WATER USE/ WATER AVAILABILITY STUDY

19658 East Road
Lower Lake, CA, 95457
APN 012-049-190

PREPARED FOR:

Roy Ochoa
19658 East Road
Lower Lake, CA 95457

February 3, 2020

PREPARED BY:

HURVITZ ENVIRONMENTAL SERVICES INC.
105 Morris Street, Suite 188
Sebastopol, California 95472

Lee S. Hurvitz, PG #7573 CHG #1015
Certified Hydrogeologist

PROJECTNO. 5076.01

HURVITZ ENVIRONMENTAL
GEOLOGIC & ENVIRONMENTAL CONSULTING

February 3, 2020

Roy Ochoa
19658 East Road
Lower Lake, CA 95457

RE: Water Use / Water Availability Study
19658 East Road
Lower Lake, CA
APN 012-049-190
Hurvitz Environmental Project No. 5076.01

Mr. Ochoa:

Hurvitz Environmental Services, Inc. (HES) is pleased to submit this Water Use / Water Availability Study for the above referenced property. HES prepared this Report in accordance with the Lake County Cannabis Ordinance. The purpose of this Report was to outline the sites proposed water usage rates and water conveyance systems as well as to demonstrate that the project water supply can legally and adequately meet the sites water demands.

Based on the information and assessments contained herein, we conclude that the wells discharge capacity appears to be sufficient to provide for the projected annual water use at the site and the well recharge rate appears to indicate that the proposed water usage rates are sustainable. The quantity of groundwater to be used for the project is unlikely to result in significant declines in groundwater availability or depletion of groundwater resources over time. The potential for the project water-use to cause well interference or impacts to Creeks are also considered minimal. Coliform bacteria were detected in the well water however through more well development and possibly treatment this issue can be mitigated and is not anticipated to inhibit the development of the property.

We appreciate the opportunity to provide you with these services. Please do not hesitate to contact us at your convenience, should you have any questions or comments regarding this report or our recommendations.

Sincerely,
HURVITZ ENVIRONMENTAL SERVICES, INC

Lee S. Hurvitz, PG# 7573 CHG #1015
Certified Hydrogeologist

105 MORRIS STREET #188 SEBASTOPOL, CA 95472 PH: 707.824.1690 FX:707.824.2675
HURVITZ.ENVIRONMENTAL@GMAIL.COM CA PG# 7573

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1.0 INTRODUCTION AND SCOPE OF SERVICES

We understand that Mr. Roy Ochoa (the applicant) is applying to Lake County for approval to develop an approximately 1-acre outdoor cannabis cultivation facility (the project) at the property identified as 19658 East Road, Lower Lake, California (the site). The proposed project will be situated on one parcel with a total area of 22.64 acres. According to the Lake County Cannabis Ordinance, development of property with the intent to cultivate cannabis requires a Water Use / Water Availability Study. Therefore, on behalf of the applicant Hurvitz Environmental Services (HES) conducted a Water Use Water Availability Study for the site in accordance with the Lake County Permit Requirements.

This Water Use/Water Availability Report includes the following elements:

- Estimates of existing and proposed water uses for the property.
- Characterization of local geologic and hydrogeologic conditions including defining water sheds and sub-basins.
- Review of Well Completion Report (drillers' logs) from the site well.
- Performance of 6-hr well yield test.
- Review of Water Quality Data from Domestic Well.
- Discussion on proposed methods for water level and water usage monitoring.
- Assess potential for well interference between the project well and neighboring wells and between the project well and nearby streams.

2.0 SITE DESCRIPTION

The site is located in unincorporated Lake County, California, on the north side of East Road. Access to the property is obtained via East Road, off of Spruce Grove Road (**PLATE 1 – SITE LOCATION MAP**). The Lake County Assessor's Office identified the site as Assessor's Parcel No. (APN) 012-049-190 (**PLATE 2 – ASSESSORS PARCEL MAP**). The site lies in the California Coastal Mountain Range, approximately 5.2 miles southeast of the town of Lower Lake and 7.4 miles northeast of Middletown. The parcel is primarily wooded with mixed oak and pine forest interspersed with grassy meadows and small rock outcrops. The site is undeveloped with no current or former structures but does have PG&E supplied electricity and a domestic well. Site Photographs are presented in **APPENDIX A**.

2.1 USGS 7.5 MINUTE QUADRANGLE MAP

HES reviewed the United States Geological Survey (USGS) Lower Lake 7.5-minute Quadrangle Map, 2015, (**PLATE 3 – USGS TOPOGRAPHIC MAP**). The approximately 22-acre site generally slopes from southwest to northeast and encompasses a variety of topographic terrains. The northeasterly sloping parcel has a peak elevation of approximately 1,800 feet above mean sea level (MSL) near the southeast corner and a low elevation of approximately 1,620 along the parcels' northeastern boundary. There are no creeks or drainage swales on the property however Asbill Creek is located approximately 1,150 north of the site. Asbill Creek flows east/northeast for approximately 2 miles before discharging into Soda Creek. Soda Creek flows southerly for several miles before coalescing with Putah Creek which eventually flows into Lake Berryessa.

2.2 GEOLOGICAL CONDITIONS

HES reviewed the Geologic Map of the 15-Minute Santa Rosa Quadrangle, 1982, prepared by the California Department of Conservation California Geologic Survey[2]. According to the Map reviewed, the site lies within a geologic region characterized by the Clear Lake Volcanics Group (*QTcv*) **PLATE 5 – GEOLOGIC MAP.**

[2] Geologic Map of the 15-Minute Santa Rosa Quadrangle, California Dept. of Conservation, California Geologic Survey, 1982.

2.3 REGIONAL GROUNDWATER

According to www.ecoatlas.com[3] the project site is located within the Upper Putah Hydrologic Region (sub-basin - HUC-8), the Upper Putah Creek Watershed Region (watershed -HUC-10), and the 180201620304 Region (HUC-12 – Soda Creek Sub-watershed), all within the jurisdiction of the North Coast Regional Water Quality Control Board.

The Upper Putah Creek Watershed encompasses 178,477 acres in southeast Lake County and some of Napa and Solano Counties. It is approximately 35 miles in length and 20 miles at its widest point. Elevations range from 440 feet at Lake Berryessa to 4722 feet at Cobb Mountain. The main drainage is into Lake Berryessa. Tributaries include Putah Creek, Anderson Creek, St. Helena Creek, Dry Creek and Big Canyon Creeks.

The Soda Creek sub-watershed encompasses approximately 20,756 acres in southern Lake County and makes up the part of the northern boundary of the Upper Putah Creek Watershed.

[3] EcoAtlas has been developed through funding from the US Environmental Protection Agency and the California State Water Resources Control Board.

3.0 SITE DEVELOPMENT AND WATER USE

It is our understanding that the site will be developed with a total of 1-acre of outdoor cannabis cultivation space. In addition, the project will include the construction of a 1,500 sq/ft metal building that will be utilized for drying, processing, and storage of cannabis. The onsite domestic well (Well # e0332222), is located approximately 50 feet from the cultivation area and will provide water for the entire cultivation project. Discussions on the well construction and well yield are presented in Section 3.5 and 3.6 of this Report. The approximate locations of the proposed outdoor cultivation areas, domestic well and proposed metal building are shown on (**PLATE 4 – ENGINEERED SITE PLAN**).

While PG& E supplied electricity is available onsite, there is currently no power connected to the domestic well. However, the well is equipped with a submersible pump and control box that were installed 2016/2017. As part of the proposed site development the applicant plans to supply electricity to the well and install one 5,000-gallon, poly, water-storage tank for the property. The well water intended for cannabis will pump directly into the poly storage tanks located proximate to the cultivation area. From there, the water will be transferred to additional 500-gallon poly mixing tanks located adjacent to the proposed cultivation area. Cannabis irrigation will be performed directly from either the large holding tank or smaller mixing tanks. The poly tank will be kept full as a backup water supply and for general landscaping and dust control.

The estimated annual water use for the entire 1-acre cultivation project (outdoor/propagation and employees) is 325,000 gallons, which is approximately 1 acre-foot of groundwater per year. The project plans do not involve any water diversions, or imported water but does call for rainwater catchment off of the proposed metal building. Details on the cultivation projects water usage, including breakdowns of average and peak monthly usage, are presented in **TABLE 1**.

