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

October 13, 2022 Project No: 0472.00

Mr. Nicholas Lewis
7325 La Jolla Blvd.
La Jolla, California 92037

Subject: Hydrologic Isolation of Existing Well from Surface Waters
Forest Road 6N06, Willow Creek, APN: 524-114-007
WCR2014-006597 (Legacy Well No. e0215783)

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 surface waters, springs, or wetlands, and if pumping this well might affect nearby surface waters. The nearest tributaries in the vicinity of this well are Mahala Creek to the northwest, an unnamed ephemeral stream to the southeast, and South Fork Trinity River to the east (Figure 1).

A California-Certified Engineering Geologist visited this site on July 27, 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. We define the "vicinity" as the area within a 1,000-foot radius of the subject well, an area of approximately 72 acres. We understand that the applicant hopes to use water from this well to irrigate cannabis. Projected annual water use is 1.32 acre-feet (428,580 gallons) per year; annual and monthly estimates of water use are attached to this report.

Based on the Humboldt County WebGIS and the Assessor's Parcel Map (Figure 2), parcel 524-114-007 (Figure 2) encompasses approximately 144 acres. GPS located the subject well at latitude 40.84854° north, and longitude 123.58727° west (±9'). This well is in Section 35, T6N, R5E, and is 200 feet deep. Wellhead elevation is approximately 1,800 feet (Figure 1).

The Humboldt County WebGIS shows three waterways nearby to the northwest, southeast and east. The nearest waterway is Mahala Creek, more than 1,450 feet northwest of the well, while the unnamed ephemeral stream is more than 1,900 feet southeast of the well. South Fork Trinity River is approximately 3,100 feet east (Figure 1). As stated, based on interpolation from the USGS "Hennessy Peak, Calif." (1979), topographic quadrangle map (Figure 1), and the Humboldt County WebGIS, the well site elevation is 1,800 feet. The elevation of the nearest watercourse to the northwest is approximately 1,000 feet and the elevation of the unnamed ephemeral watercourse to the south is approximately 1,200 feet. The well bottom elevation of the subject well is approximately 1,600 feet, making the nearest ephemeral watercourses 600 feet, and 400 feet, lower than the total depth of the well.

Well location is shown approximately on the attached figures, and was drilled by Fisch Drilling, of Hydesville, in May 2014, under Humboldt County well permit #11/12-1271. Fisch Drilling is a licensed well-drilling contractor (C-57 #683865). Fisch Drilling submitted their well completion report (DWR 188) on June 2, 2014 (attached). The driller estimated a yield of 10 gpm in May 2014, based on a 4-hour air lift pump test. Total drawdown during the pump test was reported to be 195 feet (sic).

Again, total drilled depth of this well is 200 feet. The borehole diameter is 10-inches from grade to 200-feet. From the surface to 100 feet, 5-inch diameter blank (unslotted) PVC, schedule 90, casing was installed. From 100- to 200-feet, 5-inch diameter PVC, schedule 90, slotted (0.032-inch milled slots) well screen, was installed. Per County requirements, a bentonite surface sanitary seal was installed from the surface to 20 feet. The well is cased and sealed through any potential shallow subsurface aquifers in the uppermost 20 feet as required by county regulation. Below the bentonite seal, the annulus was backfilled with 3/8-inch pea gravel to total depth. Depth to first water was reported as 98 feet below the surface, and depth to static water in the completed developed well was also reported to be 98 feet bgs when the driller conducted the pump test on May 21, 2014, so the aquifer is not artesian.

Per the USGS "Hennessy Peak, Calif." (1979), topographic quadrangle map, there are no springs within 1,000 feet nor in any of the adjacent parcels. The nearest mapped spring is approximately 2.3 miles east, at 2,180 feet, in the head of Deep Gulch, on the east side of South Fork Trinity River, in Trinity County.

This parcel is located within California's Klamath Mountains Geomorphic Province, in the Rattlesnake Creek Terrane of the Western Paleozoic and Triassic Belt of the Klamath Mountains, a seismically active region in which moderate earthquakes are expected to occur during the economic life span (70 years) of any developments on the subject property. Geologic mapping by the State of California, shows that the site is underlain by Upper Jurassic marine metasedimentary rocks (Ju), as shown in Figures 4 and 5.

According to the USDA-NRCS Web Soil Survey, the near-surface soils are very gravelly loam, in the uppermost 53-inches, with unweathered bedrock below. Soils are interpreted to be uniformly distributed across the subject parcel (Figure 7). Depth to the water table, according to the Web Soil Survey, is more than 80 inches. No flooding or ponding occur on this soil.

Materials reported on the geologic log of the driller's well completion report (attached) include 26-feet of "Silty Clay w/Rock, Reddish Brown" above 65-feet (26-feet to 91-feet) of "Weathered Greenstone, Green W/Reddish Streaks". Beneath the greenstone lies 109-feet of "Shale, Hard, Drk Gray" (91- to 200-feet) was logged, which is the water-producing unit in the subject well.

We interpret the upper silty clay section of the profile in this well, from grade to 26-feet, to be an aquitard, a material of low permeability and transmissivity. The weathered greenstone material

below 26 feet is of undetermined porosity and permeability; it did not contain producible water. The gray shale is water-bearing aquifer material in this well. Fractured shale can, and apparently does in this case, have a higher transmissivity and permeability weathered greenstone. At the location of the subject well, the elevation of the first water-bearing aquifer unit is approximately 1,702 feet, based on the driller's report.

Below the surface, the earth materials encountered in the boring are metamorphic marine rocks of the Rattlesnake Creek Terrane of the Western Paleozoic and Triassic Belt of the Klamath Mountains. Sheared, fractured, and folded metasedimentary rock materials can have highly variable hydraulic conductivity, but under the right conditions, may constitute significant aquifers. We interpret the sequence described by the driller, as lithologies within the Rattlesnake Creek Terrane of the Western Paleozoic and Triassic Belt of the Klamath Mountains. The shale section of this profile apparently has favorable hydraulic conductivity, making the grey the primary water bearing unit in this well.

