LINDBERG GEOLOGIC CONSULTING
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October 31, 2022 Project No: 0475.00

Larabee Farm, LLC
c/o Elevated Solutions
3990 Walnut Drive
Eureka, California 95503

Subject: Hydrologic Isolation of Existing Well from Surface Waters, WCR2002-009987
552 Larabee Valley Rd., Bridgeville, APN: 210-250-020, Legacy Number 756774

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 adjacent springs, wetlands and or surface waters, and if pumping this well could affect surface waters in such nearby water courses. Tributaries in the vicinity of this well are ephemeral and drain to Butte Creek (Figure 1). A California-Certified Engineering Geologist visited this site on June 10, 2022, to observe the subject well and local site conditions. Based on our research, observations, and our professional experience, it is our opinion the subject well has a low likelihood of being hydrologically connected to nearby surface waters in any manner that could affect adjacent springs, wetlands and or surface waters in the vicinity. Here we define the "vicinity" as the area within a 1,000-foot radius of the subject well, and area of approximately 72 acres. We understand that the applicant will use water from this well to irrigate cannabis. At the time of our visit this well was in use. We are not aware of the volume of water to be extracted or what the pumping schedule might be but expect that that information is provided elsewhere in the application.

Humboldt County WebGIS and the Assessor's Parcel Map (Figure 2), show parcel 210-250-020 (Figure 2) encompasses approximately 24 acres. GPS located the subject well at latitude 40.44376° north, and longitude 123.68116° west (±9'). This well is in Section 24, T1N, R4E, HB&M, and is 140 feet deep with the wellhead at an elevation of approximately 2,460 feet (Figures 1 and 2).

The Humboldt County WebGIS shows two northeasterly-flowing ephemeral tributaries of Butte Creek, the nearest is more than 140 feet southeast of the well, while the other ephemeral stream is more than 150 feet northwest (Figure 1). The neighboring property owner reported that these ephemeral streams run dry by mid-July. As stated, based on interpolation from the USGS "Larabee Valley, Calif." (1977), topographic quadrangle map (Figure 1), and the Humboldt County WebGIS, the well site elevation is 2,460 feet. The elevation of the closest ephemeral watercourse to the southeast is approximately 2,435 feet; the elevation of the ephemeral watercourse to the northwest is approximately 2,425 feet. The bottom of this well is at an elevation of 2,320 feet. It is screened from 120 to 140 feet (2,340-2,320 feet). The screened interval of the subject well is 105 feet below the elevation of the northwesterly tributary and 95 feet deeper than the southeasterly tributary, at their nearest points.

Well location is shown approximately on the attached figures, and was drilled by Diamond Core Drilling, Inc., of Redding, California, in June 2002, as a domestic well under Humboldt County well permit #01/02-921. Diamond Drilling is a licensed well-drilling contractor (C-57 #512406). They submitted their well completion report (DWR 188) on November 31, 2002 (attached). The driller estimated a yield of 15 gpm in June 2002, based on a 1-hour air lift pump test. Drawdown during the pump test was unreported.

Again, the total drilled depth of this well is 140 feet. The borehole diameter is 10-inches from grade to 21-feet. The borehole diameter from 21-feet to 140-feet is 7.5 inches. From grade to 120-feet a 6-inch diameter steel blank (unslotted) casing was installed. From 120 to 140-feet, 6-inch diameter steel, screened (slots 1/8-inch) casing was installed. Per County requirements, a bentonite surface sanitary seal was installed from the surface to 21 feet. This makes the effective bottom of the well 2,340 feet below the ground surface (bgs). The driller did not fill the remaining annulus with any sand or pea gravel for a filter pack. The well is cased and sealed through any potential shallow subsurface aquifers. Depth to first water was reported to be at 73 feet below the surface, and depth to static water in the completed developed well was 58 feet bgs when the driller conducted the pump test on June 26, 2002; the aquifer was then under 15 feet of hydrostatic head.

From the well, the nearest mapped spring is in the southeast quarter of the northwest quarter of Section 23 (Figure 1), approximately 4,300 feet northwest beyond two ephemeral tributaries of Butte Creek, at an elevation of 2,520 feet, per the WebGIS. There is a lined catchment pond on parcel 210-25-022 approximately 990 feet northwest of the subject well; the well on parcel -022 is more than 1,500 feet northwest of the subject well.

This parcel is located within California's Coast Range Geomorphic Province, in the Central Belt of the Franciscan Complex (McLaughlin et at., 2000), a seismically active region in which large earthquakes are expected to occur during the economic life span (70 years) of any developments on the subject property. Geologic mapping by McLaughlin, shows that the site is underlain by Quaternary alluvium (Qal) overlying broken formation of the Central Belt of the Franciscan Complex, as shown in Figure 4.

The near-surface soils are composed predominantly of loam to approximately three feet. From three to four feet soils are classified as gravelly loam, and below that, very gravelly loam to 79-inches according to the USDA NRCS Web Soil Survey. Soils, based on our explorations, are interpreted to be uniformly distributed across the low gradient valley floor portion on which the subject well is sited. In the areas explored, the soil profile consisted of approximately 1 foot of topsoil.

Materials reported on the geologic log of the driller's well completion report (attached) include 3-feet of "Brown silts" above 13-feet (3-feet to 16-feet) of "Brown silts with gravel". Beneath the brown silts with gravel lies 6-feet of "Grey clay" (16 to 22-feet), below which the driller logged

25-feet (22 to 47-feet) of "Dense grey clay". In the final 93-feet (47 to 140-feet) "Grey clay w/gravel zones" was logged, these are the water bearing aquifer materials in this well.

We interpret the upper clayey sections of the profile in this well, especially from 22 feet to 47 feet, to be an aquitard, a material of low permeability and transmissivity. Sandy and gravelly materials interbedded with clay below 47 feet are expected to be porous and permeable with favorable transmissivity. The gravel zones in the clay from 47 to 140 feet are the water-bearing aquifer material tapped by this well. At the location of the subject well, the elevation of the water-bearing aquifer unit is thus between approximately 2,413 feet and 2,320 feet, based on the reported lithologies, and the driller's report.