3.1 OUTDOOR CULTIVATION

The applicant plans to develop 1 acre of cannabis within a 60,000 sq/ft outdoor cultivation area on the 22+ acre parcel. The applicant has not had any specific experience growing cannabis at this location but the applicant is an experienced cannabis cultivator and is designing the system to use minimal amounts of water. First, through the use of "Auto Flowering" plants the applicant will greatly reduce the size, watering frequency, and growing/flowering time, thus creating significantly lower water usage rates than for large plants with a longer cultivation season. The applicant plans to harvest the "Auto Flower" plants twice a season with the entire growing season lasting 6 months and extending from mid-April until mid-October. Second, the applicant plans to utilize point emitter drip irrigation and irrigate early in the day while temperatures are coolest to minimize evaporation rates. Finally the applicant plans to incorporate rainwater catchment tanks proximate to the proposed metal building to use for landscape irrigation and dust control.

It is our understanding that a cannabis water usage rate of 2-acre feet/acre/year for outdoor cultivation is not out of the ordinary for typical 6-month cycle large cannabis plants. However, based on the proposed farming methods discussed above, the applicant estimates that they will use approximately 325,000 gallons or 1-acre foot/year for the entire 1-acre cannabis project. Therefore,

we estimate that the applicant will use an average of approximately 1,800 gallons/day over the cultivation season (325,000 gallons/180 days).

3.2 PROPAGATION GREENHOUSE

The applicant also plans to develop 1,000 sq/ft for cannabis propagation space as part of the Project development. The propagation greenhouse will only hold immature plants and clones that are in the process of rooting or growing. Water use is anticipated to be approximately 1,100 gallons per month for the propagation greenhouse or 13,000gallons/year. Breakdowns on the propagation greenhouse water use are presented on **TABLE 1**.

3.2 RESIDENTIAL WATER USE

There is currently no domestic water use at the site and there are no plans to have permanent residents onsite. Therefore, domestic water use was not factored into the water use assessment for this property.

3.3 EMPLOYEE WATER USE

We understand that the Project will require two full-time farm mangers, as well as, several part-time seasonal employees. Therefore, for the purpose of this Assessment we estimate that the project will require an average of five full-time employees throughout the year. Potable water for farm workers will come from the Project Well (#e0332222). Using the Napa County Water Availability Guidance Document[6] estimate of 15 gallons of water utilized per day per cultivation worker on site, we calculated the following groundwater usage for the Project:

- Annual Onsite Worker Water Use = 5 (average number of daily employees) x 15 gallons/day (daily employee water usage) x 365 days/year) = 27,375 gallons /year = 0.08 acre-feet/year = Worker Groundwater Use

So, the annual Project water use estimate is 325,000 gallons (Outdoor cultivation) + 13,000 gallons (Propagation Greenhouse) + 27,375 gallons (Employee Water Usage) = 365,375 gallons or 1.12 acre-feet/year

3.4 RAIN WATER CATCHMENT

The applicant plans to install rainwater catchment onto the proposed cannabis processing structure. The captured water would be stored in a poly tank and used onsite for onsite landscaping and dust control. We estimate that the average rainfall at the site is 31.5-inches a year and that the roof capture space is 1,500 sq/ft. Based on these assumptions the rain water capture potential at the site is approximately 17,577 gallons/year. This is calculated using the Permit Sonoma Model for rainwater catchment which provides a coefficient for drought conditions and system efficiency. The rainwater capture calculation is presented below.

[6] Water Availability Analysis (WAA) Guidance Document, Napa County, Adopted May 12, 2015.

0.6 (drought and efficiency factor) x 0.62 (unit conversion) x 1,500 sq/ft (catchment area) x 31.5-inches (average annual precipitation) =
17,577 gallons or 0.05 acre-feet/year = Total Rainwater Catchment Potential

TABLE 1 – TOTAL PROJECT AND SITE WATER USAGE

Source	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
	----------Gallons----------												
Outdoor Cultivation	0	0	0	30,000	45,000	60,000	50,000	50,000	60,000	30,000	0	0	325,000
Propagation	1,000	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,000	13,000
Employees	1,000	1,000	2,000	2,500	2,500	3,000	3,000	3,000	3,000	3,375	2,000	1,000	27,375
TOTAL USAGE	**2,000**	**2,100**	**3,100**	**33,600**	**48,600**	**64,100**	**54,100**	**54,100**	**64,100**	**34,475**	**3,100**	**2,000**	**365,375**

Based on these estimates for onsite water use it appears that the peak water demand at the site will occur annually between June and September with peak daily water demand being approximately 2,100 gallons/day.

3.5 DOMESTIC WELL INFORMATION

HES reviewed the well completion report for the proposed project well (**APPENDIX B – Well Completion Report**). The project well was installed in December of 2016 under permit number WE-4780. The well has a total depth of 158 feet a sanitary seal of 20 feet and static water levels were recorded at approximately 124 feet from the top of casing at the time of installation. The well is equipped with a 1.5 horse power motor however no electricity is currently supplied to the pump. The well yield at the time of installation was measured by the drillers at 200 gallons/minute using and air lift technique. Review of the geologic log on the Well Completion Report indicates that the site is underlain by volcanic rocks with colors varying from red to yellow to green. The well screens though materials identified primarily as yellow volcanics, emerald green volcanics, and red and multi colored volcanics. This material is consistent with the "Clear Lake Volcanics" identified on the Geologic Map and discussed in Section 2.2 of this Report.

3.6 WELL YIELD TEST

On January 23, 2020, HES conducted a 4.5-hour well yield test at the on-site domestic well. The initial static water level was measured at 92.1 feet below the top-of-casing and we used an existing 1.5hp submersible pump set in the well to perform the test. A 5,000-watt generator was also required to provide for power to the well pump. The yield test began at 9:35am and ended at 2:05pm the same day. The sustained yield was 19.4 GPM and the total drawdown was 1.85 feet with a total of 5,155-gallons being pumped from the well. The specific capacity was calculated to be 10.49 gpm/foot of drawdown (i.e., 19.4gpm/1.85ft). The well yield test data and calculations are attached in **APPENDIX C**.

HES also collected well recovery data following completion of the 4.5-hour pump test. On January 23, 2020, at 3:10 pm, the static water level had recovered to a depth of 93.04 feet indicating a 49% recovery in 1-hour. The well yield test and recovery observations demonstrated that the well can produce the water necessary for the proposed Project without causing overdraft conditions.

Based on the results of the pump test we estimate that is will take approximately 1 hour and 45 minutes of pumping from the project well to meet the sites peak daily water demand and only 1 hour and 35 minutes to meet the average groundwater demand during the growing season. Based on the results of the well yield test we estimate that these water usage rates would only cause about 1-foot of drawdown in the well and therefore, it appears that the well can sustainably produce the water required to meet the proposed projects water demand.

3.7 MONITORING AND REPORTING

The applicant currently does not have a water totalizing meter installed at the well head. Once the project is further developed the applicant plans to design the water distribution system so that they can pump water to the cultivation site as well as the ancillary building. A water meter similar to the Badger M-25 Model used during the well yield test will be installed at the well head and utilized to measure water use associated with cannabis irrigation. Monthly water usage totals will be recorded in a log book that will be kept onsite and provided to the oversight agencies upon request.

Depth to water measurements will also be recorded from the project well on a monthly basis during the growing season. The applicant will utilize a Solinist® Water Level Meter to obtain monthly depth to water readings directly from the site well. The readings will be taken on the same day of each month and prior to daily pumping activities. Results of the water level measurements will be recorded in a log book and stored onsite and provided to the oversight agencies upon request.

4.0 WATER QUALITY

A water quality assessment of the project well was performed as part of this Water Use Report. The testing was designed to provide general chemistry data that is useful for cannabis irrigation as well as to provide a water quality assessment for potable drinking water. The results of the well testing are summarized below on **TABLE 2 Water Quality Results**, and a copy of the Laboratory Report is attached in **APPENDIX D**.