A geologic cross section of the area after Irwin, (1997) shows the structural and stratigraphic relationships between the regional geologic units (Figure 5). The Rattlesnake Creek Terrane of the Western Paleozoic and Triassic Belt of the Klamath Mountains 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 colluvium 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 rock units from each other hydrologically, and limiting groundwater flow between some fault-bound units.

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 any proximal surface waters. First water was reportedly encountered at 98 feet and did not change to a different static level. This well is sealed through the upper 20 feet where potential unconfined, near-surface aquifers with might communicate hydraulically through the borehole.

When considered with the stratigraphy, and the underlying geologic structure, plus the distances (horizontal and vertically) from the nearest surface waters, and the depth of the producing zone of this well (~98 to 200 feet), as well as the position of the well relative to the nearest surface waters in the vicinity, we conclude that the depth of the surface seal, combined with the 26 feet of silty clay, are sufficient to preclude the potential for hydraulic connectivity with surface waters, of which there are none closer than 1,450 feet in Mahala Creek. Thus, the water source from which this well draws appears to be a confined subsurface aquifer not demonstrably connected to any surface waters or 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, of which there are none within 1,000 feet of the subject well.

According to the driller, the estimated the yield of this well was 10 gallons per minute (gpm) on May 21, 2014. Total drawdown was reported to be 195 feet (sic) after Fisch Drilling's four-hour air-lift pump test. This indicates the well was *more than* pumped dry during the pump test because, in a 200-foot well, with static water at 98 feet, there remained only 102 feet of well. In any case, at 10 gpm, 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. 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 Mahala Creek to the northwest, the unnamed ephemeral stream to the southeast, South Fork Trinity River to the east. This well does not appear to be hydrologically connected to any local springs or ephemeral wetlands because there are none nearby. 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 watercourses, the potential for significant hydrologic connectivity between surface waters and groundwater in the shale aquifer appears unlikely. Further, given the apparently limiting condition of the low-transmissivity silty clay unit above and below the weathered greenstone and water-bearing shale, they are not likely to have significant hydraulically connection to shallow unconfined aquifers, if any.

As mentioned, on the Hennessy Peak, Calif. USGS topographic quadrangle map, there are no springs mapped in the Section 35, or in the adjacent sections.

We researched the DWR (California Department of Water Resources) database to find other permitted wells within 2,000 feet of the subject well. Based on the information available at the present time, there are no wells which meet this criterion.

As groundwater mimics topography and responds to the force of gravity, in general any near surface unconfined aquifer will flow down slope in a direction subparallel to topography. Groundwater flow in the deeper confined subsurface aquifer in the metasedimentary rocks is likely far more complex. The ground surface slopes to the northwest, northeast and southeast away from the spur ridge where the well is located; thus the near surface unconfined aquifer flows radially away from the crest to the northwest, northeast and southeast.

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 southwesterly, upslope source areas both proximal and distal to the well site. Ephemeral streams in the recharge area also contribute to recharge, when they flow during runoff generating storm events.

The United States Department of Agriculture's (USDA), Natural Resources Conservation Service's (NRCS), online Web Soil Survey, shows the subject well within soils of the Clallam-Hugo-Holland families association, deep, on slopes 50 to 90 percent, (#266, Figure 7), which the

NRCS describes as a well-drained soil with a high runoff class. The Web Soil Survey's map unit description is attached to this report. Mean annual precipitation is listed by the NRCS as 50 to 90 inches per year. Capacity of the most limiting soil layer to transmit water (Ksat) is described as moderately low to high (0.14 to 1.98 in/hr), with a depth to the water table of greater than 80 inches.

If during the wet season, only ten percent of the "low end" precipitation estimation of 50 inches is absorbed by the soils/bedrock and does not flow across the ground surface and into local watercourses (or be lost to evapotranspiration), then approximately 60 acre-feet, or more than 19.5 million gallons of water per year (MGPY), may be expected to recharge the local aquifers below this 144-acre subject property. Given the same amount of precipitation (50") and the same 10 percent partitioned to recharge, then within the 1,000-foot radius of the subject well, recharge can be estimated. Recharge within the 72 acres enclosed by a circle having a 1,000-foot radius, would be 30 acre-feet, and more than 9.7 million gallons. 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).

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 Forest Road 6N06, Willow Creek, 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 the conditions in the Order, 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 experience, it is our professional opinion that the well on APN 524-114-007, located on Forest Road 6N06, has a low likelihood of being hydrologically connected to nearby surface waters or neighboring wells in any manner that might significantly have a negative impact or effect on proximal surface waters. We found no other wells, no springs, wetlands, ponds, or lakes within 1,000 feet of this subject well.

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 Site 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