Below the surface soils and the underlying fluvial alluvium, the earth materials encountered in the boring are likely mélange of the Central Belt Franciscan Complex, as mapped by McLaughlin et al., (2000). Sheared, fractured, and folded metasedimentary rock materials can have variable hydraulic conductivity and can constitute significant aquifers. We interpret the sequence of clay with gravel zones described by the driller below 47 feet, as lithologies within the central belt mélange (cm1 or cm2) of the Franciscan Complex. In the formation, from 120 feet to 140 feet, apparently has a favorable hydraulic conductivity, making it, in our interpretation, the primary water bearing section in this well.

A geologic cross section of the area after McLaughlin et al., (2000) shows the structural and stratigraphic relationships between the regional geologic units (Figure 5). The central belt mélange is shown dipping east and bounded by thrust fault plane contacts. On-site, no dip of the rock units could be observed because they are mantled with soil and fluvial alluvium and obscured by vegetation. We interpret the faults in the subsurface to be hydrologic boundaries of reduced permeability (due to grinding and shearing along the fault planes), effectively separating units of the Franciscan Complex from each other hydrologically and limiting groundwater flow between these fault-bound units.

Figure 6 is a hydrogeologic cross section from northwest to southeast through the well site. In our vertically exaggerated (~2x) cross section, the view is northeast. Groundwater flow in this cross section is also northeasterly. Groundwater is presumed to flow from recharge areas in the higher ground to the southwest, to the southwest toward the axis of Larabee Valley via the unnamed ephemeral tributaries of Butte Creek. Bedrock subgrade is mapped by McLaughlin et al. as composed of Quaternary Alluvium (Qal) over mélange (cm1 or cm2) of the Central Belt of the Franciscan Complex. Mélange is one of several components of the Central Belt Franciscan Complex. Groundwater is envisioned as flowing through sands and gravels in the Qal, as well as through fractured zones in the metasandstone fractions of the mélange. Gravel and coarse sands are interpreted to be the primary permeability, providing preferential flow paths for groundwater in the mélange bedrock in this area.

Based on observations, review of pertinent and available information, and our experience, it is our professional opinion that this well has a low potential of having any direct or significant connection to proximal surface waters. First water was reportedly encountered at 73 feet and subsequently rose to a static level at 58 feet bgs. This well is sealed through the upper 21 feet of any potential unconfined, near-surface aquifers with which it might communicate hydraulically through the borehole. In nearby test pits, excavated for another project, we found groundwater to be 8.5 feet bgs in January 2021. The bentonite-sealed surface casing isolates the well bore from surface runoff and shallow subsurface water infiltration into deeper water-bearing aquifers.

When considered with the stratigraphy and the underlying geologic structure, the depth of the producing zone of this well (120 to 140 feet), as well as its position relative to the nearest adjacent ephemeral watercourses in the vicinity, we conclude that the depth of the surface seal, combined with the 25 feet of dense gray clay, are sufficient to preclude the potential for hydraulic connectivity with surface waters, of which there are none closer than 140 feet in the ephemeral tributary of Butte Creek. Thus, the water source from which this well draws appears to be a confined subsurface aquifer (under 15 feet of head), not demonstrably connected to any surface waters or unconfined, near-surface aquifer(s). This well appears to be hydraulically isolated from nearby wells, surface waters, springs or wetlands by the overlying 25 feet of dense gray clay.

The driller estimated the yield of this well at 15 gallons per minute (gpm) on May 26, 2002. Total drawdown was not reported after Diamond Core Drilling's one-hour air-lift pump test. At 15 gpm, this well would potentially produce 21,600 gallons per day. As noted on the well completion report, this capacity may not be representative of this well's long-term yield. Additional drawdown and recovery testing would be necessary to estimate a sustainable long-term yield of the site well.

This subject well does not appear to be hydrologically connected to, or capable of influencing surface water flows in the local ephemeral tributaries to Butte Creek, which only flow for a limited period during the winter and spring and then run dry. Nor does this well appear to be hydrologically connected to any local springs or ephemeral wetlands. 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 perennial watercourses, springs, and ponds, the potential for significant hydrologic connectivity between surface waters and groundwater in the deeper bedrock aquifers appears low. Further, given the apparently limiting condition of 25 feet of low-transmissivity dense gray clay above the water-bearing gravel units, the aquifer is likely isolated from, and not significantly hydraulically connected to any other aquifer(s).

As mentioned, on the Larabee Valley USGS topographic quadrangle map, there is one spring mapped in the southeast quarter of the northwest quarter of Section 23, more than 4,300 feet northwest of the subject well. There are no other springs or wetlands mapped within 1,000 feet of this subject well. There is a lined rainwater catchment pond approximately 990 feet to the northwest of the well on APN 210-250-022. We interpret the pond to be sufficiently sealed to

preclude significant seepage, and as such it would not be connected hydrologically to the confined aquifer tapped by well WCR2002-009987.

We researched the California Department of Water Resources (DWR) database to determine if there were wells within 1,000 feet of the subject well. Based on the information available at the present time there appear to be two wells that meet that criterion:

- WCR2011-008070 to the northwest in Section 24, on APN 210-250-021, is a 140-foot deep, 4 gpm well that was located only by the parcel centroid in the DWR database, this well appears to be within 600 feet of the subject well at elevation 2,470 feet.
- To the southeast, well WCR2017-004089, in Section 24 on APN 210-250-019, is a 260-foot deep, 7 gpm well more than 800 feet southeast at elevation 2,445 feet.

Wells -008070 and -004089 are across the groundwater gradient from each other and the subject well. As groundwater mimics topography and responds to the force of gravity, in general it will flow down gradient in a direction subparallel to topography. The ground surface slopes to the northeast and the groundwater surface likely does the same and flows to the northeast, toward the axis of Little Larabee Valley. At the time of our visit the subject well appeared to be in use.

In our professional opinion, it appears that the aquifer tapped by the subject well is recharged by water infiltrating through the soil and bedrock from upslope source areas both distal to the well site. Ephemeral streams in the vicinity of the well may contribute recharge when they flow during runoff generating storm events.