TABLE 2 – Water Quality Results

Location (APN)	Visual Appearance	pH	EC (µmhos/cm)	Total Coliform Bacteria (MPN/100mL)	e-Coli Bacteria (MPN/100mL)	Nitrate as $NO3^-$ (mg/L)	Nitrate as N (mg/L)
012-049-190	Clear	6.52	192	**290**	<1	0.53	0.12
California Maximum Contaminant Level (MCL)	NA	NA*	900*	1	1	45	1

TABLE 2 - METALS

Sample No.	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb
	µg/L								
012-049-190	<6.0	<2.0	<100	<1.0	<1.0	<10	**0.55**	<10	<0.5
California Maximum Contaminant Level (MCL)	6.0	10	1,000	4.0	5.0	50	NA	1,300	15

TABLE 2 - METALS Continued

Sample No.	Mo	Ni	Se	Ag	Tl	V	Zn	Hg
	µg/L							
012-049-190	<0.5	<10	<5.0	<10	<1.0	<3.0	<50	<1.0
California Maximum Contaminant Level (MCL)	NA	100	50	100*	2	NA	5000*	NA

TABLE 2 Continued – ALKALINITY, ANIONS, AND TDS

Sample No.	ALKALINITY				ANIONS		TDS
	Total	Bicarbonate	Carbonate	Hydroxide	Chloride (mg/L)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)
012-049-190	94.7	94.7	<5.0	<5.0	3.2	7.6	107
California Maximum Contaminant Level (MCL)	NA	NA	NA	NAQ	250*	250*	500*

* = CA Secondary Drinking Water Standards

5.0 CONCLUSIONS

The project site is located in the Upper Putah Creek Watershed within an aquifer consisting of volcanic rock from the Clear Lake Volcanics Group. The aquifer is considered semi-confined and recharge to the aquifer likely occurs primarily through underflow from nearby stream as well as the overlying upland areas. The estimated groundwater usage for the entire site including the proposed project is approximately 1.12 acre-feet/year. This value includes the proposed project water usage of 1.04 acre-feet/year but does not include the applicants proposed rainwater catchment which will slightly offset the groundwater usage values in the future. Based on well yield test data collected at the site, it appears that the aquifer storage and recharge area are sufficient to provide for sustainable annual water use at the site and within the area.

In summary:

Estimated Water Usage at Project Site (proposed cultivation/propagation) = 1.04 acre-feet/year
Additional Site Water Use (employees) = 0.08 acre-feet/year
Total Estimated Site Water Use = 1.12acre-feet/year
Potential Rainwater Offset = 0.06 acre-feet
Sustained Well Yield after 4.5 hrs. of pumping = 19.4gpm
Peak Daily Water Demand = 2,100 gallons

The quantity of groundwater to be used for the project compared to the quantity of available groundwater indicates that pumping for the proposed project is unlikely to result in significant declines in groundwater elevations or depletion of groundwater resources over time. The horizontal and vertical separations between the project wells and the nearest streams and neighboring wells should not result in significant well interference or impacts to creeks. The permitted domestic well will need to be equipped with the required water totalizing meter. In addition, we recommend that the well be shocked and re-sampled for coliform bacteria prior to being used as a potable water source.

6.0 LIMITATIONS

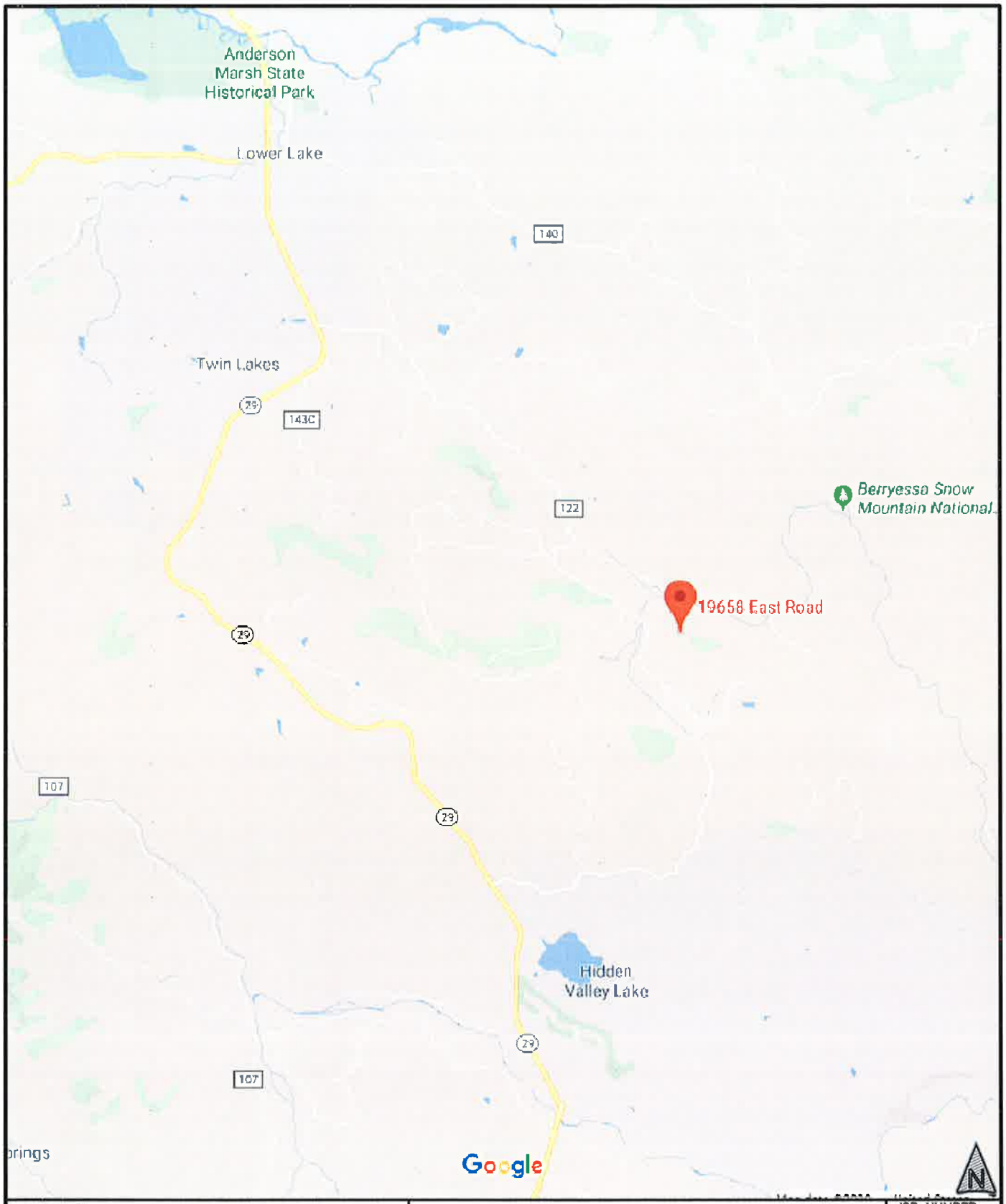
HES is not responsible for the independent conclusions, opinions or recommendations made by others based on the records review, site inspection, field exploration, laboratory test data and interpretations presented in this report.

Groundwater systems of Lake County are typically complex, and available data rarely allows for more than general assessment of groundwater conditions and delineation of aquifers. Hydrogeologic interpretations are based on the drillers' reports made available to us through the California Department of Water Resources, available geologic maps and hydrogeologic studies and professional judgment. This analysis is based on limited available data and relies significantly on interpretation of data from disparate sources of disparate quality.

It should be noted that hydro-geological assessments are inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited research and site evaluation. Additionally, the passage of time may result in a change in the environmental characteristics at this site and surrounding properties. This report does not warrant against future operations or conditions, nor does this warrant operations or conditions present of a type or at a location not investigated.

This study is not intended to assess if any soil contamination, waste emplacement, or groundwater contamination exists by subsurface sampling through the completion of soil borings and the installation of monitoring wells. The scope of work, determined by the client, did not include these activities.

This Report is for the exclusive use of Mr. Roy Ochoa, his affiliates, designates and assignees and no other party shall have any right to rely on any service provided by Hurvitz Environmental Services without prior written consent.