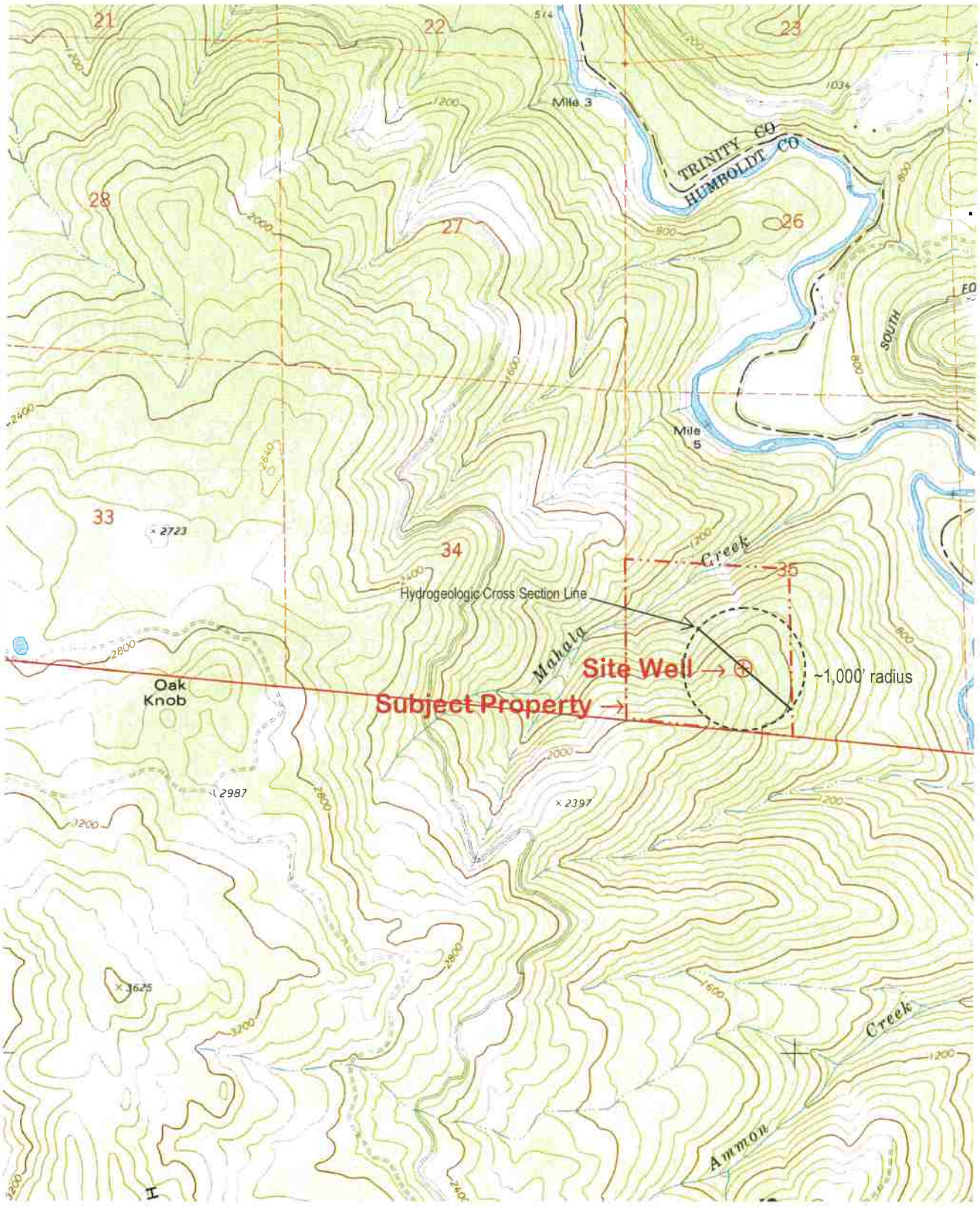
Estimated pumping schedule and extraction volumes provided by Client.

State of California Well Completion Report:
WCR2014-006597, e0215783, APN: 524-114-007 (Subject Well)

Web Soil Survey, NRCS Map Unit Description:
#266, Clallam-Hugo-Holland families association, deep, 35 to 70 percent slopes.

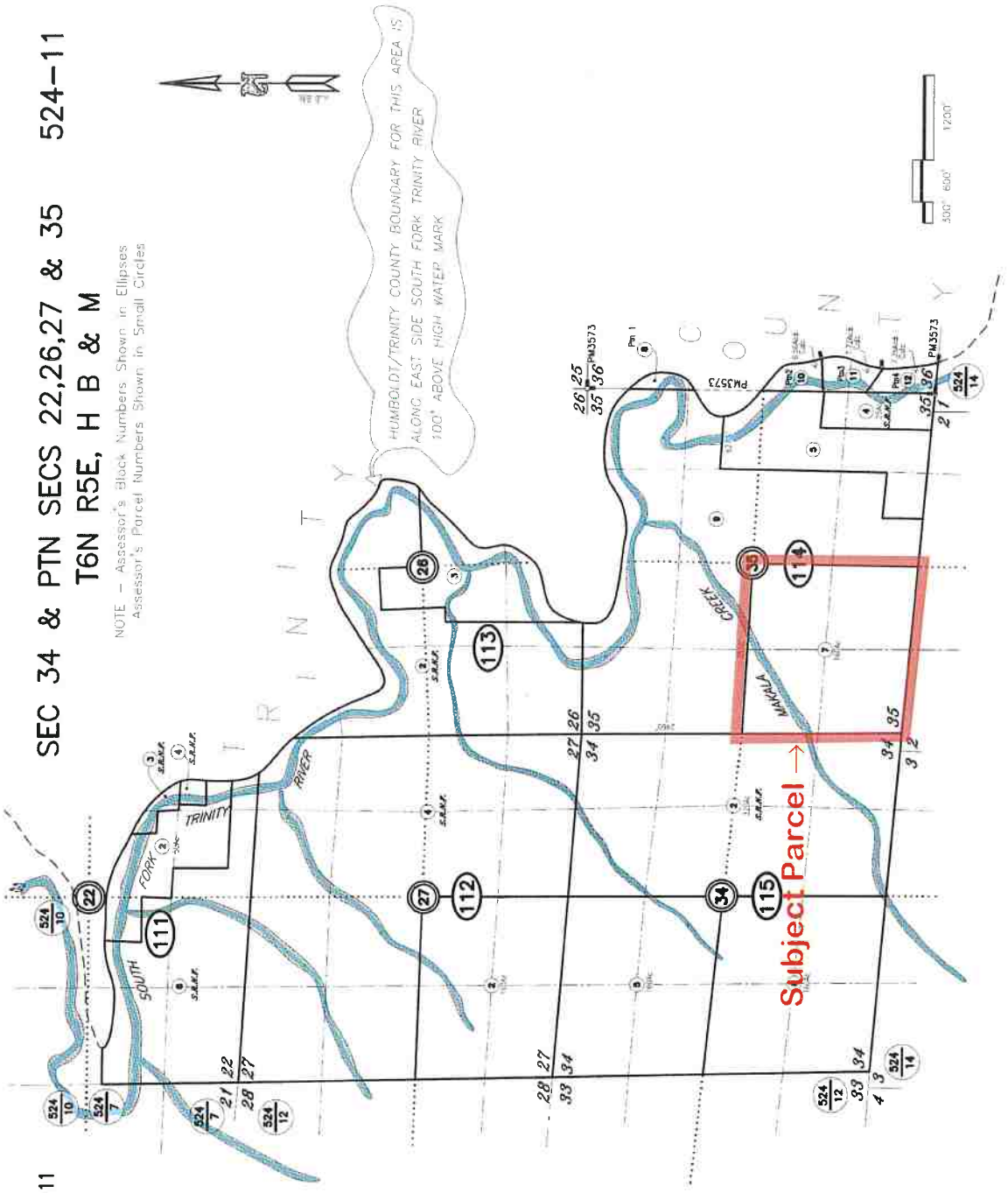
Reference:
Flint et al.: Fine-scale hydrologic modeling for regional landscape applications: the California Basin Characterization Model development and performance. Ecological Process, 2013, 2:25. (doi:10.1186/2192-1709-2-25)