The Natural Resources Conservation Service's (NRCS), online Web Soil Survey, shows the subject well within soils of the Frostvalley-Mulecreek complex, on slopes of 2 to 9 percent, (#1002, Figure 7), which the NRCS describes as well-drained. The site is also classified as "Farmland of statewide importance". The Web Soil Survey unit description is attached to this report. Mean annual precipitation in the area is listed by the NRCS as 64 to 76 inches per year. Capacity of the most limiting soil layer to transmit water (Ksat) is described as moderately high to high (0.57 to 2.00 in/hr) with a depth to the water table of greater than 80 inches. If, during the wet season, just ten percent of the "low end" 64 inches of precipitation is absorbed by the soils and does not flow across the surface and into local watercourses (or be lost to transpiration), then approximately 12.8 acre-feet, or 4.2 million gallons of water per year (MGPY), may be expected to recharge the local aquifer below this 24-acre subject property. Given that same 64-inches of precipitation, and the same 10 percent partitioned to groundwater recharge, then recharge can be estimated within a 1,000-foot radius of the subject well. Recharge within the 72 acres enclosed by a circle having a 1,000-foot radius, would be more than 38 acre-feet, and more than 12.5 MGPY. Our estimates are conservative; United States Geological Survey (USGS) researchers estimate that in northwest California, approximately 33 percent of precipitation goes to recharge (Flint, et al., 2103). Modelling the 72-acre circle surrounding the well with 33 percent of precipitation to recharge results in 41 MGPY.

On March 28, 2022, Governor Newsom issued an executive order (N-7-22) relating to the ongoing drought in California. In executive order N-7-22, the governor outlined 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*". This well on 552 Larabee Valley Road, Bridgeville, is not within a basin subject to the Act, and there has been no Groundwater Sustainability Agency established with authority over the area where this permitted well is sited.

The order states that counties, cities, and other public agencies are 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* (650,000+ gallons) *of groundwater for individual domestic users, or that will exclusively provide groundwater to public water supply systems*."

Based on our observations, research, and professional experience, it is our professional opinion that the well on APN 210-250-020, on 552 Larabee Valley Road, has a low likelihood of being hydrologically connected to nearby surface waters or wells in any manner that might significantly impact or affect adjacent wetlands, wells, and or surface waters in the vicinity.

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:

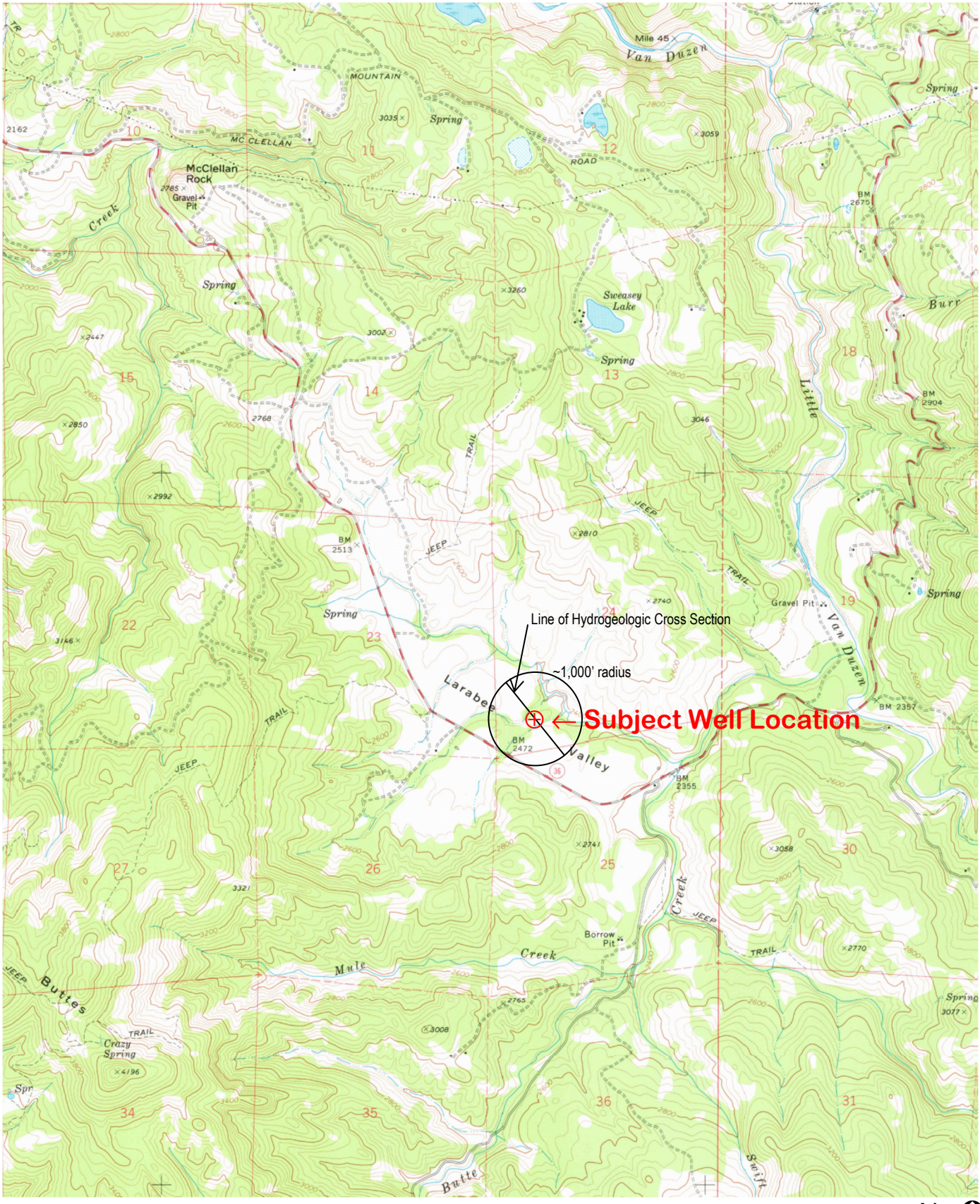
Figure 1: Topographic Well Location Map
Figure 2: Humboldt County Assessor's Parcel Map
Figure 3: Satellite Image of Well location
Figure 4: Geologic Map
Figure 4a: Geologic Map Explanation
Figure 5: Generalized Geologic Cross Section
Figure 6: Hydrogeologic Cross Section
Figure 7: USDA-NRCS Soils Map

State of California Well Completion Report:
WCR2002-009987, Legacy Number 756774, APN: 210-250-020 (Subject Well)
WCR2011-008070, Legacy No. e0136382, APN: 210-250-021 (>600 feet northwest)
WCR2017-004089, Legacy No. e0330026, APN: 210-250-019 (>800 feet southeast)

Web Soil Survey, NRCS Map Unit Description:
Frostvalley-Mulecreek complex, #1002, 2 to 9 percent slopes.