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SITE LOCATION MAP

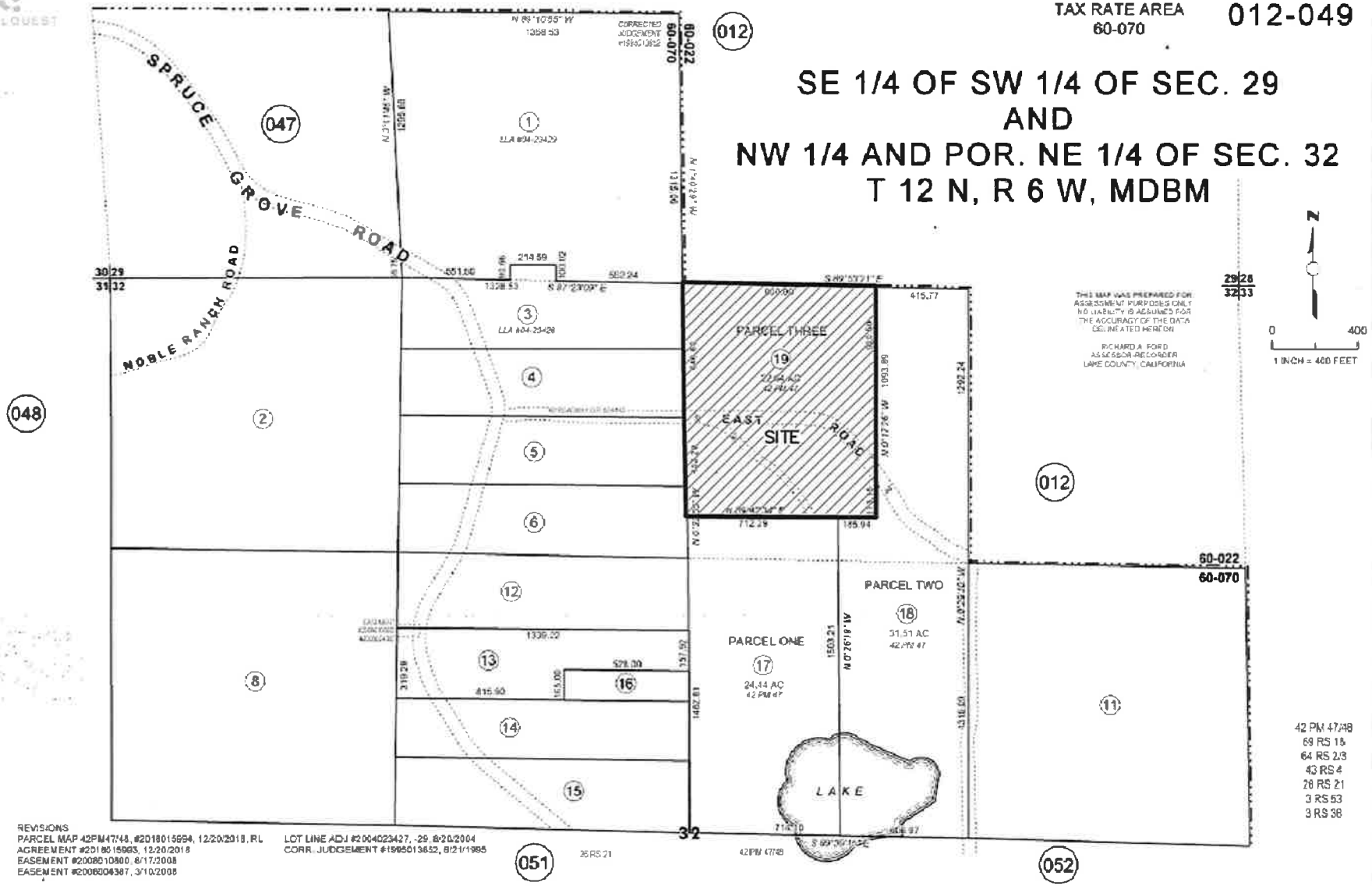
012-040-190
19658 EAST ROAD
LOWER LAKE, CALIFORNIA 95457

JOB NUMBER: 5076.01
DATE: 2/4/20
PLATE: 1

TAX RATE AREA
60-070

012-049

SE 1/4 OF SW 1/4 OF SEC. 29
AND
NW 1/4 AND POR. NE 1/4 OF SEC. 32
T 12 N, R 6 W, MDBM



REVISIONS
PARCEL MAP 42PM47/48, #2018015994, 12/20/2018, RL
AGREEMENT #2018015993, 12/20/2018
EASEMENT #2008010800, 8/17/2008
EASEMENT #2008004387, 3/10/2008
LOT LINE ADJ #2004023427, -29 -8/20/2004
CORR. JUDGEMENT #1995013652, 8/21/1995

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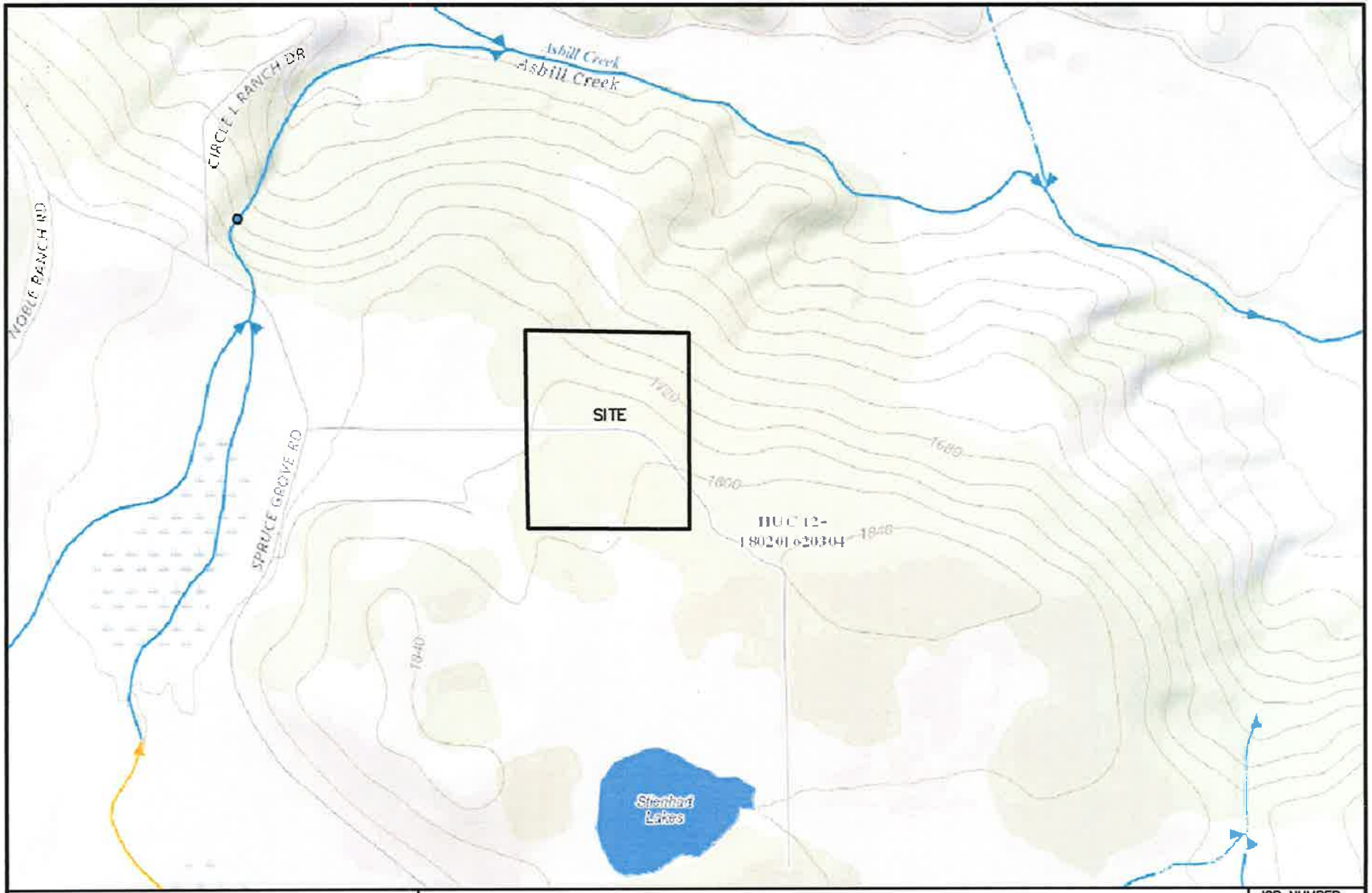
ASSESSORS PARCEL MAP