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 1
Post Office Box 306	Forest Road 6N06, Willow Creek, California	October 13, 2022
Cutten, CA 95534	APN 524-114-007, Mr. Nicholas Lewis, Client	Project 0472.00
(707) 442-6000	Topographic Well Location Map (All Locations Approximate)	1" ≅ 2250'



Modified from: USGS "Hennessy Peak, Calif." 7.5' Quadrangle Map. (1979) N ≅

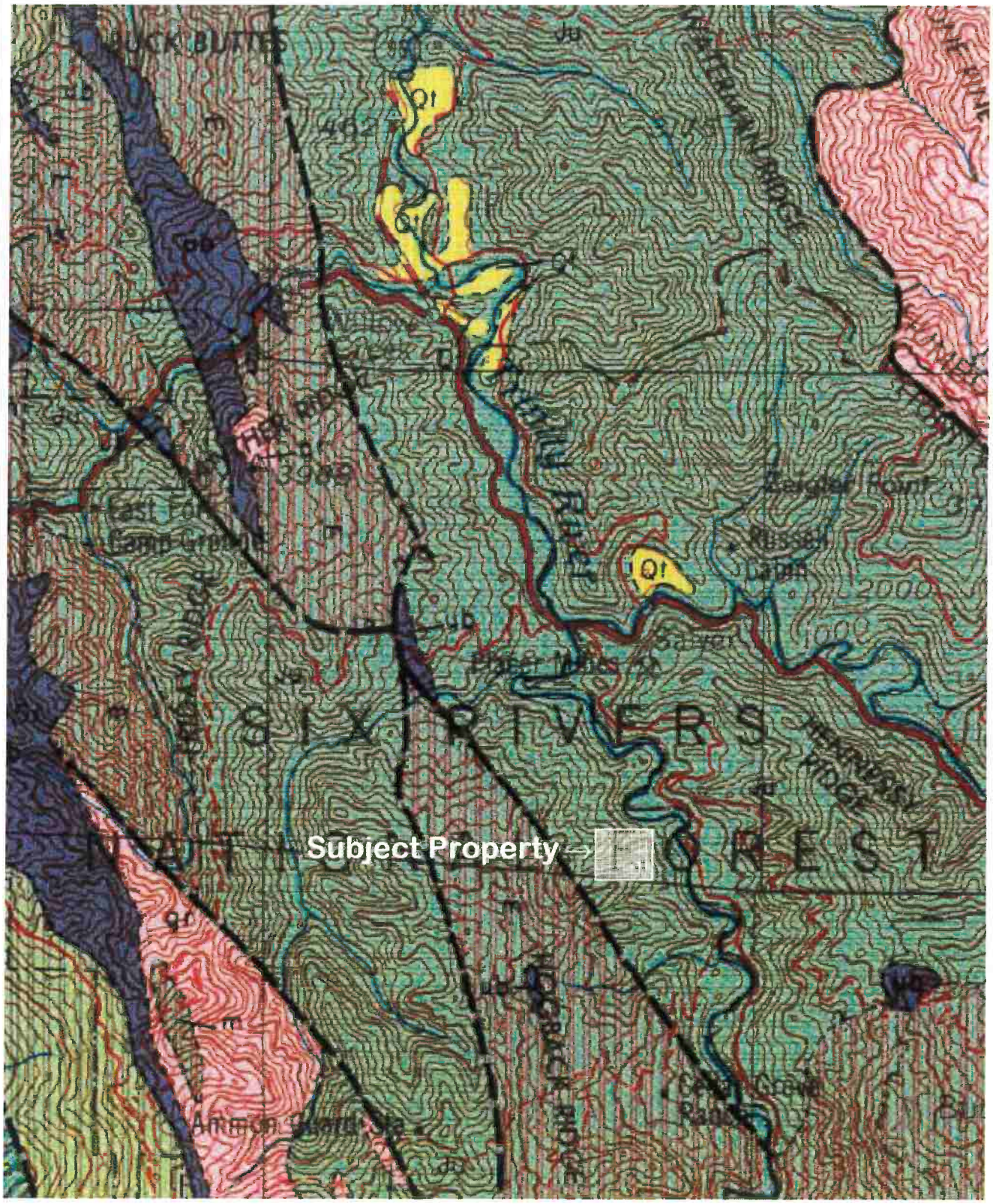
Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 2
Post Office Box 306	Forest Road 6N06, Willow Creek, California	October 13, 2022
Cutten, CA 95534	APN 524-114-007, Mr. Nicholas Lewis, Client	Project 0472.00
(707) 442-6000	Humboldt County Assessor's Parcel Map (locations approximate)	Scale as Shown



Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 3
Post Office Box 306	Forest Road 6N06, Willow Creek, California	October 13, 2022
Cutten, CA 95534	APN 524-114-007, Mr. Nicholas Lewis, Client	Project 0472.00
(707) 442-6000	Satellite Image of Well Site Location (locations approximate)	1" ≈ 1,020'

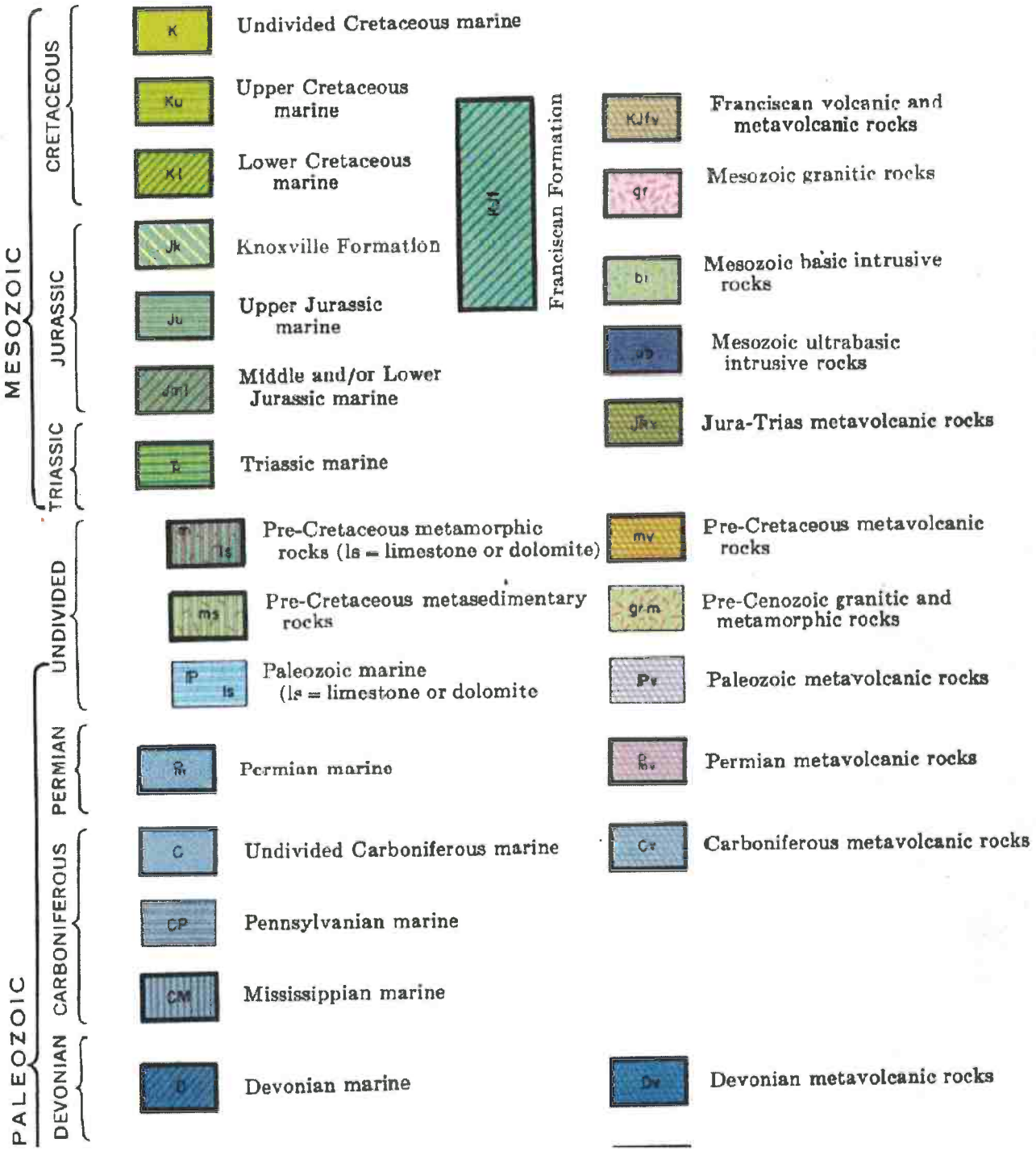
Modified from: Google Earth Imagery of July 17, 2022. N ≈

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 4
Post Office Box 306	Forest Road 6N06, Willow Creek, California	October 13, 2022
Cutten, CA 95534	APN 524-114-007, Mr. Nicholas Lewis, Client	Project 0472.00
(707) 442-6000	Geologic Map (Locations Approximate)	1" ≈ 9,000'



Modified from: Geologic Map of California, Redding Sheet, California Division of Mines and Geology, 1962. N ≅

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 4a
Post Office Box 306	Forest Road 6N06, Willow Creek, California	October 13, 2022
Cutten, CA 95534	APN 524-114-007, Mr. Nicholas Lewis, Client	Project 0472.00
(707) 442-6000	Geologic Map Explanation	No Scale



GEOLOGIC MAP OF CALIFORNIA, OLAF P. JENKINS EDITION, REDDING SHEET, COMPILATION BY RUDOLPH G. STRAND, 1962, SECOND PRINTING, 1969

