers with which it might communicate hydraulically through the borehole because the bentonite-sealed surface casing isolates the near surface zone. When considered with the stratigraphy and geologic structure, distances (horizontal and vertically) from the nearest surface waters, depth of the producing zone of this well (~90 - 200 feet, in sheared and fractured serpentinized peridotite), as well as its position relative to the nearest adjacent watercourse of Willow Creek, we conclude that the depth of the surface seal and the well site location are sufficient to preclude the potential for hydraulic connectivity with surface waters, of which there are none closer than approximately 800 feet (Willow Creek). Thus, the water source from which this well draws appears to be an aquifer not connected to any other unconfined, near-surface aquifer(s). This well appears, in our professional opinion, likely to be hydraulically isolated from nearby wells, surface waters, springs or wetlands.

In our professional opinion, it appears that the aquifer tapped by the subject well is recharged by water infiltrating from source areas upslope of and proximal to the well site. As noted, the “Water Level and Yield of Completed Well” section of the Well Completion Report estimated the yield of this well at 10 gallons per minute (gpm) in April 2017, a rate of 10 gallons per minute, this well could potentially produce 14,400 gallons per day. As noted on the well completion report, this capacity may not be representative of this well’s long-term yield.

As discussed, in our opinion the subject well does not appear to be hydrologically connected to, or capable of influencing surface water flows in the nearest tributary, Willow Creek, a tributary of the Trinity River. There are no local springs or ephemeral wetlands (if any) nearby to be hydrologically connected to the well. Given the horizontal distances involved, and the elevation differences between the water-producing zone in the subject well, and the surface waters of the nearest watercourse, the potential for hydrologic connectivity between surface waters and groundwater in the deep bedrock aquifer appears low. At 90 - 200 feet, the water-producing zone is considered hydrologically isolated from, and not connected to other aquifer(s) in the surrounding area.

As mentioned, on the Willow Creek (1979) USGS topographic quadrangle map, there are no mapped springs within one mile of the well (Figure 1). There are no mapped springs on any of the adjacent contiguous sections; any springs or wetlands are more than a mile away from the subject well.

We researched the California Department of Water Resources (DWR) database to determine if there were other wells within 1,000 feet of the subject well on our client's property. There are no other wells on this subject parcel, however, a non-productive Well #1 (WCR2017-000904), was drilled but not cased on the parcel in 2017, just prior to the drilling of the subject well, Well #2. In Section 16 (T6N, R4E), we found one other record in the Department of Water Resources (DWR) database; presumably a geotechnical boring as it was drilled to only 60 feet in the highway and grouted closed (DWR2019-011108.

The Natural Resources Conservation Service's, online Web Soil Survey, shows the subject well to be located within the Hungry soil complex (#754, Figure 6), which is described as well-drained. The Web Soil Survey Unit description is attached to this report. Mean annual precipitation in the area is listed as 60 to 80 inches per year. Capacity of the most limiting layer to transmit water (Ksat) is described as very low to moderately low (0.00 to 0.14 in/hr). If ten percent of 60 inches of precipitation in a given season is absorbed by the soils and does not flow across the surface to local watercourses, then approximately 292 acre-feet, or 9.5 million gallons, of water per year may be expected to recharge the local aquifer below this 585.13-acre subject property.

On the 28th of March 2022, our governor issued an executive order (N-7-22) relating to the ongoing drought California is experiencing. In his executive order, the governor outlined several measures the state will undertake to avoid and ameliorate the negative impacts of the current drought. Among these measures, it was ordered that counties, cities, and other public agencies have been prohibited from approving permits for new groundwater wells (or alteration of existing wells) in basins "*subject to the Sustainable Groundwater Management Act and classified as medium- or high-priority without first obtaining written verification from a Groundwater Sustainability Agency managing the basin or area of the basin where the well is proposed*". Your well at 33818 highway 299 is not within a basin subject to the Act, and there has been no Groundwater Sustainability Agency established with authority over the area where your permitted well is sited.

Further, the Order states that counties, cities, and other public agencies have been prohibited from issuing permits for new groundwater wells (or alteration of existing wells) "*without first determining that extraction of groundwater from the proposed well is (1) not likely to interfere with the production and functioning of existing nearby wells, and (2) not likely to cause subsidence that would adversely impact or damage nearby infrastructure*". Note that this Order, and that cited in the preceding paragraph, are not applicable to "*wells that provide less than two acre-feet per year of groundwater for individual domestic users, or that will exclusively provide groundwater to public water supply systems*."

Based on our professional experience, observations, and research, it is our opinion the well at 33818 Highway 299 has a low likelihood of being hydrologically connected to nearby surface waters or wells in any manner that might affect adjacent wetlands, wells, and or surface waters in the vicinity. Further, this well will not interfere with the production and functioning of existing nearby wells, or cause subsidence that would adversely impact or damage nearby infrastructure.

Please contact us if you have questions or concerns regarding our findings and conclusions.