012-040-190
19658 EAST ROAD
LOWER LAKE, CALIFORNIA 95457

JOB NUMBER: 5076.01
DATE: 2/4/20
PLATE: 2



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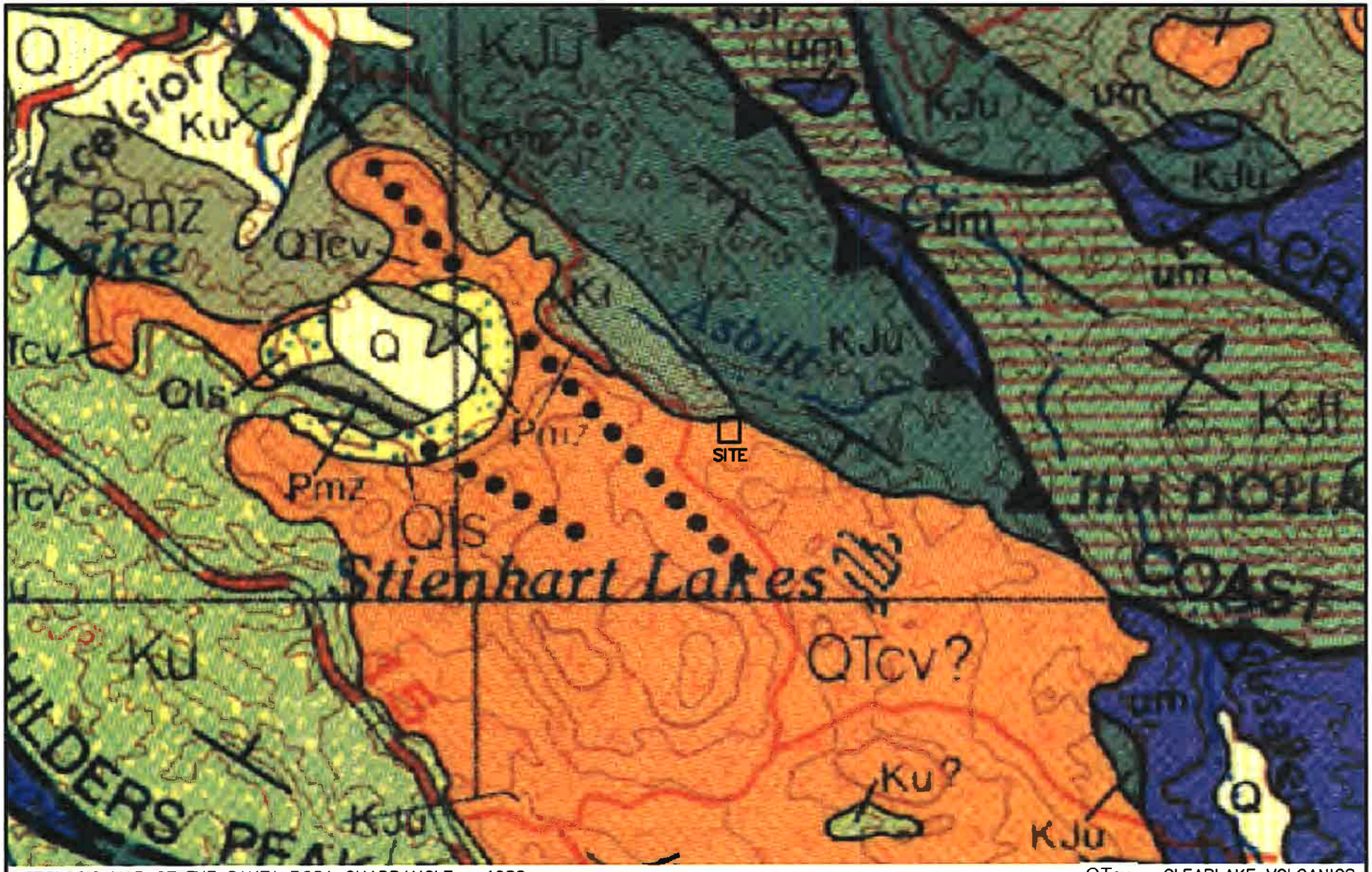
TOPOGRAPHIC MAP

012-040-190
19658 EAST ROAD
LOWER LAKE, CALIFORNIA 95457

JOB NUMBER: 5076.01
DATE: 2/4/20
PLATE: 3



GEOLOGIC MAP OF THE SANTA ROSA QUADRANGLE – 1982

QTcv = CLEARLAKE VOLCANICS

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GEOLOGIC MAP

012-040-190
19658 EAST ROAD
LOWER LAKE, CALIFORNIA 95457

JOB NUMBER: 5076.01
DATE: 2/4/20
PLATE: 4

APPENDIX A
SITE PHOTOGRAPHS

SITE PHOTOGRAPHS
January 23, 2020

Photo 1: View of site well during well yield test.

Photo 2: Close-up view of site well during well yield test.

SITE PHOTOGRAPHS
January 23, 2020

Photo 3: View westerly of the property from the project well.

Photo 4: View easterly of the property from the project well.

APPENDIX B
WELL COMPLETION REPORT

CORRECTED

File Original with DWR

State of California

Well Completion Report

No. e0332222

Page 1 of 1

Owner's Well Number Well #1

Date Work Began 10/19/2016 Date Work Ended 10/20/2016

Local Permit Agency Lake County Environmental Health Division

Permit Number WE-4780 Permit Date 9/22/16

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 Fresh Water

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	14	Red ash and boulders
14	123	Multi-colored red, black, gray and purple volcanics
123	136	Yellow volcanics
136	141	Emerald green volcanics
141	160	Red and multi-colored volcanics

Total Depth of Boring 160 Feet

Total Depth of Completed Well 158 Feet

Well Owner

Name Patrick Smythe

Mailing Address 19697 East Road

City Lower Lake State Ca Zip 95457

Well Location

Address 19658 East Road

City Lower Lake County Lake

Latitude 38 Deg 51 Min 4 Sec N Longitude 122 Deg 32 Min 51 Sec W

Datum Decimal Lat. Decimal Long.

APN Book 012 Page 049 Parcel 07

Township 12N Range 6W Section 32

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 123 (Feet below surface)

Depth to Static Water Level 124 (Feet) Date Measured 11/20/2016

Estimated Yield * 200 (GPM) Test Type Air Lift

Test Length 0.5 (Hours) Total Drawdown 158 (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	20	11						
20	160	8						
0	118		Blank	PVC Sch. 40	SDR21	5		
118	158		Screen	PVC Sch. 40	SDR21	5	Milled Slots	0.032

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	20	Bentonite	
20	158	Filter Pack	3/8 Pea Gravel

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☑ Other Site Map

Attach additional information, if it exists.

Certification Statement

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

Name Weeks Drilling & Pump Company

Person, Firm or Corporation

P.O. Box 176 Address Sebastopol City CA State 95473 Zip

Signed C-57 Licensed Water Well Contractor 12/21/16 Date Signed 177681 C-57 License Number

DWR 188 REV. 1/2006

APPENDIX C
WELL YIELD TEST

Water Yield # NA

Well Permit # WE-4780

I. Individual performing test: Lee Huvuitz

II. Type of license/registration, number and expiration date: CHG = 1015

III. Location of well:
Address: 19658 East Rd Lower Lake A.P.#: 012-049-190

IV. Type and model of test pump: Franklin 1.5hp Submersible

V. Test pump setting depth: ≈150

VI. Maximum reported yield for this pump type at this setting: NA

VII. Type of discharge measurement method: 3/4 inch Flow meter

VIII. Type and model of flow meter (or provide an accurate description of weir or orifice plate):
Badger M-25 3/4" Flow Meter

Geographic coordinates (Plane Coordinate Method or distance from fixed landmarks): 38°51'04.8"N / 122°32'51.76W

IX. Estimated elevation of well head: 1775 feet

X. Initial static water level (include measuring points such as top of casing, surface seal, access port): 92.1 from TOC

XI. Date & time of initial static water level measurement: 1/23/20 9:30 (a.m.)/p.m.

A. Discharge Rate: 19.4
B. Dynamic Water Level: 93.95
C. Specific Capacity: 10.49
D. Pump Test duration: 4.5hrs

XII. Immediately after the test take the following measurements:

A. Dynamic water level: 93.95
B. Final discharge rate: 19.4

XIII. Post - Test Measurement:

A. Dynamic water level: 93.95
B. Static water level: 93.04 After 1hr
C. Percentage of recovery of final static level: 49% after 1hr

Testing performed by (signature):