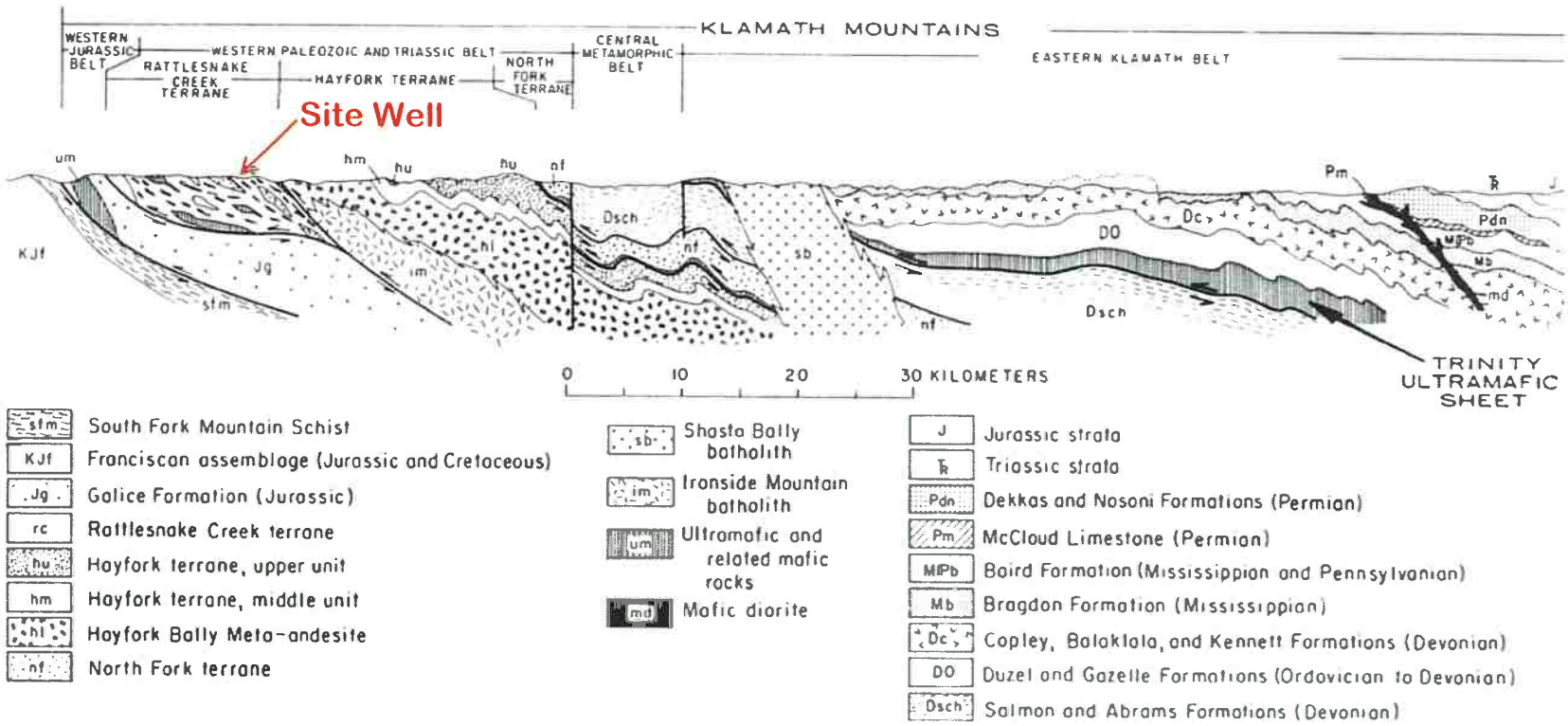


Figure 5 -Geologic section across the southern part of the Klamath Mountains

Modified from: "Review of Paleozoic Rocks of the Klamath Mountains", W. P. Irwin, 1997.

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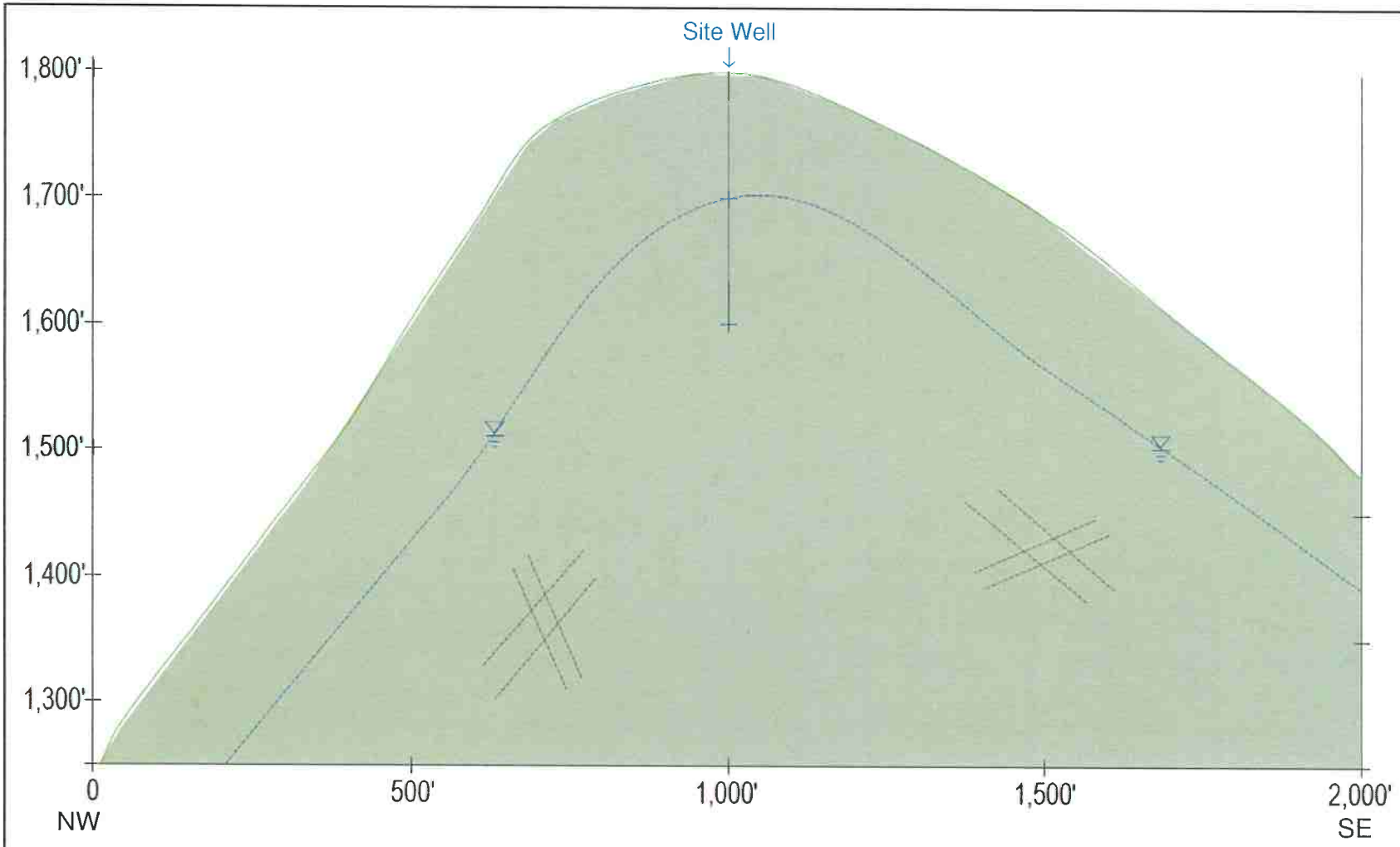
Engineering-Geologic Well Connectivity Assessment Report
Forest Road 6N06, Willow Creek, California
APN 524-114-007, Mr. Nicholas Lewis, Client
Generalized Geologic Cross Section (locations approximate)