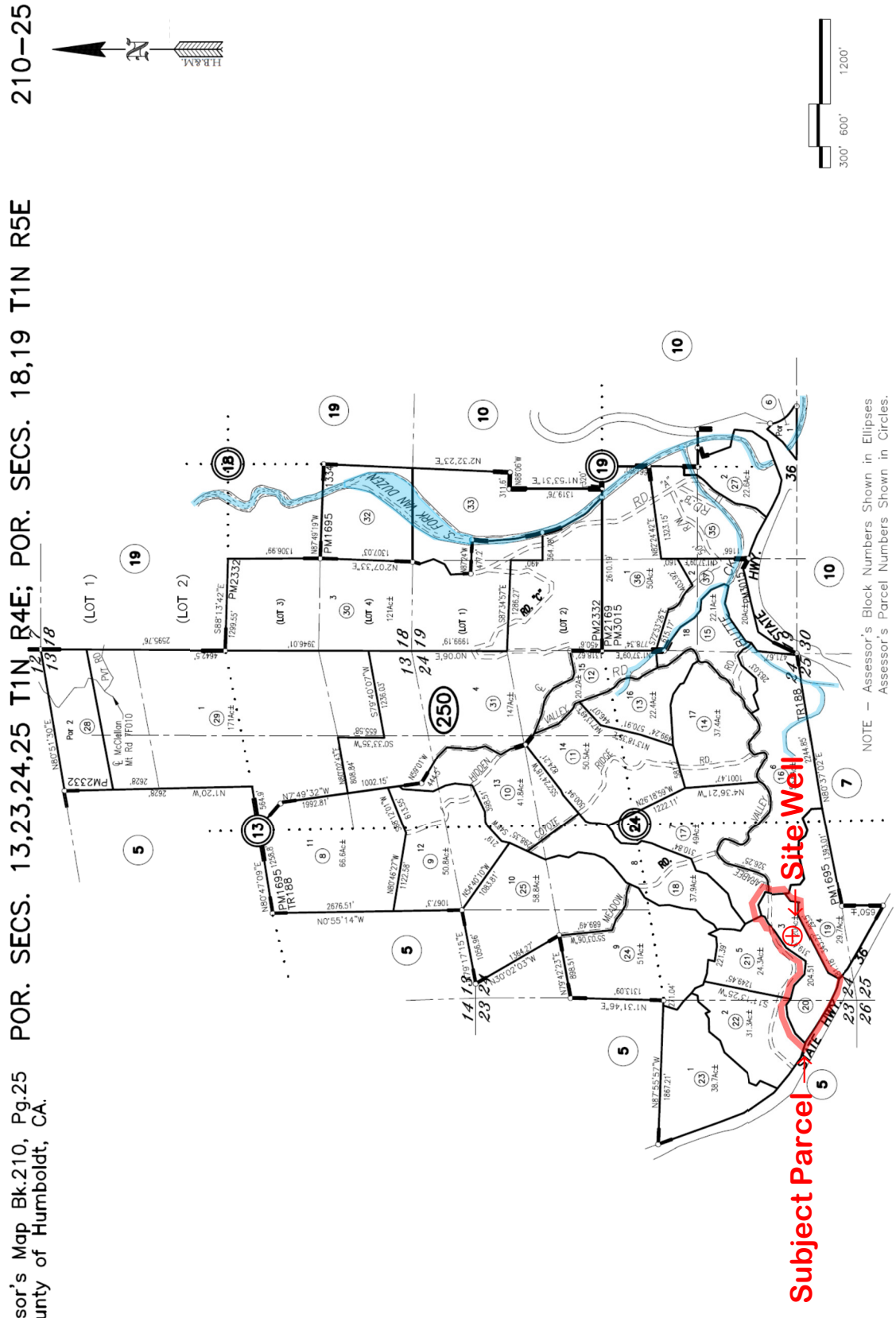
Reference:
Flint et al.: Fine-scale hydrologic modeling for regional landscape applications: the California Basin Characterization Model development and performance. Ecological Process, 2013, 2:25. (doi:10.1186/2192-1709-2-25)

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 1
Post Office Box 306	552 Larabee Valley Road, Bridgeville, California	October 31, 2022
Cutten, CA 95534	DWR Well 2002-009987, APN 210-250-020, Larabee Farm LLC, Client	Project 0475.00
(707) 442-6000	Topographic Well Location Map (locations approximate)	1" ≈ 2,900'