Date: 1-28-20 Company: Huvuitz Env. Services Phone Number: 707-824-1690

Well Pump Test Data Recordation

Address: 19658 East Rd, Lower Lake CA APN - 012-049-190

Meter@Start = 22,745 Meter@End - 27,900

Date	Time	Interval	SWL	GPM	Commentsnt		
	9:35	1 Min	92.1	19.3			
1-20-20	9:36	1 Min	92.1	19.1			
	9:37	1 Min	92.15	19.3			
	9:38	1 Min	92.15	19.2			
	1:39	1 Min	92.15	19.1			
	9:45	5 Mins	92.3	19.3			
	9:50	5 Mins	92.35	19.3			
	9:55	5 Mins	92.45	19.3			
	10:00	5 Mins	92.5	19.4			
	10:05	5 Mins	92.55	19.3			
	10:10	5 Mins	92.60	19.4			
	10:15	5 Mins	92.65	19.4			
	10:20	5 Mins	92.7	19.5	23600		
	10:25	5 Mins	92.75	19.5			
	10:30	5 Mins	92.8	19.4	23745@10:27		
	10:35	5 Mins	92.83	19.4		Average = 19.23gpm	
	10:40	5 Mins	92.85	19.4			
	11:00	20 Mins	93.0	19.4			
	11:20	20 Mins	93.15	19.4	24745@11:18		
	11:40	20 Mins	93.25	19.4		Average = 19.42gpm	
	12:10	30 Mins	93.42	19.4	25745@12:10	Average =	19.35 gpm
	12:40	30 Mins	93.58	19.4	26740@12:39	Average =	19.41gpm
	1:10	30 Mins	93.73	19.4			
	1:40	30 Mins	93.88	19.4	27410@1:35	Average =	19.41gpm
	2:05	30 Mins	93.95	19.4	27745@1:52	Average =	19.46
		30 Mins					
		30 Mins					
		30 Mins					
		30 Mins					
		30 Mins					
		30 Mins					
		30 Mins	well off	2:10	93.95		
		30 Mins		2:15	93.47		
		30 Mins		2:20	93.39		
		30 Mins		2:25	93.33		
		30 Mins		2:30	93.28		
		30 Mins		2:40	93.21		
		30 Mins		2:50	93.15		
		30 Mins		3:00	93.09		
		30 Mins		3:10	93.04		
		72 Hrs					

APPENDIX D
ANALYTICAL TEST RESULTS

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

28 January 2020

Hurvitz Environmental
Attn: Lee Hurvitz
105 Morris Street, Suite 188
Sebastopol, CA 95472
RE: Water Quality
Work Order: 20A3153

Enclosed are the results of analyses for samples received by the laboratory on 01/24/20 13:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette Poplin

Jeanette L. Poplin For Stephen F. McWeeney
Lab Manager

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

Hurvitz Environmental	Project Manager: Lee Hurvitz	
105 Morris Street, Suite 188	Project: Water Quality	Reported:
Sebastopol, CA 95472	Project Number: East Road	01/28/20 14:50

Bay Area: 262 Rickenbacker Circle | Livermore, CA 94551 | T: 925-828-6226 | F: 925-828-6309 | ELAP# 2728
Central Valley: 9090 Union Park Way Suite 113 | Elk Grove, CA 95624 | T: 916-686-5190 | F: 916-686-5192 | ELAP# 2922
North Bay: 110 Liberty Street | Petaluma, CA 94952 | T: 707-769-3128 | F: 707-769-8093 | ELAP# 2303
San Diego Service Center: 2722 Loker Avenue West Suite A | Carlsbad, CA 92010 | T: 760-930-2555 | F: 760-930-2510

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DW-East Road	20A3153-01	Water	01/23/20 14:30	01/24/20 13:20

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

Hurvitz Environmental	Project Manager: Lee Hurvitz	
105 Morris Street, Suite 188	Project: Water Quality	Reported:
Sebastopol, CA 95472	Project Number: East Road	01/28/20 14:50

	Result		Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
DW-East Road (20A3153-01)			**Sample Type: Water**			**Sampled: 01/23/20 14:30**				
Microbiological Parameters by APHA Standard Methods										
Total Coliforms	**290**	**MPN/100mL**	**1.0**	1	AA04625	01/24/20 15:25	01/25/20 15:30	2303	SM9223B	
E. Coli	ND	MPN/100mL	1.0	1	AA04625	01/24/20 15:25	01/25/20 15:30	2303	SM9223B	

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

Hurvitz Environmental	Project Manager: Lee Hurvitz	
105 Morris Street, Suite 188	Project: Water Quality	Reported:
Sebastopol, CA 95472	Project Number: East Road	01/28/20 14:50

Analyte(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

Hurvitz Environmental	Project Manager: Lee Hurvitz	
105 Morris Street, Suite 188	Project: Water Quality	Reported:
Sebastopol, CA 95472	Project Number: East Road	01/28/20 14:50

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
REC	Recovery
RPD	Relative Percent Difference

Analytical Sciences
P.O. Box 750336, Petaluma, CA 94975-0336
110 Liberty Street, Petaluma, CA 94952
(707) 769-3128
Fax (707) 769-8093

Alpha Analytical

CHAIN OF CUSTODY

Lab Project Number: 20A3153
Client's Project Name: East Road
Client's Project Number: 5076.010

CLIENT INFORMATION

Company Name: Hurvitz Environmental
Address: 105 Morris St., #188
Sebastopol, CA 95472
Contact: Lee Hurvitz
Phone #: 707-824-1690
Fax #: 707-824-2675
e-mail: hurvitz.environmental@gmail.com

BILLING INFORMATION

Company Name: SAME
Address:
Contact:
Phone:
Fax#
email:

TURNAROUND TIME

Normal X
24 Hours
48 Hours
72 Hours
5 Days

Geotracker EDF: Y X N
Global ID:

Cooler Temperature
6.1 C

Page 1 of 1

ANALYSIS

Item	Client Sample ID	Date Sampled	Time	Matrix	# Cont.	Presv. Y/N	Total Coliform	E-Coli Bacteria											Comments	Lab Sample #
1	DW- East Road	1-23-20	2:30	W	1	Yes	x	x												
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

SIGNATURES

Sampled By: Lee Hurvitz

Relinquished By: Signature — 1-24-20 Date — 1236 Time
1/24/20 1320

Received By: Signature — 1/24/20 Date — 1236 Time
1/24/20 1320

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 2001A73

Report Created for: Hurvitz Environmental

105 Morris Street, Ste., 188
Sebastopol, CA 95472

Project Contact: Lee S. Hurvitz
Project P.O.: 5076.01
Project: 5076.01; East Road

Project Received: 01/24/2020

Analytical Report reviewed & approved for release on 01/30/2020 by:

Jennifer Lagerbom
Project Manager

1534 Willow Pass Rd. Pittsburg, CA 94565 ♦ TEL: (877) 252-9262 ♦ FAX: (925) 252-9269 ♦ www.mccampbell.com
CA ELAP 1644 ♦ NELAP 4033 ORELAP

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Hurvitz Environmental
Project: 5076.01; East Road
WorkOrder: 2001A73

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Glossary of Terms & Qualifier Definitions

Client: Hurvitz Environmental
Project: 5076.01; East Road
WorkOrder: 2001A73

Analytical Qualifiers

H	Samples were analyzed out of hold time
J	Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.

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Analytical Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Received:	01/24/2020 10:15	**Extraction Method:**	E300.1
Date Prepared:	01/24/2020	**Analytical Method:**	E300.1
Project:	5076.01; East Road	**Unit:**	mg/L

Inorganic Anions by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
DW-East Road	2001A73-001B	Water	01/23/2020 14:30	IC4 01272020.D	192923

Analytes	Result	RL	DF	Date Analyzed
Bromide	ND	0.10	1	01/24/2020 20:01
Chloride	**3.2**	0.10	1	01/24/2020 20:01
Fluoride	ND	0.10	1	01/24/2020 20:01
Nitrate as N	**0.12**	0.10	1	01/24/2020 20:01
Nitrate as $NO3^-$	**0.53**	0.44	1	01/24/2020 20:01
Nitrite as N	ND	0.10	1	01/24/2020 20:01
Nitrite as $NO2^-$	ND	0.33	1	01/24/2020 20:01
Nitrate & Nitrite as N	**0.12**	0.10	1	01/24/2020 20:01
ortho-Phosphate as P	ND	0.10	1	01/24/2020 20:01
ortho-Phosphate as PO4	ND	0.31	1	01/24/2020 20:01
Sulfate	**7.6**	0.50	5	01/24/2020 20:15

Surrogates	REC (%)	Limits	
Formate	99	90-115	01/24/2020 20:01

Analyst(s): AO

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Analytical Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Received:	01/24/2020 10:15	**Extraction Method:**	SM2320 B-1997
Date Prepared:		**Analytical Method:**	SM2320 B
Project:	5076.01; East Road	**Unit:**	mg $CaCO_3$/L

Total & Speciated Alkalinity as Calcium Carbonate

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
DW-East Road	2001A73-001C	Water	01/23/2020 14:30	TITRINO F062712	193171

Analytes	Result	RL	DF	Date Analyzed
Total Alkalinity	**94.7**	5.00	1	01/30/2020 10:13
Carbonate	ND	5.00	1	01/30/2020 10:13
Bicarbonate	**94.7**	5.00	1	01/30/2020 10:13
Hydroxide	ND	5.00	1	01/30/2020 10:13