Sincerely,

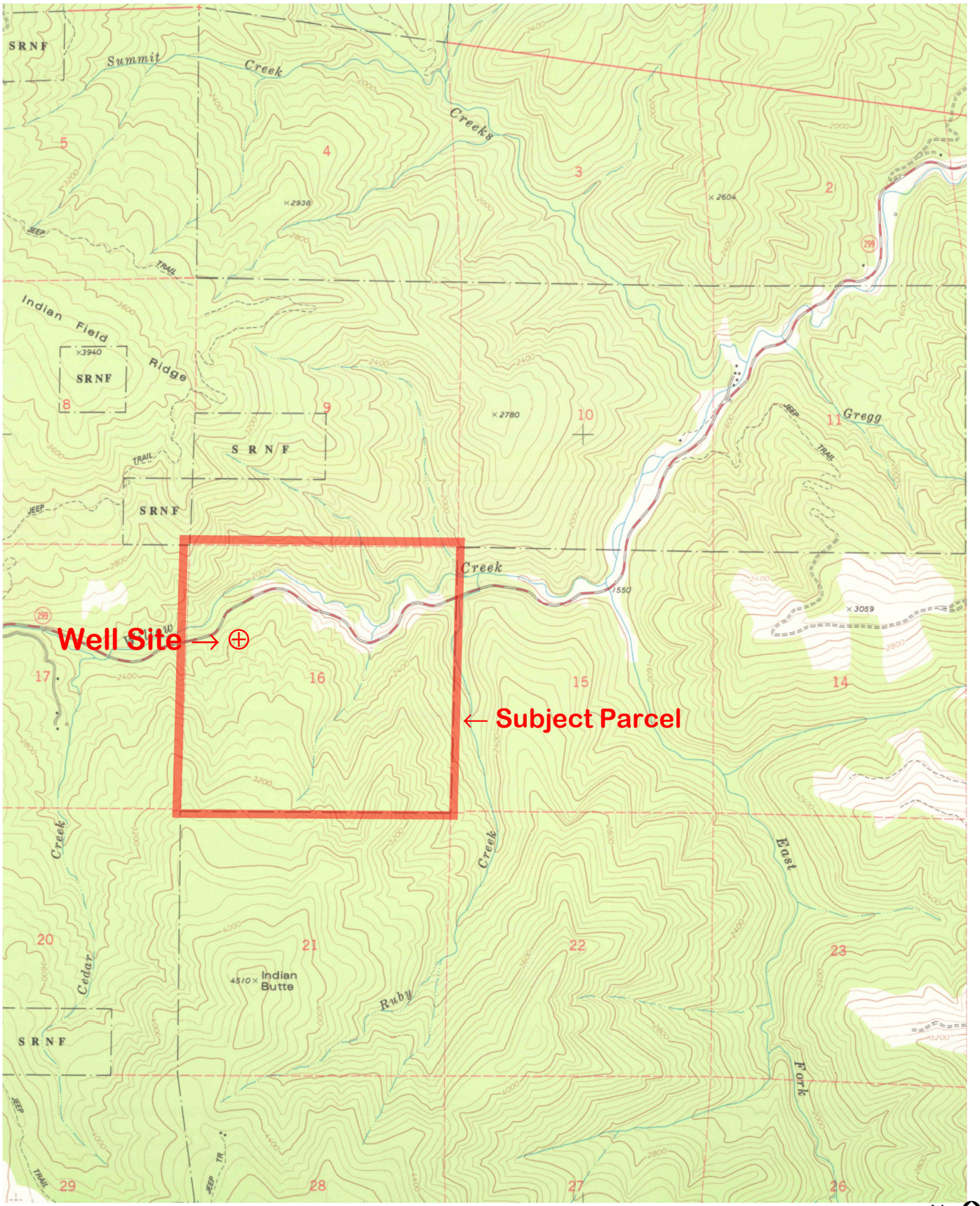
David N. Lindberg, CEG
Lindberg Geologic Consulting

DNL:sll
Attachments:
Figure 1: Topographic Project Location Map
Figure 2: Assessor's Parcel Map
Figure 3: Satellite Image Site Map
Figure 4: Geologic Map
Figure 4a: Geologic Map Explanation
Figure 5: Geologic Cross Section
Figure 5a: Geologic Cross Section Explanation
Figure 6: USDA-NRCS Soil Map

State of California Well Completion Reports:
WCR2017-001220, the subject well.
WCR2017-000904, non-producing well bore, not a well.
WCR2019-011108, a 60-foot geotechnical boring backfilled with neat cement grout.

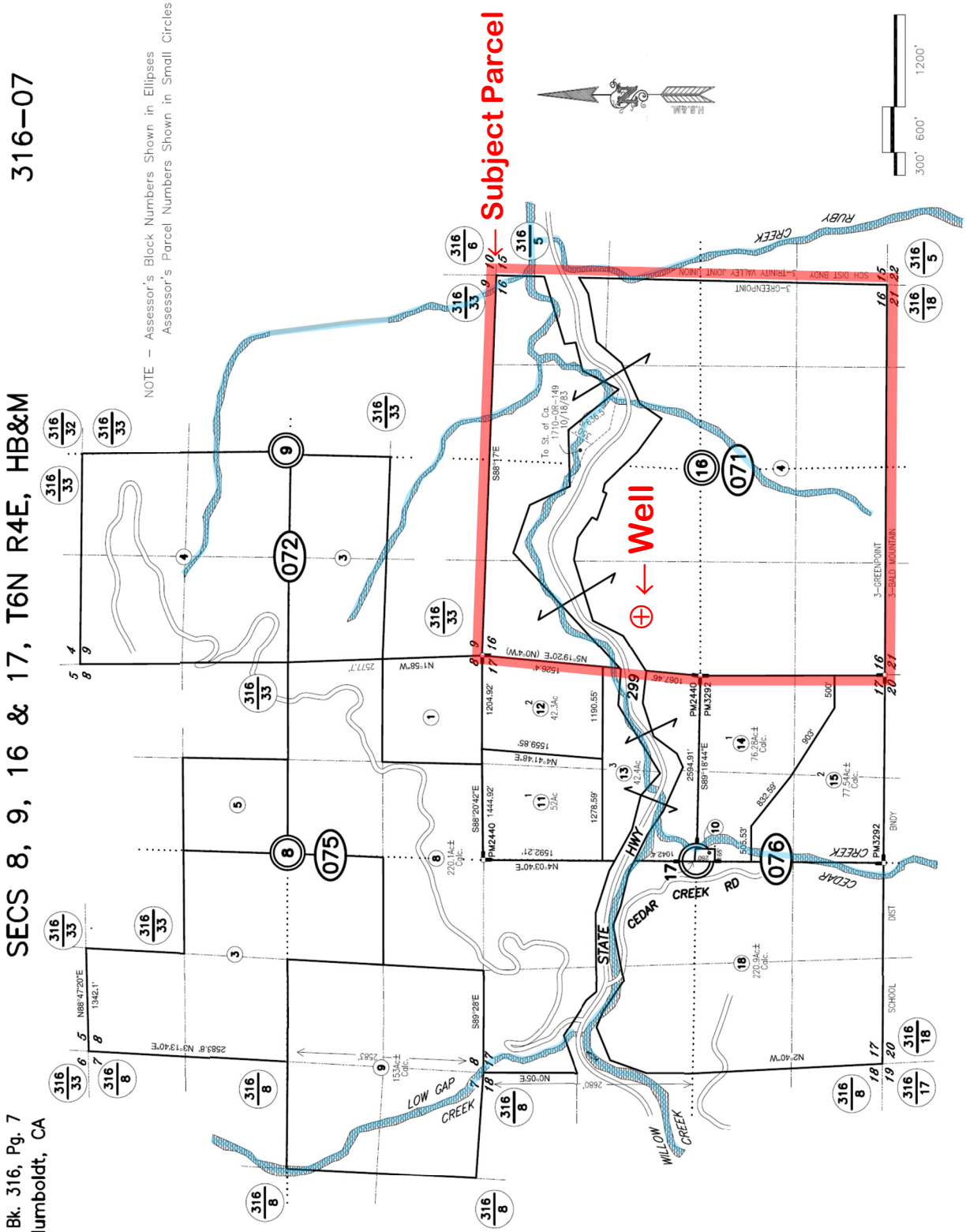
Web Soil Survey, NRCS Unit Description: Hungry, 35 to 70 percent slopes.