Figure 5
October 13, 2022
Project 0472.00
Not to Scale



In this vertically exaggerated (~2x) cross section, the view is looking 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 toward the axis of South Fork Trinity River valley. Bedrock subgrade is mapped by the State of California as composed of Upper Jurassic marine (Ju). Groundwater is envisioned as flowing through fractured zones in the Ju. Fractures are interpreted to be the primary permeability, providing preferential flow paths for groundwater in this area. Note that this Site Well is screened only through the 100-foot section from 100 to 200 feet, and thus draws water from deep within the Ju formation and not from an unconfined near-surface aquifer.

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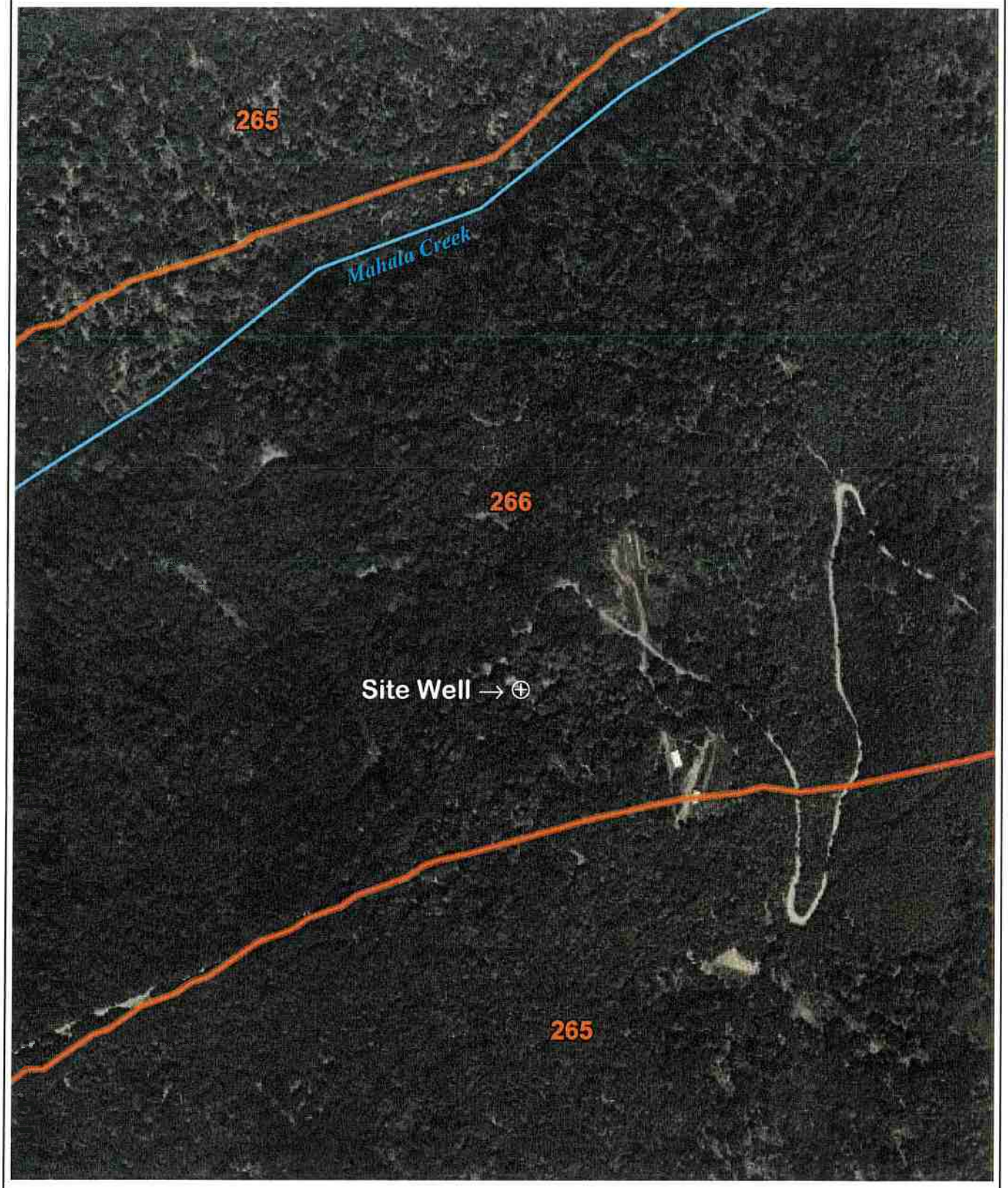
Engineering-Geologic Well Connectivity Assessment Report
Forest Road 6N06, Willow Creek, California
APN 524-114-007, Mr. Nicholas Lewis, Client
Hydrogeologic Cross Section (locations approximate)

Figure 6
October 13, 2022
Project 0472.00
2x = V. E.