Analyst(s): HN

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Analytical Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Received:	01/24/2020 10:15	**Extraction Method:**	E200.8
Date Prepared:	01/27/2020	**Analytical Method:**	E200.8
Project:	5076.01; East Road	**Unit:**	µg/L

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
DW-East Road	2001A73-001A	Water	01/23/2020 14:30	ICP-MS2 089SMPL.D	192935

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	6.0	1	01/27/2020 20:50
Arsenic	ND	2.0	1	01/27/2020 20:50
Barium	ND	100	1	01/27/2020 20:50
Beryllium	ND	1.0	1	01/27/2020 20:50
Cadmium	ND	1.0	1	01/27/2020 20:50
Chromium	ND	10	1	01/27/2020 20:50
Cobalt	**0.55**	0.50	1	01/27/2020 20:50
Copper	ND	10	1	01/27/2020 20:50
Lead	ND	0.50	1	01/27/2020 20:50
Mercury	ND	1.0	1	01/27/2020 20:50
Molybdenum	ND	0.50	1	01/27/2020 20:50
Nickel	ND	10	1	01/27/2020 20:50
Selenium	ND	5.0	1	01/27/2020 20:50
Silver	ND	10	1	01/27/2020 20:50
Thallium	ND	1.0	1	01/27/2020 20:50
Vanadium	ND	3.0	1	01/27/2020 20:50
Zinc	ND	50	1	01/27/2020 20:50

Analyst(s): ND

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Analytical Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Received:	01/24/2020 10:15	**Extraction Method:**	SM4500H+B-2000
Date Prepared:	01/24/2020	**Analytical Method:**	SM4500H+B
Project:	5076.01; East Road	**Unit:**	pH units @ 25°C

pH

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
DW-East Road	2001A73-001D	Water	01/23/2020 14:30	WetChem	192933

Analytes	Result	Qualifiers	Accuracy	DF	Date Analyzed
pH	**6.52**	H	±0.05	1	01/24/2020 20:09

Analyst(s): PHU

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Analytical Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Received:	01/24/2020 10:15	**Extraction Method:**	SM2510 B
Date Prepared:	01/24/2020	**Analytical Method:**	SM2510B
Project:	5076.01; East Road	**Unit:**	µmhos/cm @ 25°C

Specific Conductivity at 25°C

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
DW-East Road	2001A73-001D	Water	01/23/2020 14:30	WetChem	192937

Analytes	Result	RL	DF	Date Analyzed
Specific Conductivity	192	10.0	1	01/24/2020 21:00

Analyst(s): PHU

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Analytical Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Received:	01/24/2020 10:15	**Extraction Method:**	SM2540 C-1997
Date Prepared:	01/28/2020	**Analytical Method:**	SM2540 C-1997
Project:	5076.01; East Road	**Unit:**	mg/L

Total Dissolved Solids

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
DW-East Road	2001A73-001D	Water	01/23/2020 14:30	WetChem	193095

Analytes	Result	RL	DF	Date Analyzed
Total Dissolved Solids	**107**	10.0	1	01/29/2020 12:20

Analyst(s): AL

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Quality Control Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Prepared:	01/24/2020	**BatchID:**	192923
Date Analyzed:	01/24/2020	**Extraction Method:**	E300.1
Instrument:	IC4	**Analytical Method:**	E300.1
Matrix:	Water	**Unit:**	mg/L
Project:	5076.01; East Road	**Sample ID:**	MB/LCS/LCSD-192923

QC Summary Report for E300.1

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Bromide	ND	0.062	0.10	-	-	-
Chloride	ND	0.039	0.10	-	-	-
Fluoride	ND	0.044	0.10	-	-	-
Nitrate as N	ND	0.053	0.10	-	-	-
Nitrate as $NO3^-$	ND	0.23	0.44	-	-	-
Nitrite as N	ND	0.047	0.10	-	-	-
Nitrite as $NO2^-$	ND	0.15	0.33	-	-	-
ortho-Phosphate as P	ND	0.090	0.10	-	-	-
ortho-Phosphate as PO4	ND	0.28	0.31	-	-	-
Sulfate	ND	0.086	0.10	-	-	-
Surrogate Recovery						
Formate	0.099			0.1	99	85-115

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Bromide	0.94	0.94	1	94	94	85-115	0	15
Chloride	0.92	0.92	1	92	92	85-115	0	15
Fluoride	0.92	0.91	1	92	91	85-115	0.230	15
Nitrate as N	0.92	0.92	1	92	92	85-115	0	15
Nitrate as $NO3^-$	4.1	4.1	4.4	92	92	85-115	0	15
Nitrite as N	0.92	0.91	1	92	91	85-115	0.726	15
Nitrite as $NO2^-$	3.0	3.0	3.3	91	91	85-115	0	15
ortho-Phosphate as P	0.93	0.92	1	93	92	85-115	0.231	15
ortho-Phosphate as PO4	2.8	2.8	3.06	93	92	85-115	0	15
Sulfate	0.93	0.93	1	93	93	85-115	0	15
Surrogate Recovery								
Formate	0.094	0.093	0.10	94	93	90-115	0.508	10

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Quality Control Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Prepared:	01/30/2020	**BatchID:**	193171
Date Analyzed:	01/30/2020	**Extraction Method:**	SM2320 B-1997
Instrument:	TITRINO	**Analytical Method:**	SM2320 B
Matrix:	Water	**Unit:**	mg $CaCO_3$/L
Project:	5076.01; East Road	**Sample ID:**	MB/LCS/LCSD-193171

QC Summary Report for Alkalinity

Analyte	MB Result	MDL	RL			
Total Alkalinity	ND	5.00	5.00	-	-	-
Carbonate	ND	5.00	5.00	-	-	-
Bicarbonate	ND	5.00	5.00	-	-	-
Hydroxide	ND	5.00	5.00	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Total Alkalinity	52.8	54.5	50	106	109	80-120	3.17	20

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Quality Control Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Prepared:	01/27/2020	**BatchID:**	192935
Date Analyzed:	01/27/2020	**Extraction Method:**	E200.8
Instrument:	ICP-MS2	**Analytical Method:**	E200.8
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	5076.01; East Road	**Sample ID:**	MB/LCS/LCSD-192935 2001A73-001AMS/MSD

QC Summary Report for Metals

Analyte	MB Result	MDL	RL			
Antimony	ND	0.060	6.0	-	-	-
Arsenic	ND	0.53	2.0	-	-	-
Barium	ND	0.12	100	-	-	-
Beryllium	ND	0.060	1.0	-	-	-
Cadmium	ND	0.030	1.0	-	-	-
Chromium	ND	0.090	10	-	-	-
Cobalt	ND	0.060	0.50	-	-	-
Copper	ND	0.090	10	-	-	-
Lead	0.010,J	0.010	0.50	-	-	-
Mercury	ND	0.010	1.0	-	-	-
Molybdenum	ND	0.060	0.50	-	-	-
Nickel	ND	0.15	10	-	-	-
Selenium	ND	0.42	5.0	-	-	-
Silver	ND	0.070	10	-	-	-
Thallium	ND	0.010	1.0	-	-	-
Vanadium	ND	0.12	3.0	-	-	-
Zinc	0.69,J	0.13	50	-	-	-

(Cont.)

CA ELAP 1644

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Quality Control Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Prepared:	01/27/2020	**BatchID:**	192935
Date Analyzed:	01/27/2020	**Extraction Method:**	E200.8
Instrument:	ICP-MS2	**Analytical Method:**	E200.8
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	5076.01; East Road	**Sample ID:**	MB/LCS/LCSD-192935 2001A73-001AMS/MSD

QC Summary Report for Metals

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Antimony	51	51	50	103	102	85-115	0	20
Arsenic	48	49	50	97	97	85-115	0	20
Barium	510	510	500	102	103	85-115	0	20
Beryllium	49	50	50	99	100	85-115	0.967	20
Cadmium	50	50	50	101	100	85-115	0	20
Chromium	51	50	50	101	100	85-115	1.11	20
Cobalt	51	51	50	102	103	85-115	0	20
Copper	46	47	50	93	93	85-115	0	20
Lead	51	50	50	102	101	85-115	1.18	20
Mercury	1.2	1.2	1.25	96	94	85-115	0	20
Molybdenum	49	48	50	99	97	85-115	1.96	20
Nickel	51	50	50	101	101	85-115	0	20
Selenium	47	47	50	94	94	85-115	0	20
Silver	46	46	50	92	91	85-115	0	20
Thallium	52	52	50	104	104	85-115	0	20
Vanadium	52	52	50	104	104	85-115	0	20
Zinc	510	510	500	102	102	85-115	0	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	1	52	52	50	ND	103	104	85-115	0	20
Arsenic	1	49	49	50	ND	95	95	85-115	0	20
Barium	1	600	600	500	ND	103	104	85-115	0	20
Beryllium	1	49	48	50	ND	97	97	85-115	0	20
Cadmium	1	51	50	50	ND	101	100	85-115	0.635	20
Chromium	1	49	49	50	ND	98	98	85-115	0	20
Cobalt	1	49	49	50	0.5530	98	98	85-115	0	20
Copper	1	45	45	50	ND	89	88	85-115	0	20
Lead	1	50	50	50	ND	101	100	85-115	0	20
Mercury	1	1.2	1.2	1.25	ND	97	97	85-115	0	20
Molybdenum	1	49	49	50	ND	98	98	85-115	0	20
Nickel	1	53	54	50	ND	96	97	85-115	0.597	20
Selenium	1	45	44	50	ND	90	88	85-115	1.37	20
Silver	1	46	46	50	ND	92	92	85-115	0	20

(Cont.)

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Quality Control Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Prepared:	01/27/2020	**BatchID:**	192935
Date Analyzed:	01/27/2020	**Extraction Method:**	E200.8
Instrument:	ICP-MS2	**Analytical Method:**	E200.8
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	5076.01; East Road	**Sample ID:**	MB/LCS/LCSD-192935 2001A73-001AMS/MSD

QC Summary Report for Metals

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Thallium	1	52	52	50	ND	103	103	85-115	0	20
Vanadium	1	53	52	50	ND	101	100	85-115	0.990	20
Zinc	1	500	490	500	ND	98	97	85-115	1.13	20

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Quality Control Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Prepared:	01/24/2020	**BatchID:**	192933
Date Analyzed:	01/24/2020	**Extraction Method:**	SM4500H+B-2000
Instrument:	WetChem	**Analytical Method:**	SM4500H+B
Matrix:	Water	**Unit:**	pH units @ 25°C
Project:	5076.01; East Road	**Sample ID:**	CCV-192933

QC Summary Report for pH

Analyte	CCV Result	CCV Limits
pH	6.99	6.8-7.2

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Quality Control Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Prepared:	01/24/2020	**BatchID:**	192937
Date Analyzed:	01/24/2020	**Extraction Method:**	SM2510 B
Instrument:	WetChem	**Analytical Method:**	SM2510B
Matrix:	Water	**Unit:**	µmhos/cm @ 25°C
Project:	5076.01; East Road	**Sample ID:**	CCV-192937

QC Summary Report for Specific Conductivity

Analyte	CCV REC (%)	CCV Limits
Specific Conductivity	101	90-110

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Quality Control Report

Client:	Hurvitz Environmental	**WorkOrder:**	2001A73
Date Prepared:	01/28/2020	**BatchID:**	193095
Date Analyzed:	01/29/2020	**Extraction Method:**	SM2540 C-1997
Instrument:	WetChem	**Analytical Method:**	SM2540 C-1997
Matrix:	Water	**Unit:**	mg/L
Project:	5076.01; East Road	**Sample ID:**	MB/LCS/LCSD-193095

QC Summary Report for Total Dissolved Solids

Analyte	MB Result	MDL	RL			
Total Dissolved Solids	ND	10.0	10.0	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Total Dissolved Solids	1000	935	1000	100	94	80-120	6.72	10

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 2001A73 **ClientCode: HESC**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☒ EQuIS ☐ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☒ Detection Summary ☒ Dry-Weight

Report to:
Lee S. Hurvitz
Hurvitz Environmental
105 Morris Street, Ste., 188
Sebastopol, CA 95472
(707) 824-1690 FAX: (707) 824-2675

Email: hurvitz.environmental@gmail.com
cc/3rd Party:
PO: 5076.01
Project: 5076.01; East Road

Bill to:
Lee S. Hurvitz
Hurvitz Environmental
105 Morris Street, Ste., 188
Sebastopol, CA 95472

Requested TAT: 5 days;

Date Received: 01/24/2020
Date Logged: 01/24/2020

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2001A73-001	DW-East Road	Water	1/23/2020 14:30	☐	B	C	A	D	A	D	D					

Test Legend:

1	300_1_W	2	Alk_W	3	CAM17MS_DIGEST_DW	4	PH_W
5	PRDisposal Fee	6	SC_W	7	TDS_W	8	
9		10		11		12	

Project Manager: Rosa Venegas

Prepared by: Agustina Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: HURVITZ ENVIRONMENTAL
Client Contact: Lee S. Hurvitz
Contact's Email: hurvitz.environmental@gmail.com

Project: 5076.01; East Road
Comments:

Work Order: 2001A73
QC Level: LEVEL 2
Date Logged: 1/24/2020

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☒ EQuIS ☐ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2001A73-001A	DW-East Road	Water	E200.8 (CAM 17)	1	250mL HDPE w/ HNO3	☐	1/23/2020 14:30	5 days	Present	☐	
2001A73-001B	DW-East Road	Water	E300.1 (Inorganic Anions) <Bromide, Chloride, Fluoride, Nitrate & Nitrite as N, Nitrate as N, Nitrate as $NO3^-$, Nitrite as N, Nitrite as $NO2^-$, ortho-Phosphate as P, ortho-Phosphate as PO4, Sulfate>	2	125mL HDPE, unprsv.	☐	1/23/2020 14:30	5 days	Present	☐	
2001A73-001C	DW-East Road	Water	SM2320B (Alkalinity)	1	250mL HDPE, unprsv.	☐	1/23/2020 14:30	5 days	Present	☐	
2001A73-001D	DW-East Road	Water	SM2540C (TDS)	1	500mL HDPE, unprsv.	☐	1/23/2020 14:30	5 days	Present	☐	
			SM2510B (Specific Conductivity)			☐		5 days	Present	☐	
			SM4500H+B (pH)			☐		5 days	Present	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

General COC

MAI Work Order # 201A73

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CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush | 2 Day Rush | 3 Day Rush | STD ☒ | Quote #
J-Flag / MDL | ESL | Cleanup Approved | Bottle Order #
Delivery Format: PDF ● | GeoTracker EDF | EDD | Write On (DW) | EQuIS

Report To: Lee HUrvitz | Bill To: Same
Company: Hurvitz Environmental Services
Email: lee@hurvitzenvironmental.com
Alt Email: | Tele: 707-824-1690
Project Name: East Road | Project #: 5076.01
Project Location: 19658 East Road | PO # 5076.01
Sampler Signature:

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative
DW - East Road	1-23-20	2:30	5	Water	Yes / No

Analysis Requested

BTEX & TPH as Gas (8021/ 8015) MTBE	TPH as Diesel (8015) + Motor Oil Without Silica Gel	TPH as Diesel (8015) + Motor Oil With Silica Gel	Total Oil & Grease (1664 / 9071) Without Silica Gel	Total Petroleum Hydrocarbons - Oil & Grease (1664 / 9071) With Silica Gel	Total Petroleum Hydrocarbons (418.1) With Silica Gel	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors only	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)*	Metals (200.8 / 6020)	Baylands Requirements	Lab to filter sample for dissolved metals analysis	Nitrates	Alkalinity	TDS / PH / Specific Conductivity	Inorganic Anions
											X				X	X	X	X

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
	1-24-20	7:45		1-24-2020	0745
	1-24-20	1015		1/24/2020	1015

Comments / Instructions
Bottle order # 10157

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other
Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 0.1 °C Initials

Page 1 of 1

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Sample Receipt Checklist

Client Name: **Hurvitz Environmental**
Project: **5076.01; East Road**

Date and Time Received: **1/24/2020 10:15**
Date Logged: **1/24/2020**
Received by: Agustina Venegas
Logged by: Agustina Venegas

WorkOrder №: **2001A73** Matrix: Water
Carrier: Bernie Cummins (MAI Courier)

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Sample IDs noted by Client on COC?	Yes ☑	No ☐	
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐	
Sampler's name noted on COC?	Yes ☑	No ☐	
COC agrees with Quote?	Yes ☐	No ☐	NA ☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☐	No ☑	NA ☐
Samples Received on Ice?	Yes ☑	No ☐	
(Ice Type: WET ICE)			
Sample/Temp Blank temperature	Temp: 0.1°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☐	No ☐	NA ☑
Sample labels checked for correct preservation?	Yes ☑	No ☐	
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes ☑	No ☐	NA ☐
UCMR Samples:			
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes ☐	No ☐	NA ☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes ☐	No ☐	NA ☑

Comments: Method SM4500H+B (pH) was received past its 0.01-day holding time.