Lindberg Geologic Consulting	Engineering-Geologic Hydrogeologic Well Isolation Report	Figure 1
Post Office Box 306	33818 State Highway 299, Willow Creek, Humboldt County	May 31, 2022
Cutten, CA 95534	APN: 316-071-004, Mr. Elvecio Machado, Client	Project 0452.00
(707) 442-6000	Topographic Project Location Map (locations approximate)	1" ≈ 2,640'



Modified from: USGS "Willow Creek, Calif.", 7.5' Topographic Quadrangle Map, 1979, N ≈

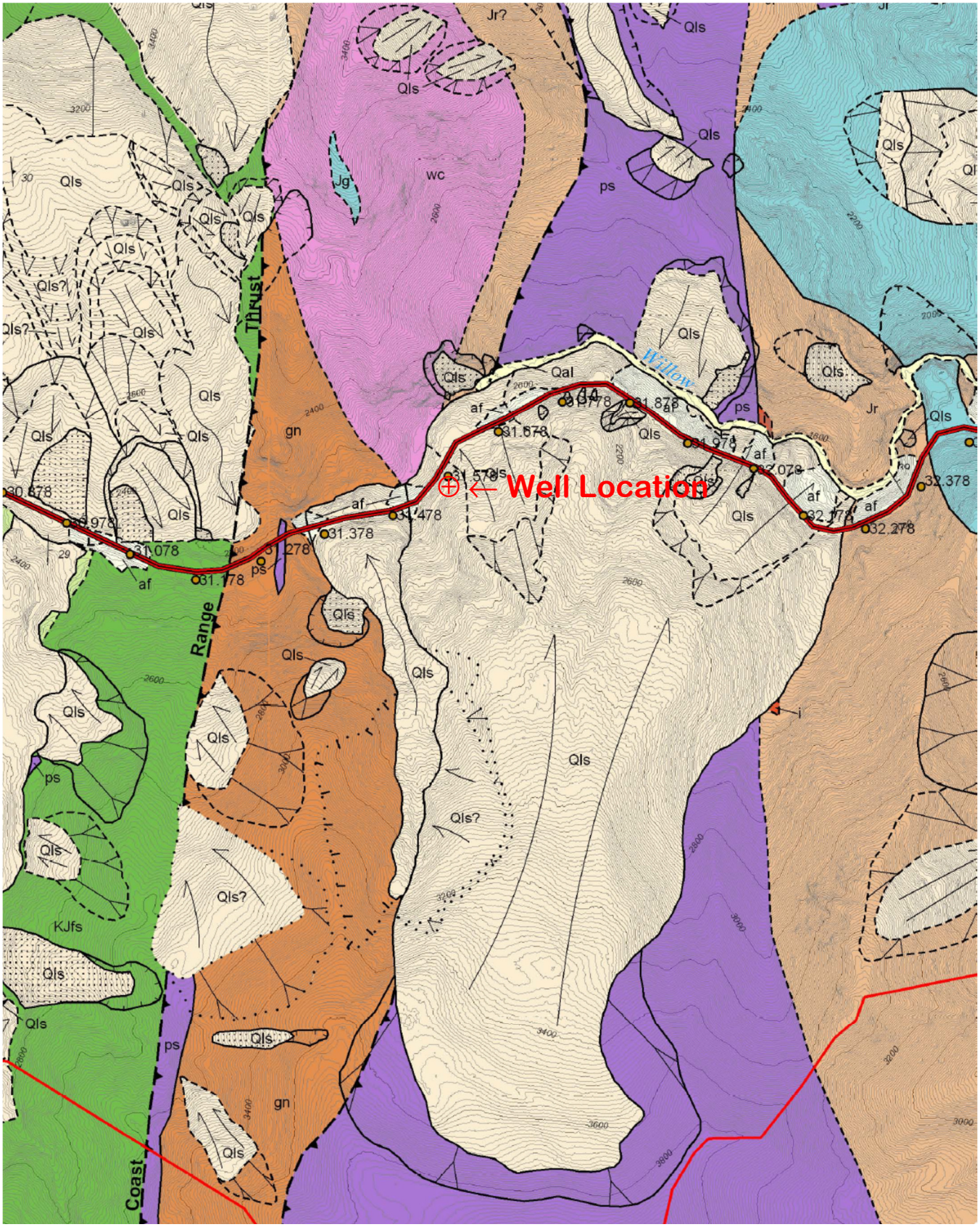
Lindberg Geologic Consulting	Engineering-Geologic Hydrogeologic Well Isolation Report	Figure 2
Post Office Box 306	33818 State Highway 299, Willow Creek, Humboldt County	May 31, 2022
Cutten, CA 95534	APN: 316-071-004, Mr. Elvecio Machado, Client	Project 0452.00
(707) 442-6000	Assessor's Parel Map (locations approximate)	Scale as Shown



Lindberg Geologic Consulting	Engineering-Geologic Hydrogeologic Well Isolation Report	Figure 3
Post Office Box 306	33818 State Highway 299, Willow Creek, Humboldt County	May 31, 2022
Cutten, CA 95534	APN: 316-071-004, Mr. Elvecio Machado, Client	Project 0452.00
(707) 442-6000	Satellite Image Site Map (locations approximate)	1" ≈ 910'

Modified from: Google Earth Imagery of April 30, 2019, N ≈

Lindberg Geologic Consulting	Engineering-Geologic Hydrogeologic Well Isolation Report	Figure 4
Post Office Box 306	33818 State Highway 299, Willow Creek, Humboldt County	May 31, 2022
Cutten, CA 95534	APN: 316-071-004, Mr. Elvecio Machado, Client	Project 0452.00
(707) 442-6000	Geologic Map (locations approximate)	1" ≈ 1,060'



GEOLOGIC MAP OF THE HIGHWAY 299 CORRIDOR HUMBOLDT COUNTY, CALIFORNIA. BLUE LAKE TO WILLOW CREEK. (James N. Falls, CEG and Burt Hardin, CEG, 2005) N ≈

Lindberg Geologic Consulting	Engineering-Geologic Hydrogeologic Well Isolation Report	Figure 4a
Post Office Box 306	33818 State Highway 299, Willow Creek, Humboldt County	May 31, 2022
Cutten, CA 95534	APN: 316-071-004, Mr. Elvecio Machado, Client	Project 0452.00
(707) 442-6000	Geologic Map Explanation (Modified from Falls and Hardin 2005)	No Scale

af — Artificial fill (Holocene) - Heterogeneous mixture of artificially deposited material deposited ranging from well compacted gravel, sand, silt and clay to poorly compacted sediment high in organic content.

Qal — Alluvium (Holocene and Late Pleistocene?) - Undifferentiated alluvial deposits of unconsolidated sand, gravel, silt, and lesser clay.