Modified from: USGS "Larabee Valley, Calif." 7.5' Quadrangle Map (1977). N ≅

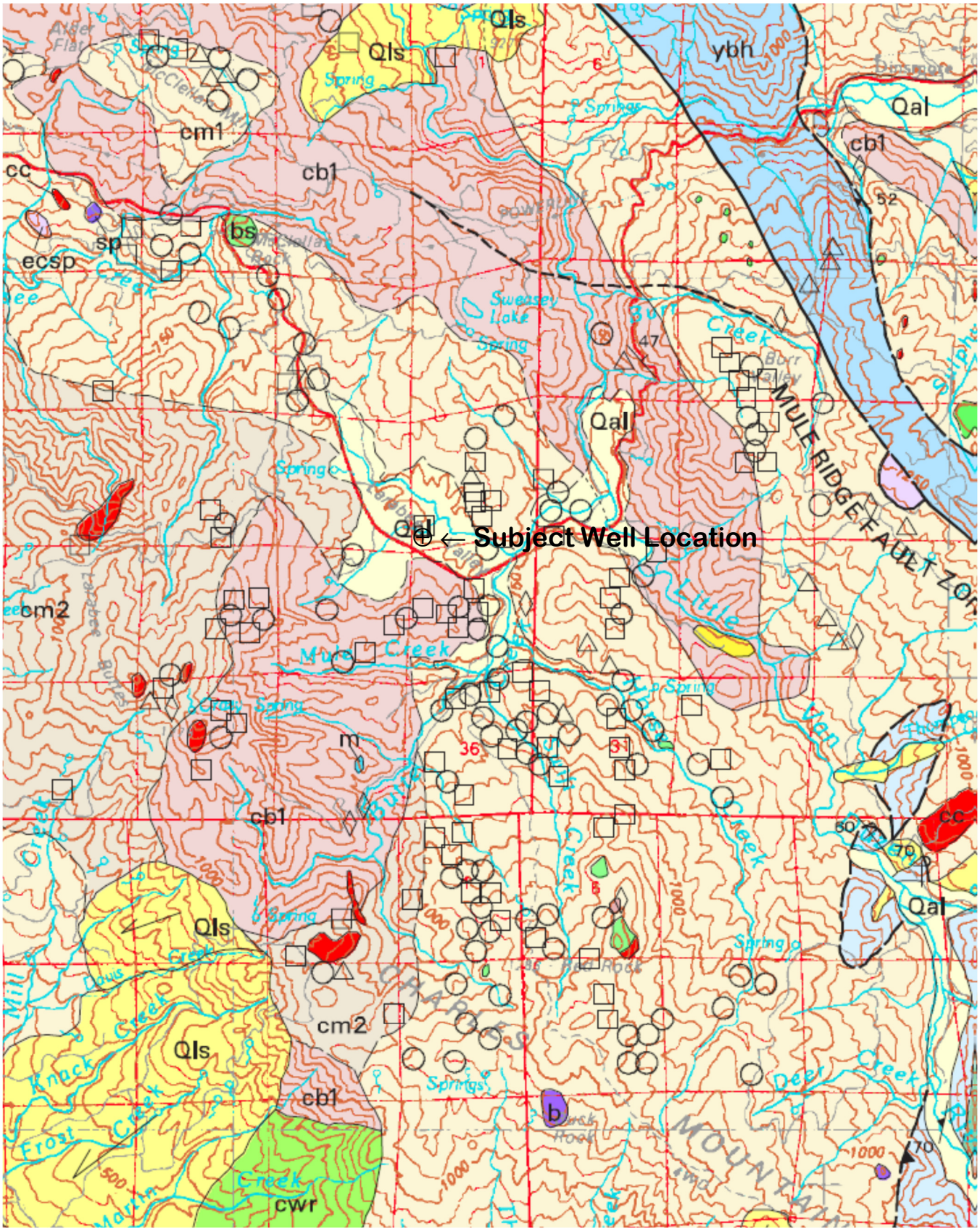
Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 2
Post Office Box 306	552 Larabee Valley Road, Bridgeville, California	October 31, 2022
Cutten, CA 95534	DWR Well 2002-009987, APN 210-250-020, Larabee Farm LLC, Client	Project 0475.00
(707) 442-6000	Humboldt County Assessor's Parcel Map (locations approximate)	Scale As Shown



Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 3
Post Office Box 306	552 Larabee Valley Road, Bridgeville, California	October 31, 2022
Cutten, CA 95534	DWR Well 2002-009987, APN 210-250-020, Larabee Farm LLC, Client	Project 0475.00
(707) 442-6000	Satellite Image of Well Location (locations approximate)	1" ≈ 600'

Modified from: Google Earth Imagery of July 17, 2022. N ≈

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 4
Post Office Box 306	552 Larabee Valley Road, Bridgeville, California	October 31, 2022
Cutten, CA 95534	DWR Well 2002-009987, APN 210-250-020, Larabee Farm LLC, Client	Project 0475.00
(707) 442-6000	Geologic Map (locations approximate)	1" ≈ 4,750'



Modified from: McLaughlin, et al., (2,000). N ≈

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 4a
P. O. Box 306	552 Larabee Valley Road, Bridgeville, California	October 31, 2022
Cutten, CA 95534	DWR Well 2002-009987, APN 210-250-020, Larabee Farm LLC, Client	Project 0475.00
(707) 442-6000	Geologic Map 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
- Vertical
- Horizontal
- Overturned
- Approximate
- Joint
- Strike and dip of cleavage

Shear foliation:

- Inclined
- Vertical

Folds:

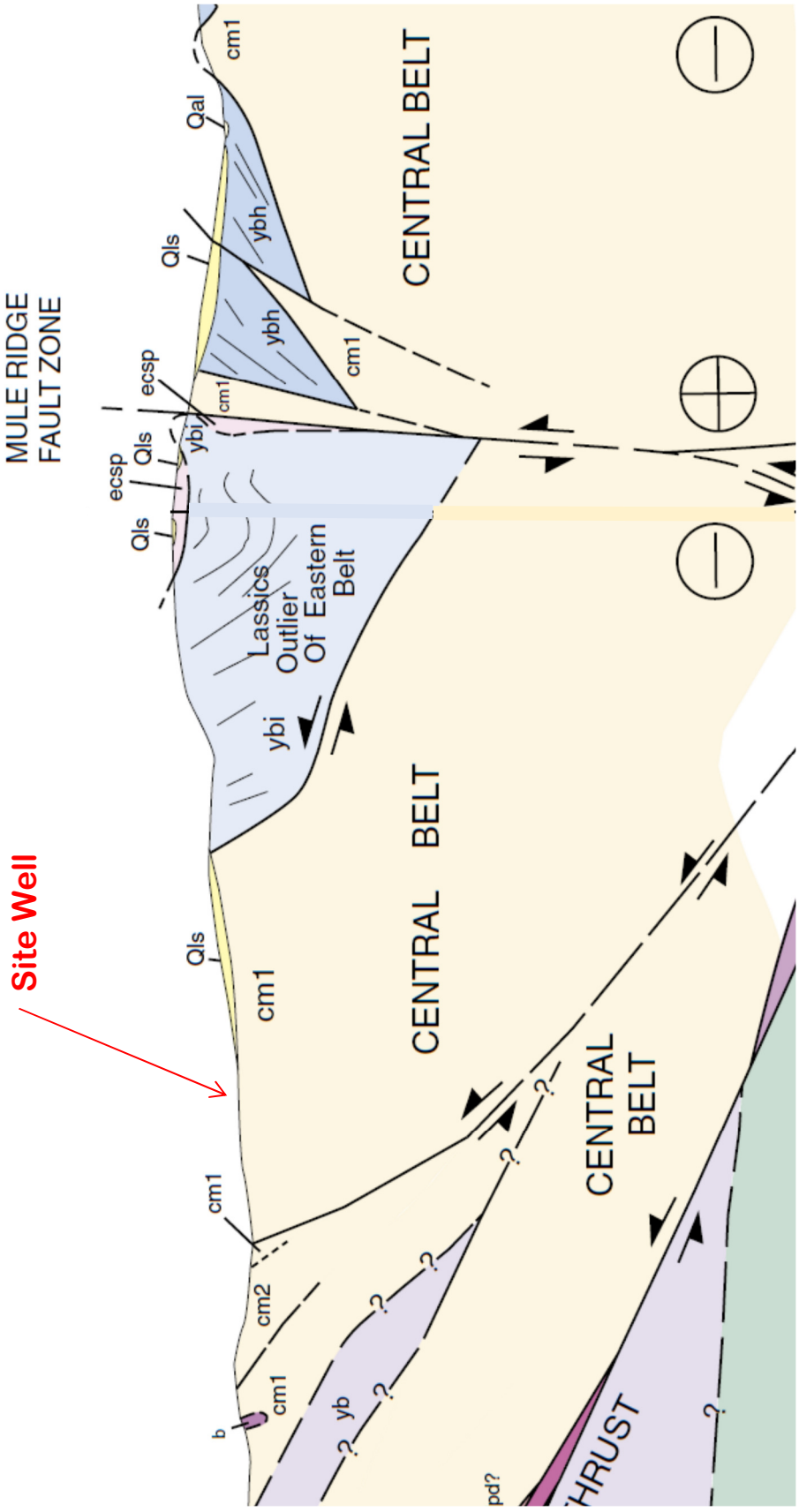
- Synclinal or synformal axis
- Anticlinal or antiformal axis
- Overturned syncline
- Landslide (Qls)

Melange Blocks:

- Serpentinite
- Chert
- Blueschist
- Greenstone
- Fossil locality and number

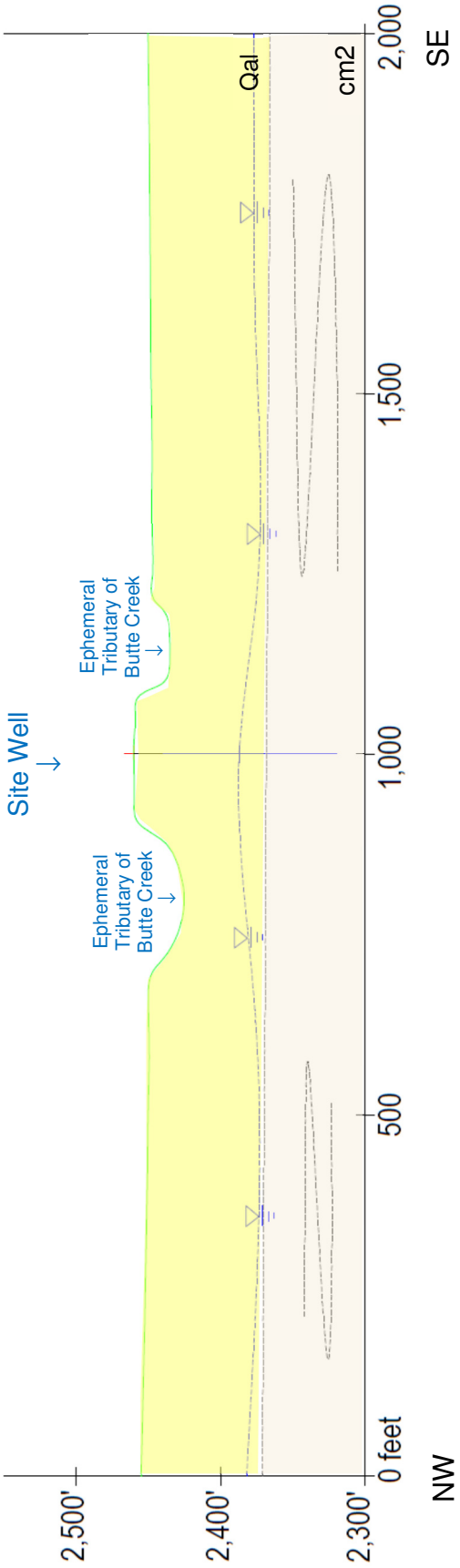
GEOLOGY OF THE CAPE MENDOCINO, EUREKA, GARBERVILLE, AND SOUTHWESTERN PART OF THE HAYFORK 30 X 60 MINUTE QUADRANGLES AND ADJACENT OFFSHORE AREA, NORTHERN CALIFORNIA (McLaughlin et al., 2000)

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 5
Post Office Box 306	552 Larabee Valley Road, Bridgeville, California	October 31, 2022
Cutten, CA 95534	DWR Well 2002-009987, APN 210-250-020, Larabee Farm LLC, Client	Project 0475.00
(707) 442-6000	Generalized Geologic Cross Section (locations approximate)	Not to Scale



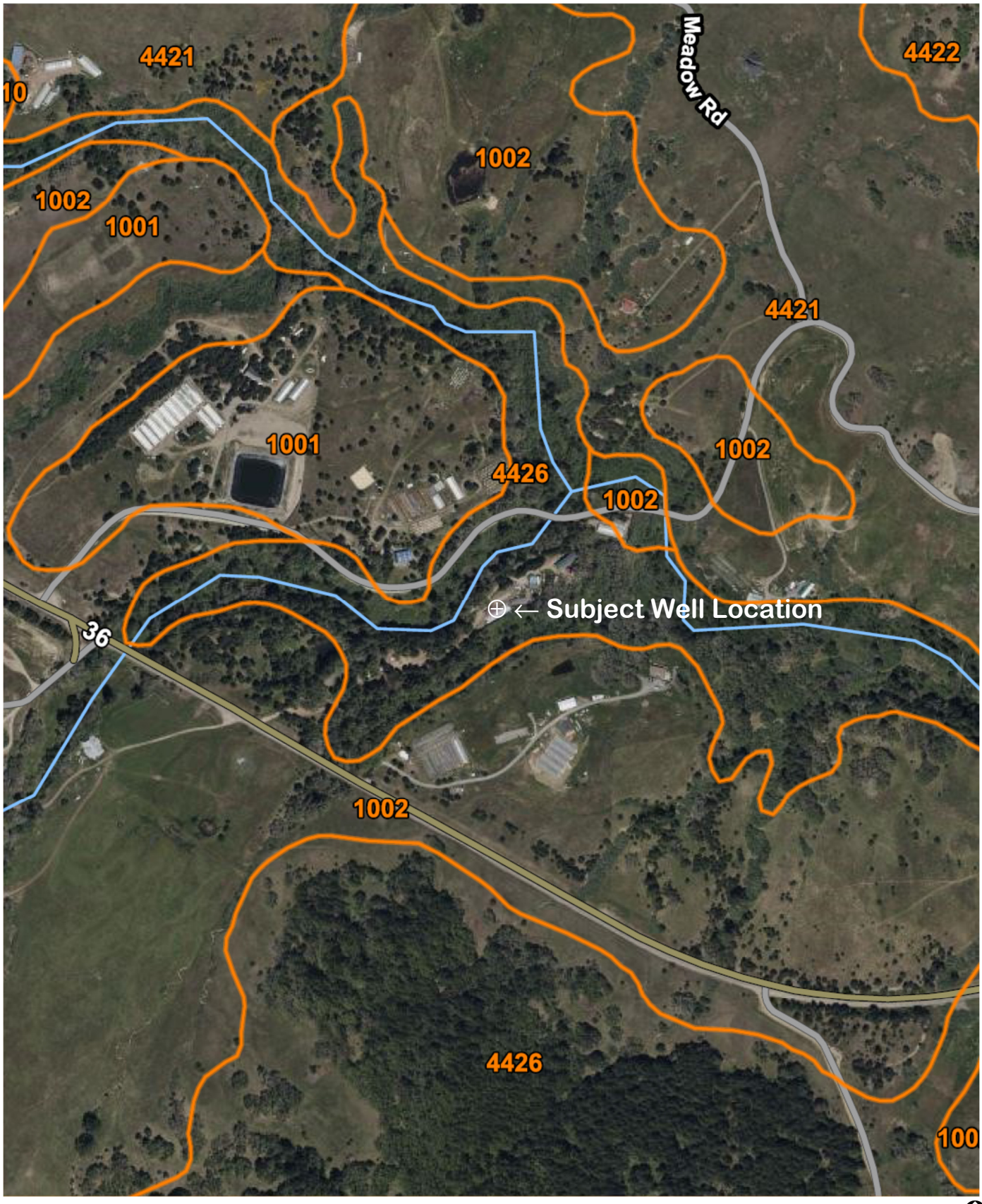
Modified from: McLaughlin, et al., (2,000).

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 6
Post Office Box 306	552 Larabee Valley Road, Bridgeville, California	October 31, 2022
Cutten, CA 95534	DWR Well 2002-009987, APN 210-250-020, Larabee Farm LLC, Client	Project 0475.00
(707) 442-6000	Hydrogeologic Cross Section (locations approximate)	V. E. = 2x



In this vertically exaggerated (~2x) cross section, the view is looking down slope and toward the northeast. Groundwater flow in this cross section is away from the viewer, or into the page. Groundwater is presumed to flow from recharge areas in the higher ground to the southwest, to the northeast toward the axis of Larabee Valley via unnamed tributaries of Butte Creek. Bedrock subgrade is mapped by McLaughlin et al. as composed of Quaternary Alluvium (Qal) over mélange (cm2) of the Central Belt of the Franciscan Complex. Mélange is one of several components of the Central Belt Franciscan Complex. Groundwater is envisioned as flowing through sands and gravels in the Qal, and through fractured zones in the metasandstone fraction of the mélange. Fractures are interpreted to be the primary permeability and providing preferential flow paths for groundwater in this area.

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 7
Post Office Box 306	552 Larabee Valley Road, Bridgeville, California	October 31, 2022
Cutten, CA 95534	DWR Well 2002-009987, APN 210-250-020, Larabee Farm LLC, Client	Project 0475.00
(707) 442-6000	USDA-NRCS Soils Map (locations approximate)	Scale Not Determined



Modified from: USGS-NRCS Web Soil Survey, October 26, 2022 N ≈

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 756774

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO. 01N/04E-24H
LATITUDE LONGITUDE
APN/TRS/OTHER

Page 1 of 1 NOV 12 2002
Owner's Well No. WW-1
Date Work Began 6-25-02 Ended 6-26-02
Local Permit Agency Humboldt County Environmental Health
Permit No. 01/02-921 Permit Date 6-13-02

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD air rotary FLUID none

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	3	Brown silts
3	16	Brown silt w/gravels
16	22	Grey clay
22	47	Dense grey clay
47	140	Grey clay w/gravel zones

TOTAL DEPTH OF BORING 140 (Feet)
TOTAL DEPTH OF COMPLETED WELL 140 (Feet)

WELL OWNER

[redacted]
Address 552 Larabee Valley Drive
City Bridgeville
County Humboldt
APN Book 210 Page 250 Parcel 20
Township 1N Range 4E Section 24
Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH

NORTH
WEST
See attached map
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
X Domestic ___ Public
___ Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 73 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 58 (Ft.) & DATE MEASURED 6-26-02
ESTIMATED YIELD * 15 (GPM) & TEST TYPE air lift
TEST LENGTH 1 (Hrs.) TOTAL DRAWDOWN n/a (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	21	10	x				Steel	6	.188	
21	120	7⅞	x				Steel	6	.188	
120	140	7⅞		x			Steel	6	.188	1/8

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	21		x		Granular & Chips

DEC 24 2002

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 Diamond Core Drilling, Inc. (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
P.O. Box 491925 Redding CA 96049
ADDRESS CITY STATE ZIP
Signed [signature] WELL DRILLER/AUTHORIZED REPRESENTATIVE
10-31-02 DATE SIGNED
512406 C-57 LICENSE NUMBER

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

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Page 1 of 2

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. e0136382

Owner's Well Number 1

Date Work Began 08/28/2011 Date Work Ended 8/30/2011

Local Permit Agency Humboldt County E.H.D.

Permit Number 11/12-0033 Permit Date 7/28/11

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01N/04E-24

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Direct Rotary Drilling Fluid Air

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0	1	Top Soil
1	23	Clay Brown
23	47	Silty Clay Blue
47	48	Silty Sand Blue
48	62	Silty Clay Blue
62	84	Silty Sand Blue
84	140	Franciscan Drk Gray

Total Depth of Boring 140 Feet

Total Depth of Completed Well 140 Feet

Well Location

Address 275 Larabee Valley Road

City Bridgeville County Humboldt

Latitude ___ ___ ___ N Longitude ___ ___ ___ W (Deg. Min. Sec.)

Datum ___ Decimal Lat. ___ Decimal Long. ___

APN Book 210 Page 250 Parcel 021

Township 1N Range 4E Section 24

Location Sketch

(Sketch must be drawn by hand after form is printed.)

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 and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply
☑ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 60 (Feet below surface)

Depth to Static Water Level 60 (Feet) Date Measured 08/30/2011

Estimated Yield * 4 (GPM) Test Type Air Lift

Test Length 4.0 (Hours) Total Drawdown 140 (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	40	10	Blank	PVC Sch. 80	CL200	5		
40	140	10	Screen	PVC Sch. 80	CL200	5	Milled Slots	0.032

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	20	Bentonite	Sanitary Seal
20	140	Filter Pack	3/8" Pea Gravel

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Location Map

Attach additional information, if it exists.

Certification Statement

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

Name FISCH DRILLING (Person, Firm or Corporation)

3150 JOHNSON ROAD (Address) HYDESVILLE (City) CA (State) 95547 (Zip)

Signed ___ (C-57 Licensed Water Well Contractor) 09/06/2011 (Date Signed) 683865 (C-57 License Number)

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

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Page 1 of 1 FEB 2 1 2017

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0330026

Owner's Well Number

Date Work Began 11/16/2016 Date Work Ended 11/18/2016

Local Permit Agency Humboldt County

Permit Number Permit Date 9/15/16

DWR Use Only – Do Not Fill In

01N/04E-24

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Rotory Drilling Fluid Bentonite mud

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	15	yellow silty Clay
15	40	Blue Silty Clay With Sand wet
40	50	Blue Silty Clay Soft
50	76	Grey Silty Clay W/ Course Sand
76	80	Pee Gravel and Silty Blue Clay
80	143	Green Broken Rock W/ Blue Silty Clay
143	173	Blue And green Broken Rock W/ Silty Blue Clay
173	210	Blue Silty Clay
210	223	Hard Blue Broken rock
223	260	Broken green Rock

Total Depth of Boring 260 Feet

Total Depth of Completed Well 260 Feet

Well Owner

Well Location

Address 3443 Hiway 36

City Bridgeville County Humboldt

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

Datum Dec. Lat. Dec. Long.

APN Book 210 Page 250 Parcel 019

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)

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 and complete.

Activity

◉ New Well

○ Modification/Repair

○ Deepen ○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply

☑ Domestic ☐ Public

☑ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water 40 (Feet below surface)

Depth to Static Water Level 96 (Feet) Date Measured 11/18/2016

Estimated Yield * 7 (GPM) Test Type Constant Rate

Test Length 8.0 (Hours) Total Drawdown 240 (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	240	12	Blank	PVC Sch. 40	1/4	5		
240	250	12	Screen	PVC Sch. 40	1/4	5	Milled Slots	0.032
250	260	12	Blank	PVC Sch. 40	1/4	5		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	20	Bentonite	3/8 Hole Plug
20	260	Filter Pack	3/8 Pee 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 Rich Well Drilling and Pump Service, Inc.
Person, Firm or Corporation

1251 RailRoad Dr. Mckinleyv ille CA 95519
Address City State Zip

Signed Allen W. Richey 11/28/2016 902702
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Humboldt County, Central Part, California

1002—Frostvalley-Mulecreek complex, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2sx6d
Elevation: 2,300 to 3,610 feet
Mean annual precipitation: 64 to 76 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 60 to 120 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Frostvalley and similar soils: 48 percent
Mulecreek and similar soils: 42 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Frostvalley

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from metasedimentary rock

Typical profile

Ap - 0 to 3 inches: loam
A - 3 to 20 inches: loam
AB - 20 to 35 inches: loam
Bw - 35 to 47 inches: gravelly loam
C - 47 to 79 inches: very gravelly loamy sand

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B
Ecological site: F005XZ003CA - Terraces
Hydric soil rating: No

Description of Mulecreek

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Alluvium derived from metasedimentary rock

Typical profile

Ap - 0 to 4 inches: loam
A - 4 to 22 inches: loam
Bt1 - 22 to 30 inches: clay loam
Bt2 - 30 to 37 inches: clay loam
Bt3 - 37 to 55 inches: clay loam
BCt - 55 to 79 inches: clay loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 20 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F005XZ003CA - Terraces
Hydric soil rating: No

Minor Components

Pasturerock, dry

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, convex, linear
Across-slope shape: Linear, concave, convex
Hydric soil rating: No

Rockyglen

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 9, Sep 1, 2022