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 7
Post Office Box 306	Forest Road 6N06, Willow Creek, California	October 13, 2022
Cutten, CA 95534	APN 524-114-007, Mr. Nicholas Lewis, Client	Project 0472.00
(707) 442-6000	USDA-NRCS Soils Map (locations approximate)	Scale Not Determined



Modified from: USGS-NRCS Web Soil Survey, October 11, 2022 N ≈

Water Use Estimate	Willow Creek, Forest Rte. 6N06	
WIllow Creek Ventures	APN 524-114-007	3/9/22

Crop:	Cannabis		Peak ET - July:	0.30	in/day
Permitted growing area:	20,000	ft2	Peak-Day Water Use:	4,175	gallons
Nursery Area:	2,000	ft2	Well Yield [a]:	10	gal/min
Irrigation Efficiency (Drip):	80%		Peak-Day Pumping Time:	7.0	hours

	March	April	May	June	July	August	September	October	Annual
1. Reference ETo (in/mo) [b]	3.1	4.8	6.5	7.8	9.0	7.8	5.7	3.7	54.3
2. Crop Coefficient, Kc									
- Veg	0.3	0.4	0.4	0.5	0.5	0.5	0.4		
- Flower				0.9	0.9	0.9	0.8	0.6	
3. Consumptiom ETc (in/mo)									
- Veg	0.9	1.9	2.6	3.9	4.5	3.9	2.3		
- Flower			-	7.0	8.1	7.0	4.6	2.2	
4. Production Area (ft2)									
- Veg		6,000	15,000	10,000	6,000	2,000			
- Flower		-	-	8,000	12,000	15,000	10,000	4,000	
total		6,000	15,000	18,000	18,000	17,000	10,000	4,000	
5. Water Use (gal/mo)									
- Veg		11,520	39,000	39,000	27,000	7,800	-	-	
- Flower		-	-	56,160	97,200	105,300	45,600	8,880	
Total Use (gallons)		11,520	39,000	95,160	124,200	113,100	45,600	8,880	428,580
Total Use (acre-ft)		0.04	0.12	0.29	0.38	0.35	0.14	0.03	1.31
Daily Water Use (gallons)		384	1,258	3,172	4,006	3,770	1,520	296	
Average Pumping Time (h/d)		0.6	2.1	5.3	6.7	6.3	2.5	0.5	

[a] Well Completion Report, No. e0215783, measured 05/21/2014

[b] CIMIS ETo data, Eastern Humboldt County - Zone 13

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

File Original with DWR JUL 31 2014

Page 1 of 2

Owner's Well Number 1

Date Work Began 05/21/2014 Date Work Ended 5/30/2014

Local Permit Agency Humboldt County E.H.D.

Permit Number 11/12-1271 Permit Date 8/12/13

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0215783

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Direct Rotary Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	26	Silty Clay W/Rock, Reddish Brown
26	91	Weathered Greenstone, GreenW/Reddish Streaks
91	200	Shale, Hard, Drk Gray

Total Depth of Boring 200 Feet

Total Depth of Completed Well 200 Feet

Well Location

Address Forest Service Rt. 6

City Willow Creek County Humboldt

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

Datum Dec. Lat. Dec. Long.

APN Book 524 Page 114 Parcel 007

Township 01N Range 05E Section 35

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 98 (Feet below surface)

Depth to Static Water Level 98 (Feet) Date Measured 05/21/2014

Estimated Yield * 10 (GPM) Test Type Air Lift

Test Length 4.0 (Hours) Total Drawdown 195 (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	100	10	Blank	PVC Sch. 80	CL200	5		
100	200	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	200	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 HYDESVILLEE City CA State 95547 Zip

Signed C-57 Licensed Water Well Contractor

06/02/2014 Date Signed

683865 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Six Rivers National Forest Area, California

266—Clallam-Hugo-Holland families association, deep, 35 to 70 percent slopes

Map Unit Setting

National map unit symbol: hsbj
Elevation: 600 to 3,500 feet
Mean annual precipitation: 50 to 90 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 150 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Clallam family, deep, and similar soils: 30 percent
Hugo family, deep, and similar soils: 25 percent
Holland family, deep, and similar soils: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Clallam Family, Deep

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from metasedimentary rock

Typical profile

H1 - 0 to 4 inches: very gravelly loam
H2 - 4 to 30 inches: very gravelly loam
H3 - 30 to 53 inches: very gravelly loam
R - 53 to 57 inches: unweathered bedrock

Properties and qualities

Slope: 35 to 70 percent
Depth to restrictive feature: 53 to 57 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: B
Hydric soil rating: No

Description of Hugo Family, Deep

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from metasedimentary rock

Typical profile

H1 - 0 to 7 inches: loam
H3 - 7 to 40 inches: clay loam
H4 - 40 to 60 inches: very gravelly loam
R - 60 to 64 inches: weathered bedrock

Properties and qualities

Slope: 35 to 70 percent
Depth to restrictive feature: 60 to 64 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Holland Family, Deep

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from metasedimentary rock

Typical profile

H1 - 0 to 6 inches: very gravelly loam
H2 - 6 to 46 inches: gravelly clay loam
H3 - 46 to 60 inches: very gravelly clay loam
R - 60 to 64 inches: weathered bedrock

Properties and qualities

Slope: 35 to 70 percent
Depth to restrictive feature: 60 to 64 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Soulajule

Percent of map unit: 10 percent
Hydric soil rating: No

Deadwood

Percent of map unit: 10 percent
Hydric soil rating: No

Unnamed, steeper slopes

Percent of map unit: 5 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Six Rivers National Forest Area, California
Survey Area Data: Version 17, Sep 7, 2022