KJfs — South Fork Mountain Schist (Cretaceous-Jurassic) Eastern Belt Franciscan Complex - The dominant rock is dark gray to green quartz-albite-muscovite-chlorite schist and has similar mineralogical characteristics to the Redwood Creek schist. Includes foliated greenstone and quartz-gneissic rocks. The surface expression is geomorphically variable. It has a well-developed foliation (platy texture), is fine-grained and typically has quartz veins oriented parallel to the foliation based on our field examination of hand specimens and outcrop exposures.

Jg — Galice Formation (Jurassic) - Very fine- to coarse-grained gray phyllitic metagraywacke. Finer portions altered to slate and phyllitic slate. Level of metamorphism generally increases westward through the unit. Numerous exposures streams show graded bedding typical of turbidite sequences. Intruded by scattered metamorphic-felsite dikes and sills. Areas underlain by slates and phyllitic slate are especially subject to slope failure.

Jr — Rogue (?) Formation (Jurassic) - Mafic (high in magnesium and iron) to intermediate volcanic flows and tuffs, now altered to greenstone. Some volcanic conglomerates in the upper portion of the unit. Stringers and layers of chert or siliceous argillite to 1 inch thick are present sporadically.

gn — Friday Camp gneiss (Jurassic?) - Weakly foliated hornblende-diorite gneiss. Alternatively, unit may be related to an ophiolite sequence and gneiss appearance may be due to cumulate layering in gabbro within the sequence. May also be altered Rogue Formation.

TrPz — Western Paleozoic and Triassic belt mélange (Triassic) - Fine-grained volcanic rocks, fine- to medium-grained greywacke, chert and siliceous argillite, lenses of serpentinite, local limestone and conglomerate and small intrusive igneous bodies. Individual rock units are discontinuous and overall rock character is highly fractured and chaotic.

ps — Undifferentiated Ultramafic rocks (Mesozoic) - Seen as sporadic sheared lenses and sheet-like masses of peridotite and serpentinite. Larger bodies are serpentinized peridotite, while smaller bodies are largely serpentinite. No occurrences of asbestos have been noted in this unit.

i — Small igneous plugs, dikes and sills (Mesozoic) - Only the largest masses were shown on the map. Found at widely scattered locations throughout region.

wc — Willow Creek Pluton (Mesozoic) - Coarse granodiorite composed almost entirely of extremely large quartz and feldspar grains that have been crushed and sheared.

ROCK SLIDE: Slope movement with bedrock as its primary source material. This class of failure includes rotational and translational landslides; relatively cohesive slide masses with failure planes that are deep-seated in comparison to those debris slides of similar areal extent. The slide plane is curved in a rotational slide. Movement along a planer joint or bedding surface may be referred to as translational. Complex versions with combinations of rotational heads and translational movement or earthflows downslope are common. Landslide boundary indicates confidence; solid line- definite, dashed line - probable, dotted line - questionable. indicates a scarp, arrows show direction of movement. Qls denotes deposit when present.

EARTHFLOW: Slow to rapid movement of mostly fine-grained soil with some rocky debris in a semi-viscous, highly plastic state. After initial failure, the mass may flow or creep seasonally in response to changes in groundwater level. These types of slope failures often include complexes of nested rotational slides and deeply incised gullies. Landslide boundary indicates confidence; solid line- definite, dashed line - probable, dotted line - questionable. indicates scarp, arrows show direction of movement. Qls denotes deposit when present.

DEBRIS SLIDE: Mass of unconsolidated rock, colluvium, and coarse-grained soil that has moved slowly to rapidly downslope along a relatively steep, shallow, translational failure plane. Debris slides form steep, unvegetated scars in the head region and possibly irregular, hummocky deposits in the toe region. Scars commonly erode and remain unvegetated for several seasons depending on slope aspect. Landslide boundary indicates confidence; solid line- definite, dashed line - probable, dotted line - questionable. Landslide deposit is locally absent. indicates scarp, no arrows are used to portray landslide movement direction. Qls denotes deposit when present.

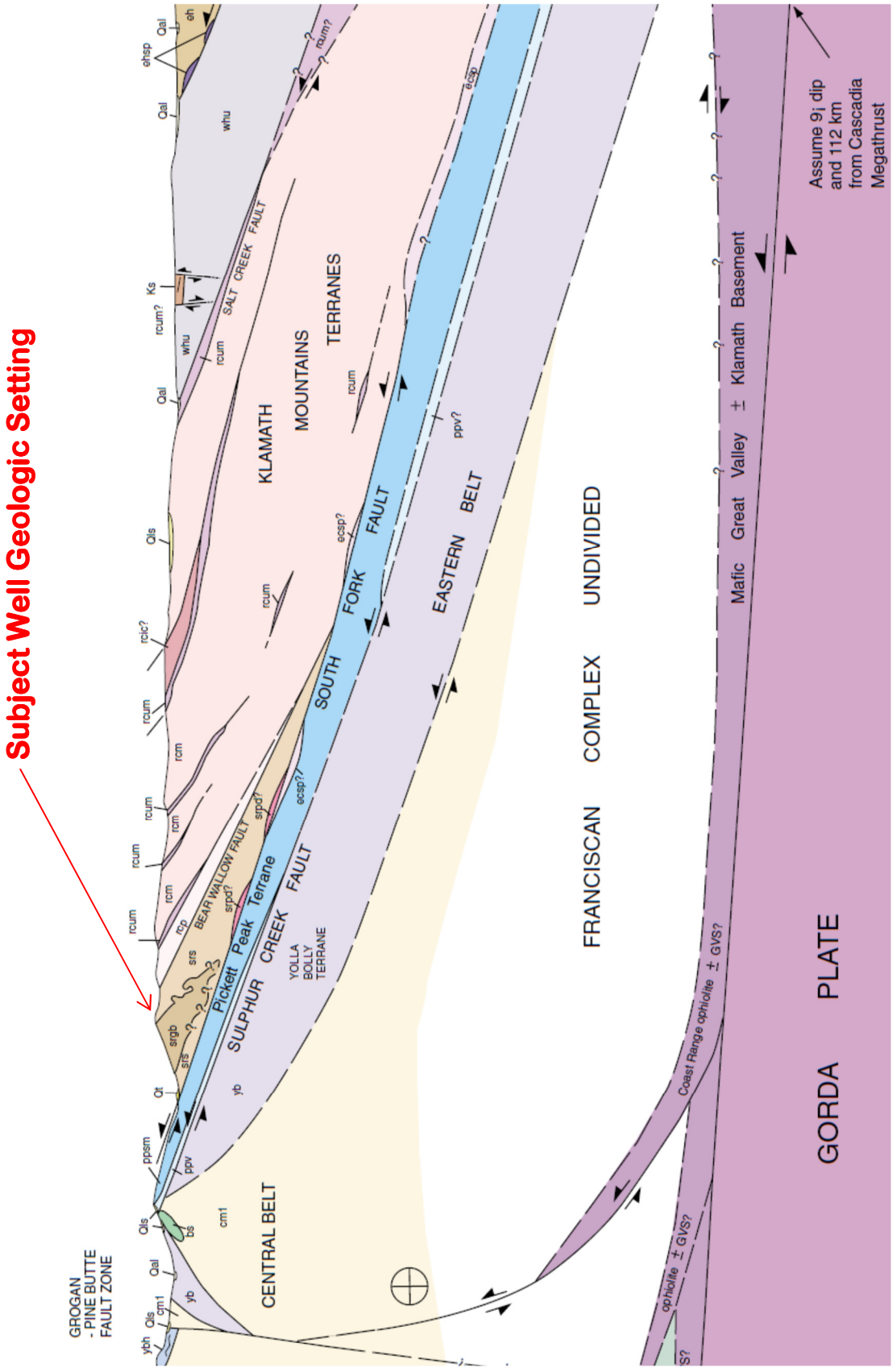
DEBRIS SLIDE: Mass of unconsolidated rock, colluvium, and coarse-grained soil that has moved slowly to rapidly downslope along a relatively steep, shallow, translational failure plane. Debris slides form steep, unvegetated scars in the head region and possibly irregular, hummocky deposits in the toe region. Scars commonly erode and remain unvegetated for several seasons depending on slope aspect. Landslide boundary indicates confidence; solid line- definite, dashed line - probable, dotted line - questionable. Landslide deposit is locally absent. indicates scarp, no arrows are used to portray landslide movement direction. Qls denotes deposit when present.

Lithologic contact: Solid where location is certain, dashed where approximately located or inferred, dotted where concealed, and queried where continuation or existence is uncertain

Fault: Solid where location is certain, dashed where approximately located or inferred, dotted where concealed, and queried where continuation or existence is uncertain

Thrust fault: Barbs on upper plate. Solid where location is certain, dashed where approximately located or inferred, dotted where concealed, and queried where continuation or existence is uncertain

Lindberg Geologic Consulting	Engineering-Geologic Hydrogeologic Well Isolation Report	Figure 5
Post Office Box 306	33818 State Highway 299, Willow Creek, Humboldt County	May 31, 2022
Cutten, CA 95534	APN: 316-071-004, Mr. Elvecio Machado, Client	Project 0452.00
(707) 442-6000	Geologic Cross Section (locations approximate)	No to Scale



Lindberg Geologic Consulting	Engineering-Geologic Hydrogeologic Well Isolation Report	Figure 5a
P. O. Box 306	33818 State Highway 299, Willow Creek, Humboldt County	May 31, 2022
Cutten, CA 95534	APN: 316-071-004, Mr. Elvecio Machado, Client	Project 0452.00
(707) 442-6000	Geologic Cross Section Explanation	No Scale

DESCRIPTION OF MAP UNITS

QUATERNARY AND TERTIARY OVERLAP DEPOSITS

- Qal — Alluvial deposits (Holocene and late Pleistocene?)
- Qm — Undeformed marine shoreline and aolian deposits (Holocene and late Pleistocene)
- Qt — Undifferentiated nonmarine terrace deposits (Holocene and Pleistocene)
- Qls — Landslide deposits (Holocene and Pleistocene)
- QTog — Older alluvium (Pleistocene and [or] Pliocene)
- QTw — Marine and nonmarine overlap deposits (late Pleistocene to middle Miocene)
- Ti — Volcanic rocks of Fickle Hill (Oligocene)

COAST RANGES PROVINCE

FRANCISCAN COMPLEX

-- Coastal Belt --

Coastal terrane(Pliocene to Late Cretaceous)

Sedimentary, igneous, and metamorphic rocks of the Coastal terrane (Pliocene to Late Cretaceous):

- co1 — Melange
- co2 — Melange
- co3 — Broken sandstone and argillite
- co4 — Intact sandstone and argillite
- cob — Basaltic Rocks (Late Cretaceous)
- cols — Limestone (Late Cretaceous)
- m — Undivided blueschist (Jurassic?)

King Range terrane (Miocene to Late Cretaceous)

- Krp — Igneous and sedimentary rocks of Point Delgada (Late Cretaceous)
- m — Undivided blueschist blocks (Jurassic?)

Sandstone and argillite of King Peak (middle Miocene to Paleocene[?]):

- krk1 — Melange and (or) folded argillite
- krk2 — Highly folded broken formation
- krk3 — Highly folded, largely unbroken rocks
- krl — Limestone
- krc — Chert
- krb — Basalt

False Cape terrane (Miocene? to Oligocene?)

- fc — Sedimentary rocks of the False Cape terrane (Miocene? to Oligocene?)

Yager terrane (Eocene to Paleocene?)

Sedimentary rocks of the Yager terrane (Eocene to Paleocene?):

- y1 — Sheared and highly folded mudstone
- y2 — Highly folded broken mudstone, sandstone, and conglomeratic sandstone
- y3 — Highly folded, little-broken sandstone, conglomerate, and mudstone
- Ycgl — Conglomerate

-- Central belt --

Melange of the Central belt (early Tertiary to Late Cretaceous):

Unnamed Metasandstone and meta-argillite (Late Cretaceous to Late Jurassic):

- cm1 — Melange
- cm2 — Melange
- cb1 — Broken formation
- cb2 — Broken formation
- cwr — White Rock metasandstone of Jayko and others (1989) (Paleogene and [or] Late Cretaceous)
- chr — Haman Ridge graywacke of Jayko and others (1989) (Cretaceous?)
- cfs — Fort Seward metasandstone (age unknown)
- cls — Limestone (Late to Early Cretaceous)
- cc — Chert (Late Cretaceous to Early Jurassic)
- bs — Basaltic rocks (Cretaceous and Jurassic)
- m — Undivided blueschist blocks (Jurassic?)
- gs — Greenstone
- c — Metachert
- yb — Metasandstone of Yolla Bolly terrane, undivided
- b — Melange block, lithology unknown

-- Eastern Belt --

Pickett Peak terrane (Early Cretaceous or older)

Metasedimentary and metavolcanic rocks of the Pickett Peak terrane (Early Cretaceous or older):

- ppsm — South Fork Mountain Schist
- mb — Chinquapin Metabasalt Member (Irwin and others, 1974)
- ppv — Valentine Springs Formation
- mv — Metabasalt and minor metachert

Yolla Bolly terrane (Early Cretaceous to Middle Jurassic?)

Metasedimentary and metaigneous rocks of the Yolla Bolly terrane (Early Cretaceous to Middle Jurassic?):

- ybt — Taliaferro Metamorphic Complex of Suppe and Armstrong (1972) (Early Cretaceous to Middle Jurassic?)
- ybc — Chicago Rock melange of Blake and Jayko (1983) (Early Cretaceous to Middle Jurassic)
- gs — Greenstone
- c — Metachert
- ybh — Metagraywacke of Hammerhorn Ridge (Late Jurassic to Middle Jurassic)
- c — Metachert
- gs — Greenstone
- sp — Serpentinite
- ybd — Devils Hole Ridge broken formation of Blake and Jayko (1983) (Early Cretaceous to Middle Jurassic)
- c — Radiolarian chert
- ybi — Little Indian Valley argillite of McLaughlin and Ohlin (1984) (Early Cretaceous to Late Jurassic)

Yolla Bolly terrane

- yb — Rocks of the Yolla Bolly terrane, undivided

GREAT VALLEY SEQUENCE AND COAST RANGE OPHIOLITE

Elder Creek(?) terrane

- ecms — Mudstone (Early Cretaceous)

Coast Range ophiolite (Middle and Late Jurassic):

- ecg — Layered gabbro
- ecsp — Serpentinite melange

Del Puerto(?) terrane

Rocks of the Del Puerto(?) terrane:

- dpms — Mudstone (Late Jurassic)

Coast Range ophiolite (Middle and Late Jurassic):

- dpt — Tuffaceous chert (Late Jurassic)
- dpb — Basaltic flows and keratophyric tuff (Jurassic?)
- dpd — Diabase (Jurassic?)
- dpsp — Serpentinite melange (Jurassic?)
- sp — Undivided Serpentinized peridotite (Jurassic?)

KLAMATH MOUNTAINS PROVINCE

Undivided Great Valley Sequence:

- Ks — Sedimentary rocks (Lower Cretaceous)

GREAT VALLEY SEQUENCE OVERLAP ASSEMBLAGE

Hayfork terrane

Eastern Hayfork subterrane:

- eh — Melange and broken formation (early? Middle Jurassic)
- ehls — Limestone
- ehsp — Serpentinite

Western Hayfork subterrane:

- whu — Hayfork Bally Meta-andesite of Irwin (1985), undivided (Middle Jurassic)
- whwg — Wildwood (Chanchelulla Peak of Wright and Fahan, 1988) pluton (Middle Jurassic)
- whwp — Clinopyroxenite
- whji — Diorite and gabbro plutons (Middle? Jurassic)

Rattlesnake Creek terrane

- rcm — Melange (Jurassic and older)
- rcls — Limestone
- rcc — Radiolarian chert
- rcis — Volcanic Rocks (Jurassic or Triassic)
- rcic — Intrusive complex (Early Jurassic or Late Triassic)
- rcp — Plutonic rocks (Early Jurassic or Late Triassic)
- rcum — Ultramafic rocks (age uncertain)
- rcpd — Blocky peridotite

Western Klamath terrane

Smith River subterrane:

- srs — Galice? formation (Late Jurassic)
- srv — Pyroclastic andesite
- srgb — Glen Creek gabbro-ultramafic complex of Irwin and others (1974)
- srpd — Serpentinized peridotite

MAP SYMBOLS

- Contact
- Fault
- Thrust fault
- Trace of the San Andreas fault associated with 1906 earthquake rupture

Strike and dip of bedding:

- Inclined (10/20)
- Vertical
- Horizontal
- Overturned (10/20)
- Approximate (20)
- Joint (10)
- Strike and dip of cleavage (10)

Shear foliation:

- Inclined (10)
- Vertical

Folds:

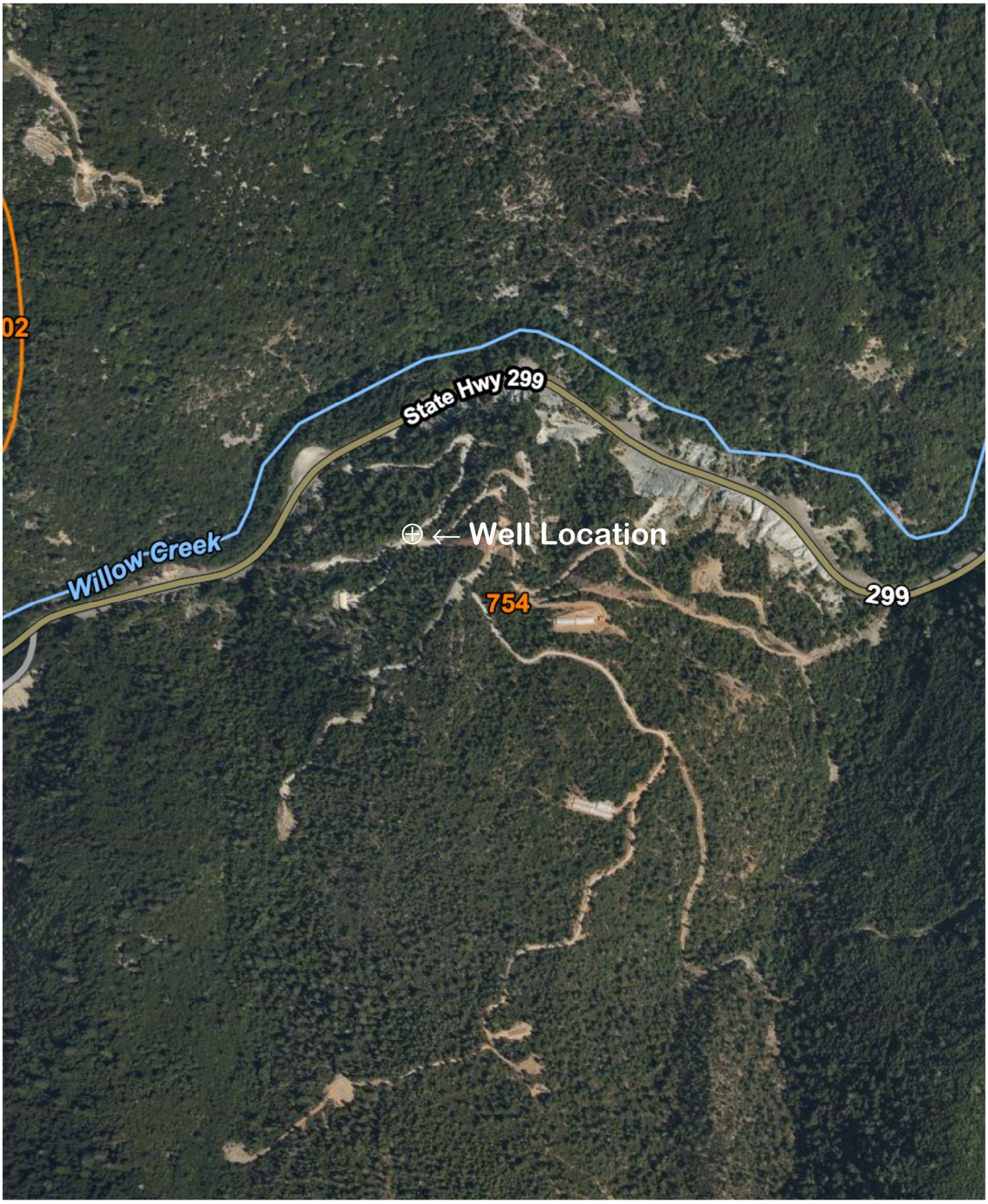
- Synclinal or synformal axis
- Anticlinal or antiformal axis
- Overturned syncline
- Landslide (Qls)

Melange Blocks:

- Serpentinite
- Chert
- Blueschist
- Greenstone
- Fossil locality and number (10)

GEOLOGY OF THE CAPE MENDOCINO, EUREKA, GARBERVILLE, AND SOUTHWESTERN PART OF THE HAYFORK 30 X 60 MINUTE QUADRANGLES AND ADJACENT OFFSHORE AREA, NORTHERN CALIFORNIA (McLaughlin et al., 2000)

Lindberg Geologic Consulting	Engineering-Geologic Hydrogeologic Well Isolation Report	Figure 6
Post Office Box 306	33818 State Highway 299, Willow Creek, Humboldt County	May 31, 2022
Cutten, CA 95534	APN: 316-071-004, Mr. Elvecio Machado, Client	Project 0452.00
(707) 442-6000	USDA-NRCS Soil Map (locations approximate)	Scale not Specified



Modified from: USDA-NRCS Online Web Soil Survey Map, May 2022 N ≈

State of California

Well Completion Report

WCR Form - DWR 188 Complete 06/19/2017

WCR2017-001220

Owner's Well Number: Well #2 | Date Work Began: 03/20/2017 | Date Work Ended: 03/24/2017

Local Permit Agency: Humboldt County Department of Health & Human Services - Land Use Program

Secondary Permit Agency: | Permit Number: 16/17-0803 | Permit Date: 03/14/2017

Well Owner (must remain confidential pursuant to Water Code 13752)

Name: XXXXXXXXXXXXXXXXXXX

Mailing Address: XXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXX

City: XXXXXXXXXXXXXXXXXXX | State: XX | Zip: XXXXX

Planned Use and Activity

Activity: New Well

Planned Use: Water Supply Domestic

Well Location

Address: 33818 Hwy 299

City: Willow Creek | Zip: 95573 | County: Humboldt

Latitude: Deg. Min. Sec. N | Longitude: Deg. Min. Sec. W

Dec. Lat. | Dec. Long.

Vertical Datum | Horizontal Datum: WGS84

Location Accuracy | Location Determination Method

APN: 316-071-004

Township: 06 N

Range: 04 E

Section: 16

Baseline Meridian: Humboldt

Ground Surface Elevation

Elevation Accuracy

Elevation Determination Method

Borehole Information

Orientation: Vertical | Specify

Drilling Method: Other - Casing Advance | Drilling Fluid: Air

Total Depth of Boring: 200 Feet

Total Depth of Completed Well: 200 Feet

Water Level and Yield of Completed Wall

Depth to first water: 90 (Feet below surface)

Depth to Static Water Level: (Feet) | Date Measured

Estimated Yield*: 10 (GPM) | Test Type

Test Length: (Hours) | Total Drawdown: (Feet)

*May not be representative of a well's long term yield.

Geologic Log - Free Form

Depth from Surface Feet to	Feet to	Description
0	3	Over Burden
3	200	Blue Sandstone with Green Serpentine

Casings

Casing #	Depth from Surface Feet to	Feet to	Casing Type	Material	Casings Specifications	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	20	Blank	Stainless Steel	N/A	0.188	8			
2	0	40	Blank	Stainless Steel	N/A	0.188	6			
2	40	200	Screen	Stainless Steel	N/A	0.188	6	Saw Cut	0.25	Holte Perforator

Annular Material

Depth from Surface Feet to	Feet to	Fill	Fill Type Details	Filter Pack Size	Description
0	20	Bentonite	Non Hydrated Bentonite		3/8 Hole Plug
20	200	Other Fill	See description.		non annular fill

Other Observations:

Borehole Specifications

Depth from Surface Feet to	Feet	Borehole Diameter (inches)
0	20	12
20	200	7.875

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name: WATSON WELL DRILLING (Person, Firm or Corporation)

500 Summer Street (Address) | Eureka (City) | CA (State) | 95501 (Zip)

Signed: *electronic signature received* (C-57 Licensed Water Well Contractor) | 04/27/2017 (Date Signed) | 1014048 (C-57 License Number)

Attachments

WellReport_05222017_1_20170619_113133.pdf - WCR Final

DWR Use Only

Site Number / State Well Number

Latitude Deg/Min/Sec N

Longitude Deg/Min/Sec W

TRS:

APN:

State of California

Well Completion Report

WCR Form Submitted 03/24/2017

WCR2017-000904

Owner's Well Number: Well #1 | Date Work Began: 03/16/2017 | Date Work Ended: 03/17/2017

Local Permit Agency: Humboldt County Department of Health & Human Services - Land Use Program

Secondary Permit Agency: | Permit Number: 16/17-0803 | Permit Date: 03/14/2017

Well Owner (must remain confidential pursuant to Water Code 13752)

Name: Fritz Sexton R & S Investments, LLC.

Mailing Address: 1717 Tasi Ln

City: McKinleyville | State: CA | Zip: 95519

Planned Use and Activity

Activity: New Well

Planned Use: Water Supply Domestic

Well Location

Address: 33818 Hwy 299

City: Willow Creek | Zip: 95573 | County: Humboldt

Latitude: Deg. Min. Sec. N | Longitude: Deg. Min. Sec. W

Dec. Lat. | Dec. Long.

Vertical Datum | Horizontal Datum: WGS84

Location Accuracy | Location Determination Method

APN: 316-071-004

Township | Range | Section | Baseline Meridian

Ground Surface Elevation | Elevation Accuracy | Elevation Determination Method

Borehole Information

Orientation: Vertical | Specify

Drilling Method: Direct Rotary | Drilling Fluid: Air

Total Depth of Boring: 230 Feet

Total Depth of Completed Well: 20 Feet

Water Level and Yield of Completed Wall

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) | Date Measured

Estimated Yield* | Test Type

Test Length | Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Geologic Log - Free Form

Depth from Surface Feet to	Feet	Description
0	4	Overburden
4	230	Blue Franciscan Sandstone with Greenstone

Casings

Casing #	Depth from Surface Feet to	Feet	Casing Type	Material	Casings Specifications	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	20	Blank	Stainless Steel	N/A	0.188	8			

Annular Material

Depth from Surface Feet to	Feet	Fill	Fill Type Details	Filter Pack Size	Description
0	20	Bentonite	Non Hydrated Bentonite		3/8 Hole Plug

Other Observations:

Borehole Specifications

Depth from Surface Feet to	Feet	Borehole Diameter (inches)
0	20	12
20	230	7.875

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name: WATSON WELL DRILLING
Person, Firm or Corporation

500 Summer Street | Eureka | CA | 95501
Address | City | State | Zip

Signed: _____ 03/24/2017 1014048
C-57 Licensed Water Well Contractor | Date Signed | C-57 License Number

DWR Use Only

Site Number / State Well Number

N _____ Latitude Deg/Min/Sec

W _____ Longitude Deg/Min/Sec

TRS:

APN:

State of California

Well Completion Report

WCR Form Submitted 04/27/2017

WCR2017-001220

Owner's Well Number: Well #2 | Date Work Began: 03/20/2017 | Date Work Ended: 03/24/2017

Local Permit Agency: Humboldt County Department of Health & Human Services - Land Use Program

Secondary Permit Agency: | Permit Number: 16/17-0803 | Permit Date: 03/14/2017

Well Owner (must remain confidential pursuant to Water Code 13752)

Name: Fritz Sexton

Mailing Address: 1717 Tasi Ln

City: McKinleyville | State: CA | Zip: 95519

Planned Use and Activity

Activity: New Well

Planned Use: Water Supply Domestic

Well Location

Address: 33818 Hwy 299

City: Willow Creek | Zip: 95573 | County: Humboldt

Latitude: Deg. Min. Sec. N | Longitude: Deg. Min. Sec. W

Dec. Lat. | Dec. Long.

Vertical Datum | Horizontal Datum: WGS84

Location Accuracy | Location Determination Method

APN: 316-071-004

Township | Range | Section | Baseline Meridian

Ground Surface Elevation | Elevation Accuracy | Elevation Determination Method

Borehole Information

Orientation: Vertical | Specify

Drilling Method: Other - Casing Advance | Drilling Fluid: Air

Total Depth of Boring: 200 Feet

Total Depth of Completed Well: 200 Feet

Water Level and Yield of Completed Wall

Depth to first water: 90 (Feet below surface)

Depth to Static Water Level: (Feet) | Date Measured

Estimated Yield*: 10 | Test Type

Test Length | Total Drawdown: (Feet)

*May not be representative of a well's long term yield.

Geologic Log - Free Form

Depth from Surface Feet to	Feet	Description
0	3	Over Burden
3	200	Blue Sandstone with Green Serpentine

Casings

Casing #	Depth from Surface Feet to	Feet	Casing Type	Material	Casings Specifications	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	20	Blank	Stainless Steel	N/A	0.188	8			
2	0	40	Blank	Stainless Steel	N/A	0.188	6			
2	40	200	Screen	Stainless Steel	N/A	0.188	6	Saw Cut	0.25	Holte Perforator

Annular Material

Depth from Surface Feet to	Feet	Fill	Fill Type Details	Filter Pack Size	Description
0	20	Bentonite	Non Hydrated Bentonite		3/8 Hole Plug
20	200	Other Fill	See description.		non annular fill

Other Observations:

Borehole Specifications

Depth from Surface Feet to	Feet	Borehole Diameter (inches)
0	20	12
20	200	7.875

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name: WATSON WELL DRILLING
Person, Firm or Corporation

500 Summer Street (Address) | Eureka (City) | CA (State) | 95501 (Zip)

Signed _____ (C-57 Licensed Water Well Contractor) | 04/27/2017 (Date Signed) | 1014048 (C-57 License Number)

DWR Use Only

Site Number / State Well Number

Latitude Deg/Min/Sec N

Longitude Deg/Min/Sec W

TRS:

APN:

State of California

Well Completion Report

Form DWR 188 Auto-Completed 10/28/2019

WCR2019-011108

Owner's Well Number 01-0B460_003 (RC-012-003) Date Work Began 06/26/2018 Date Work Ended 06/26/2018

Local Permit Agency Humboldt County Department of Health & Human Services - Land Use Program

Secondary Permit Agency Permit Number 299-07132018 Permit Date 06/15/2018

Well Owner (must remain confidential pursuant to Water Code 13752)

Name XXXXXXXXXXXXXXXXXXX

Mailing Address XXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXX

City XXXXXXXXXXXXXXXXXXX State XX Zip XXXXX

Former Use

Activity Destroy

Former Use Monitoring

Well Location

Address

City Zip County Humboldt

Latitude 40 54 24.7248 N Longitude -123 43 40.9872 W

Deg. Min. Sec. Deg. Min. Sec.

Dec. Lat. 40.906868 Dec. Long. -123.728052

Vertical Datum Horizontal Datum NAD83

Location Accuracy Location Determination Method

APN 01-HUM-299 32

Township 06 N

Range 04 E

Section 16

Baseline Meridian Humboldt

Ground Surface Elevation

Elevation Accuracy

Elevation Determination Method

Borehole Information

Orientation Vertical Specify

Drilling Method Drilling Fluid

Total Depth of Boring Feet

Total Depth of Completed Well Feet

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static

Water Level 58 (Feet) Date Measured 06/26/2018

Estimated Yield* (GPM) Test Type

Test Length (Hours) Total Drawdown (feet)

*May not be representative of a well's long term yield.

Destruction Details:

Borehole drilled to a total depth of 60 feet below ground surface. Borehole backfilled with neat cement grout via tremie pipe from full depth to the surface. Grout was mixed at a ratio of 3 gallons of water per 47-lb bag of cement. A total of 173 gallons of grout was used, requiring approximately 36 bags of cement and 108 gallons of water. Borehole was checked for settlement on 2018-06-27. No settlement was noted.

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name: KLEINFELDER INC (Person, Firm or Corporation)

550 WEST C STREET STE 1200	SAN DIEGO	CA	92101
Address	City	State	Zip

Signed: *electronic signature received* (C-57 Licensed Water Well Contractor) | 08/08/2019 (Date Signed) | 467252 (C-57 License Number)

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

					N

Latitude Deg/Min/Sec

					W

Longitude Deg/Min/Sec

TRS:

APN: