LOS OSOS WATER RECYCLING FACILITY
BASELINE GROUNDWATER QUALITY MONITORING
APRIL-MAY 2016

Prepared for

SAN LUIS OBISPO COUNTY
DEPARTMENT OF PUBLIC WORKS

JUNE 2016

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INTRODUCTION

This report presents the results of the April-May 2016 Baseline Groundwater Quality Monitoring event conducted by Cleath-Harris Geologists (CHG) in the Los Osos groundwater basin, San Luis Obispo County, California. Baseline groundwater monitoring is required by a California Water Code Section 13267 Order from the California Regional Water Quality Control Board, Central Coast Region, for the Los Osos Water Recycling Facility. This groundwater monitoring event conforms with Waste Discharge Requirements (WDR) Order No. R3-2011-0001 and its Monitoring and Reporting Program. The purpose of the monitoring program is to establish a baseline for perched aquifer and upper aquifer groundwater quality in areas with high-density septic systems, prior to implementation of the community wastewater project. Comparing baseline groundwater quality with future wastewater project conditions will provide a measure of effectiveness for reducing nitrate concentrations in groundwater.

MONITORING WELL NETWORK

The monitoring well network for WDR compliance monitoring currently consists of 25 wells, including 20 public agency wells and 5 private wells (private well 30S/11E-18A was removed from program in 2014 per the owner's request). Twenty three were sampled during the April 2016 monitoring event. Two monitoring wells (30S/11E-8Ma and 8Mb) are dry due to drought conditions. Network well construction information is summarized in Table 1. Well locations are presented in Figure 1.

The County of San Luis Obispo developed and operated a groundwater monitoring program from 1982 through 1998 (County of San Luis Obispo, 1999). In 2002, twelve monitoring network wells were reconstructed with deeper sanitary seals (Cleath & Associates, 2002), leading to the Los Osos Community Services District groundwater monitoring program that was operated through 2006 (Cleath & Associates, 2006).

This is the eighth Baseline Groundwater Quality Monitoring report. The first two monitoring events were completed by CHG in August 2012 and June 2013. The next three monitoring events were completed by Rincon Consultants in January, May, and October 2014. The sixth and seventh monitoring events were completed by CHG in May and November 2015.

Treated wastewater discharges to the Broderson disposal leach field are planned to begin in 2016. Per County request, vadose zone monitoring wells down slope of the Broderson disposal leach field were monitored during the April-May Baseline monitoring event. Monitoring results, well locations and construction details for these vadose zone wells are included herein.

WATER LEVELS

Depth to groundwater was measured in 22 monitoring network wells by CHG between April 25 and May 5, 2016 (Table 1). Estimated groundwater flow directions and hydraulic gradients for first water are shown in Figure 1. Groundwater in the western area is inferred to flow to the northwest at an estimated average hydraulic gradient of 0.009 vertical feet of head loss per horizontal foot of distance (ft/ft) between Redfield Woods and Cuesta-by-the-Sea (from Well 18N1 to Well 13G), and as low as 0.001 ft/ft beneath Sunset Terrace (from Well 13Q1 to Well 13L5). In the central area, groundwater is inferred to flow primarily to the northwest toward the bay from downtown Los Osos, shifting to a westerly flow direction across Baywood Park. A local groundwater elevation high (groundwater mound) is inferred across eastern Baywood park, which results in some groundwater movement to the east and northeast toward Los Osos Creek (Figure 1).

Table 1
Nitrate Monitoring Well Network

Well ID	Location	Type	Depth (ft)	Perforated interval (ft)	Well diam. (in)	R.P. Elev. (ft)	Water Depth* (ft)	Water Elevation (ft)
30S/10E								
13G	South Court	CSD mon	52	47-52	2	50.95	40.46	10.5
13H	Broderson/Skyline	CSD mon	34	29-34	2	49.33	32.04	17.3
13L5r	Howard/ Del Norte	CSD mon	37	26-36	2	32.63	23.49	9.1
13Q1r	Woodland Dr.	CSD mon	105	95-105	2	101.27	88.9	12.4
24A	Highland/ Alexander	CSD mon	164	154-164	2	193.04	160.24	32.8
30S/11E								
7K3r	12th/ Santa Ysabel	CSD mon	70	55-65	2	90.71	54.15	36.6
7L3r	Santa Ysabel/ 5th	CSD mon	50	40-50	2	45.76	37.46	8.3
7N1	3rd St.	CSD prod	83	61-71, 73-83	8	11	3.6	7.4
7Q1	El Moro/ 8th St.	CSD mon	75	29-43, 54-75	8	25.29	9	16.3
7R1r	El Moro/ 12th St.	CSD mon	35	25-35	2	61.93	23.91	38.0
8Ma	Sta. Ysabel/ South	CSD mon	45	35-45	2	91	>45	<46
8Mb	South Bay/ 18th St.	CSD mon	47	37-47	2	95	>47	<48
8N2r	South Bay/ El Moro	CSD mon	50	40-50	2	95.99	41.25	54.7
17D	Pismo / 18th	Private	120	na	10	na	na	na
17E9	Nipomo / South Bay	CSD mon	204	184-194	2	105.85	92.5	13.4
17F4	Hollister Lane	Private	72	48-72	8	78.57	48.54	30.0
17N4	Willow Dr.	Private	60	40-60	6	162.61	18.28	144.3
18B1r	Ramona Ave./10th	CSD mon	35	25-35	2	79.89	21.93	58.0
18C1r	Pismo Ave / 5th St	CSD mon	35	25-35	2	34.55	20.16	14.4
18E1	Ramona/private road	Private	100	40-60	6	39.61	27.43	12.2
18J6r	Los Olivos/ Fairchild	CSD mon	35	25-35	2	125.74	25.26	100.5
18L3r	Palisades Ave.	CSD mon	55	43-53	2	88.02	47.64	40.4
18L4r	Ferrell Ave.	CSD mon	35	25-35	2	103.85	21.38	82.5
18N1r	Manzanita/ Ravenna	CSD mon	95	85-95	2	125.53	83.42	42.1
18R1	Los Osos Valley Rd.	Private	50	40-50	8	170.96	16.59	154.4

Notes: *See Table 3 for specific dates.
Well ID's ending with "r" are reconstructed wells.
Elevations in feet above mean sea level (NGVD 29 datum)
R.P. = reference point
CSD = Los Osos CSD
na = not available

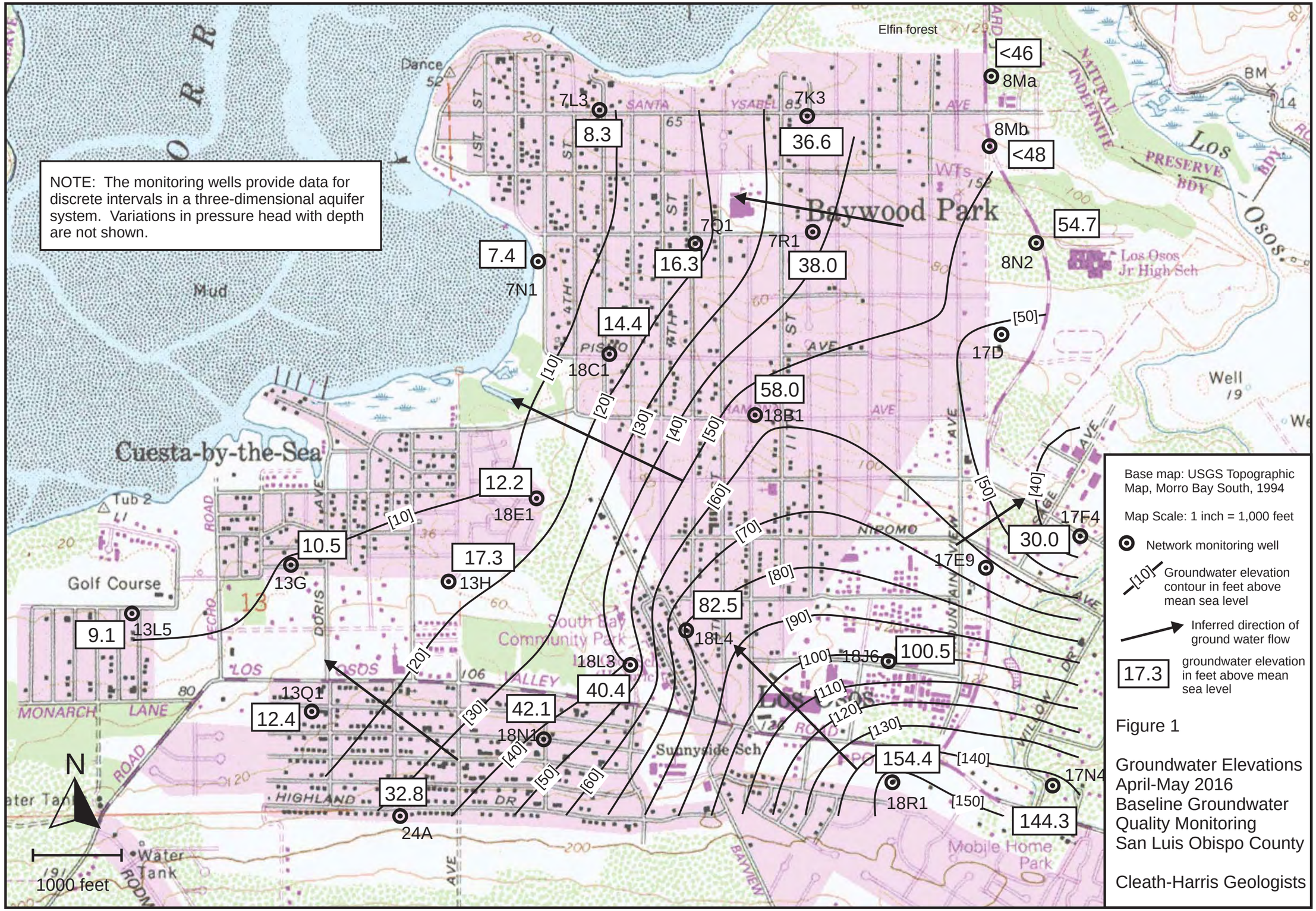

Figure 1

Groundwater Elevations
April-May 2016
Baseline Groundwater Quality Monitoring
San Luis Obispo County

Cleath-Harris Geologists

The hydraulic gradients for shallow water moving toward the bay in the central area range from 0.012 ft/ft westerly along Santa Ysabel Avenue (Well 7K3 to Well 7L3) up to 0.025 ft/ft northwesterly between Ramona and Pismo Avenues (Well 18B1 to Well 18C1). The hydraulic gradients for shallow water moving toward Willow Creek and Los Osos Creek are variable in direction but generally steep (0.03 ft/ft). The April 2016 groundwater flow directions and hydraulic gradients are similar to those from prior monitoring events. The water level contour map in Figure 1 is a composite of perched aquifer and upper aquifer pressures (excludes data from network well 17E9, which is not under first water pressure). Overall, individual recorded water levels averaged 2 feet higher in April-May 2016, compared to November 2015. Table 2 and Figure 2 compare water levels over the last four monitoring events.

Table 2
Water Level Comparison

Well ID	Depth to Water (feet)			
	Oct 2014	May 2015	Nov 2015	Apr-May 2016
30S/10E-13G	42.03	41.84	42.06	40.46
30S/10E-13H	31.07	31.29	32.32	32.04
30S/10E-13L5	23.84	23.82	23.71	23.49
30S/10E-13Q1	86.53	86.67	86.83	88.9
30S/10E-24A	--	160.11	160.91	160.24
30S/11E-7K3	54.23	54.42	54.9	54.15
30S/11E-7L3	38.24	38.2	38.3	37.46
30S/11E-7N1	--	7.25	6.2	3.6
30S/11E-7Q1	9.28	9.2	9.51	9
30S/11E-7R1	24.62	24.61	25.34	23.91
30S/11E-8Ma	44.78	>45 (dry)	>45 (dry)	<46 (dry)
30S/11E-8Mb	46.38	>47 (dry)	>47 (dry)	<48 (dry)
30S/11E-8N2	41.7	41.9	42.24	41.25
30S/11E-17E9	91.72	94.12	93.84	92.5
30S/11E-17F4	--	47.7	48.41	48.54
30S/11E-17N4		19.9	21.7	18.28
30S/11E-18B1	23.12	22.82	23.73	21.93
30S/11E-18C1	20.2	20.2	20.56	20.16
30S/11E-18E1	27.59	27.41	27.41	27.43
30S/11E-18J6	27.42	26.45	27.44	25.26
30S/11E-18L3	44.95	46.51	46.65	47.64
30S/11E-18L4	22.95	22.38	23.26	21.38
30S/11E-18N1	79.91	81.25	82.51	83.42
30S/11E-18R1	--	17.23	--	16.59

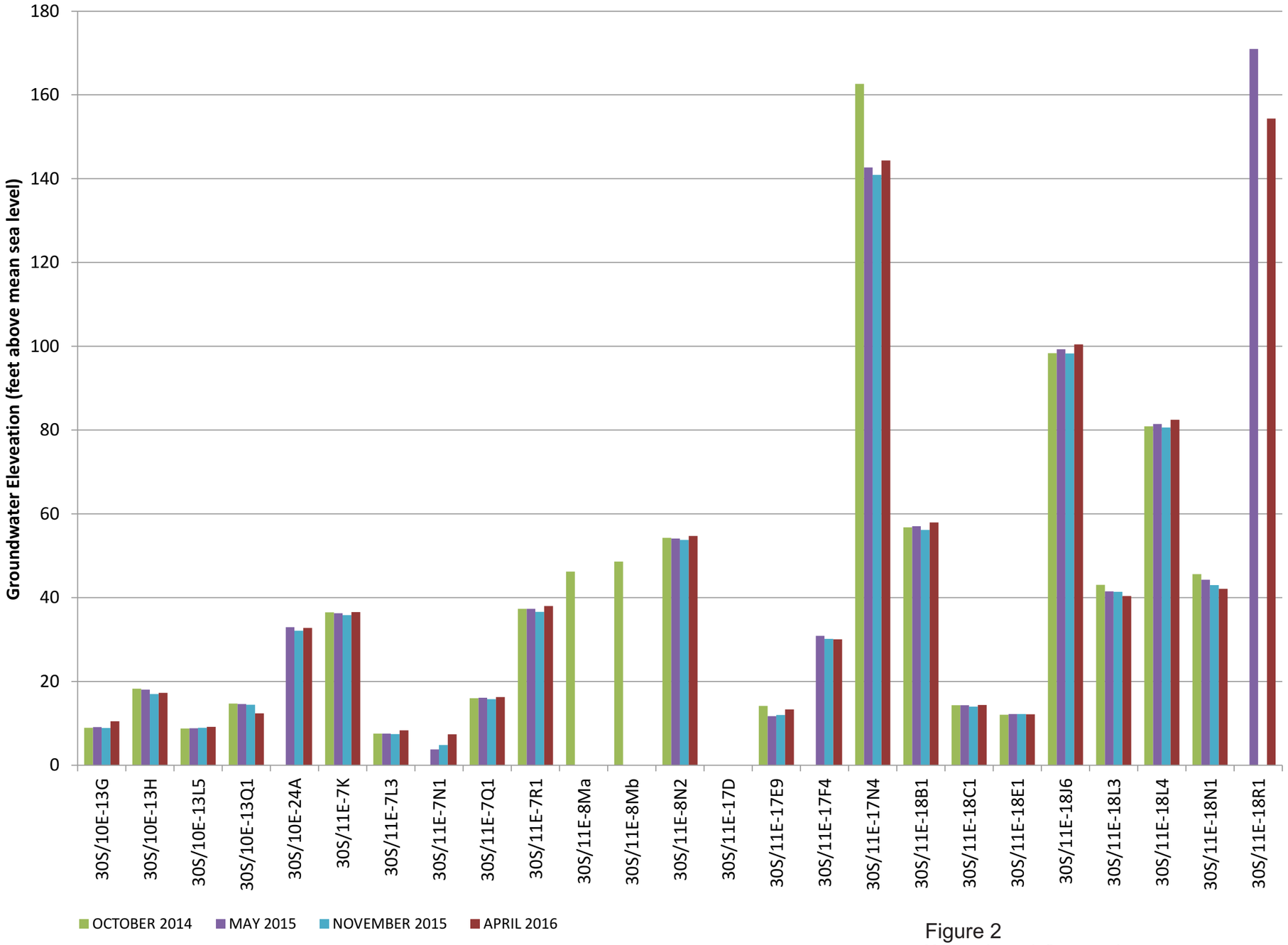

Figure 2
Water Level Comparison
Baseline Groundwater Quality Monitoring

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GEOLOGIC AND HYDROGEOLOGIC SETTING

The Los Osos groundwater basin is located in the Coast Ranges geomorphic province. The onshore portion of the basin covers approximately 10 square miles, of which approximately 3.3 square miles underlie the Morro Bay estuary and sand spit, and 6.7 square miles underlie Los Osos/Baywood Park and the Los Osos Creek Valley. The basin is underlain and bounded by relatively impermeable rocks on the north, south, and east. To the west, the basin is effectively bounded by the seawater-freshwater interface, although basin sediments extend close to three miles offshore. Unconsolidated deposits forming the basin include alluvial deposits, dune sands, the Paso Robles Formation and the Careaga Formation.

Six aquifer zones are identified in the basin, and have been designated Zones A through E, and the alluvial aquifer. Zones A and B are perched and semi-perched aquifers, mostly present within dune sand deposits in the central basin area. Zone C is the upper aquifer, which saturates portions of the Paso Robles Formation and dune sand deposits, and extends across the central and western basin areas. Beneath Zone C is the regional aquitard, an average 50-foot thick clay horizon that separates the upper aquifer from lower aquifer zones D and E. The lower aquifer has been subjected to seawater intrusion in the western basin area. The alluvial aquifer underlies the Los Osos Creek valley in the eastern basin area.

GROUNDWATER QUALITY MONITORING

A total of 23 groundwater samples were collected from monitoring network wells. These monitoring wells generally tap first water within the upper aquifer or the perched aquifer. First water is the interface where percolating waters, including precipitation and return flows from irrigation and wastewater, mix with groundwater. Sampling was conducted by CHG personnel. Sampling procedures are in Appendix A. Groundwater monitoring field logs are in Appendix B.

Water Quality Results

The water samples were analyzed by FGL Environmental Laboratories (San Luis Obispo, California). The constituents of analysis required for this monitoring event by the Central Coast Water Board included pH, total dissolved solids, total nitrogen as N (all forms identified), sodium, chloride, sulfate, and boron. Table 3 presents a summary of the analytical results of water samples for the April 2016 sampling event. Laboratory reports are in Appendix C.

Table 3
April-May 2016 Water Quality Results

Well ID	Sample Date	pH units	TDS mg/l	Total N mg/l	NO_3-N mg/l	NO_2-N mg/l	NH_3-N mg/l	Org. N mg/l	TKN mg/l	Na mg/l	Cl mg/l	SO_4 mg/l	B mg/l
30S/10E-13G	4/27/2016	5.8	490	13.3	13.3	ND	ND	ND	ND	65	178	55	ND
30S/10E-13H	5/3/2016	6.2	230	4	4.2	ND	ND	ND	ND	19	48	43	ND
30S/10E-13L5	4/25/2016	6	600	30.3	30.3	ND	ND	ND	ND	125	125	40	0.1
30S/10E-13Q1	4/28/2016	6.8	640	31	30.8	ND	ND	ND	ND	69	163	26	ND
30S/10E-24A	5/3/2016	6.6	520	16	15.5	ND	ND	ND	ND	43	159	9	ND
30S/11E-7K3	5/3/2016	6.7	510	20	19.6	ND	ND	ND	ND	78	108	45	0.2
30S/11E-7L3	4/27/2016	6.8	390	15	15	ND	ND	ND	ND	50	82	41	ND
30S/11E-7N1	4/27/2016	7.2	190	4.7	4.7	ND	ND	ND	ND	20	32	7	ND
30S/11E-7Q1	5/3/2016	6.2	500	21	21.4	ND	0.3	ND	ND	91	124	45	0.3
30S/11E-7R1	4/26/2016	6.4	250	11.6	11.6	ND	ND	ND	ND	32	49	24	ND
30S/11E-8Ma	Well dry - not sampled												
30S/11E-8Mb	Well dry - not sampled												
30S/11E-8N2	4/27/2016	6.6	120	4.8	4.8	ND	ND	ND	ND	11	20	17	ND
30S/11E-17D	4/27/2016	6.6	560	30	30	ND	ND	ND	ND	64	143	44	ND
30S/11E-17E9	4/28/2016	6.7	370	14.8	14.8	ND	ND	ND	ND	36	65	24	ND
30S/11E-17F4	4/27/2016	6.7	440	1	1.1	ND	ND	ND	ND	51	156	21	ND
30S/11E-17N4	5/5/2016	7.2	190	8	7.8	ND	ND	ND	ND	31	51	17	ND
30S/11E-18B1	4/26/2016	6.2	410	11.4	11.4	ND	ND	ND	ND	47	53	98	0.1
30S/11E-18C1	4/26/2016	6.4	560	18	18	ND	ND	ND	ND	73	167	47	0.1
30S/11E-18E1	5/4/2016	6.9	290	12	11.9	ND	ND	ND	ND	39	78	19	0.1
30S/11E-18J6	5/3/2016	6	400	11	8.7	ND	1	1	2	49	76	30	0.2
30S/11E-18L3	4/25/2016	6.3	300	13.5	13.5	ND	ND	ND	ND	33	80	23	ND
30S/11E-18L4	4/25/2016	6	530	32.3	32.3	ND	ND	ND	ND	50	108	42	0.1
30S/11E-18N1	4/28/2016	7.4	370	21.1	21.1	ND	ND	ND	ND	54	89	45	0.2
30S/11E-18R1	4/27/2016	6.1	330	19	18.8	ND	ND	ND	ND	50	80	23	0.1

NOTES: TDS = Total Dissolved Solids; NO_3-N = Nitrate as Nitrogen; NO_2-N = Nitrite as Nitrogen; NH_3-N = Ammonia as Nitrogen; Org. N = Organic Nitrogen; TKN = Total Kjeldahl Nitrogen; Na = Sodium; Cl = chloride; SO_4 = Sulfate; B = Boron; ND = Not Detected; See laboratory reports for practical quantitation limits; mg/l = milligrams per liter

Nitrate as Nitrogen

Sample results presented in Table 3 and Figure 3 show nitrate as nitrogen (NO_3-N) concentrations in groundwater range from 1.1 milligrams per liter (mg/l) to 32.3 mg/l. The average NO_3-N concentration for the 23 sampled wells is 15.7 mg/l (median value 14.8 mg/l). The greatest concentrations of NO_3-N are generally reported at wells in Baywood Park and south of Los Osos Valley Road, similar to the distribution reported in prior monitoring events. The maximum NO_3-N concentration, however, was reported at 32.3 mg/l in well 18L4 near downtown Los Osos.

Well 8Mb in Baywood Park registered the maximum NO_3-N concentrations during the first three Baseline Groundwater Quality Monitoring events, but has not been sampled due to insufficient water during the last three monitoring events (dry in April 2016). Well 8Mb and nearby monitoring well 8Ma (also dry in April 2016) have less penetration into first water than other monitoring wells. They were originally constructed as piezometers for measuring groundwater mounding associated with a prior wastewater project disposal design that was not implemented.

Isopleth lines for NO_3-N are included in Figure 3. These contours are based on the ordinary kriging interpolation method, which provides a best (least-squares) estimate of values at unsampled points based on the mapped values.

Figure 4 presents a bar graph comparing NO_3-N concentrations at network wells over the last four Baseline Groundwater Monitoring events. Declining NO_3-N concentrations between the November 2015 and April-May 2016 monitoring events were reported at 13 wells, with increased NO_3-N concentrations reported at 9 wells. One well (18R1) sampled in April 2016 was not accessible during the November 2015 monitoring event. Individual fluctuations in NO_3-N concentrations across the network, when averaged together, showed a 1.2 mg/l decrease between November 2015 and April-May 2016. The number of monitoring network wells with water quality in excess of the NO_3-N drinking water standard of 10 mg/l is presently 17 out of 23 wells tested.

Other Forms of Nitrogen

Other forms of nitrogen have been historically detected in groundwater collected from the nitrate monitoring program wells. Most of the detections are isolated and/or at levels close to detection limits, but two wells have consistently been reported with total ammonia concentrations, including concentrations greater than 1 mg/l. These two wells are a former upper aquifer community supply well on 8th Street in Baywood Park (30S/11E-7Q1) and a monitoring well tapping the perched aquifer near downtown Los Osos (30S/11E-18J6). April 2016 results reported 0.3 mg/l total ammonia in groundwater collected from well 7Q1 and 1 mg/l total ammonia concentrations in groundwater collected from well 18J6.

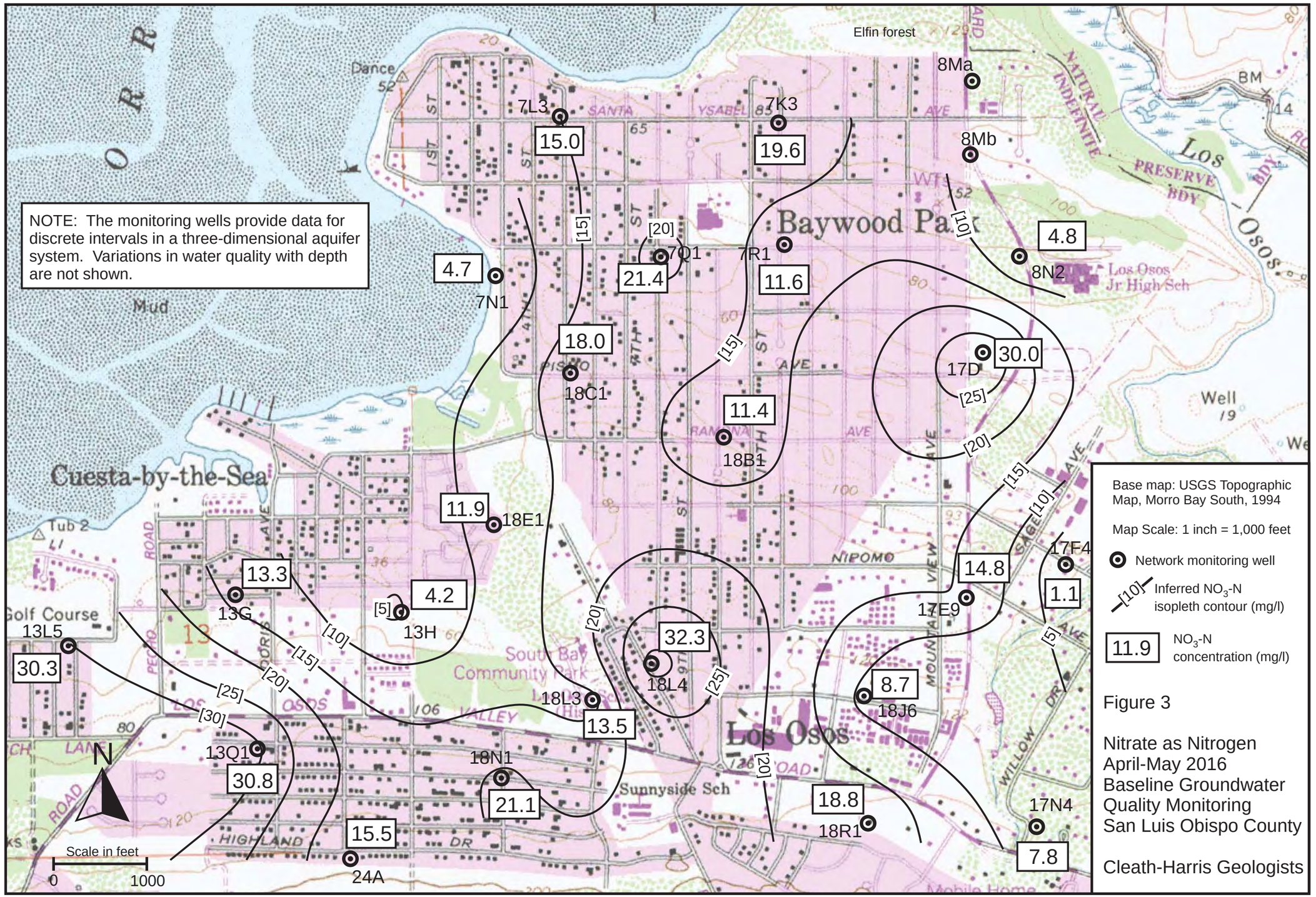

Figure 3

Nitrate as Nitrogen
April-May 2016
Baseline Groundwater Quality Monitoring
San Luis Obispo County

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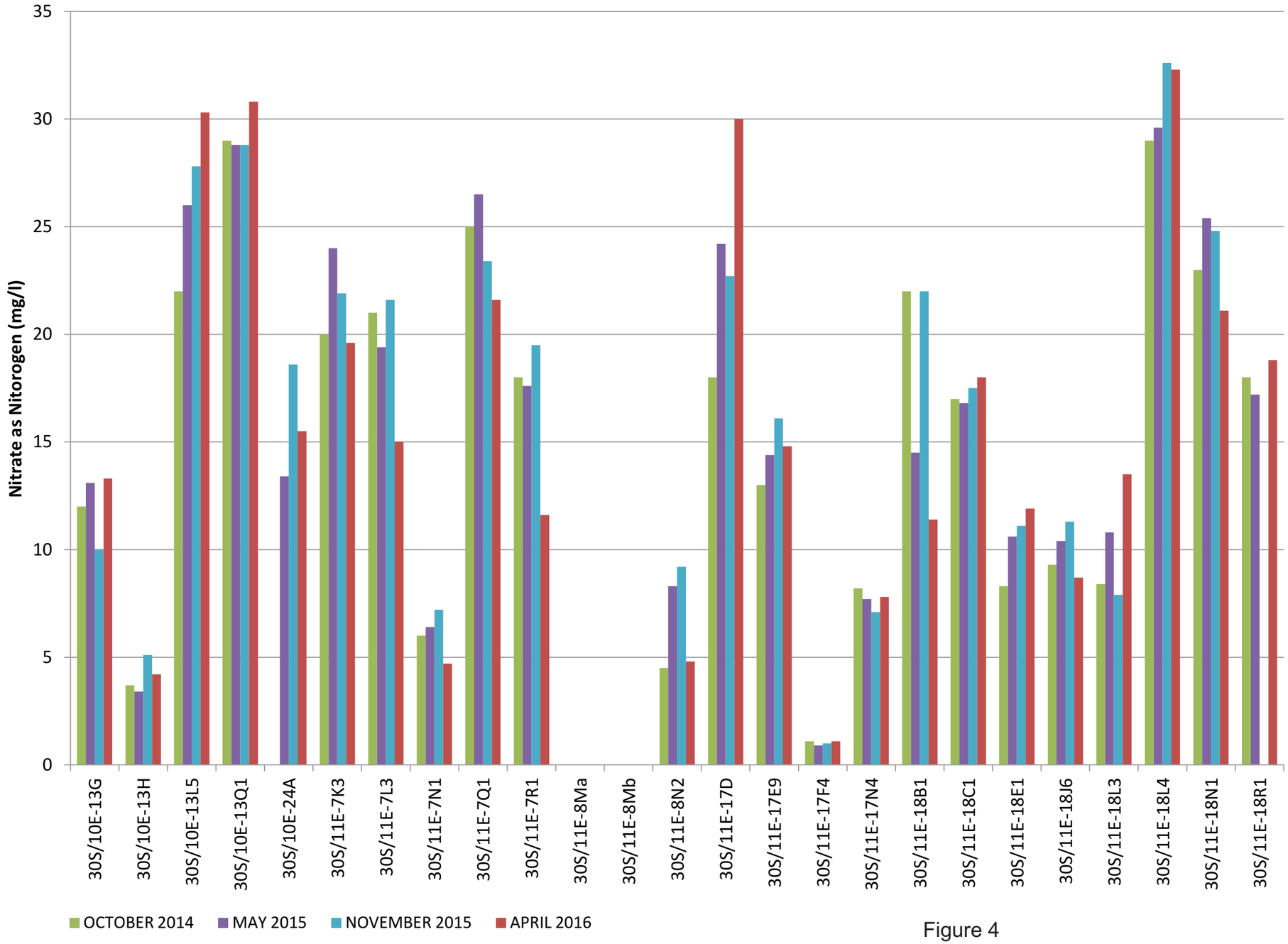

Figure 4
Nitrate as Nitrogen Comparison
Baseline Groundwater Quality Monitoring

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Total Dissolved Solids

TDS concentrations in shallow groundwater during April 2016 were typically between 200 and 600 mg/l, with a low of 120 mg/l in well 8N2 along South Bay Boulevard and a high of 640 mg/l in Cuesta-by-the-Sea monitoring well 13Q1. The average TDS concentration for the 23 network wells sampled was 400 mg/l (median value also 400 mg/l).

Isopleth lines for TDS are included in Figure 5. These contours are based on the ordinary kriging interpolation method, which provides a best (least-squares) estimate of values at unsampled points based on the mapped values.

Figure 6 presents a bar graph comparing TDS concentrations at network wells over the last four monitoring events. Between November 2015 and April 2016, a decline in TDS concentrations was reported at 7 wells, 13 wells showed increased TDS concentrations, while 2 wells remained the same. Individual fluctuations in TDS concentrations, when averaged together, decreased by an average of 8 mg/l at monitoring network wells.

General Minerals and Boron

Concentrations of sodium, chloride, sulfate, and boron were also analyzed in groundwater samples collected from monitoring network wells. Results for these constituents are included in Table 3.

Broderson Monitoring Wells

Five vadose zone monitoring locations down slope of the Broderson disposal leach field site were inspected May 2016. Each location includes a nested set of three piezometers of approximately 14 feet, 27 feet, and 40 feet depth. All fifteen piezometers were dry. Table 4 below summarizes the vadose zone monitoring results. Appendix D contains the well locations and construction logs.

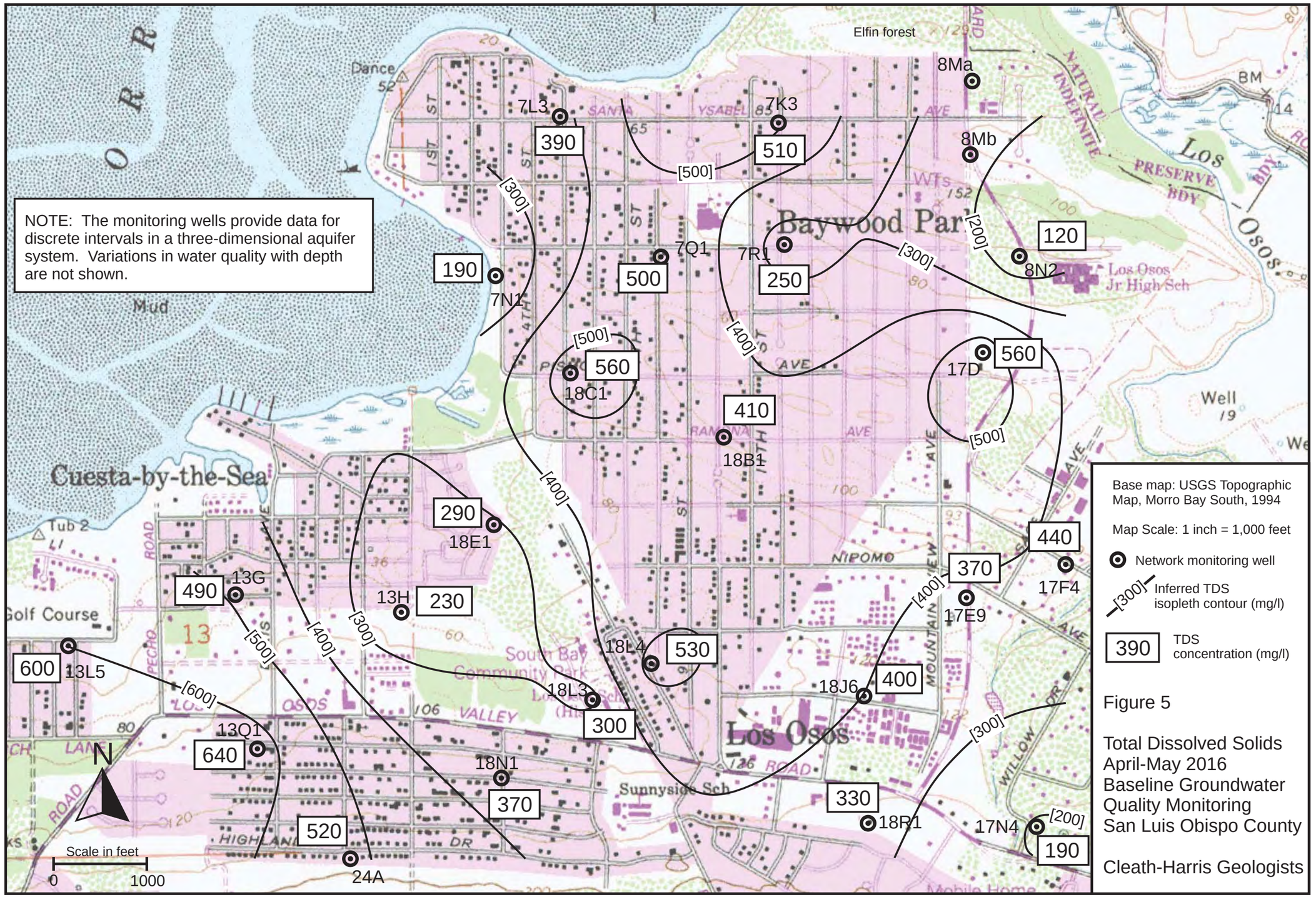

Figure 5

Total Dissolved Solids
April-May 2016
Baseline Groundwater Quality Monitoring
San Luis Obispo County

Cleath-Harris Geologists

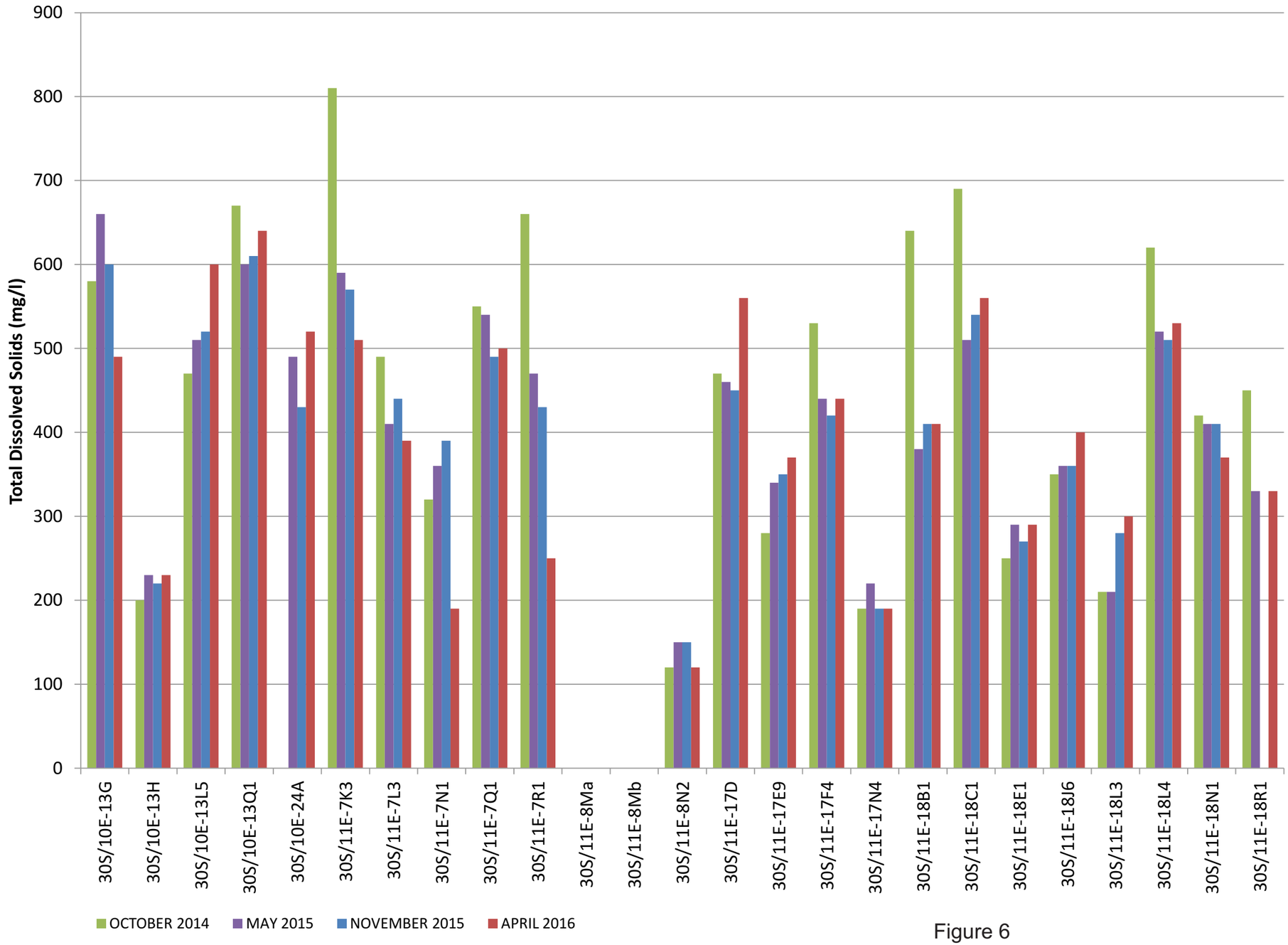

Figure 6
TDS Comparison
Baseline Groundwater Quality Monitoring

Cleath-Harris Geologists

Table 4
Broderson Vadose Zone Monitoring Wells
Inspected May 4, 2016

Well Name	Piezometer depth in feet	Water Level
MW-B1	14	Dry
	27	Dry
	40	Dry
MW-B2	14	Dry
	27	Dry
	40	Dry
MW-B3	14	Dry
	27	Dry
	40	Dry
MW-B4	14	Dry
	27	Dry
	40	Dry
MW-B5	14	Dry
	27	Dry
	40	Dry

CONCLUSIONS

The groundwater flow pattern for April-May 2016 is similar to historical flow patterns. Shallow groundwater generally flows to the northwest toward the bay. On the east side of the basin, a portion of the shallow groundwater moves toward Willow Creek and Los Osos Creek. Water levels averaged 2 feet higher in April-May 2016 compared to measurements in November 2015.

The average NO_3-N concentration for the 23 wells sampled is 15.7 mg/l. The greatest concentrations of NO_3-N are generally reported at wells in Baywood Park and south of Los Osos Valley Road. Individual fluctuations in NO_3-N concentrations across the network, when averaged together, showed a 1.2 mg/l decrease between November 2015 and April-May 2016. The number of monitoring network wells with water quality in excess of the NO_3-N drinking water standard of 10 mg/l is presently 17 out of 23 wells tested.

The average TDS concentration for the 23 monitoring wells sampled is 400 mg/l. Individual fluctuations in TDS concentrations across the network, when averaged together, decreased by an average of 8 mg/l between November 2015 and April-May 2016.

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APPENDIX A

Sampling Procedures

Sampling Procedures

Water sampling procedures for general mineral and dissolved nitrogen sampling are presented below. The purpose of the procedures are to ensure that communication is established with the aquifer prior to sample collection.

Non-equipped monitoring wells:

1) Calibrate field monitoring instruments each day prior to sampling.
2) Inspect wellhead condition and note any maintenance required (perform at earliest convenience).
3) Measure depth to static water (record to 0.01 inches) from surveyed reference point.
4) Install temporary purge pump to at least three feet below the water surface (deeper setting may be needed if water level draw down is too great).
5) Begin well purge, record flow rate.
6) Measure discharge water EC (measured to 10 μmhos/cm), pH (measured to 0.01 units), and temperature (measured to 0.1 degrees C) at regular intervals during well purging. Record time and gallons purged. Note discharge water color, odor, and turbidity (visual).
7) A minimum of three casing volumes of water should be removed during purging, or one borehole volume opposite perforated interval, whichever is greater*. In addition, a set of at least three consecutive field monitoring measurements with stable values should be recorded. For EC, stability within 10 percent of the first value in the set is sufficient (typically within 50-100 μmhos/cm). For pH, stability within 5 percent of the first value is sufficient (typically within 0.3-0.4 units). For temperature, stability within 1 percent of the first value is sufficient (typically within 0.2 degrees C).
8) Collect sample directly from discharge tube, note sample color, odor, turbidity (visual). Use only laboratory-provided containers.
9) Place samples on-ice for transport to the laboratory.
10) Remove temporary pump and rinse with distilled water.
11) Close well and secure well box lid.

*note: If well is pumped dry at the minimum pumping rate, the well may be allowed to recover and then sampled by bailer within 24 hours.

Equipped wells:

The sampling port for an equipped well must be upstream of any water filtration or chemical feeds. Sample from the discharge line as close to the wellhead as possible. Sampling procedures for equipped wells will vary. For active wells (i.e. wells used daily), the need for purging three casing volumes is unnecessary. Flush supply line from well or holding tank to sampling port, and record one set of EC, pH, and temperature readings collected prior to sampling. For inactive wells, a field monitoring procedure similar to that described for non-equipped wells above would be appropriate. Static water level measurements should also be taken before sampling. Water samples should always be transported on-ice to the laboratory.

APPENDIX B

Groundwater Monitoring Field Logs

Groundwater Monitoring Field Log
Los Osos Baseline

Date:	4/27/2016
Operator:	SBH
Well number and location:	30S/10E-13G (South Ct.)
Site and wellhead conditions:	Slip cap only, no lock. Metal cover secure.

Static water depth (feet):	40.46
Well depth (feet):	52
Water column (feet):	11.54
Casing diameter (inches):	2
Minimum purge volume (gal)	11.9
Purge rate (gpm):	1.8
Pumping water level (feet):	--
Pump setting (feet):	48
Minimum purge time (min):	7
Time begin purge:	13:43

Time	Gallons	EC	pH	Temp.	Comments*
13:44	1		6.40	20.4	Turbid, light brown, odorless
13:46	5		6.25	18.3	Slightly turbid, light brown, odorless
13:49	10		6.26	18	Slightly turbid, light brown, odorless
13:52	15	852	6.25	17.9	Slightly turbid, light brown, odorless
13:55	20	859	6.24	17.7	Clear, colorless, odorless
13:59	25	858	6.26	17.8	Clear, colorless, odorless
14:02	30	866	6.26	17.7	Clear, colorless, odorless
					Sampled at 14:05

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 5/2-5/3/16
Operator: SBH
Well number and location: 30S/10E-13H (Skyline & Broderson)
Site and wellhead conditions: Overcast, cool
Well box slightly buried, plug intact, locked

Static water depth (feet): 32.04
Well depth (feet): 34
Water column (feet): 1.96
Casing diameter (inches): 2
Minimum purge volume (gal) 1
Purge rate (gpm): variable
Pumping water level (feet): --
Pump setting (feet): (hand bailer)
Minimum purge time (min): --
Time begin purge: 12:37

Time	Gallons	EC	pH	Temp.	Comments*
12:37	0.5	303	6.87	19.5	Turbid, light brown, sandy, salty odor
12:58	0.75				Bailed dry, wait for recovery
13:12	1	364	6.58	19.1	Bailed dry, turbid, light brown
13:30	1.25	356	6.51	19.2	Bailed dry, turbid, light brown
13:43	1.5	359	6.61	19.5	Bailed dry, turbid, light brown
					Recovery period
11:00		346	6.64	18.5	Slightly turbid, light brown.
					Sampled next day (5/3), at 11:00am with disposable bailer

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/25/2026
Operator: SBH
Well number and location: 30S/10E-13L5 (Howard & Del Norte)
Site and wellhead conditions: Sunny, breezy, cool
Well box buried in sand, dry, plug intact, locked

Static water depth (feet):	23.49
Well depth (feet):	37
Water column (feet):	13.51
Casing diameter (inches):	2
Minimum purge volume (gal)	13.9
Purge rate (gpm):	1.91
Pumping water level (feet):	--
Pump setting (feet):	30
Minimum purge time (min):	7
Time begin purge:	14:36

Time	Gallons	EC	pH	Temp.	Comments
14:39	5	855	6.09	19.5	cloudy, light brown, odorless
14:43	10	924	6	19.5	hazy, colorless, odorless
14:45	15	932	6.04	19.2	nearly clear, colorless, odorless
14:47	20	933	6.01	19.1	nearly clear, colorless, odorless
14:51	25	928	6.01	19.4	nearly clear, colorless, odorless
14:53	30	927	6.36	19.4	nearly clear, colorless, odorless
					Sampled @ 14:55

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/28/2016
Operator: SBH
Well number and location: 30S/10E-13Q1 (Woodland Dr.)
Site and wellhead conditions: Sunny, windy, cool
Well box dry, plug intact, locked

Static water depth (feet): 88.9
Well depth (feet): 105
Water column (feet): 16.1
Casing diameter (inches): 2
Minimum purge volume (gal) 16.7
Purge rate (gpm): 1.2
Pumping water level (feet): --
Pump setting (feet): 95
Minimum purge time (min): 14
Time begin purge: 10:00

Time	Gallons	EC	pH	Temp.	Comments
10:02	1	864	6.64	18.8	Turbid, light brown, no odor
10:06	5	903	6.43	18.7	Slightly turbid, colorless, odorless
10:13	10	907	6.23	18.3	Raised voltage. Clear, colorless, odorless, sandy
10:15	15	904	6.21	18.3	Slightly turbid, light brown, no odor
10:18	20	909	6.09	18.1	Nearly Clear colorless, odorless, trace sand
10:21	25	911	6.20	18.1	Clear, colorless, odorless
10:24	30	907	6.19	18.3	Clear, colorless, odorless
					Sampled at 10:26

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 5/2-5/3/2016
Operator: SBH
Well number and location: 30S/10E-24A (Alexander & Highland)
Site and wellhead conditions: Sunny, mild
Monument casing locked and plug intact, tight hinge on lid

Static water depth (feet):	160.24
Well depth (feet):	165
Water column (feet):	4.76
Casing diameter (inches):	2
Minimum purge volume (gal)	3
Purge rate (gpm):	(hand bailed)
Pumping water level (feet):	--
Pump setting (feet):	(hand bailer)
Minimum purge time (min):	--
Time begin purge:	3:20

Time	Gallons	EC	pH	Temp.	Comments*
3:20	1	702	6.63	17.9	Turbid, sandy, light brown
3:33	2	711	6.70	17.4	Turbid, sandy, light brown
3:36	3	715	6.70	17.2	Turbid, sandy, light brown
3:57	4	708	6.68	16.8	Turbid, sandy, light brown
4:09	5	708	6.68	16.9	Turbid, sandy, light brown
					Recovery period
12:30		726	6.61	18.3	Sampled next day (5/3) with disposable bailer at 12:30

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 5/3/2016
Operator: SBH
Well number and location: 30S/11E-7K3 (Santa Ysabel & 12th St.)
Site and wellhead conditions: Overcast
Secure, locked, slightly buried under DG gravel.

Static water depth (feet):	54.15
Well depth (feet):	70
Water column (feet):	15.85
Casing diameter (inches):	2
Minimum purge volume (gal)	16.4
Purge rate (gpm):	1
Pumping water level (feet):	--
Pump setting (feet):	62
Minimum purge time (min):	16
Time begin purge:	9:14

Time	Gallons	EC	pH	Temp.	Comments*
9:16	1	420	7.08	18.3	Turbid, light brown, odorless
9:19	5	735	6.94	19.0	Slightly turbid, light brown, odorless
9:24	10	784	6.93	18.9	Slightly turbid, light brown, odorless
9:28	15	785	6.91	19.1	Nearly clear, colorless, odorless
9:33	20	789	6.93	19.3	Clear, colorless, odorless
9:37	25	783	6.94	19.3	Clear, colorless, odorless
					Samped at 9:40

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/27/2016
Operator: SBH
Well number and location: 30S/11E-7L3 (Santa Ysabel & 5th St.)
Site and wellhead conditions: sunny and warm
Standing water in well box above top of casing (bailed out), plug and gasket intact.

Static water depth (feet):	37.46
Well depth (feet):	50
Water column (feet):	12.54
Casing diameter (inches):	2
Minimum purge volume (gal)	12.9
Purge rate (gpm):	1.4
Pumping water level (feet):	--
Pump setting (feet):	44
Minimum purge time (min):	9
Time begin purge:	10:32

Time	Gallons	EC	pH	Temp.	Comments*
10:33	1	566	6.55	19.7	Turbid, light brown, odorless
10:35	5	607	6.3	19.4	Turbid, light brown, odorless
10:38	10	622	6.46	19.2	Nearly clear, colorless, odorless
10:41	15	624	6.56	19.2	Clear, colorless, odorless
10:44	20	629	6.62	19.2	Clear, colorless, odorless
10:47	25	626	6.65	19	Clear, colorless, odorless
10:50	30	632	6.69	19.2	Clear, colorless, odorless

Sampled at 10:54

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date:	4/27/2016
Operator:	SJH
Well number and location:	30S/ 11E-7N1 (3rd St.)
Site and wellhead conditions:	Sunny and cool. Well in locked enclosure.

Static water depth (feet):	3.6
Well depth (feet):	83
Water column (feet):	75.7
Casing diameter (inches):	8
Minimum purge volume (gal)	flush line
Pump rate (gpm):	80
Pumping water level (feet):	--
Pump setting (feet):	N/A
Minimum purge time (min):	line purge only
Time begin purge:	10:18

Time	Gallons	EC	pH	Temp.	Comments*
10:18	2	298	7.58	18.3	Clear, colorless, odorless
10:23	400	298	7.35	18.3	Clear, colorless, odorless
10:28	800	294	7.28	18.4	Clear, colorless, odorless
10:33	1200	292	7.26	18.5	Clear, colorless, odorless
10:38	1700	293	7.27	18.4	Clear, colorless, odorless
					Sampled @ 10:38 am

*Turbidity, color, odor, sheen, debris, etc.
NA represents information not available

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 5/3/2016
Operator: SBH
Well number and location: 30S/11E-7Q1 (8th Street/El Moro Ave.)
Site and wellhead conditions: Overcast, cool
Well plug intact and locked

Static water depth (feet):	9
Well depth (feet):	71
Water column (feet):	62
Casing diameter (inches):	6
Minimum purge volume (gal)	273
Purge rate (gpm):	5
Pumping water level (feet):	--
Pump setting (feet):	60
Minimum purge time (min):	55
Time begin purge:	13:25

Time	Gallons	EC	pH	Temp.	Comments*
13:25	5				turbid, orange, odorless
13:27	10	748	7.2	18.6	turbid, orange, odorless
13:29	15	751	7.42	18.9	turbid, orange, odorless
13:31	20	751	7.47	18.9	turbid, orange, odorless
13:33	25	755	7.52	18.9	turbid, orange, odorless
13:35	30				turbid, orange, odorless
13:37	35	758			turbid, orange, odorless
13:41	45				turn on second purge pump
13:57	120	775	7.31	18.8	turbid, orange, odorless
14:05	160	932	6.93	18.6	slightly turbid, orange
14:13	200	864	6.99	18.8	slightly turbid, orange, lowered supertwister
14:21	240	941	6.88	18.6	almost clear, some yellow-brown tinge
14:29	280	882	6.88	18.8	almost clear, some yellow-brown tinge
14:37	320	889	6.83	19.0	almost clear, some yellow-brown tinge
					Sampled @ 14:39 pm

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/26/2016
Operator: A. Berge
Well number and location: 30S/11E-7R1 (El Moro Ave. & 12th St.)
Site and wellhead conditions: Sunny, breezy, cool
Gasket plug, lock intact, one bolt flange broken.

Static water depth (feet):	23.91
Well depth (feet):	35
Water column (feet):	11.09
Casing diameter (inches):	2
Minimum purge volume (gal)	11.4
Purge rate (gpm):	0.53
Pumping water level (feet):	--
Pump setting (feet):	32
Minimum purge time (min):	22
Time begin purge:	13:11

Time	Gallons	EC	pH	Temp.	Comments*
13:12	1	453	6.68	19.3	Turbid, brown, earthy odor
13:15	5	437	6.60	19.1	Turbid, brown, slight earthy odor
13:20	10	431	6.60	19.3	Slightly turbid, slight odor
13:27	15	424	6.56	19.2	Slightly turbid, slight odor
13:34	20	426	6.47	18.9	Slightly turbid, slight odor
					Sampled @ 13:36

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/28/2016
Operator: SBH
Well number and location: 30S/11E-8Ma (South Bay Blvd. & Santa Ysabel)
Site and wellhead conditions: Sunny, windy, cool
Water inside well box, bailed out and cleaned gasket. Slip cap intact

Static water depth (feet): dry
Well depth (feet): 45
Water column (feet): none
Casing diameter (inches): 2
Minimum purge volume (gal) --
Purge rate (gpm): --
Pumping water level (feet): --
Pump setting (feet): --
Minimum purge time (min): --
Time begin purge: --

Time	Gallons	EC	pH	Temp.	Comments*
					WELL DRY - NOT SAMPLED

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/28/2016
Operator: SBH
Well number and location: 30S/11E-8Mb (Santa Maria & 18th St.)
Site and wellhead conditions: Sunny, windy, cool
Casing, gasket and slip cap intact

Static water depth (feet): dry
Well depth (feet): 46.5
Water column (feet): none
Casing diameter (inches): 2
Minimum purge volume (gal) --
Purge rate (gpm): --
Pumping water level (feet): --
Pump setting (feet): --
Minimum purge time (min): --
Time begin purge: --

Time	Gallons	EC	pH	Temp.	Comments*
					WELL DRY - NOT SAMPLED

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/27/2016
Operator: SBH
Well number and location: 30S/11E-8N2 (South Bay Blvd.)
Site and wellhead conditions: Sunny, breezy, cool
Well box dry, clean and locked, bolt flange missing

Static water depth (feet):	41.25
Well depth (feet):	50
Water column (feet):	8.75
Casing diameter (inches):	2
Minimum purge volume (gal)	9
Purge rate (gpm):	0.5
Pumping water level (feet):	--
Pump setting (feet):	47
Minimum purge time (min):	18
Time begin purge:	12:08

Time	Gallons	EC	pH	Temp.	Comments*
12:10	1	187	6.96	20.8	Slightly turbid, light brownish gray, odorless
12:13	5	200	6.75	20.0	Slightly turbid, light brownish gray, odorless
12:17	7	201	6.70	19.8	Very slightly turbid, light gray, odorless
12:19	9	202	6.66	19.8	Very slightly turbid, light gray, odorless
12:22	11	202	6.64	19.7	Clear, colorless, odorless
12:25	13	203	6.61	19.7	Clear, colorless, odorless
12:27	15	205	6.61	19.7	Clear, colorless, odorless
					Sampled at 12:29

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/27/2016
Operator: SJH
Well number and location: 30S/11E-17D (Pismo Ave. & 18th St.)
Site and wellhead conditions: Sunny, cool.
Wellhead intact, equipped private well with pressure tank. Sampled from spigot

Static water depth (feet): --
Well depth (feet): 120
Water column (feet): --
Casing diameter (inches): 10
Minimum purge volume (gal) flush well
Purge rate (gpm): --
Pumping water level (feet): --
Pump setting (feet): --
Minimum purge time (min): flush line
Time begin purge: 11:49

Time	Gallons	EC	pH	Temp.	Comments*
11:49	10	839	7.00	19.2	Clear, colorless, odorless
					Sampled at 11:50

*Turbidity, color, odor, sheen, debris, etc.
NA represents information not available

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/28/2016
Operator: SBH
Well number and location: 30S/11E-17E9 (South Bay Blvd. Yard)
Site and wellhead conditions: Sunny, windy cool
Monument casing locked, slip cap intact

Static water depth (feet):	92.5
Well depth (feet):	204
Water column (feet):	111.5
Casing diameter (inches):	2
Minimum purge volume (gal):	54.60
Purge rate (gpm):	1
Pumping water level (feet):	--
Pump setting (feet):	115
Minimum purge time (min):	55
Time begin purge:	11:12

Time	Gallons	EC	pH	Temp.	Comments*
11:12	1	1502	11.92	19.0	Turbid, milky, no odor
11:16	5	1845	12.10	18.9	Slightly turbid, slightly milky, no odor
11:19	10	1303	12.09	18.8	Slightly turbid, slightly milky, no odor
11:23	15	580	11.31	19.0	Slightly turbid, slightly milky
11:28	20	576	9.91	19.0	Clear, colorless, odorless
11:30	25	587	8.87	19.0	Clear, colorless, odorless
11:34	30	589	8.35	18.9	Clear, colorless, odorless
11:38	35	588	8.14	18.8	Clear, colorless, odorless
11:42	40	584	7.95	18.8	Clear, colorless, odorless
11:45	45	587	7.60	18.8	Clear, colorless, odorless
11:49	50	584	7.56	18.9	Clear, colorless, odorless
11:53	55	583	7.44	18.5	Clear, colorless, odorless
11:57	60	583	7.32	18.9	Clear, colorless, odorless
12:00	65	583	7.25	18.6	Clear, colorless, odorless
12:03	70	584	7.19	18.8	Clear, colorless, odorless
12:08	75	582	7.12	18.4	Clear, colorless, odorless
12:12	80	582	7.09	18.4	Clear, colorless, odorless
12:15	85	582	7.05	18.8	Clear, colorless, odorless
12:19	90	586	7.04	18.8	Clear, colorless, odorless
12:22	95	583	7.02	18.9	Clear, colorless, odorless
12:26	100	584	6.99	18.8	Clear, colorless, odorless
12:29	105	584	6.99	18.8	Clear, colorless, odorless
					Sampled @ 12:30

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/27/2016
Operator: SJH
Well number and location: 30S/11E-17F4 (Hollister Ln.)
Site and wellhead conditions: Sunny, breezy cool.
Wellhead intact, active well with pressure tank, sample from spigot near well.

Static water depth (feet): 48.54
Well depth (feet): 72
Water column (feet): 23.46
Casing diameter (inches): 6
Minimum purge volume (gal): flush line
Purge rate (gpm): --
Pumping water level (feet): --
Pump setting (feet): --
Minimum purge time (min): flush line
Time begin purge: 12:04

Time	Gallons	EC	pH	Temp.	Comments*
12:04	10	716	6.9	17.9	Clear, colorless, odorless
					Sampled at 12:05

*Turbidity, color, odor,sheen, debris, etc.
NA represents information not available

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 5/5/2016
Operator: A. Berge
Well number and location: 30S/11E-17N4 (Willow)
Site and wellhead conditions: Sunny, warm, breezy
Plastic cap intact on sounding port, Sample from spigot at well

Static water depth (feet): 18.28
Well depth (feet): 60
Water column (feet): 41.72
Casing diameter (inches): 6
Minimum purge volume (gal): flush line
Purge rate (gpm): --
Pumping water level (feet): --
Pump setting (feet): --
Minimum purge time (min): flush line
Time begin purge: 14:23

Time	Gallons	EC	pH	Temp.	Comments*
14:23	0	343	6.85	22.0	Clear, Colorless, Odorless
14:25	5	334	6.97	18.8	Clear, Colorless, Odorless
					Sampled @ 14:26

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/26/2016
Operator: A. Berge
Well number and location: 30S/11E-18B1 (Ramona & 10th St.)
Site and wellhead conditions: Sunny, cool.
Under ice plant, bailed standing water from well box, plug intact, no lock present

Static water depth (feet):	21.93
Well depth (feet):	35
Water column (feet):	13.07
Casing diameter (inches):	2
Minimum purge volume (gal)	13.5
Purge rate (gpm):	1
Pumping water level (feet):	--
Pump setting (feet):	30
Minimum purge time (min):	13.5
Time begin purge:	11:53

Time	Gallons	EC	pH	Temp.	Comments*
11:54	1	469	6.46	18.5	Turbid, brown, sandy, no odor
11:56	5	651	6.36	18.1	Slightly sandy, brown tinge, odorless
11:59	10	661	6.28	18.2	Slightly sandy, brown tinge, odorless
12:02	15	665	6.33	18	Trace sand, mostly clear, odorless
12:05	20	664	6.27	18.3	Trace sand, clear, odorless
12:08	25	660	6.30	18	Trace sand, clear, odorless
					Sampled @ 12:10 pm

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date:	4/26/2016
Operator:	A. Berge
Well number and location:	30S/11E-18C1 (Pismo Ave. & 5th St.)
Site and wellhead conditions:	Sunny, cool, breezy
	Box slightly buried, cap and plug intact, difficult to lock

Static water depth (feet):	20.16
Well depth (feet):	35
Water column (feet):	14.84
Casing diameter (inches):	2
Minimum purge volume (gal)	30
Purge rate (gpm):	1.5
Pumping water level (feet):	--
Pump setting (feet):	30
Minimum purge time (min):	21
Time begin purge:	10:12

Time	Gallons	EC	pH	Temp.	Comments*
10:12	1	340	7.50	17.9	Slightly turbid, no odor
10:16	5	922	6.61	18.0	Some sand, slightly turbid, earthy odor
10:19	10	935	6.49	18.1	Some sand, slightly turbid, earthy odor
10:22	15	949	6.50	17.9	Clear, colorless, slightly earthy odor
10:25	20	943	6.42	18.3	Clear, colorless, odorless
10:29	25	956	6.40	18.1	Clear, colorless, odorless
10:33	30	959	6.34	17.3	Clear, colorless, odorless
					Sampled at 10:35am

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date:	5/4/2016
Operator:	SBH
Well number and location:	30S/11E-18E1 (Ramona Ave.)
Site and wellhead conditions:	Overcast, cool
	Secure, intact, fake rock covering well

Static water depth (feet):	27.43
Well depth (feet):	100
Water column (feet):	72.57
Casing diameter (inches):	6
Minimum purge volume (gal)	320
Purge rate (gpm):	5
Pumping water level (feet):	--
Pump setting (feet):	60
Minimum purge time (min):	64
Time begin purge:	10:30

Time	Gallons	EC	pH	Temp.	Comments*
10:31	5	521	7.40	17.8	Clear, colorless, odorless
10:32	10	492	6.84	18.1	Clear, slightly gray, odorless
10:39	40	504	6.48	18.5	Clear, colorless, odorless
10:48	80	506	6.45	19.0	Clear, colorless, odorless
10:58	120	506	6.45	19.0	Clear, colorless, odorless
11:02	140	507	6.48	18.5	Clear, colorless, odorless
11:07	160	506	6.46	18.8	Clear, colorless, odorless
11:16	200	505	6.46	18.7	Clear, colorless, odorless
11:25	240	503	6.47	18.6	Clear, colorless, odorless
11:36	280	502	6.47	18.4	Clear, colorless, odorless
11:46	320	505	6.48	18.2	Clear, colorless, odorless
					Sampled at 11:50

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date:	5/2-5/3/16
Operator:	SBH
Well number and location:	30S/11E-18J6 (Los Olivos & Fairchild)
Site and wellhead conditions:	Overcast, cool.
	Well box dry, plug intact, not locked.

Static water depth (feet):	25.26
Well depth (feet):	35
Water column (feet):	9.74
Casing diameter (inches):	2
Minimum purge volume (gal)	10
Purge rate (gpm):	variable
Pumping water level (feet):	--
Pump setting (feet):	variable
Minimum purge time (min):	--
Time begin purge:	11:04

Time	Gallons	EC	pH	Temp.	Comments*
11:06	1	694	6.45	19.4	Slightly turbid
11:11	2	680	6.33	19.9	Lowered pump to 34', pumped dry
11:18	4	690	6.34	19..8	Rest 6 minutes, restarted at 11:17
11:25	5	692	6.42	19.70	Slightly turbid, light gray, some sand, odor
11:37	7	686	6.48	20.30	Slightly turbid, light gray, some sand, odor
					Pumped dry at 7.5 gallons
10:25		697	6.45	19.5	Next day, 5/3. Clear, colorless, slight sulfur odor bailer
					Sampled at 10:25

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date:	4/25/2016
Operator:	SBH
Well number and location:	30S/11E-18L3 (Palisades Ave.)
Site and wellhead conditions:	Sunny windy
	Well in sidewalk, locked, dry

Static water depth (feet):	47.64
Well depth (feet):	53
Water column (feet):	5.36
Casing diameter (inches):	2
Minimum purge volume (gal)	5.4
Purge rate (gpm):	1
Pumping water level (feet):	--
Pump setting (feet):	48
Minimum purge time (min):	5
Time begin purge:	13:05

Time	Gallons	EC	pH	Temp.	Comments*
13:07	1	422	6.47	19.3	Very cloudy, brown, no odor
13:10	5	501	6.35	18.8	Turbid, slightly brown, no odor
13:13	7	492	6.18	19.3	Turbid, slightly brown, no odor
13:15	10	504	6.18	19.0	Turbid, slightly brown, no odor
13:17	12	506	6.13	18.8	Slightly cloudy, colorless, odorless
13:19	14	507	6.15	18.9	Slightly cloudy, colorless, odorless
13:21	16	508	6.15	18.8	Slightly cloudy, yellow tinge, odorless
13:23	18	508	6.17	19.0	Slightly cloudy, yellow tinge, odorless
13:25	20	509	6.17	18.8	Slightly cloudy, yellow tinge, odorless
					Sampled at 13:27

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/25/2016
Operator: SBH
Well number and location: 30S/11E-18L4 (Ferrell Ave)
Site and wellhead conditions: Overcast, light rain
Sunny, windy, plug intact, well locked, air pressure release when opened

Static water depth (feet): 21.38
Well depth (feet): 35
Water column (feet): 13.62
Casing diameter (inches): 2
Minimum purge volume (gal) 14.1
Purge rate (gpm): 1.8
Pumping water level (feet): --
Pump setting (feet): 32
Minimum purge time (min): 8
Time begin purge: 11:10

Time	Gallons	EC	pH	Temp.	Comments*
11:11	2	745	6.70	18.5	murky, light brown, no odor
11:13	5	870	6.6	18.3	almost clear colorless, odorless
11:14	7.5	888	6.44	18.9	almost clear colorless, odorless
11:15	10	880	6.45	19.0	almost clear colorless, odorless
11:18	15	885	6.37	18.8	Clear, colorless, odorless, slightly cloudy
11:20	20	880	6.3	19.1	Clear, colorless, odorless, slightly cloudy
11:22	25	880	6.29	19.0	Clear, colorless, odorless, slightly cloudy
11:26	30	876	6.28	18.8	Clear, colorless, odorless, slightly cloudy
11:29	35	879	6.25	18.9	Clear, colorless, odorless, slightly cloudy
11:32	40	873	6.24	19.0	Slightly cloudy, light brown, odorless
					Sampled at 11:34

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/28/2016
Operator: SBH
Well number and location: 30S/11E-18N1 (Manzanita & Ravenna)
Site and wellhead conditions: Sunny, windy, cool
Well box sealed, intact and locked

Static water depth (feet): 83.42
Well depth (feet): 95
Water column (feet): 11.58
Casing diameter (inches): 2
Minimum purge volume (gal) 11.9
Purge rate (gpm): 1
Pumping water level (feet): --
Pump setting (feet): 90
Minimum purge time (min): 12
Time begin purge: 14:10

Time	Gallons	EC	pH	Temp.	Comments*
14:11	1	512	7.47	20.0	Turbid, light brown, odorless
14:13	5	608	7.07	18.9	Turbid, light brown, odorless
14:19	10	632	6.64	19.2	Turbid, light brown, odorless
14:25	15	634	6.48	19.5	Turbid, light brown, odorless
14:31	20	633	6.43	19.5	Slightly turbid, very light brown / gray
14:39	25	633	6.42	19.5	Slightly turbid, gray
14:55	30	631	6.39	19.0	Slightly turbid, gray
					Sampled at 14:57

*Turbidity, color, odor, sheen, debris, etc.

Groundwater Monitoring Field Log
Los Osos Baseline

Date: 4/27/2016
Operator: SJH
Well number and location: 30S/11E-18R1 (Ocean View Drive)
Site and wellhead conditions: Sunny, cool.
Equipped private well with pressure tank. Sampled from spigot near well

Static water depth (feet): 16.59
Well depth (feet): 50
Water column (feet): 33.41
Casing diameter (inches): 8
Minimum purge volume (gal) (active well)
Purge rate (gpm): --
Pumping water level (feet): --
Pump setting (feet): --
Minimum purge time (min): flush line
Time begin purge: 11:13

Time	Gallons	EC	pH	Temp.	Comments*
11:15	5	530	6.54	17.1	Clear, colorless, odorless
					Sampled at 11:15

*Turbidity, color, odor, sheen, debris, etc.

APPENDIX C

Laboratory Reports

NOTE: Review of case narrative pages of attached reports indicate that all samples were received, prepared, and analyzed within the method specified holding time except as noted below.

The required holding time for pH is 15 minutes. Analyses of pH exceeded the required holding time for all samples. Field pH values within the required holding time are reported on groundwater monitoring field logs in Appendix B.

May 11, 2016

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401

Lab ID : CC 1681261
Customer : 8-514

Laboratory Report

Introduction: This report package contains total of 12 pages divided into 3 sections:

Case Narrative	(3 pages)	: An overview of the work performed at FGL.
Sample Results	(6 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
30S/10E-13L5	04/25/2016	04/25/2016	CC 1681261-001	MW
30S/11E-18L4	04/25/2016	04/25/2016	CC 1681261-002	MW
30S/11E-18L3	04/25/2016	04/25/2016	CC 1681261-003	MW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below. The holding time for pH is listed as immediate. Logistically this is very difficult to obtain. FGL policy is to analyze all samples requiring pH on the same day of receipt at the laboratory. If this presents any problem please call.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CC 1681261-001	pH	15	2625 Minutes
CC 1681261-002	pH	15	2826 Minutes
CC 1681261-003	pH	15	4188 Minutes

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	04/27/2016:205870 All analysis quality controls are within established criteria.
3010	04/27/2016:204803 All preparation quality controls are within established criteria, except:

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May 11, 2016 Lab ID : CC 1681261
Cleath-Harris Geologists Customer : 8-514

Inorganic - Metals QC

3010	The following note applies to Sodium: 430 Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.

Inorganic - Wet Chemistry QC

2540CE	04/27/2016:204824 All preparation quality controls are within established criteria.
300.0	04/26/2016:205714 All analysis quality controls are within established criteria.
	05/04/2016:206200 All analysis quality controls are within established criteria.
	04/26/2016:204818 All preparation quality controls are within established criteria.
	05/03/2016:205146 All preparation quality controls are within established criteria.
351.2	04/28/2016:204879 All preparation quality controls are within established criteria.
4500-H B	04/27/2016:204817 All preparation quality controls are within established criteria.
	04/28/2016:204902 All preparation quality controls are within established criteria.
4500HB	04/27/2016:205817 All analysis quality controls are within established criteria.
	04/28/2016:205908 All analysis quality controls are within established criteria.
4500NH3G	05/02/2016:206052 All analysis quality controls are within established criteria.
	04/29/2016:204943 All preparation quality controls are within established criteria.
4500NO3F	05/10/2016:206464 All analysis quality controls are within established criteria.
	05/10/2016:205333 All preparation quality controls are within established criteria.
EPA351.2	04/29/2016:205980 All analysis quality controls are within established criteria.

May 11, 2016 Lab ID : CC 1681261
Cleath-Harris Geologists Customer : 8-514

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:SB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-05-11

May 11, 2016

Lab ID : CC 1681261-001
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/10E-13L5
Project : Los Osos Baseline GWM

Sampled On : April 25, 2016-14:55
Sampled By : Spencer Harris
Received On : April 25, 2016-13:42
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	0.1	0.1	mg/L		3010	04/27/16:204803	200.7	04/27/16:205870
Sodium	125	1	mg/L		3010	04/27/16:204803	200.7	04/27/16:205870
Wet Chemistry[P:1]								
Chloride	125	2*	mg/L		300.0	05/03/16:205146	300.0	05/04/16:206200
Nitrate Nitrogen	30.3	0.1	mg/L		4500NO3F	05/10/16:205333	4500NO3F	05/10/16:206464
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/26/16:204818	300.0	04/26/16:205714
Nitrogen, Organic	ND	--	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/28/16:204879	EPA351.2	04/29/16:205980
Nitrogen, Total as Nitrogen	30.3	--	mg/L		351.2	04/28/16:204879	EPA351.2	04/29/16:205980
Nitrate + Nitrite as N	30.3	0.1	mg/L		4500NO3F	05/10/16:205333	4500NO3F	05/10/16:206464
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/28/16:204879	EPA351.2	04/29/16:205980
pH	6.0	--	units		4500-H B	04/27/16:204817	4500HB	04/27/16:205817
Total Dissolved Solids (TFR)	600	20	mg/L		2540CE	04/27/16:204824	2540C	04/28/16:205885
Sulfate	40	2	mg/L		300.0	04/26/16:204818	300.0	04/26/16:205714

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (N/A) Not Applicable COC Only, (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016

Lab ID : CC 1681261-001
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/10E-13L5
Project : Los Osos Baseline GWM

Sampled On : April 25, 2016-14:55
Sampled By : Spencer Harris
Received On : April 25, 2016-13:42
Matrix : Monitoring Well

Sample Result - Support

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Field Test								
Conductivity	927		umhos/cm			04/25/16 14:55	2510B	04/25/16 14:55
Temperature	19.4		°C			04/25/16 14:55	2550B	04/25/16 14:55
pH (Field)	6.01		units			04/25/16 14:55	4500-H B	04/25/16 14:55

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (N/A) Not Applicable COC Only, (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016

Lab ID : CC 1681261-002
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-18L4
Project : Los Osos Baseline GWM

Sampled On : April 25, 2016-11:34
Sampled By : Spencer Harris
Received On : April 25, 2016-13:42
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total[P:1'5]								
Boron	0.1	0.1	mg/L		3010	04/27/16:204803	200.7	04/27/16:205870
Sodium	50	1	mg/L		3010	04/27/16:204803	200.7	04/27/16:205870
Wet Chemistry[P:1]								
Chloride	108	1	mg/L		300.0	04/26/16:204818	300.0	04/26/16:205714
Nitrate Nitrogen	32.3	0.1	mg/L		4500NO3F	05/10/16:205333	4500NO3F	05/10/16:206464
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/26/16:204818	300.0	04/26/16:205714
Nitrogen, Organic	ND	--	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/28/16:204879	EPA351.2	04/29/16:205980
Nitrogen, Total as Nitrogen	32.3	--	mg/L		351.2	04/28/16:204879	EPA351.2	04/29/16:205980
Nitrate + Nitrite as N	32.3	0.1	mg/L		4500NO3F	05/10/16:205333	4500NO3F	05/10/16:206464
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/28/16:204879	EPA351.2	04/29/16:205980
pH	6.0	--	units		4500-H B	04/27/16:204817	4500HB	04/27/16:205817
Total Dissolved Solids (TFR)	530	20	mg/L		2540CE	04/27/16:204824	2540C	04/28/16:205885
Sulfate	42	2	mg/L		300.0	04/26/16:204818	300.0	04/26/16:205714

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (N/A) Not Applicable COC Only, (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016

Lab ID : CC 1681261-002
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-18L4
Project : Los Osos Baseline GWM

Sampled On : April 25, 2016-11:34
Sampled By : Spencer Harris
Received On : April 25, 2016-13:42
Matrix : Monitoring Well

Sample Result - Support

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Field Test								
Conductivity	873		umhos/cm			04/25/16 11:34	2510B	04/25/16 11:34
Temperature	19.0		°C			04/25/16 11:34	2550B	04/25/16 11:34
pH (Field)	6.24		units			04/25/16 11:34	4500-H B	04/25/16 11:34

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (N/A) Not Applicable COC Only, (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016

Lab ID : CC 1681261-003
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-18L3
Project : Los Osos Baseline GWM

Sampled On : April 25, 2016-13:27
Sampled By : Spencer Harris
Received On : April 25, 2016-13:42
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	04/27/16:204803	200.7	04/27/16:205870
Sodium	33	1	mg/L		3010	04/27/16:204803	200.7	04/27/16:205870
Wet Chemistry[P:1]								
Chloride	80	1	mg/L		300.0	04/26/16:204818	300.0	04/26/16:205714
Nitrate Nitrogen	13.5	0.1	mg/L		300.0	04/26/16:204818	300.0	04/26/16:205714
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/26/16:204818	300.0	04/26/16:205714
Nitrogen, Organic	ND	--	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/28/16:204879	EPA351.2	04/29/16:205980
Nitrogen, Total as Nitrogen	13.5	--	mg/L		351.2	04/28/16:204879	EPA351.2	04/29/16:205980
Nitrate + Nitrite as N	13.5	0.1	mg/L		300.0	04/26/16:204818	300.0	04/26/16:205714
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/28/16:204879	EPA351.2	04/29/16:205980
pH	6.3	--	units		4500-H B	04/28/16:204902	4500HB	04/28/16:205908
Total Dissolved Solids (TFR)	300	20	mg/L		2540CE	04/27/16:204824	2540C	04/28/16:205885
Sulfate	23	2	mg/L		300.0	04/26/16:204818	300.0	04/26/16:205714

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (N/A) Not Applicable COC Only, (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016

Lab ID : CC 1681261-003
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-18L3
Project : Los Osos Baseline GWM

Sampled On : April 25, 2016-13:27
Sampled By : Spencer Harris
Received On : April 25, 2016-13:42
Matrix : Monitoring Well

Sample Result - Support

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Field Test								
Conductivity	509		umhos/cm			04/25/16 13:27	2510B	04/25/16 13:27
Temperature	18.8		°C			04/25/16 13:27	2550B	04/25/16 13:27
pH (Field)	6.17		units			04/25/16 13:27	4500-H B	04/25/16 13:27

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (N/A) Not Applicable COC Only, (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016 Lab ID : CC 1681261
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	04/27/16:205870AC	CCV	ppm	5.000	98.0 %	90-110	
			CCB	ppm		0.044	0.1	
			CCV	ppm	5.000	98.4 %	90-110	
			CCB	ppm		0.028	0.1	
Sodium	200.7	04/27/16:205870AC	CCV	ppm	25.00	97.9 %	90-110	
			CCB	ppm		-0.24	1	
			CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		-0.20	1	
Boron	3010	04/27/16:204803amb	Blank	mg/L		ND	<0.1	
			LCS	mg/L	4.000	96.2 %	85-115	
			MS	mg/L	4.000	91.2 %	75-125	
		(CC 1681261-001)	MSD	mg/L	4.000	93.7 %	75-125	
			MSRPD	mg/L	0.8000	2.6%	≤20.0	
			PDS	mg/L	4.000	96.0 %	75-125	
Sodium	3010	04/27/16:204803amb	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	91.4 %	85-115	
			MS	mg/L	12.00	65.5 %	<¼	
		(CC 1681261-001)	MSD	mg/L	12.00	79.3 %	75-125	
			MSRPD	mg/L	0.8000	1.2%	≤20.0	
			PDS	mg/L	12.00	68.5 %	75-125	430
Wet Chem								
Total Dissolved Solids (TFR)	2540CE	04/27/16:204824CTL	Blank	mg/L		7.7	20	
			LCS	mg/L	1000	98.3 %	90-110	
		(CC 1681262-001)	Dup	mg/L		1.4%	5	
Chloride	300.0	04/26/16:204818MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	99.0 %	90-110	
			MS	mg/L	500.0	102 %	85-121	
		(CC 1681237-001)	MSD	mg/L	500.0	99.8 %	85-121	
			MSRPD	mg/L	100.0	2.3%	≤19	
			MS	mg/L	500.0	100 %	85-121	
		(CC 1681237-002)	MSD	mg/L	500.0	101 %	85-121	
			MSRPD	mg/L	100.0	0.4%	≤19	
	300.0	04/26/16:205714MCA	CCB	ppm		0.07	1	
			CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		0.07	1	
			CCV	ppm	25.00	101 %	90-110	
	300.0	05/03/16:205146MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	102 %	90-110	
			MS	mg/L	500.0	106 %	85-121	
		(STK1634634-001)	MSD	mg/L	500.0	108 %	85-121	
			MSRPD	mg/L	100.0	2.0%	≤19	
			MS	mg/L	500.0	107 %	85-121	
		(VI 1641256-001)	MSD	mg/L	500.0	106 %	85-121	
			MSRPD	mg/L	100.0	0.3%	≤19	
	300.0	05/04/16:206200MCA	CCB	ppm		0.06	1	
			CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		0.06	1	
			CCV	ppm	25.00	102 %	90-110	
Nitrate	300.0	04/26/16:204818MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	20.00	101 %	90-110	
			MS	mg/L	400.0	101 %	85-119	
		(CC 1681237-001)	MSD	mg/L	400.0	98.7 %	85-119	
			MSRPD	mg/L	100.0	2.4%	≤19	
			MS	mg/L	400.0	98.9 %	85-119	
		(CC 1681237-002)	MSD	mg/L	400.0	99.3 %	85-119	

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May 11, 2016 Lab ID : CC 1681261
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Nitrate	300.0	04/26/16:204818MCA	MSRPD	mg/L	100.0	0.4%	≤19	
	300.0	04/26/16:205714MCA	CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	102 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	102 %	90-110	
Nitrite	300.0	04/26/16:204818MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	15.00	99.6 %	90-110	
			MS	mg/L	300.0	101 %	74-126	
		(CC 1681237-001)	MSD	mg/L	300.0	99.6 %	74-126	
			MSRPD	mg/L	100.0	1.9%	≤20	
			MS	mg/L	300.0	99.8 %	74-126	
		(CC 1681237-002)	MSD	mg/L	300.0	101 %	74-126	
			MSRPD	mg/L	100.0	0.8%	≤20	
	300.0	04/26/16:205714MCA	CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	102 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	101 %	90-110	
Sulfate	300.0	04/26/16:204818MCA	Blank	mg/L		ND	<2.0	
			LCS	mg/L	50.00	101 %	90-110	
			MS	mg/L	1000	102 %	82-124	
		(CC 1681237-001)	MSD	mg/L	1000	99.7 %	82-124	
			MSRPD	mg/L	100.0	2.2%	≤23	
			MS	mg/L	1000	100 %	82-124	
		(CC 1681237-002)	MSD	mg/L	1000	100 %	82-124	
			MSRPD	mg/L	100.0	0.3%	≤23	
	300.0	04/26/16:205714MCA	CCB	ppm		0.07	2	
			CCV	ppm	50.00	102 %	90-110	
			CCB	ppm		0.06	2	
			CCV	ppm	50.00	102 %	90-110	
Nitrogen, Total Kjeldahl	351.2	04/28/16:204879JMG	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	79.0 %	73-124	
			LCS	mg/L	12.00	83.1 %	73-124	
			MS	mg/L	12.00	65.2 %	54-136	
		(SP 1604664-001)	MSD	mg/L	12.00	67.8 %	54-136	
			MSRPD	mg/L	12.00	4.0%	≤27	
		(SP 1604664-001)	Dup	mg/L		0.0	0.5	
pH	4500-H B	(STK1634631-001)	Dup	units		0.0%	4.80	
	4500-H B	(STK1634664-001)	Dup	units		0.8%	4.80	
	4500HB	04/27/16:205817JMG	CCV	units	8.000	99.8 %	95-105	
			CCV	units	8.000	99.9 %	95-105	
	4500HB	04/28/16:205908JMG	CCV	units	8.000	99.9 %	95-105	
			CCV	units	8.000	99.6 %	95-105	
Ammonia Nitrogen	4500NH3G		MS	mg/L	2.000	106 %	70-130	
		(CC 1681254-001)	MSD	mg/L	2.000	106 %	70-130	
			MSRPD	mg/L	2.000	0.2%	≤20	
	4500NH3G	05/02/16:206052AMB	ICB	mg/L		-0.119	0.2	
			ICV	mg/L	2.000	106 %	90-110	
			CCB	mg/L		-0.103	0.2	
			CCV	mg/L	2.000	106 %	90-110	
Nitrate + Nitrite as N	4500NO3F		MS	mg/L	10.00	105 %	5-285	
		(VI 1641428-001)	MSD	mg/L	10.00	103 %	5-285	
			MSRPD	mg/L	10.00	1.5%	≤30.4	
	4500NO3F	05/10/16:206464AMB	CCB	mg/L		0.051	0.1	
			CCV	mg/L	11.27	96.0 %	90-110	

May 11, 2016 Lab ID : CC 1681261

Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Nitrate + Nitrite as N	4500NO3F	05/10/16:206464AMB	CCB	mg/L		0.097	0.1	
			CCV	mg/L	11.27	97.5 %	90-110	
Nitrogen, Total Kjeldahl	EPA351.2	04/29/16:205980AMB	CCB	mg/L		-0.195	0.5	
			CCV	mg/L	5.000	101 %	90-110	
			CCB	mg/L		-0.302	0.5	
			CCV	mg/L	5.000	101 %	90-110	

Definition

PDS	: PDS failed, matrix - Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
ICV	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

430	: Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.

May 11, 2016

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401

Lab ID : CC 1681282
Customer : 8-514

Laboratory Report

Introduction: This report package contains total of 10 pages divided into 3 sections:

Case Narrative	(3 pages)	: An overview of the work performed at FGL.
Sample Results	(3 pages)	: Results for each sample submitted.
Quality Control	(4 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
30S/11E 18C1	04/26/2016	04/26/2016	CC 1681282-001	MW
30S/11E 18B1	04/26/2016	04/26/2016	CC 1681282-002	MW
30S/11E 7R1	04/26/2016	04/26/2016	CC 1681282-003	MW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below. The holding time for pH is listed as immediate. Logistically this is very difficult to obtain. FGL policy is to analyze all samples requiring pH on the same day of receipt at the laboratory. If this presents any problem please call.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CC 1681282-001	pH	15	2920.2 Minutes
CC 1681282-002	pH	15	2824.8 Minutes
CC 1681282-003	pH	15	2739 Minutes

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	05/04/2016:206228 All analysis quality controls are within established criteria.
3010	04/29/2016:204967 All preparation quality controls are within established criteria, except:

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May 11, 2016 Lab ID : CC 1681282
Cleath-Harris Geologists Customer : 8-514

Inorganic - Metals QC

3010	The following note applies to Sodium: 430 Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.

Inorganic - Wet Chemistry QC

2540CE	04/28/2016:204920 All preparation quality controls are within established criteria, except: The following note applies to Total Dissolved Solids (TFR): 440 Sample nonhomogeneity may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
300.0	04/27/2016:205947 All analysis quality controls are within established criteria.
	04/27/2016:205986 All analysis quality controls are within established criteria.
	04/27/2016:204932 All preparation quality controls are within established criteria.
	04/27/2016:204968 All preparation quality controls are within established criteria, except: The following note applies to Chloride, Nitrate, Sulfate: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery. The following note applies to Chloride, Nitrite, Nitrate, Sulfate: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
351.2	04/29/2016:204949 All preparation quality controls are within established criteria.
4500-H B	04/28/2016:204902 All preparation quality controls are within established criteria.
4500HB	04/28/2016:205908 All analysis quality controls are within established criteria.
4500NH3G	05/02/2016:206052 All analysis quality controls are within established criteria.
	04/29/2016:204943 All preparation quality controls are within established criteria.
EPA351.2	05/02/2016:206090 All analysis quality controls are within established criteria.

May 11, 2016 Lab ID : CC 1681282
Cleath-Harris Geologists Customer : 8-514

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:SB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-05-11

May 11, 2016

Lab ID : CC 1681282-001
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E 18C1
Project : Los Osos Baseline GWM

Sampled On : April 26, 2016-10:35
Sampled By : Andrea Berge
Received On : April 26, 2016-14:48
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	0.1	0.1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Sodium	73	1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Wet Chemistry[P:1'4]								
Chloride	167	5*	mg/L		300.0	04/27/16:204968	300.0	04/27/16:205986
Nitrate Nitrogen	18.0	0.1	mg/L		300.0	04/27/16:204968	300.0	04/27/16:205986
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/27/16:204968	300.0	04/27/16:205986
Nitrogen, Organic	ND	--	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
Nitrogen, Total as Nitrogen	18.0	--	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
Nitrate + Nitrite as N	18.0	0.1	mg/L		300.0	04/27/16:204968	300.0	04/27/16:205986
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
pH	6.4	--	units		4500-H B	04/28/16:204902	4500HB	04/28/16:205908
Total Dissolved Solids (TFR)	560	20	mg/L		2540CE	04/28/16:204920	2540C	04/29/16:205977
Sulfate	47	2	mg/L		300.0	04/27/16:204968	300.0	04/27/16:205986

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016

Lab ID : CC 1681282-002
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
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San Luis Obispo, CA 93401
Description : 30S/11E 18B1
Project : Los Osos Baseline GWM

Sampled On : April 26, 2016-12:10
Sampled By : Andrea Berge
Received On : April 26, 2016-14:48
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	0.1	0.1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Sodium	47	1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Wet Chemistry[P:1'4]								
Chloride	53	1	mg/L		300.0	04/27/16:204932	300.0	04/27/16:205947
Nitrate Nitrogen	11.4	0.1	mg/L		300.0	04/27/16:204932	300.0	04/27/16:205947
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/27/16:204932	300.0	04/27/16:205947
Nitrogen, Organic	ND	--	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
Nitrogen, Total as Nitrogen	11.4	--	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
Nitrate + Nitrite as N	11.4	0.1	mg/L		300.0	04/27/16:204932	300.0	04/27/16:205947
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
pH	6.2	--	units		4500-H B	04/28/16:204902	4500HB	04/28/16:205908
Total Dissolved Solids (TFR)	410	20	mg/L		2540CE	04/28/16:204920	2540C	04/29/16:205977
Sulfate	98	2	mg/L		300.0	04/27/16:204932	300.0	04/27/16:205947

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016

Lab ID : CC 1681282-003
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E 7R1
Project : Los Osos Baseline GWM

Sampled On : April 26, 2016-13:36
Sampled By : Andrea Berge
Received On : April 26, 2016-14:48
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Sodium	32	1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Wet Chemistry[P:1'4]								
Chloride	49	1	mg/L		300.0	04/27/16:204932	300.0	04/27/16:205947
Nitrate Nitrogen	11.6	0.1	mg/L		300.0	04/27/16:204932	300.0	04/27/16:205947
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/27/16:204932	300.0	04/27/16:205947
Nitrogen, Organic	ND	--	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
Nitrogen, Total as Nitrogen	11.6	--	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
Nitrate + Nitrite as N	11.6	0.1	mg/L		300.0	04/27/16:204932	300.0	04/27/16:205947
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
pH	6.4	--	units		4500-H B	04/28/16:204902	4500HB	04/28/16:205908
Total Dissolved Solids (TFR)	250	20	mg/L		2540CE	04/28/16:204920	2540C	04/29/16:205977
Sulfate	24	2	mg/L		300.0	04/27/16:204932	300.0	04/27/16:205947

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016 Lab ID : CC 1681282
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	05/04/16:206228AC	CCV	ppm	5.000	101 %	90-110	
			CCB	ppm		-0.017	0.1	
			CCV	ppm	5.000	98.2 %	90-110	
			CCB	ppm		0.059	0.1	
Sodium	200.7	05/04/16:206228AC	CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		0.005	1	
			CCV	ppm	25.00	96.9 %	90-110	
			CCB	ppm		-0.09	1	
Boron	3010	04/29/16:204967amb	Blank	mg/L		ND	<0.1	
			LCS	mg/L	4.000	100 %	85-115	
			MS	mg/L	4.000	107 %	75-125	
		(CC 1681282-001)	MSD	mg/L	4.000	95.9 %	75-125	
			MSRPD	mg/L	4.000	10.4%	≤20.0	
			PDS	mg/L	4.000	99.5 %	75-125	
Sodium	3010	04/29/16:204967amb	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	95.7 %	85-115	
			MS	mg/L	12.00	199 %	<¼	
		(CC 1681282-001)	MSD	mg/L	12.00	117 %	75-125	
			MSRPD	mg/L	4.000	10.7%	≤20.0	
			PDS	mg/L	12.00	127 %	75-125	430
Wet Chem								
Total Dissolved Solids (TFR)	2540CE	04/28/16:204920CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	1000	100 %	90-110	
		(STK1634619-001)	Dup	mg/L		6.0%	5	440
Chloride	300.0	04/27/16:204932MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	100 %	90-110	
			MS	mg/L	50.00	95.7 %	85-121	
		(STK1634631-002)	MSD	mg/L	50.00	96.1 %	85-121	
			MSRPD	mg/L	10.00	0.4%	≤19	
			MS	mg/L	50.00	95.4 %	85-121	
		(STK1634631-003)	MSD	mg/L	50.00	95.1 %	85-121	
			MSRPD	mg/L	10.00	0.3%	≤19	
	300.0	04/27/16:204968MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	101 %	90-110	
			MS	mg/L	500.0	75.8 %	85-121	435
		(STK1634640-001)	MSD	mg/L	500.0	103 %	85-121	
			MSRPD	mg/L	100.0	30.4%	≤19	435
			MS	mg/L	500.0	104 %	85-121	
		(VI 1641219-003)	MSD	mg/L	500.0	103 %	85-121	
			MSRPD	mg/L	100.0	0.4%	≤19	
	300.0	04/27/16:205947MCA	CCB	mg/L		0.00	1	
			CCV	mg/L	25.00	102 %	90-110	
			CCB	mg/L		0.07	1	
			CCV	mg/L	25.00	101 %	90-110	
	300.0	04/27/16:205986MCA	CCB	ppm		0.05	1	
			CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		0.04	1	
			CCV	ppm	25.00	102 %	90-110	
Nitrate	300.0	04/27/16:204932MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	20.00	101 %	90-110	
			MS	mg/L	40.00	96.8 %	85-119	
		(STK1634631-002)	MSD	mg/L	40.00	97.1 %	85-119	
			MSRPD	mg/L	10.00	0.3%	≤19	
			MS	mg/L	40.00	96.6 %	85-119	
		(STK1634631-003)	MSD	mg/L	40.00	96.4 %	85-119	

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May 11, 2016 Lab ID : CC 1681282
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Nitrate	300.0	04/27/16:204932MCA	MSRPD	mg/L	10.00	0.2%	≤19	
	300.0	04/27/16:204968MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	20.00	103 %	90-110	
			MS	mg/L	400.0	74.7 %	85-119	435
		(STK1634640-001)	MSD	mg/L	400.0	102 %	85-119	
			MSRPD	mg/L	100.0	30.7%	≤19	435
			MS	mg/L	400.0	103 %	85-119	
		(VI 1641219-003)	MSD	mg/L	400.0	102 %	85-119	
			MSRPD	mg/L	100.0	0.4%	≤19	
	300.0	04/27/16:205947MCA	CCB	mg/L		0.000	0.5	
			CCV	mg/L	20.00	102 %	90-110	
			CCB	mg/L		0.000	0.5	
			CCV	mg/L	20.00	102 %	90-110	
	300.0	04/27/16:205986MCA	CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	103 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	104 %	90-110	
Nitrite	300.0	04/27/16:204932MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	15.00	101 %	90-110	
			MS	mg/L	30.00	97.5 %	74-126	
		(STK1634631-002)	MSD	mg/L	30.00	97.9 %	74-126	
			MSRPD	mg/L	10.00	0.4%	≤20	
			MS	mg/L	30.00	97.3 %	74-126	
		(STK1634631-003)	MSD	mg/L	30.00	97.1 %	74-126	
			MSRPD	mg/L	10.00	0.2%	≤20	
	300.0	04/27/16:204968MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	15.00	102 %	90-110	
			MS	mg/L	300.0	75.2 %	74-126	
		(STK1634640-001)	MSD	mg/L	300.0	103 %	74-126	
			MSRPD	mg/L	100.0	31.1%	≤20	435
			MS	mg/L	300.0	103 %	74-126	
		(VI 1641219-003)	MSD	mg/L	300.0	103 %	74-126	
			MSRPD	mg/L	100.0	0.1%	≤20	
	300.0	04/27/16:205947MCA	CCB	mg/L		0.000	0.5	
			CCV	mg/L	15.00	103 %	90-110	
			CCB	mg/L		0.000	0.5	
			CCV	mg/L	15.00	103 %	90-110	
	300.0	04/27/16:205986MCA	CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	101 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	102 %	90-110	
Sulfate	300.0	04/27/16:204932MCA	Blank	mg/L		ND	<2.0	
			LCS	mg/L	50.00	101 %	90-110	
			MS	mg/L	100.0	96.6 %	82-124	
		(STK1634631-002)	MSD	mg/L	100.0	96.9 %	82-124	
			MSRPD	mg/L	10.00	0.3%	≤23	
			MS	mg/L	100.0	96.3 %	82-124	
		(STK1634631-003)	MSD	mg/L	100.0	96.0 %	82-124	
			MSRPD	mg/L	10.00	0.3%	≤23	
	300.0	04/27/16:204968MCA	Blank	mg/L		ND	<2.0	
			LCS	mg/L	50.00	102 %	90-110	
			MS	mg/L	1000	69.8 %	82-124	435
		(STK1634640-001)	MSD	mg/L	1000	103 %	82-124	
			MSRPD	mg/L	100.0	38.4%	≤23	435

May 11, 2016 Lab ID : CC 1681282
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Sulfate	300.0		MS	mg/L	1000	104 %	82-124	
		(VI 1641219-003)	MSD	mg/L	1000	103 %	82-124	
			MSRPD	mg/L	100.0	0.4%	≤23	
	300.0	04/27/16:205947MCA	CCB	mg/L		0.13	2	
			CCV	mg/L	50.00	102 %	90-110	
			CCB	mg/L		0.20	2	
			CCV	mg/L	50.00	102 %	90-110	
	300.0	04/27/16:205986MCA	CCB	ppm		0.03	2	
			CCV	ppm	50.00	103 %	90-110	
			CCB	ppm		0.00	2	
			CCV	ppm	50.00	103 %	90-110	
Nitrogen, Total Kjeldahl	351.2	04/29/16:204949JMG	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	86.7 %	73-124	
			LCS	mg/L	12.00	91.7 %	73-124	
			MS	mg/L	12.00	86.9 %	54-136	
		(SP 1604713-001)	MSD	mg/L	12.00	87.7 %	54-136	
			MSRPD	mg/L	12.00	0.7%	≤27	
		(SP 1604713-001)	Dup	mg/L		2.7%	27	
pH	4500-H B	(STK1634664-001)	Dup	units		0.8%	4.80	
	4500HB	04/28/16:205908JMG	CCV	units	8.000	99.9 %	95-105	
			CCV	units	8.000	99.6 %	95-105	
Ammonia Nitrogen	4500NH3G		MS	mg/L	2.000	106 %	70-130	
		(CC 1681254-001)	MSD	mg/L	2.000	106 %	70-130	
			MSRPD	mg/L	2.000	0.2%	≤20	
	4500NH3G	05/02/16:206052AMB	CCB	mg/L		-0.103	0.2	
			CCV	mg/L	2.000	106 %	90-110	
			CCB	mg/L		-0.005	0.2	
			CCV	mg/L	2.000	101 %	90-110	
Nitrogen, Total Kjeldahl	EPA351.2	05/02/16:206090AMB	CCB	mg/L		-0.077	0.5	
			CCV	mg/L	5.000	104 %	90-110	
			CCB	mg/L		-0.271	0.5	
			CCV	mg/L	5.000	101 %	90-110	

Definition

PDS	: PDS failed, matrix - Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

430	: Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

Quality Control - Inorganic

Explanation	
440	: Sample nonhomogeneity may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

May 13, 2016

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401

Lab ID : CC 1681293
Customer : 8-514

Laboratory Report

Introduction: This report package contains total of 9 pages divided into 3 sections:

Case Narrative	(3 pages)	: An overview of the work performed at FGL.
Sample Results	(3 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
30S/11E-7L3	04/27/2016	04/27/2016	CC 1681293-001	MW
30S/10E-13G	04/27/2016	04/27/2016	CC 1681293-002	MW
30S/11E-8N2	04/27/2016	04/27/2016	CC 1681293-003	MW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below. The holding time for pH is listed as immediate. Logistically this is very difficult to obtain. FGL policy is to analyze all samples requiring pH on the same day of receipt at the laboratory. If this presents any problem please call.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CC 1681293-001	pH	15	2947.8 Minutes
CC 1681293-002	pH	15	21409.2 Minutes
CC 1681293-003	pH	15	2853 Minutes

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	05/04/2016:206228 All analysis quality controls are within established criteria.
3010	04/29/2016:204967 All preparation quality controls are within established criteria, except:

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May 13, 2016 Lab ID : CC 1681293
Cleath-Harris Geologists Customer : 8-514

Inorganic - Metals QC

3010	The following note applies to Sodium: 430 Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.

Inorganic - Wet Chemistry QC

2540CE	04/29/2016:204972 All preparation quality controls are within established criteria.
	05/04/2016:205117 All preparation quality controls are within established criteria.
300.0	04/28/2016:205985 All analysis quality controls are within established criteria.
	05/04/2016:206200 All analysis quality controls are within established criteria.
	04/28/2016:204934 All preparation quality controls are within established criteria.
	05/03/2016:205146 All preparation quality controls are within established criteria.
351.2	04/30/2016:204993 All preparation quality controls are within established criteria.
	04/29/2016:204949 All preparation quality controls are within established criteria.
4500-H B	04/29/2016:204966 All preparation quality controls are within established criteria.
	05/12/2016:205466 All preparation quality controls are within established criteria.
4500HB	04/29/2016:205987 All analysis quality controls are within established criteria.
	05/12/2016:206577 All analysis quality controls are within established criteria.
4500NH3G	05/02/2016:206052 All analysis quality controls are within established criteria.
	05/04/2016:206165 All analysis quality controls are within established criteria.
	04/29/2016:204943 All preparation quality controls are within established criteria.
	05/03/2016:205056 All preparation quality controls are within established criteria.
EPA351.2	05/02/2016:206090 All analysis quality controls are within established criteria.

May 13, 2016 Lab ID : CC 1681293
Cleath-Harris Geologists Customer : 8-514

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-05-16

May 13, 2016

Lab ID : CC 1681293-001
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-7L3
Project : Los Osos Baseline GWM

Sampled On : April 27, 2016-10:54
Sampled By : Spencer Harris
Received On : April 27, 2016-15:14
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Sodium	50	1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Wet Chemistry[P:1]								
Chloride	82	1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrate Nitrogen	15.0	0.1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrogen, Organic	ND	--	mg/L		4500NH3G	05/03/16:205056	4500NH3G	05/04/16:206165
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	05/03/16:205056	4500NH3G	05/04/16:206165
Kjeldahl Nitrogen	ND	1	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
Nitrogen, Total as Nitrogen	15	--	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
Nitrate + Nitrite as N	15.0	0.1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Kjeldahl Nitrogen	ND	1	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
pH	6.8	--	units		4500-H B	04/29/16:204966	4500HB	04/29/16:205987
Total Dissolved Solids (TFR)	390	20	mg/L		2540CE	05/04/16:205117	2540C	05/05/16:206223
Sulfate	41	2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 13, 2016

Lab ID : CC 1681293-002
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/10E-13G
Project : Los Osos Baseline GWM

Sampled On : April 27, 2016-14:05
Sampled By : Spencer Harris
Received On : April 27, 2016-15:14
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Sodium	65	1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Wet Chemistry[P:1]								
Chloride	178	2*	mg/L		300.0	05/03/16:205146	300.0	05/04/16:206200
Nitrate Nitrogen	13.3	0.1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrogen, Organic	ND	--	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
Nitrogen, Total as Nitrogen	13.3	--	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
Nitrate + Nitrite as N	13.3	0.1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
pH	5.8	--	units		4500-H B	05/12/16:205466	4500HB	05/12/16:206577
Total Dissolved Solids (TFR)	490	20	mg/L		2540CE	04/29/16:204972	2540C	05/02/16:206044
Sulfate	55	2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 13, 2016

Lab ID : CC 1681293-003
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-8N2
Project : Los Osos Baseline GWM

Sampled On : April 27, 2016-12:29
Sampled By : Spencer Harris
Received On : April 27, 2016-15:14
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Sodium	11	1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Wet Chemistry[P:1]								
Chloride	20	1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrate Nitrogen	4.8	0.1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrogen, Organic	ND	--	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
Nitrogen, Total as Nitrogen	4.8	--	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
Nitrate + Nitrite as N	4.8	0.1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
pH	6.6	--	units		4500-H B	04/29/16:204966	4500HB	04/29/16:205987
Total Dissolved Solids (TFR)	120	20	mg/L		2540CE	04/29/16:204972	2540C	05/02/16:206044
Sulfate	17	2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 13, 2016 Lab ID : CC 1681293
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	05/04/16:206228AC	CCV	ppm	5.000	98.2 %	90-110	
			CCB	ppm		0.059	0.1	
			CCV	ppm	5.000	98.4 %	90-110	
			CCB	ppm		0.049	0.1	
Sodium	200.7	05/04/16:206228AC	CCV	ppm	25.00	96.9 %	90-110	
			CCB	ppm		-0.09	1	
			CCV	ppm	25.00	97.3 %	90-110	
			CCB	ppm		-0.12	1	
Boron	3010	04/29/16:204967amb	Blank	mg/L		ND	<0.1	
			LCS	mg/L	4.000	100 %	85-115	
			MS	mg/L	4.000	107 %	75-125	
		(CC 1681282-001)	MSD	mg/L	4.000	95.9 %	75-125	
			MSRPD	mg/L	4.000	10.4%	≤20.0	
			PDS	mg/L	4.000	99.5 %	75-125	
Sodium	3010	04/29/16:204967amb	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	95.7 %	85-115	
			MS	mg/L	12.00	199 %	<¼	
		(CC 1681282-001)	MSD	mg/L	12.00	117 %	75-125	
			MSRPD	mg/L	4.000	10.7%	≤20.0	
			PDS	mg/L	12.00	127 %	75-125	430
Wet Chem								
Total Dissolved Solids (TFR)	2540CE	04/29/16:204972CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	1000	98.0 %	90-110	
		(CC 1681293-002)	Dup	mg/L		1.2%	5	
	2540CE	05/04/16:205117CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	1000	101 %	90-110	
		(SP 1604787-003)	Dup	mg/L		0.2%	5	
Chloride	300.0	04/28/16:204934MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	100 %	90-110	
			MS	mg/L	500.0	105 %	85-121	
		(STK1634634-002)	MSD	mg/L	500.0	104 %	85-121	
			MSRPD	mg/L	100.0	1.7%	≤19	
			MS	mg/L	500.0	104 %	85-121	
		(STK1634634-003)	MSD	mg/L	500.0	104 %	85-121	
			MSRPD	mg/L	100.0	0.2%	≤19	
	300.0	04/28/16:205985MCA	CCB	ppm		0.05	1	
			CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		0.05	1	
			CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		0.06	1	
			CCV	ppm	25.00	102 %	90-110	
	300.0	05/03/16:205146MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	102 %	90-110	
			MS	mg/L	500.0	106 %	85-121	
		(STK1634634-001)	MSD	mg/L	500.0	108 %	85-121	
			MSRPD	mg/L	100.0	2.0%	≤19	
			MS	mg/L	500.0	107 %	85-121	
		(VI 1641256-001)	MSD	mg/L	500.0	106 %	85-121	
			MSRPD	mg/L	100.0	0.3%	≤19	
	300.0	05/04/16:206200MCA	CCB	ppm		0.06	1	
			CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		0.06	1	
			CCV	ppm	25.00	102 %	90-110	
Nitrate	300.0	04/28/16:204934MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	20.00	102 %	90-110	

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May 13, 2016 Lab ID : CC 1681293
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Nitrate	300.0		MS	mg/L	400.0	104 %	85-119	
		(STK1634634-002)	MSD	mg/L	400.0	103 %	85-119	
			MSRPD	mg/L	100.0	1.7%	≤19	
			MS	mg/L	400.0	103 %	85-119	
		(STK1634634-003)	MSD	mg/L	400.0	103 %	85-119	
			MSRPD	mg/L	100.0	0.04%	≤19	
	300.0	04/28/16:205985MCA	CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	103 %	90-110	
			CCB	ppm		0.015	0.5	
			CCV	ppm	20.00	103 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	104 %	90-110	
Nitrite	300.0	04/28/16:204934MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	15.00	101 %	90-110	
			MS	mg/L	300.0	105 %	74-126	
		(STK1634634-002)	MSD	mg/L	300.0	104 %	74-126	
			MSRPD	mg/L	100.0	1.0%	≤20	
			MS	mg/L	300.0	104 %	74-126	
		(STK1634634-003)	MSD	mg/L	300.0	104 %	74-126	
			MSRPD	mg/L	100.0	0.2%	≤20	
	300.0	04/28/16:205985MCA	CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	102 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	102 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	102 %	90-110	
Sulfate	300.0	04/28/16:204934MCA	Blank	mg/L		ND	<2.0	
			LCS	mg/L	50.00	102 %	90-110	
			MS	mg/L	1000	105 %	82-124	
		(STK1634634-002)	MSD	mg/L	1000	104 %	82-124	
			MSRPD	mg/L	100.0	1.5%	≤23	
			MS	mg/L	1000	104 %	82-124	
		(STK1634634-003)	MSD	mg/L	1000	104 %	82-124	
			MSRPD	mg/L	100.0	0.2%	≤23	
	300.0	04/28/16:205985MCA	CCB	ppm		0.00	2	
			CCV	ppm	50.00	103 %	90-110	
			CCB	ppm		0.04	2	
			CCV	ppm	50.00	104 %	90-110	
			CCB	ppm		0.00	2	
			CCV	ppm	50.00	104 %	90-110	
Nitrogen, Total Kjeldahl	351.2	04/29/16:204949JMG	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	86.7 %	73-124	
			LCS	mg/L	12.00	91.7 %	73-124	
			MS	mg/L	12.00	86.9 %	54-136	
		(SP 1604713-001)	MSD	mg/L	12.00	87.7 %	54-136	
			MSRPD	mg/L	12.00	0.7%	≤27	
		(SP 1604713-001)	Dup	mg/L		2.7%	27	
	351.2	04/30/16:204993JMG	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	95.2 %	73-124	
			MS	mg/L	12.00	73.6 %	54-136	
		(CC 1681268-001)	MSD	mg/L	12.00	90.7 %	54-136	
			MSRPD	mg/L	12.00	20.5%	≤27	
pH	4500-H B	(CH 1672874-001)	Dup	units		0.0%	4.80	
	4500-H B	(CC 1681293-002)	Dup	units		0.7%	4.80	

May 13, 2016 Lab ID : CC 1681293

Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
pH	4500HB	04/29/16:205987JMG	CCV	units	8.000	99.9 %	95-105	
			CCV	units	8.000	100 %	95-105	
	4500HB	05/12/16:206577JMG	CCV	units	8.000	99.9 %	95-105	
			CCV	units	8.000	99.4 %	95-105	
Ammonia Nitrogen	4500NH3G	(CC 1681254-001)	MS	mg/L	2.000	106 %	70-130	
			MSD	mg/L	2.000	106 %	70-130	
			MSRPD	mg/L	2.000	0.2%	≤20	
	4500NH3G	05/02/16:206052AMB	CCB	mg/L		-0.103	0.2	
			CCV	mg/L	2.000	106 %	90-110	
			CCB	mg/L		-0.005	0.2	
			CCV	mg/L	2.000	101 %	90-110	
			CCB	mg/L		-0.080	0.2	
			CCV	mg/L	2.000	99.8 %	90-110	
	4500NH3G	(SP 1604857-001)	MS	mg/L	2.000	118 %	70-130	
			MSD	mg/L	2.000	119 %	70-130	
			MSRPD	mg/L	2.000	0.9%	≤20	
	4500NH3G	05/04/16:206165AMB	CCB	mg/L		-0.013	0.2	
			CCV	mg/L	2.000	107 %	90-110	
			CCB	mg/L		-0.135	0.2	
			CCV	mg/L	2.000	106 %	90-110	
Nitrogen, Total Kjeldahl	EPA351.2	05/02/16:206090AMB	CCB	mg/L		-0.077	0.5	
			CCV	mg/L	5.000	104 %	90-110	
			CCB	mg/L		-0.271	0.5	
			CCV	mg/L	5.000	101 %	90-110	
			CCB	mg/L		0.298	0.5	
			CCV	mg/L	5.000	98.0 %	90-110	
			CCB	mg/L		0.090	0.5	
			CCV	mg/L	5.000	101 %	90-110	

Definition

PDS	: PDS failed, matrix - Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

430	: Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.

May 11, 2016

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401

Lab ID : CC 1681288
Customer : 8-514

Laboratory Report

Introduction: This report package contains total of 10 pages divided into 3 sections:

Case Narrative	(3 pages)	: An overview of the work performed at FGL.
Sample Results	(4 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
30S/11E-7N1	04/27/2016	04/27/2016	CC 1681288-001	MW
30S/11E-18R1	04/27/2016	04/27/2016	CC 1681288-002	MW
30S/11E-17D	04/27/2016	04/27/2016	CC 1681288-003	MW
30S/11E-17F4	04/27/2016	04/27/2016	CC 1681288-004	MW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below. The holding time for pH is listed as immediate. Logistically this is very difficult to obtain. FGL policy is to analyze all samples requiring pH on the same day of receipt at the laboratory. If this presents any problem please call.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CC 1681288-001	pH	15	2964 Minutes
CC 1681288-002	pH	15	2926.8 Minutes
CC 1681288-003	pH	15	2892 Minutes
CC 1681288-004	pH	15	2877 Minutes

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

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May 11, 2016 Lab ID : CC 1681288
Cleath-Harris Geologists Customer : 8-514

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	05/04/2016:206228 All analysis quality controls are within established criteria.
3010	04/29/2016:204967 All preparation quality controls are within established criteria, except: The following note applies to Sodium: 430 Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.

Inorganic - Wet Chemistry QC

2540CE	04/29/2016:204972 All preparation quality controls are within established criteria.
300.0	04/28/2016:205985 All analysis quality controls are within established criteria.
	05/04/2016:206200 All analysis quality controls are within established criteria.
	04/28/2016:204934 All preparation quality controls are within established criteria.
	05/03/2016:205146 All preparation quality controls are within established criteria.
351.2	04/30/2016:204993 All preparation quality controls are within established criteria.
	04/29/2016:204949 All preparation quality controls are within established criteria.
4500-H B	04/29/2016:204966 All preparation quality controls are within established criteria.
4500HB	04/29/2016:205987 All analysis quality controls are within established criteria.
4500NH3G	05/02/2016:206052 All analysis quality controls are within established criteria.
	04/29/2016:204943 All preparation quality controls are within established criteria.
4500NO3F	05/04/2016:206199 All analysis quality controls are within established criteria.
	05/04/2016:205114 All preparation quality controls are within established criteria.
EPA351.2	05/02/2016:206090 All analysis quality controls are within established criteria.

May 11, 2016 Lab ID : CC 1681288
Cleath-Harris Geologists Customer : 8-514

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:SB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-05-11

May 11, 2016

Lab ID : CC 1681288-001
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-7N1
Project : Los Osos Baseline GWM

Sampled On : April 27, 2016-10:38
Sampled By : Spencer Harris
Received On : April 27, 2016-14:04
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Sodium	20	1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Wet Chemistry[P:1]								
Chloride	32	1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrate Nitrogen	4.7	0.1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrogen, Organic	ND	--	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
Nitrogen, Total as Nitrogen	4.7	--	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
Nitrate + Nitrite as N	4.7	0.1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	04/29/16:204949	EPA351.2	05/02/16:206090
pH	7.2	--	units		4500-H B	04/29/16:204966	4500HB	04/29/16:205987
Total Dissolved Solids (TFR)	190	20	mg/L		2540CE	04/29/16:204972	2540C	05/02/16:206044
Sulfate	7	2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016

Lab ID : CC 1681288-002
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-18R1
Project : Los Osos Baseline GWM

Sampled On : April 27, 2016-11:15
Sampled By : Spencer Harris
Received On : April 27, 2016-14:04
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	0.1	0.1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Sodium	50	1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Wet Chemistry[P:1]								
Chloride	80	1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrate Nitrogen	18.8	0.1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrogen, Organic	ND	--	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Kjeldahl Nitrogen	ND	1	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
Nitrogen, Total as Nitrogen	19	--	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
Nitrate + Nitrite as N	18.8	0.1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Kjeldahl Nitrogen	ND	1	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
pH	6.1	--	units		4500-H B	04/29/16:204966	4500HB	04/29/16:205987
Total Dissolved Solids (TFR)	330	20	mg/L		2540CE	04/29/16:204972	2540C	05/02/16:206044
Sulfate	23	2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016

Lab ID : CC 1681288-003
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-17D
Project : Los Osos Baseline GWM

Sampled On : April 27, 2016-11:50
Sampled By : Spencer Harris
Received On : April 27, 2016-14:04
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Sodium	64	1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Wet Chemistry[P:1]								
Chloride	143	2*	mg/L		300.0	05/03/16:205146	300.0	05/04/16:206200
Nitrate Nitrogen	30.0	0.1	mg/L		4500NO3F	05/04/16:205114	4500NO3F	05/04/16:206199
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrogen, Organic	ND	--	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Kjeldahl Nitrogen	ND	1	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
Nitrogen, Total as Nitrogen	30	--	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
Nitrate + Nitrite as N	30.0	0.1	mg/L		4500NO3F	05/04/16:205114	4500NO3F	05/04/16:206199
Kjeldahl Nitrogen	ND	1	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
pH	6.6	--	units		4500-H B	04/29/16:204966	4500HB	04/29/16:205987
Total Dissolved Solids (TFR)	560	20	mg/L		2540CE	04/29/16:204972	2540C	05/02/16:206044
Sulfate	44	2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016

Lab ID : CC 1681288-004
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
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Description : 30S/11E-17F4
Project : Los Osos Baseline GWM

Sampled On : April 27, 2016-12:05
Sampled By : Spencer Harris
Received On : April 27, 2016-14:04
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Sodium	51	1	mg/L		3010	04/29/16:204967	200.7	05/04/16:206228
Wet Chemistry[P:1]								
Chloride	156	2*	mg/L		300.0	05/03/16:205146	300.0	05/04/16:206200
Nitrate Nitrogen	1.1	0.1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Nitrogen, Organic	ND	--	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	04/29/16:204943	4500NH3G	05/02/16:206052
Kjeldahl Nitrogen	ND	1	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
Nitrogen, Total as Nitrogen	1	--	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
Nitrate + Nitrite as N	1.1	0.1	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985
Kjeldahl Nitrogen	ND	1	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
pH	6.7	--	units		4500-H B	04/29/16:204966	4500HB	04/29/16:205987
Total Dissolved Solids (TFR)	440	20	mg/L		2540CE	04/29/16:204972	2540C	05/02/16:206044
Sulfate	21	2	mg/L		300.0	04/28/16:204934	300.0	04/28/16:205985

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 11, 2016 Lab ID : CC 1681288
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	05/04/16:206228AC	CCV	ppm	5.000	101 %	90-110	
			CCB	ppm		-0.017	0.1	
			CCV	ppm	5.000	98.2 %	90-110	
			CCB	ppm		0.059	0.1	
			CCV	ppm	5.000	98.4 %	90-110	
			CCB	ppm		0.049	0.1	
Sodium	200.7	05/04/16:206228AC	CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		0.005	1	
			CCV	ppm	25.00	96.9 %	90-110	
			CCB	ppm		-0.09	1	
			CCV	ppm	25.00	97.3 %	90-110	
			CCB	ppm		-0.12	1	
Boron	3010	04/29/16:204967amb	Blank	mg/L		ND	<0.1	
			LCS	mg/L	4.000	100 %	85-115	
			MS	mg/L	4.000	107 %	75-125	
		(CC 1681282-001)	MSD	mg/L	4.000	95.9 %	75-125	
			MSRPD	mg/L	4.000	10.4%	≤20.0	
			PDS	mg/L	4.000	99.5 %	75-125	
Sodium	3010	04/29/16:204967amb	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	95.7 %	85-115	
			MS	mg/L	12.00	199 %	<¼	
		(CC 1681282-001)	MSD	mg/L	12.00	117 %	75-125	
			MSRPD	mg/L	4.000	10.7%	≤20.0	
			PDS	mg/L	12.00	127 %	75-125	430
Wet Chem								
Total Dissolved Solids (TFR)	2540CE	04/29/16:204972CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	1000	98.0 %	90-110	
		(CC 1681293-002)	Dup	mg/L		1.2%	5	
Chloride	300.0	04/28/16:204934MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	100 %	90-110	
			MS	mg/L	500.0	105 %	85-121	
		(STK1634634-002)	MSD	mg/L	500.0	104 %	85-121	
			MSRPD	mg/L	100.0	1.7%	≤19	
			MS	mg/L	500.0	104 %	85-121	
		(STK1634634-003)	MSD	mg/L	500.0	104 %	85-121	
			MSRPD	mg/L	100.0	0.2%	≤19	
	300.0	04/28/16:205985MCA	ICV	ppm	25.00	100 %	90-110	
			ICB	ppm		0.03	1	
			CCB	ppm		0.04	1	
			CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		0.05	1	
			CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		0.05	1	
			CCV	ppm	25.00	102 %	90-110	
	300.0	05/03/16:205146MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	102 %	90-110	
			MS	mg/L	500.0	106 %	85-121	
		(STK1634634-001)	MSD	mg/L	500.0	108 %	85-121	
			MSRPD	mg/L	100.0	2.0%	≤19	
			MS	mg/L	500.0	107 %	85-121	
		(VI 1641256-001)	MSD	mg/L	500.0	106 %	85-121	
			MSRPD	mg/L	100.0	0.3%	≤19	
	300.0	05/04/16:206200MCA	CCB	ppm		0.06	1	
			CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		0.06	1	

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May 11, 2016 Lab ID : CC 1681288
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Chloride	300.0	05/04/16:206200MCA	CCV	ppm	25.00	102 %	90-110	
Nitrate	300.0	04/28/16:204934MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	20.00	102 %	90-110	
			MS	mg/L	400.0	104 %	85-119	
		(STK1634634-002)	MSD	mg/L	400.0	103 %	85-119	
			MSRPD	mg/L	100.0	1.7%	≤19	
			MS	mg/L	400.0	103 %	85-119	
		(STK1634634-003)	MSD	mg/L	400.0	103 %	85-119	
			MSRPD	mg/L	100.0	0.04%	≤19	
	300.0	04/28/16:205985MCA	ICV	ppm	20.00	102 %	90-110	
			ICB	ppm		0.000	0.5	
			CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	103 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	103 %	90-110	
			CCB	ppm		0.015	0.5	
			CCV	ppm	20.00	103 %	90-110	
Nitrite	300.0	04/28/16:204934MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	15.00	101 %	90-110	
			MS	mg/L	300.0	105 %	74-126	
		(STK1634634-002)	MSD	mg/L	300.0	104 %	74-126	
			MSRPD	mg/L	100.0	1.0%	≤20	
			MS	mg/L	300.0	104 %	74-126	
		(STK1634634-003)	MSD	mg/L	300.0	104 %	74-126	
			MSRPD	mg/L	100.0	0.2%	≤20	
	300.0	04/28/16:205985MCA	ICV	ppm	15.00	99.3 %	90-110	
			ICB	ppm		0.000	0.5	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	103 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	102 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	102 %	90-110	
Sulfate	300.0	04/28/16:204934MCA	Blank	mg/L		ND	<2.0	
			LCS	mg/L	50.00	102 %	90-110	
			MS	mg/L	1000	105 %	82-124	
		(STK1634634-002)	MSD	mg/L	1000	104 %	82-124	
			MSRPD	mg/L	100.0	1.5%	≤23	
			MS	mg/L	1000	104 %	82-124	
		(STK1634634-003)	MSD	mg/L	1000	104 %	82-124	
			MSRPD	mg/L	100.0	0.2%	≤23	
	300.0	04/28/16:205985MCA	ICV	ppm	50.00	102 %	90-110	
			ICB	ppm		0.00	2	
			CCB	ppm		0.00	2	
			CCV	ppm	50.00	103 %	90-110	
			CCB	ppm		0.00	2	
			CCV	ppm	50.00	103 %	90-110	
			CCB	ppm		0.04	2	
			CCV	ppm	50.00	104 %	90-110	
Nitrogen, Total Kjeldahl	351.2	04/29/16:204949JMG	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	86.7 %	73-124	
			LCS	mg/L	12.00	91.7 %	73-124	
			MS	mg/L	12.00	86.9 %	54-136	
		(SP 1604713-001)	MSD	mg/L	12.00	87.7 %	54-136	

May 11, 2016 Lab ID : CC 1681288
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Nitrogen, Total Kjeldahl	351.2	04/29/16:204949JMG	MSRPD	mg/L	12.00	0.7%	≤27	
		(SP 1604713-001)	Dup	mg/L		2.7%	27	
	351.2	04/30/16:204993JMG	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	95.2 %	73-124	
			MS	mg/L	12.00	73.6 %	54-136	
		(CC 1681268-001)	MSD	mg/L	12.00	90.7 %	54-136	
			MSRPD	mg/L	12.00	20.5%	≤27	
pH	4500-H B	(CH 1672874-001)	Dup	units		0.0%	4.80	
	4500HB	04/29/16:205987JMG	CCV	units	8.000	99.9 %	95-105	
			CCV	units	8.000	100 %	95-105	
Ammonia Nitrogen	4500NH3G		MS	mg/L	2.000	106 %	70-130	
		(CC 1681254-001)	MSD	mg/L	2.000	106 %	70-130	
			MSRPD	mg/L	2.000	0.2%	≤20	
	4500NH3G	05/02/16:206052AMB	CCB	mg/L		-0.103	0.2	
			CCV	mg/L	2.000	106 %	90-110	
			CCB	mg/L		-0.005	0.2	
			CCV	mg/L	2.000	101 %	90-110	
Nitrate + Nitrite as N	4500NO3F		MS	mg/L	10.00	117 %	5-285	
		(VI 1641391-001)	MSD	mg/L	10.00	125 %	5-285	
			MSRPD	mg/L	10.00	2.0%	≤30.4	
	4500NO3F	05/04/16:206199NMRP	CCB	mg/L		-0.024	0.1	
			CCV	mg/L	10.00	105 %	90-110	
			CCB	mg/L		0.229	0.1	
			CCV	mg/L	10.00	108 %	90-110	
Nitrogen, Total Kjeldahl	EPA351.2	05/02/16:206090AMB	CCB	mg/L		-0.077	0.5	
			CCV	mg/L	5.000	104 %	90-110	
			CCB	mg/L		-0.271	0.5	
			CCV	mg/L	5.000	101 %	90-110	
			CCB	mg/L		0.298	0.5	
			CCV	mg/L	5.000	98.0 %	90-110	
			CCB	mg/L		0.090	0.5	
			CCV	mg/L	5.000	101 %	90-110	

Definition

PDS	: PDS failed, matrix - Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
ICV	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

430	: Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.

May 12, 2016

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401

Lab ID : CC 1681319
Customer : 8-514

Laboratory Report

Introduction: This report package contains total of 10 pages divided into 3 sections:

Case Narrative	(3 pages)	: An overview of the work performed at FGL.
Sample Results	(3 pages)	: Results for each sample submitted.
Quality Control	(4 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
30S/16E-13Q1	04/28/2016	04/28/2016	CC 1681319-001	MW
30S/11E-17E9	04/28/2016	04/28/2016	CC 1681319-002	MW
30S/11E-18N1	04/28/2016	04/28/2016	CC 1681319-003	MW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below. The holding time for pH is listed as immediate. Logistically this is very difficult to obtain. FGL policy is to analyze all samples requiring pH on the same day of receipt at the laboratory. If this presents any problem please call.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CC 1681319-001	pH	15	6955.2 Minutes
CC 1681319-002	pH	15	5743.2 Minutes
CC 1681319-003	pH	15	19917 Minutes

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	05/04/2016:206228 All analysis quality controls are within established criteria.
3010	05/02/2016:205001 All preparation quality controls are within established criteria, except:

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TEL: (559)734-9473
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CA ELAP Certification No. 2810

Inorganic - Metals QC

3010	The following note applies to Sodium: 430 Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
	05/03/2016:205069 All preparation quality controls are within established criteria.

Inorganic - Wet Chemistry QC

2540CE	04/29/2016:204972 All preparation quality controls are within established criteria.
300.0	04/29/2016:206106 All analysis quality controls are within established criteria.
	04/29/2016:205071 All preparation quality controls are within established criteria.
351.2	04/30/2016:204993 All preparation quality controls are within established criteria.
	05/02/2016:205002 All preparation quality controls are within established criteria, except: The following note applies to Nitrogen, Total Kjeldahl: 440 Sample nonhomogeneity may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
4500-H B	05/02/2016:205026 All preparation quality controls are within established criteria.
	05/03/2016:205043 All preparation quality controls are within established criteria.
	05/12/2016:205466 All preparation quality controls are within established criteria.
4500HB	05/02/2016:206058 All analysis quality controls are within established criteria.
	05/03/2016:206089 All analysis quality controls are within established criteria.
	05/12/2016:206577 All analysis quality controls are within established criteria.
4500NH3G	05/04/2016:206165 All analysis quality controls are within established criteria.
	05/03/2016:205056 All preparation quality controls are within established criteria.
4500NO3F	05/12/2016:206569 All analysis quality controls are within established criteria.
	05/12/2016:205446 All preparation quality controls are within established criteria.
EPA351.2	05/02/2016:206090 All analysis quality controls are within established criteria.

May 12, 2016 Lab ID : CC 1681319
Cleath-Harris Geologists Customer : 8-514

Inorganic - Wet Chemistry QC

EPA351.2	05/03/2016:206108 All analysis quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-05-12

May 12, 2016

Lab ID : CC 1681319-001
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/16E-13Q1
Project : Los Osos Baseline GWM

Sampled On : April 28, 2016-10:26
Sampled By : Spencer Harris
Received On : April 28, 2016-15:42
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	05/03/16:205069	200.7	05/04/16:206228
Sodium	69	1	mg/L		3010	05/03/16:205069	200.7	05/04/16:206228
Wet Chemistry[P:1]								
Chloride	163	5*	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106
Nitrate Nitrogen	30.8	0.6*	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106
Nitrogen, Organic	ND	--	mg/L		4500NH3G	05/03/16:205056	4500NH3G	05/04/16:206165
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	05/03/16:205056	4500NH3G	05/04/16:206165
Kjeldahl Nitrogen	ND	1	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
Nitrogen, Total as Nitrogen	31	--	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
Nitrate + Nitrite as N	30.8	0.6*	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106
Kjeldahl Nitrogen	ND	1	mg/L		351.2	04/30/16:204993	EPA351.2	05/02/16:206090
pH	6.8	--	units		4500-H B	05/03/16:205043	4500HB	05/03/16:206089
Total Dissolved Solids (TFR)	640	20	mg/L		2540CE	04/29/16:204972	2540C	05/02/16:206044
Sulfate	26	2	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 12, 2016

Lab ID : CC 1681319-002
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-17E9
Project : Los Osos Baseline GWM

Sampled On : April 28, 2016-12:30
Sampled By : Spencer Harris
Received On : April 28, 2016-15:42
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	05/02/16:205001	200.7	05/04/16:206228
Sodium	36	1	mg/L		3010	05/02/16:205001	200.7	05/04/16:206228
Wet Chemistry[P:1]								
Chloride	65	1	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106
Nitrate Nitrogen	14.8	0.1	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106
Nitrogen, Organic	ND	--	mg/L		4500NH3G	05/03/16:205056	4500NH3G	05/04/16:206165
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	05/03/16:205056	4500NH3G	05/04/16:206165
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	05/02/16:205002	EPA351.2	05/03/16:206108
Nitrogen, Total as Nitrogen	14.8	--	mg/L		351.2	05/02/16:205002	EPA351.2	05/03/16:206108
Nitrate + Nitrite as N	14.8	0.1	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	05/02/16:205002	EPA351.2	05/03/16:206108
pH	6.7	--	units		4500-H B	05/02/16:205026	4500HB	05/02/16:206058
Total Dissolved Solids (TFR)	370	20	mg/L		2540CE	04/29/16:204972	2540C	05/02/16:206044
Sulfate	24	2	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 12, 2016

Lab ID : CC 1681319-003
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-18N1
Project : Los Osos Baseline GWM

Sampled On : April 28, 2016-14:57
Sampled By : Spencer Harris
Received On : April 28, 2016-15:42
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	0.2	0.1	mg/L		3010	05/02/16:205001	200.7	05/04/16:206228
Sodium	54	1	mg/L		3010	05/02/16:205001	200.7	05/04/16:206228
Wet Chemistry[P:1]								
Chloride	89	1	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106
Nitrate Nitrogen	21.1	0.1	mg/L		4500NO3F	05/12/16:205446	4500NO3F	05/12/16:206569
Nitrite Nitrogen	ND	0.2	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106
Nitrogen, Organic	ND	--	mg/L		4500NH3G	05/03/16:205056	4500NH3G	05/04/16:206165
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	05/03/16:205056	4500NH3G	05/04/16:206165
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	05/02/16:205002	EPA351.2	05/03/16:206108
Nitrogen, Total as Nitrogen	21.1	--	mg/L		351.2	05/02/16:205002	EPA351.2	05/03/16:206108
Nitrate + Nitrite as N	21.1	0.1	mg/L		4500NO3F	05/12/16:205446	4500NO3F	05/12/16:206569
Kjeldahl Nitrogen	ND	0.5	mg/L		351.2	05/02/16:205002	EPA351.2	05/03/16:206108
pH	7.4	--	units		4500-H B	05/12/16:205466	4500HB	05/12/16:206577
Total Dissolved Solids (TFR)	370	20	mg/L		2540CE	04/29/16:204972	2540C	05/02/16:206044
Sulfate	45	2	mg/L		300.0	04/29/16:205071	300.0	04/29/16:206106

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 12, 2016 Lab ID : CC 1681319
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	05/04/16:206228AC	CCV	ppm	5.000	98.9 %	90-110	
			CCB	ppm		0.097	0.1	
			CCV	ppm	5.000	96.1 %	90-110	
			CCB	ppm		0.053	0.1	
			CCV	ppm	5.000	96.5 %	90-110	
			CCB	ppm		0.061	0.1	
			CCV	ppm	5.000	96.9 %	90-110	
			CCB	ppm		0.081	0.1	
Sodium	200.7	05/04/16:206228AC	CCV	ppm	25.00	96.2 %	90-110	
			CCB	ppm		-0.04	1	
			CCV	ppm	25.00	95.4 %	90-110	
			CCB	ppm		-0.05	1	
			CCV	ppm	25.00	96.4 %	90-110	
			CCB	ppm		-0.03	1	
			CCV	ppm	25.00	96.0 %	90-110	
			CCB	ppm		-0.03	1	
Boron	3010	05/02/16:205001amb	Blank	mg/L		ND	<0.1	
			LCS	mg/L	4.000	99.1 %	85-115	
			MS	mg/L	4.000	102 %	75-125	
		(CC 1681312-001)	MSD	mg/L	4.000	97.8 %	75-125	
			MSRPD	mg/L	4.000	3.8%	≤20.0	
			PDS	mg/L	4.000	102 %	75-125	
	3010	05/03/16:205069amb	Blank	mg/L		ND	<0.1	
			LCS	mg/L	4.000	96.2 %	85-115	
			MS	mg/L	4.000	99.6 %	75-125	
		(CC 1681294-001)	MSD	mg/L	4.000	96.8 %	75-125	
			MSRPD	mg/L	4.000	2.7%	≤20.0	
			PDS	mg/L	4.000	98.6 %	75-125	
Sodium	3010	05/02/16:205001amb	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	95.3 %	85-115	
			MS	mg/L	12.00	-141 %	<¼	
		(CC 1681312-001)	MSD	mg/L	12.00	-153 %	<¼	
			MSRPD	mg/L	4.000	0.3%	≤20.0	
			PDS	mg/L	12.00	-162 %	75-125	430
	3010	05/03/16:205069amb	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	93.8 %	85-115	
			MS	mg/L	12.00	-32.7 %	<¼	
		(CC 1681294-001)	MSD	mg/L	12.00	106 %	75-125	
			MSRPD	mg/L	4.000	8.7%	≤20.0	
			PDS	mg/L	12.00	89.6 %	75-125	
Wet Chem								
Total Dissolved Solids (TFR)	2540CE	04/29/16:204972CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	1000	99.8 %	90-110	
		(STK1634683-001)	Dup	mg/L		2.6%	5	
Chloride	300.0	04/29/16:205071MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	101 %	90-110	
			MS	mg/L	500.0	105 %	85-121	
		(CC 1681319-002)	MSD	mg/L	500.0	105 %	85-121	
			MSRPD	mg/L	100.0	0.03%	≤19	
			MS	mg/L	500.0	104 %	85-121	
		(CH 1672938-001)	MSD	mg/L	500.0	104 %	85-121	
			MSRPD	mg/L	100.0	0.5%	≤19	
	300.0	04/29/16:206106MCA	ICV	ppm	25.00	100 %	90-110	
			ICB	ppm		0.02	1	
			CCB	ppm		0.04	1	

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May 12, 2016 Lab ID : CC 1681319
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Chloride	300.0	04/29/16:206106MCA	CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		0.04	1	
			CCV	ppm	25.00	102 %	90-110	
Nitrate	300.0	04/29/16:205071MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	20.00	103 %	90-110	
			MS	mg/L	400.0	104 %	85-119	
		(CC 1681319-002)	MSD	mg/L	400.0	104 %	85-119	
			MSRPD	mg/L	100.0	0.008%	≤19	
			MS	mg/L	400.0	103 %	85-119	
		(CH 1672938-001)	MSD	mg/L	400.0	103 %	85-119	
			MSRPD	mg/L	100.0	0.8%	≤19	
	300.0	04/29/16:206106MCA	ICV	ppm	20.00	102 %	90-110	
			ICB	ppm		0.000	0.5	
			CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	103 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	104 %	90-110	
Nitrite	300.0	04/29/16:205071MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	15.00	101 %	90-110	
			MS	mg/L	300.0	104 %	74-126	
		(CC 1681319-002)	MSD	mg/L	300.0	105 %	74-126	
			MSRPD	mg/L	100.0	0.8%	≤20	
			MS	mg/L	300.0	103 %	74-126	
		(CH 1672938-001)	MSD	mg/L	300.0	103 %	74-126	
			MSRPD	mg/L	100.0	0.3%	≤20	
	300.0	04/29/16:206106MCA	ICV	ppm	15.00	100 %	90-110	
			ICB	ppm		0.000	0.5	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	103 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	102 %	90-110	
Sulfate	300.0	04/29/16:205071MCA	Blank	mg/L		ND	<2.0	
			LCS	mg/L	50.00	103 %	90-110	
			MS	mg/L	1000	105 %	82-124	
		(CC 1681319-002)	MSD	mg/L	1000	105 %	82-124	
			MSRPD	mg/L	100.0	0.0%	≤23	
			MS	mg/L	1000	104 %	82-124	
		(CH 1672938-001)	MSD	mg/L	1000	104 %	82-124	
			MSRPD	mg/L	100.0	0.6%	≤23	
	300.0	04/29/16:206106MCA	ICV	ppm	50.00	102 %	90-110	
			ICB	ppm		0.00	2	
			CCB	ppm		0.00	2	
			CCV	ppm	50.00	103 %	90-110	
			CCB	ppm		0.05	2	
			CCV	ppm	50.00	104 %	90-110	
Nitrogen, Total Kjeldahl	351.2	04/30/16:204993JMG	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	95.2 %	73-124	
			MS	mg/L	12.00	73.6 %	54-136	
		(CC 1681268-001)	MSD	mg/L	12.00	90.7 %	54-136	
			MSRPD	mg/L	12.00	20.5%	≤27	
	351.2	05/02/16:205002jmg	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	97.1 %	73-124	
			LCS	mg/L	12.00	97.5 %	73-124	
			MS	mg/L	12.00	84.8 %	54-136	

May 12, 2016 Lab ID : CC 1681319
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Nitrogen, Total Kjeldahl	351.2	(SP 1604764-001)	MSD	mg/L	12.00	79.5 %	54-136	
			MSRPD	mg/L	12.00	4.1%	≤27	
		(SP 1604764-001)	Dup	mg/L		37.7%	27	440
pH	4500-H B	(STK1634855-001)	Dup	units		0.1%	4.80	
	4500-H B	(SP 1604866-002)	Dup	units		0.4%	4.80	
	4500-H B	(CC 1681293-002)	Dup	units		0.7%	4.80	
	4500HB	05/02/16:206058JMG	CCV	units	8.000	100 %	95-105	
			CCV	units	8.000	100 %	95-105	
	4500HB	05/03/16:206089JMG	CCV	units	8.000	100 %	95-105	
			CCV	units	8.000	100 %	95-105	
	4500HB	05/12/16:206577JMG	CCV	units	8.000	99.9 %	95-105	
			CCV	units	8.000	99.4 %	95-105	
Ammonia Nitrogen	4500NH3G		MS	mg/L	2.000	118 %	70-130	
		(SP 1604857-001)	MSD	mg/L	2.000	119 %	70-130	
			MSRPD	mg/L	2.000	0.9%	≤20	
			MS	mg/L	2.000	118 %	70-130	
		(VI 1641245-002)	MSD	mg/L	2.000	116 %	70-130	
			MSRPD	mg/L	2.000	1.4%	≤20	
	4500NH3G	05/04/16:206165AMB	CCB	mg/L		-0.013	0.2	
			CCV	mg/L	2.000	107 %	90-110	
			CCB	mg/L		-0.135	0.2	
			CCV	mg/L	2.000	106 %	90-110	
			CCB	mg/L		0.087	0.2	
			CCV	mg/L	2.000	105 %	90-110	
Nitrate + Nitrite as N	4500NO3F		MS	mg/L	10.00	106 %	5-285	
		(CC 1681423-001)	MSD	mg/L	10.00	116 %	5-285	
			MSRPD	mg/L	10.00	8.3%	≤30.4	
	4500NO3F	05/12/16:206569AMB	CCB	mg/L		0.000	0.1	
			CCV	mg/L	11.27	92.2 %	90-110	
			CCB	mg/L		0.000	0.1	
			CCV	mg/L	11.27	96.2 %	90-110	
Nitrogen, Total Kjeldahl	EPA351.2	05/02/16:206090AMB	CCB	mg/L		0.090	0.5	
			CCV	mg/L	5.000	101 %	90-110	
			CCB	mg/L		-0.093	0.5	
			CCV	mg/L	5.000	103 %	90-110	
	EPA351.2	05/03/16:206108AMB	CCB	mg/L		-0.079	0.5	
			CCV	mg/L	5.000	100 %	90-110	
			CCB	mg/L		-0.308	0.5	
			CCV	mg/L	5.000	94.5 %	90-110	

Definition

PDS	: PDS failed, matrix - Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
ICV	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.

May 12, 2016 Lab ID : CC 1681319

Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Definition	
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.
Explanation	
430	: Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
440	: Sample nonhomogeneity may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

June 10, 2016

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401

Lab ID : CC 1681387
Customer : 8-514

Laboratory Report

Introduction: This report package contains total of 12 pages divided into 3 sections:

Case Narrative	(3 pages)	: An overview of the work performed at FGL.
Sample Results	(5 pages)	: Results for each sample submitted.
Quality Control	(4 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
30S/10E-24A	05/03/2016	05/03/2016	CC 1681387-001	MW
30S/11E-7K3	05/03/2016	05/03/2016	CC 1681387-002	MW
30S/11E-18J6	05/03/2016	05/03/2016	CC 1681387-003	MW
30S/10E-13H	05/03/2016	05/03/2016	CC 1681387-004	MW
30S/11E-7Q1	05/03/2016	05/03/2016	CC 1681387-005	MW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below. The holding time for pH is listed as immediate. Logistically this is very difficult to obtain. FGL policy is to analyze all samples requiring pH on the same day of receipt at the laboratory. If this presents any problem please call.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CC 1681387-001	pH	15	2881.2 Minutes
CC 1681387-002	pH	15	3051 Minutes
CC 1681387-003	pH	15	1546.8 Minutes
CC 1681387-004	pH	15	1512 Minutes
CC 1681387-005	pH	15	1293 Minutes

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

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June 10, 2016 Lab ID : CC 1681387
Cleath-Harris Geologists Customer : 8-514

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	05/06/2016:206340 All analysis quality controls are within established criteria
	05/09/2016:206409 All analysis quality controls are within established criteria
	05/18/2016:206966 All analysis quality controls are within established criteria
	05/23/2016:207254 All analysis quality controls are within established criteria
3010	05/05/2016:205186 All preparation quality controls are within established criteria
	05/09/2016:205297 All preparation quality controls are within established criteria
	05/18/2016:205761 All preparation quality controls are within established criteria
	05/23/2016:205998 All preparation quality controls are within established criteria

Inorganic - Wet Chemistry QC

2540CE	05/04/2016:205117 All preparation quality controls are within established criteria
300.0	05/04/2016:206232 All analysis quality controls are within established criteria
	05/16/2016:206819 All analysis quality controls are within established criteria
	05/04/2016:205185 All preparation quality controls are within established criteria
	05/16/2016:205762 All preparation quality controls are within established criteria
351.2	05/05/2016:205169 All preparation quality controls are within established criteria
4500-H B	05/04/2016:205119 All preparation quality controls are within established criteria
	05/05/2016:205188 All preparation quality controls are within established criteria
4500HB	05/04/2016:206166 All analysis quality controls are within established criteria
	05/05/2016:206234 All analysis quality controls are within established criteria
4500NH3G	05/09/2016:206364 All analysis quality controls are within established criteria
	05/11/2016:206533 All analysis quality controls are within established criteria

June 10, 2016 Lab ID : CC 1681387
Cleath-Harris Geologists Customer : 8-514

Inorganic - Wet Chemistry QC

4500NH3G	05/09/2016:205282 All preparation quality controls are within established criteria
	05/11/2016:205398 All preparation quality controls are within established criteria
4500NO3F	05/12/2016:206569 All analysis quality controls are within established criteria
	05/12/2016:205446 All preparation quality controls are within established criteria
EPA351.2	05/05/2016:206238 All analysis quality controls are within established criteria

Discussion of Analytical Results: Amended Report 6/10/16

CC 1681387-002 30S/11E-7K3	Report amended to remove the hold time flag for Nitrite.
CC 1681387-005 30S/11E-7Q1	Amended to remove the hold time flag Nitrate-Nitrogen and to include a case narrative note.
CC 1681387-005 30S/11E-7Q1	The Nitrate-Nitrogen result was outside of the calibration range, however the result was confirmed by an analysis performed past the holding time.

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-06-10

KD:DMB

June 10, 2016

Lab ID : CC 1681387-001
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/10E-24A
Project : Los Osos Baseline GWM

Sampled On : May 3, 2016-12:30
Sampled By : Spencer Harris
Received On : May 3, 2016-16:02
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	05/05/16:205186	200.7	05/06/16:206340
Sodium	43	1	mg/L		3010	05/05/16:205186	200.7	05/06/16:206340
Wet Chemistry[P:1]								
Chloride	159	2*	mg/L		300.0	05/16/16:205762	300.0	05/16/16:206819
Nitrate Nitrogen	15.5	0.1	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Nitrite Nitrogen	ND	0.2	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Nitrogen, Organic	ND	--	mg/L		4500NH3G	05/09/16:205282	4500NH3G	05/09/16:206364
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	05/09/16:205282	4500NH3G	05/09/16:206364
Kjeldahl Nitrogen	ND	1	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
Nitrogen, Total as Nitrogen	16	--	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
Nitrate + Nitrite as N	15.5	0.1	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Kjeldahl Nitrogen	ND	1	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
pH	6.6	--	units		4500-H B	05/05/16:205188	4500HB	05/05/16:206234
Total Dissolved Solids (TFR)	520	20	mg/L		2540CE	05/04/16:205117	2540C	05/05/16:206223
Sulfate	9	2	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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June 10, 2016

Lab ID : CC 1681387-002
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-7K3
Project : Los Osos Baseline GWM

Sampled On : May 3, 2016-09:40
Sampled By : Spencer Harris
Received On : May 3, 2016-16:02
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total[P:1'5]								
Boron	0.2	0.1	mg/L		3010	05/09/16:205297	200.7	05/09/16:206409
Sodium	78	1	mg/L		3010	05/09/16:205297	200.7	05/09/16:206409
Wet Chemistry[P:1]								
Chloride	108	1	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Nitrate Nitrogen	19.6	0.1	mg/L		4500NO3F	05/12/16:205446	4500NO3F	05/12/16:206569
Nitrite Nitrogen	ND	0.2	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Nitrogen, Organic	ND	--	mg/L		4500NH3G	05/11/16:205398	4500NH3G	05/11/16:206533
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	05/11/16:205398	4500NH3G	05/11/16:206533
Kjeldahl Nitrogen	ND	1	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
Nitrogen, Total as Nitrogen	20	--	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
Nitrate + Nitrite as N	19.6	0.1	mg/L		4500NO3F	05/12/16:205446	4500NO3F	05/12/16:206569
Kjeldahl Nitrogen	ND	1	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
pH	6.7	--	units		4500-H B	05/05/16:205188	4500HB	05/05/16:206234
Total Dissolved Solids (TFR)	510	20	mg/L		2540CE	05/04/16:205117	2540C	05/05/16:206223
Sulfate	45	2	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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June 10, 2016

Lab ID : CC 1681387-003
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-18J6
Project : Los Osos Baseline GWM

Sampled On : May 3, 2016-10:25
Sampled By : Spencer Harris
Received On : May 3, 2016-16:02
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total[P:1'5]								
Boron	0.2	0.1	mg/L		3010	05/23/16:205998	200.7	05/23/16:207254
Sodium	49	1	mg/L		3010	05/23/16:205998	200.7	05/23/16:207254
Wet Chemistry[P:1]								
Chloride	76	1	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Nitrate Nitrogen	8.7	0.1	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Nitrite Nitrogen	ND	0.2	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Nitrogen, Organic	1	--	mg/L		4500NH3G	05/09/16:205282	4500NH3G	05/09/16:206364
Ammonia Nitrogen	1.0	0.2	mg/L		4500NH3G	05/09/16:205282	4500NH3G	05/09/16:206364
Kjeldahl Nitrogen	2	1	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
Nitrogen, Total as Nitrogen	11	--	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
Nitrate + Nitrite as N	8.7	0.1	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Kjeldahl Nitrogen	2	1	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
pH	6.0	--	units		4500-H B	05/04/16:205119	4500HB	05/04/16:206166
Total Dissolved Solids (TFR)	400	20	mg/L		2540CE	05/04/16:205117	2540C	05/05/16:206223
Sulfate	30	2	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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June 10, 2016

Lab ID : CC 1681387-004
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/10E-13H
Project : Los Osos Baseline GWM

Sampled On : May 3, 2016-11:00
Sampled By : Spencer Harris
Received On : May 3, 2016-16:02
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	05/09/16:205297	200.7	05/09/16:206409
Sodium	19	1	mg/L		3010	05/09/16:205297	200.7	05/09/16:206409
Wet Chemistry[P:1]								
Chloride	48	1	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Nitrate Nitrogen	4.2	0.1	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Nitrite Nitrogen	ND	0.2	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Nitrogen, Organic	ND	--	mg/L		4500NH3G	05/09/16:205282	4500NH3G	05/09/16:206364
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	05/09/16:205282	4500NH3G	05/09/16:206364
Kjeldahl Nitrogen	ND	1	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
Nitrogen, Total as Nitrogen	4	--	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
Nitrate + Nitrite as N	4.2	0.1	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Kjeldahl Nitrogen	ND	1	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
pH	6.2	--	units		4500-H B	05/04/16:205119	4500HB	05/04/16:206166
Total Dissolved Solids (TFR)	230	20	mg/L		2540CE	05/04/16:205117	2540C	05/05/16:206223
Sulfate	43	2	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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June 10, 2016

Lab ID : CC 1681387-005
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-7Q1
Project : Los Osos Baseline GWM

Sampled On : May 3, 2016-14:39
Sampled By : Spencer Harris
Received On : May 3, 2016-16:02
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total[P:1'5]								
Boron	0.3	0.1	mg/L		3010	05/18/16:205761	200.7	05/18/16:206966
Sodium	91	1	mg/L		3010	05/18/16:205761	200.7	05/18/16:206966
Wet Chemistry[P:1]								
Chloride	124	2*	mg/L		300.0	05/16/16:205762	300.0	05/16/16:206819
Nitrate Nitrogen	21.4	0.1	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Nitrite Nitrogen	ND	0.2	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Nitrogen, Organic	ND	--	mg/L		4500NH3G	05/09/16:205282	4500NH3G	05/09/16:206364
Ammonia Nitrogen	0.3	0.2	mg/L		4500NH3G	05/09/16:205282	4500NH3G	05/09/16:206364
Kjeldahl Nitrogen	ND	1	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
Nitrogen, Total as Nitrogen	21	--	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
Nitrate + Nitrite as N	21.4	0.1	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232
Kjeldahl Nitrogen	ND	1	mg/L		351.2	05/05/16:205169	EPA351.2	05/05/16:206238
pH	6.2	--	units		4500-H B	05/04/16:205119	4500HB	05/04/16:206166
Total Dissolved Solids (TFR)	500	20	mg/L		2540CE	05/04/16:205117	2540C	05/05/16:206223
Sulfate	45	2	mg/L		300.0	05/04/16:205185	300.0	05/04/16:206232

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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June 10, 2016 Lab ID : CC 1681387
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	05/06/16:206340AC	CCV	ppm	5.000	98.6 %	90-110	
			CCB	ppm		0.040	0.1	
			CCV	ppm	5.000	98.2 %	90-110	
			CCB	ppm		0.034	0.1	
	200.7	05/09/16:206409AC	CCV	ppm	5.000	93.9 %	90-110	
			CCB	ppm		0.002	0.1	
			CCV	ppm	5.000	94.3 %	90-110	
			CCB	ppm		0.045	0.1	
			CCV	ppm	5.000	94.9 %	90-110	
			CCB	ppm		0.044	0.1	
	200.7	05/18/16:206966AC	CCV	ppm	5.000	103 %	90-110	
			CCB	ppm		0.020	0.1	
			CCV	ppm	5.000	103 %	90-110	
			CCB	ppm		0.020	0.1	
	200.7	05/23/16:207254AC	CCV	ppm	5.000	100 %	90-110	
			CCB	ppm		0.038	0.1	
			CCV	ppm	5.000	99.8 %	90-110	
			CCB	ppm		0.048	0.1	
Sodium	200.7	05/06/16:206340AC	CCV	ppm	25.00	98.3 %	90-110	
			CCB	ppm		0.003	1	
			CCV	ppm	25.00	98.9 %	90-110	
			CCB	ppm		0.08	1	
	200.7	05/09/16:206409AC	CCV	ppm	25.00	96.6 %	90-110	
			CCB	ppm		0.07	1	
			CCV	ppm	25.00	96.8 %	90-110	
			CCB	ppm		0.1	1	
			CCV	ppm	25.00	97.5 %	90-110	
			CCB	ppm		0.07	1	
	200.7	05/18/16:206966AC	CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		0.01	1	
			CCV	ppm	25.00	104 %	90-110	
			CCB	ppm		0.08	1	
	200.7	05/23/16:207254AC	CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		-0.11	1	
			CCV	ppm	25.00	99.6 %	90-110	
			CCB	ppm		-0.12	1	
Boron	3010	05/05/16:205186AMB	Blank	mg/L		ND	<0.1	
			LCS	mg/L	8.000	99.0 %	85-115	
			MS	mg/L	4.000	99.9 %	75-125	
		(CC 1681341-001)	MSD	mg/L	4.000	95.9 %	75-125	
			MSRPD	mg/L	4.000	3.9%	≤20.0	
			PDS	mg/L	4.000	113 %	75-125	
	3010	05/09/16:205297AMB	Blank	mg/L		ND	<0.1	
			LCS	mg/L	4.000	106 %	85-115	
			MS	mg/L	4.000	115 %	75-125	
		(VI 1641390-001)	MSD	mg/L	4.000	112 %	75-125	
			MSRPD	mg/L	0.8000	2.5%	≤20.0	
			PDS	mg/L	4.000	112 %	75-125	
	3010	05/18/16:205761amb	Blank	mg/L		ND	<0.1	
			LCS	mg/L	4.000	105 %	85-115	
			MS	mg/L	4.000	89.6 %	75-125	
		(SP 1605538-001)	MSD	mg/L	4.000	99.5 %	75-125	
			MSRPD	mg/L	4.000	9.4%	≤20.0	
			PDS	mg/L	4.000	94.0 %	75-125	
	3010	05/23/16:205998amb	Blank	mg/L		ND	<0.1	

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June 10, 2016 Lab ID : CC 1681387
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	3010	05/23/16:205998amb	LCS	mg/L	4.000	98.8 %	85-115	
			MS	mg/L	4.000	104 %	75-125	
		(CC 1681654-001)	MSD	mg/L	4.000	105 %	75-125	
			MSRPD	mg/L	4.000	1.3%	≤20.0	
			PDS	mg/L	4.000	100 %	75-125	
Sodium	3010	05/05/16:205186AMB	Blank	mg/L		ND	<1	
			LCS	mg/L	24.00	96.9 %	85-115	
			MS	mg/L	12.00	105 %	75-125	
		(CC 1681341-001)	MSD	mg/L	12.00	56.9 %	<¼	
			MSRPD	mg/L	4.000	9.2%	≤20.0	
			PDS	mg/L	12.00	120 %	75-125	
	3010	05/09/16:205297AMB	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	101 %	85-115	
			MS	mg/L	12.00	67.7 %	<¼	
		(VI 1641390-001)	MSD	mg/L	12.00	171 %	<¼	
			MSRPD	mg/L	0.8000	14.4%	≤20.0	
			PDS	mg/L	12.00	82.6 %	75-125	
	3010	05/18/16:205761amb	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	101 %	85-115	
			MS	mg/L	12.00	104 %	75-125	
		(SP 1605538-001)	MSD	mg/L	12.00	109 %	75-125	
			MSRPD	mg/L	4.000	0.5%	≤20.0	
			PDS	mg/L	12.00	118 %	75-125	
	3010	05/23/16:205998amb	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	90.1 %	85-115	
			MS	mg/L	12.00	107 %	75-125	
		(CC 1681654-001)	MSD	mg/L	12.00	123 %	75-125	
			MSRPD	mg/L	4.000	4.2%	≤20.0	
			PDS	mg/L	12.00	109 %	75-125	
Wet Chem								
Total Dissolved Solids (TFR)	2540CE	05/04/16:205117CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	1000	101 %	90-110	
		(CC 1681359-001)	Dup	mg/L		1.2%	5	
Chloride	300.0	05/04/16:205185MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	101 %	90-110	
			MS	mg/L	500.0	106 %	85-121	
		(CH 1673037-001)	MSD	mg/L	500.0	104 %	85-121	
			MSRPD	mg/L	100.0	2.3%	≤19	
			MS	mg/L	500.0	104 %	85-121	
		(CC 1681387-004)	MSD	mg/L	500.0	104 %	85-121	
			MSRPD	mg/L	100.0	0.02%	≤19	
	300.0	05/04/16:206232MCA	ICV	ppm	25.00	101 %	90-110	
			ICB	ppm		0.05	1	
			CCB	ppm		0.08	1	
			CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		0.07	1	
			CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		0.04	1	
			CCV	ppm	25.00	101 %	90-110	
	300.0	05/16/16:205762MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	95.1 %	90-110	
			MS	mg/L	500.0	102 %	85-121	
		(VI 1641500-001)	MSD	mg/L	500.0	100 %	85-121	
			MSRPD	mg/L	100.0	2.0%	≤19	

June 10, 2016 Lab ID : CC 1681387
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Chloride	300.0	05/16/16:206819MCA	CCB	ppm		0.09	1	
			CCV	ppm	25.00	97.1 %	90-110	
			CCB	ppm		0.06	1	
			CCV	ppm	25.00	98.7 %	90-110	
Nitrate	300.0	05/04/16:205185MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	20.00	103 %	90-110	
			MS	mg/L	400.0	106 %	85-119	
		(CH 1673037-001)	MSD	mg/L	400.0	103 %	85-119	
			MSRPD	mg/L	100.0	2.4%	≤19	
			MS	mg/L	400.0	103 %	85-119	
		(CC 1681387-004)	MSD	mg/L	400.0	103 %	85-119	
			MSRPD	mg/L	100.0	0.02%	≤19	
	300.0	05/04/16:206232MCA	ICV	ppm	20.00	103 %	90-110	
			ICB	ppm		0.000	0.5	
			CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	104 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	104 %	90-110	
Nitrite	300.0	05/04/16:205185MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	15.00	101 %	90-110	
			MS	mg/L	300.0	106 %	74-126	
		(CH 1673037-001)	MSD	mg/L	300.0	104 %	74-126	
			MSRPD	mg/L	100.0	1.8%	≤20	
			MS	mg/L	300.0	104 %	74-126	
		(CC 1681387-004)	MSD	mg/L	300.0	104 %	74-126	
			MSRPD	mg/L	100.0	0.5%	≤20	
	300.0	05/04/16:206232MCA	ICV	ppm	15.00	100 %	90-110	
			ICB	ppm		0.000	0.5	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	103 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	102 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	101 %	90-110	
Sulfate	300.0	05/04/16:205185MCA	Blank	mg/L		ND	<2.0	
			LCS	mg/L	50.00	103 %	90-110	
			MS	mg/L	1000	107 %	82-124	
		(CH 1673037-001)	MSD	mg/L	1000	104 %	82-124	
			MSRPD	mg/L	100.0	2.4%	≤23	
			MS	mg/L	1000	104 %	82-124	
		(CC 1681387-004)	MSD	mg/L	1000	105 %	82-124	
			MSRPD	mg/L	100.0	0.2%	≤23	
	300.0	05/04/16:206232MCA	ICV	ppm	50.00	102 %	90-110	
			ICB	ppm		0.09	2	
			CCB	ppm		0.15	2	
			CCV	ppm	50.00	103 %	90-110	
			CCB	ppm		0.16	2	
			CCV	ppm	50.00	104 %	90-110	
			CCB	ppm		0.13	2	
			CCV	ppm	50.00	103 %	90-110	
Nitrogen, Total Kjeldahl	351.2	05/05/16:205169jmg	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	74.2 %	73-124	
			MS	mg/L	12.00	89.8 %	54-136	
		(CC 1681372-001)	MSD	mg/L	12.00	94.9 %	54-136	

June 10, 2016 Lab ID : CC 1681387
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Nitrogen, Total Kjeldahl	351.2	05/05/16:205169jmg	MSRPD	mg/L	12.00	5.7%	≤27	
pH	4500-H B	(SP 1604919-001)	Dup	units		0.8%	4.80	
	4500-H B	(SP 1604990-001)	Dup	units		0.0%	4.80	
	4500HB	05/04/16:206166JMG	CCV	units	8.000	99.4 %	95-105	
			CCV	units	8.000	99.8 %	95-105	
	4500HB	05/05/16:206234JMG	CCV	units	8.000	99.9 %	95-105	
			CCV	units	8.000	100 %	95-105	
Ammonia Nitrogen	4500NH3G	(CC 1681387-003)	MS	mg/L	2.000	107 %	70-130	
			MSD	mg/L	2.000	105 %	70-130	
			MSRPD	mg/L	2.000	1.1%	≤20	
	4500NH3G	05/09/16:206364AMB	CCB	mg/L		-0.040	0.2	
			CCV	mg/L	2.000	102 %	90-110	
			CCB	mg/L		0.044	0.2	
			CCV	mg/L	2.000	103 %	90-110	
	4500NH3G	(SP 1604899-002)	MS	mg/L	2.000	75.7 %	70-130	
			MSD	mg/L	2.000	76.8 %	70-130	
			MSRPD	mg/L	2.000	1.4%	≤20	
	4500NH3G	05/11/16:206533AMB	ICB	mg/L		0.000	0.2	
			ICV	mg/L	2.000	92.2 %	90-110	
			CCB	mg/L		0.000	0.2	
			CCV	mg/L	2.000	90.2 %	90-110	
Nitrate + Nitrite as N	4500NO3F	(CC 1681423-001)	MS	mg/L	10.00	106 %	5-285	
			MSD	mg/L	10.00	116 %	5-285	
			MSRPD	mg/L	10.00	8.3%	≤30.4	
	4500NO3F	05/12/16:206569AMB	CCB	mg/L		0.047	0.1	
			CCV	mg/L	11.27	89.8 %	90-110	
			CCB	mg/L		0.000	0.1	
			CCV	mg/L	11.27	92.2 %	90-110	
Nitrogen, Total Kjeldahl	EPA351.2	05/05/16:206238AMB	CCB	mg/L		-0.198	0.5	
			CCV	mg/L	5.000	101 %	90-110	
			CCB	mg/L		0.089	0.5	
			CCV	mg/L	5.000	99.7 %	90-110	

Definition

PDS	: PDS failed, matrix - Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
ICV	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

May 16, 2016

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401

Lab ID : CC 1681406
Customer : 8-514

Laboratory Report

Introduction: This report package contains total of 6 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
30S/11E-18E1	05/04/2016	05/04/2016	CC 1681406-001	MW

Sampling and Receipt Information: The sample was received, prepared and analyzed within the method specified holding except those as listed in the table below. The holding time for pH is listed as immediate. Logistically this is very difficult to obtain. FGL policy is to analyze all samples requiring pH on the same day of receipt at the laboratory. If this presents any problem please call.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CC 1681406-001	pH	15	13068 Minutes

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	05/06/2016:206340 All analysis quality controls are within established criteria
3010	05/06/2016:205240 All preparation quality controls are within established criteria

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CA ELAP Certification No. 2810

May 16, 2016 Lab ID : CC 1681406
Cleath-Harris Geologists Customer : 8-514

Inorganic - Wet Chemistry QC

2540CE	05/09/2016:205287 All preparation quality controls are within established criteria
300.0	05/05/2016:206276 All analysis quality controls are within established criteria
	05/05/2016:205235 All preparation quality controls are within established criteria
351.2	05/06/2016:205219 All preparation quality controls are within established criteria
4500-H B	05/13/2016:205524 All preparation quality controls are within established criteria
4500HB	05/13/2016:206642 All analysis quality controls are within established criteria
4500NH3G	05/09/2016:206364 All analysis quality controls are within established criteria
	05/09/2016:205282 All preparation quality controls are within established criteria
EPA351.2	05/10/2016:206410 All analysis quality controls are within established criteria

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-05-17

May 16, 2016

Lab ID : CC 1681406-001
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 30S/11E-18E1
Project : Los Osos Baseline GWM

Sampled On : May 4, 2016-11:50
Sampled By : Spencer Harris
Received On : May 4, 2016-15:00
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	0.1	0.1	mg/L		3010	05/06/16:205240	200.7	05/06/16:206340
Sodium	39	1	mg/L		3010	05/06/16:205240	200.7	05/06/16:206340
Wet Chemistry[P:1]								
Chloride	78	1	mg/L		300.0	05/05/16:205235	300.0	05/05/16:206276
Nitrate Nitrogen	11.9	0.1	mg/L		300.0	05/05/16:205235	300.0	05/05/16:206276
Nitrite Nitrogen	ND	0.2	mg/L		300.0	05/05/16:205235	300.0	05/05/16:206276
Nitrogen, Organic	ND	--	mg/L		4500NH3G	05/09/16:205282	4500NH3G	05/09/16:206364
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	05/09/16:205282	4500NH3G	05/09/16:206364
Kjeldahl Nitrogen	ND	1	mg/L		351.2	05/06/16:205219	EPA351.2	05/10/16:206410
Nitrogen, Total as Nitrogen	12	--	mg/L		351.2	05/06/16:205219	EPA351.2	05/10/16:206410
Nitrate + Nitrite as N	11.9	0.1	mg/L		300.0	05/05/16:205235	300.0	05/05/16:206276
Kjeldahl Nitrogen	ND	1	mg/L		351.2	05/06/16:205219	EPA351.2	05/10/16:206410
pH	6.9	--	units		4500-H B	05/13/16:205524	4500HB	05/13/16:206642
Total Dissolved Solids (TFR)	290	20	mg/L		2540CE	05/09/16:205287	2540C	05/10/16:206440
Sulfate	19	2	mg/L		300.0	05/05/16:205235	300.0	05/05/16:206276

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 16, 2016 Lab ID : CC 1681406
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	05/06/16:206340AC	CCV	ppm	5.000	98.5 %	90-110	
			CCB	ppm		0.051	0.1	
			CCV	ppm	5.000	99.6 %	90-110	
			CCB	ppm		0.066	0.1	
Sodium	200.7	05/06/16:206340AC	CCV	ppm	25.00	98.7 %	90-110	
			CCB	ppm		0.11	1	
			CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		0.11	1	
Boron	3010	05/06/16:205240amb	Blank	mg/L		ND	<0.1	
			LCS	mg/L	8.000	90.2 %	85-115	
			MS	mg/L	8.000	99.8 %	75-125	
		(CC 1681370-001)	MSD	mg/L	8.000	90.4 %	75-125	
			MSRPD	mg/L	8.000	9.7%	≤20.0	
			PDS	mg/L	8.000	111 %	75-125	
Sodium	3010	05/06/16:205240amb	Blank	mg/L		ND	<1	
			LCS	mg/L	24.00	87.1 %	85-115	
			MS	mg/L	24.00	99.5 %	75-125	
		(CC 1681370-001)	MSD	mg/L	24.00	78.2 %	75-125	
			MSRPD	mg/L	8.000	3.4%	≤20.0	
			PDS	mg/L	24.00	109 %	75-125	
Wet Chem								
Total Dissolved Solids (TFR)	2540CE	05/09/16:205287CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	1000	98.4 %	90-110	
		(CC 1681404-001)	Dup	mg/L		2.0%	5	
Chloride	300.0	05/05/16:205235MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	101 %	90-110	
			MS	mg/L	500.0	105 %	85-121	
		(CC 1681393-001)	MSD	mg/L	500.0	104 %	85-121	
			MSRPD	mg/L	100.0	0.8%	≤19	
			MS	mg/L	500.0	105 %	85-121	
		(CC 1681399-001)	MSD	mg/L	500.0	105 %	85-121	
			MSRPD	mg/L	100.0	0.3%	≤19	
	300.0	05/05/16:206276MCA	CCB	ppm		0.06	1	
			CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		0.07	1	
			CCV	ppm	25.00	103 %	90-110	
Nitrate	300.0	05/05/16:205235MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	20.00	103 %	90-110	
			MS	mg/L	400.0	104 %	85-119	
		(CC 1681393-001)	MSD	mg/L	400.0	104 %	85-119	
			MSRPD	mg/L	100.0	0.7%	≤19	
			MS	mg/L	400.0	104 %	85-119	
		(CC 1681399-001)	MSD	mg/L	400.0	104 %	85-119	
			MSRPD	mg/L	100.0	0.5%	≤19	
	300.0	05/05/16:206276MCA	CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	104 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	104 %	90-110	
Nitrite	300.0	05/05/16:205235MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	15.00	102 %	90-110	
			MS	mg/L	300.0	104 %	74-126	
		(CC 1681393-001)	MSD	mg/L	300.0	104 %	74-126	
			MSRPD	mg/L	100.0	0.2%	≤20	
			MS	mg/L	300.0	105 %	74-126	
		(CC 1681399-001)	MSD	mg/L	300.0	105 %	74-126	

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May 16, 2016 Lab ID : CC 1681406
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Nitrite	300.0	05/05/16:205235MCA	MSRPD	mg/L	100.0	0.1%	≤20	
	300.0	05/05/16:206276MCA	CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	103 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	15.00	103 %	90-110	
Sulfate	300.0	05/05/16:205235MCA	Blank	mg/L		ND	<2.0	
			LCS	mg/L	50.00	103 %	90-110	
			MS	mg/L	1000	105 %	82-124	
		(CC 1681393-001)	MSD	mg/L	1000	104 %	82-124	
			MSRPD	mg/L	100.0	0.7%	≤23	
			MS	mg/L	1000	105 %	82-124	
		(CC 1681399-001)	MSD	mg/L	1000	105 %	82-124	
			MSRPD	mg/L	100.0	0.2%	≤23	
	300.0	05/05/16:206276MCA	CCB	ppm		0.10	2	
			CCV	ppm	50.00	104 %	90-110	
			CCB	ppm		0.11	2	
			CCV	ppm	50.00	105 %	90-110	
Nitrogen, Total Kjeldahl	351.2	05/06/16:205219jmg	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	73.7 %	73-124	
			MS	mg/L	12.00	69.0 %	54-136	
		(CC 1681406-001)	MSD	mg/L	12.00	60.6 %	54-136	
			MSRPD	mg/L	12.00	13.0%	≤27	
pH	4500-H B	(CC 1681500-001)	Dup	units		0.4%	4.80	
	4500HB	05/13/16:206642JMG	CCV	units	8.000	99.2 %	95-105	
			CCV	units	8.000	99.4 %	95-105	
Ammonia Nitrogen	4500NH3G		MS	mg/L	2.000	107 %	70-130	
		(CC 1681387-003)	MSD	mg/L	2.000	105 %	70-130	
			MSRPD	mg/L	2.000	1.1%	≤20	
	4500NH3G	05/09/16:206364AMB	CCB	mg/L		-0.040	0.2	
			CCV	mg/L	2.000	102 %	90-110	
			CCB	mg/L		0.044	0.2	
			CCV	mg/L	2.000	103 %	90-110	
Nitrogen, Total Kjeldahl	EPA351.2	05/10/16:206410AMB	ICB	mg/L		0.000	0.5	
			ICV	mg/L	5.000	97.1 %	90-110	
			CCB	mg/L		0.000	0.5	
			CCV	mg/L	5.000	103 %	90-110	

Definition

PDS	: PDS failed, matrix - Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
ICV	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.

May 16, 2016 Lab ID : CC 1681406

Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Definition	
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

May 16, 2016

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401

Lab ID : CC 1681421
Customer : 8-514

Laboratory Report

Introduction: This report package contains total of 5 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(2 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
305/116-17N4	05/05/2016	05/05/2016	CC 1681421-001	MW

Sampling and Receipt Information: The sample was received, prepared and analyzed within the method specified holding except those as listed in the table below. The holding time for pH is listed as immediate. Logistically this is very difficult to obtain. FGL policy is to analyze all samples requiring pH on the same day of receipt at the laboratory. If this presents any problem please call.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CC 1681421-001	Nitrite Nitrogen	48	158.07 Hours
CC 1681421-001	pH	15	7084.8 Minutes

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	05/09/2016:206409 All analysis quality controls are within established criteria
3010	05/09/2016:205297 All preparation quality controls are within established criteria

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CA ELAP Certification No. 2810

May 16, 2016 Lab ID : CC 1681421
Cleath-Harris Geologists Customer : 8-514

Inorganic - Wet Chemistry QC

2540CE	05/10/2016:205367 All preparation quality controls are within established criteria
300.0	05/06/2016:206405 All analysis quality controls are within established criteria
	05/06/2016:205298 All preparation quality controls are within established criteria
351.2	05/09/2016:205286 All preparation quality controls are within established criteria
4500-H B	05/10/2016:205370 All preparation quality controls are within established criteria
4500HB	05/10/2016:206468 All analysis quality controls are within established criteria
4500NH3G	05/11/2016:206533 All analysis quality controls are within established criteria
	05/11/2016:205398 All preparation quality controls are within established criteria
4500NO2F	05/12/2016:205447 All preparation quality controls are within established criteria
4500NO3F	05/12/2016:206567 All analysis quality controls are within established criteria
EPA351.2	05/09/2016:206378 All analysis quality controls are within established criteria

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2016-05-17

May 16, 2016

Lab ID : CC 1681421-001
Customer ID : 8-514

Cleath-Harris Geologists
Attn: Spencer Harris
71 Zaca Lane
Suite 140
San Luis Obispo, CA 93401
Description : 305/116-17N4
Project : Los Osos Baseline GWM

Sampled On : May 5, 2016-14:26
Sampled By : Andrea Berge
Received On : May 5, 2016-17:00
Matrix : Monitoring Well

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total[P:1'5]								
Boron	ND	0.1	mg/L		3010	05/09/16:205297	200.7	05/09/16:206409
Sodium	31	1	mg/L		3010	05/09/16:205297	200.7	05/09/16:206409
Wet Chemistry[P:1]								
Chloride	51	1	mg/L		300.0	05/06/16:205298	300.0	05/06/16:206405
Nitrate Nitrogen	7.8	0.1	mg/L		300.0	05/06/16:205298	300.0	05/06/16:206405
Nitrite Nitrogen	ND	0.1	mg/L		4500NO2F	05/12/16:205447	4500NO3F	05/12/16:206567
Nitrogen, Organic	ND	--	mg/L		4500NH3G	05/11/16:205398	4500NH3G	05/11/16:206533
Ammonia Nitrogen	ND	0.2	mg/L		4500NH3G	05/11/16:205398	4500NH3G	05/11/16:206533
Kjeldahl Nitrogen	ND	1	mg/L		351.2	05/09/16:205286	EPA351.2	05/09/16:206378
Nitrogen, Total as Nitrogen	8	--	mg/L		351.2	05/09/16:205286	EPA351.2	05/09/16:206378
Nitrate + Nitrite as N	7.8	0.1	mg/L		300.0	05/06/16:205298	300.0	05/06/16:206405
Kjeldahl Nitrogen	ND	1	mg/L		351.2	05/09/16:205286	EPA351.2	05/09/16:206378
pH	7.2	--	units		4500-H B	05/10/16:205370	4500HB	05/10/16:206468
Total Dissolved Solids (TFR)	190	20	mg/L		2540CE	05/10/16:205367	2540C	05/11/16:206519
Sulfate	17	2	mg/L		300.0	05/06/16:205298	300.0	05/06/16:206405

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: H2SO4 pH < 2, HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.

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May 16, 2016 Lab ID : CC 1681421
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	05/09/16:206409AC	CCV	ppm	5.000	94.3 %	90-110	
			CCB	ppm		0.045	0.1	
			CCV	ppm	5.000	94.9 %	90-110	
			CCB	ppm		0.044	0.1	
Sodium	200.7	05/09/16:206409AC	CCV	ppm	25.00	96.8 %	90-110	
			CCB	ppm		0.1	1	
			CCV	ppm	25.00	97.5 %	90-110	
			CCB	ppm		0.07	1	
Boron	3010	05/09/16:205297AMB	Blank	mg/L		ND	<0.1	
			LCS	mg/L	4.000	106 %	85-115	
			MS	mg/L	4.000	115 %	75-125	
		(VI 1641390-001)	MSD	mg/L	4.000	112 %	75-125	
			MSRPD	mg/L	0.8000	2.5%	≤20.0	
			PDS	mg/L	4.000	112 %	75-125	
Sodium	3010	05/09/16:205297AMB	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	101 %	85-115	
			MS	mg/L	12.00	67.7 %	<¼	
		(VI 1641390-001)	MSD	mg/L	12.00	171 %	<¼	
			MSRPD	mg/L	0.8000	14.4%	≤20.0	
			PDS	mg/L	12.00	82.6 %	75-125	
Wet Chem								
Total Dissolved Solids (TFR)	2540CE	05/10/16:205367CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	1000	96.7 %	90-110	
		(STK1635280-001)	Dup	mg/L		1.3%	5	
Chloride	300.0	05/06/16:205298MCA	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	101 %	90-110	
			MS	mg/L	500.0	108 %	85-121	
		(SP 1604919-003)	MSD	mg/L	500.0	107 %	85-121	
			MSRPD	mg/L	100.0	0.6%	≤19	
			MS	mg/L	500.0	107 %	85-121	
		(CH 1672889-001)	MSD	mg/L	500.0	107 %	85-121	
			MSRPD	mg/L	100.0	0.3%	≤19	
	300.0	05/06/16:206405MCA	CCB	ppm		0.05	1	
			CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		0.06	1	
			CCV	ppm	25.00	103 %	90-110	
Nitrate	300.0	05/06/16:205298MCA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	20.00	104 %	90-110	
			MS	mg/L	400.0	107 %	85-119	
		(SP 1604919-003)	MSD	mg/L	400.0	106 %	85-119	
			MSRPD	mg/L	100.0	0.6%	≤19	
			MS	mg/L	400.0	106 %	85-119	
		(CH 1672889-001)	MSD	mg/L	400.0	106 %	85-119	
			MSRPD	mg/L	100.0	0.3%	≤19	
	300.0	05/06/16:206405MCA	CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	104 %	90-110	
			CCB	ppm		0.000	0.5	
			CCV	ppm	20.00	104 %	90-110	
Sulfate	300.0	05/06/16:205298MCA	Blank	mg/L		ND	<2.0	
			LCS	mg/L	50.00	103 %	90-110	
			MS	mg/L	1000	108 %	82-124	
		(SP 1604919-003)	MSD	mg/L	1000	107 %	82-124	
			MSRPD	mg/L	100.0	0.6%	≤23	
			MS	mg/L	1000	107 %	82-124	
		(CH 1672889-001)	MSD	mg/L	1000	107 %	82-124	

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May 16, 2016 Lab ID : CC 1681421
Cleath-Harris Geologists Customer : 8-514

Quality Control - Inorganic

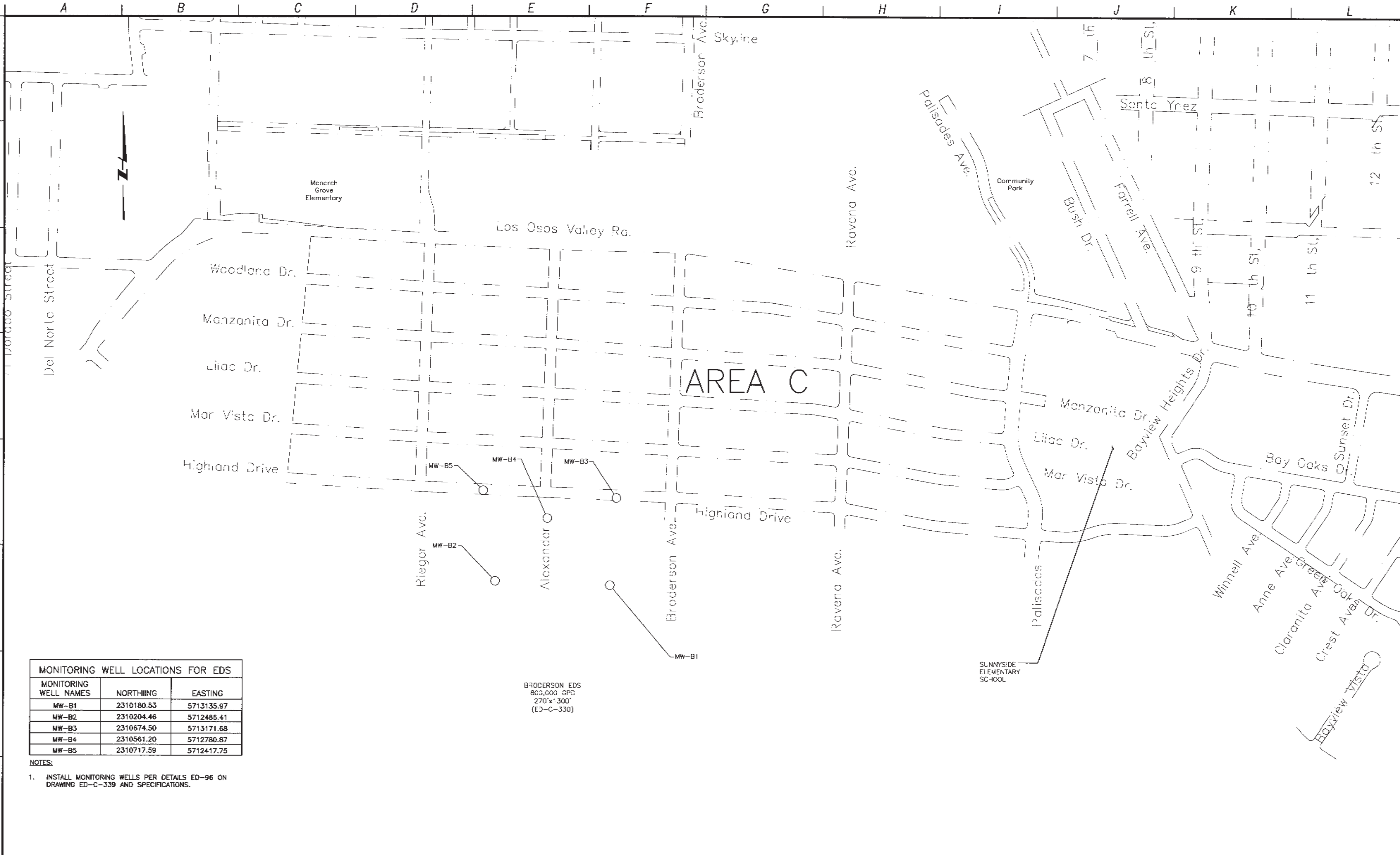
Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Sulfate	300.0	05/06/16:205298MCA	MSRPD	mg/L	100.0	0.3%	≤23	
	300.0	05/06/16:206405MCA	CCB	ppm		0.00	2	
			CCV	ppm	50.00	104 %	90-110	
			CCB	ppm		0.05	2	
			CCV	ppm	50.00	104 %	90-110	
Nitrogen, Total Kjeldahl	351.2	05/09/16:205286jmg	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	85.3 %	73-124	
			MS	mg/L	12.00	71.0 %	54-136	
		(CC 1681421-001)	MSD	mg/L	12.00	74.2 %	54-136	
			MSRPD	mg/L	12.00	4.5%	≤27	
pH	4500-H B	(STK1635326-002)	Dup	units		0.0%	4.80	
	4500HB	05/10/16:206468JMG	CCV	units	8.000	100 %	95-105	
			CCV	units	8.000	101 %	95-105	
Ammonia Nitrogen	4500NH3G		MS	mg/L	2.000	75.7 %	70-130	
		(SP 1604899-002)	MSD	mg/L	2.000	76.8 %	70-130	
			MSRPD	mg/L	2.000	1.4%	≤20	
	4500NH3G	05/11/16:206533AMB	ICB	mg/L		0.000	0.2	
			ICV	mg/L	2.000	92.2 %	90-110	
			CCB	mg/L		0.000	0.2	
			CCV	mg/L	2.000	90.2 %	90-110	
Nitrite as Nitrogen	4500NO2F		MS	mg/L	1.270	91.0 %	50-150	
		(CC 1681423-001)	MSD	mg/L	1.270	84.4 %	50-150	
			MSRPD	mg/L	1.270	7.5%	≤30	
	4500NO3F	05/12/16:206567AMB	CCB	mg/L		0.009	0.2	
			CCV	mg/L	1.270	99.4 %	90-110	
			CCB	mg/L		0.01	0.2	
			CCV	mg/L	1.270	99.1 %	90-110	
Nitrogen, Total Kjeldahl	EPA351.2	05/09/16:206378AMB	CCB	mg/L		0.000	0.5	
			CCV	mg/L	5.000	96.8 %	90-110	
			CCB	mg/L		-0.395	0.5	
			CCV	mg/L	5.000	109 %	90-110	

Definition

PDS	: PDS failed, matrix - Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
ICV	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

APPENDIX D

Broderson Monitoring Well
Location Map and Boring Logs



MONITORING WELL LOCATIONS FOR EDS

MONITORING WELL NAMES	NORTHING	EASTING
MW-B1	2310180.53	5713135.97
MW-B2	2310204.46	5712486.41
MW-B3	2310674.50	5713171.68
MW-B4	2310561.20	5712780.87
MW-B5	2310717.59	5712417.75

NOTES:

1. INSTALL MONITORING WELLS PER DETAILS ED-96 ON DRAWING ED-C-339 AND SPECIFICATIONS.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: BJC
DRAWN BY: WKT
CHECKED BY: RLA
DATE: APRIL, 2012

CDM Smith
2295 Gateway Oaks Drive, Suite 240
Sacramento, CA 95833
Tel: (916) 567-9900

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN ADJUST SCALE ACCORDINGLY

DIGALERT
DIAL TOLL FREE 1-800-642-2444
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA

LOS OSOS WASTEWATER COLLECTION SYSTEM

GENERAL
EFFLUENT DISPOSAL SYSTEM
OVERALL KEY PLAN

PROJECT NO. 42502-83120
FILE NAME: C-G-007
SHEET NO.
C-G-007

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

Monitoring Well Log

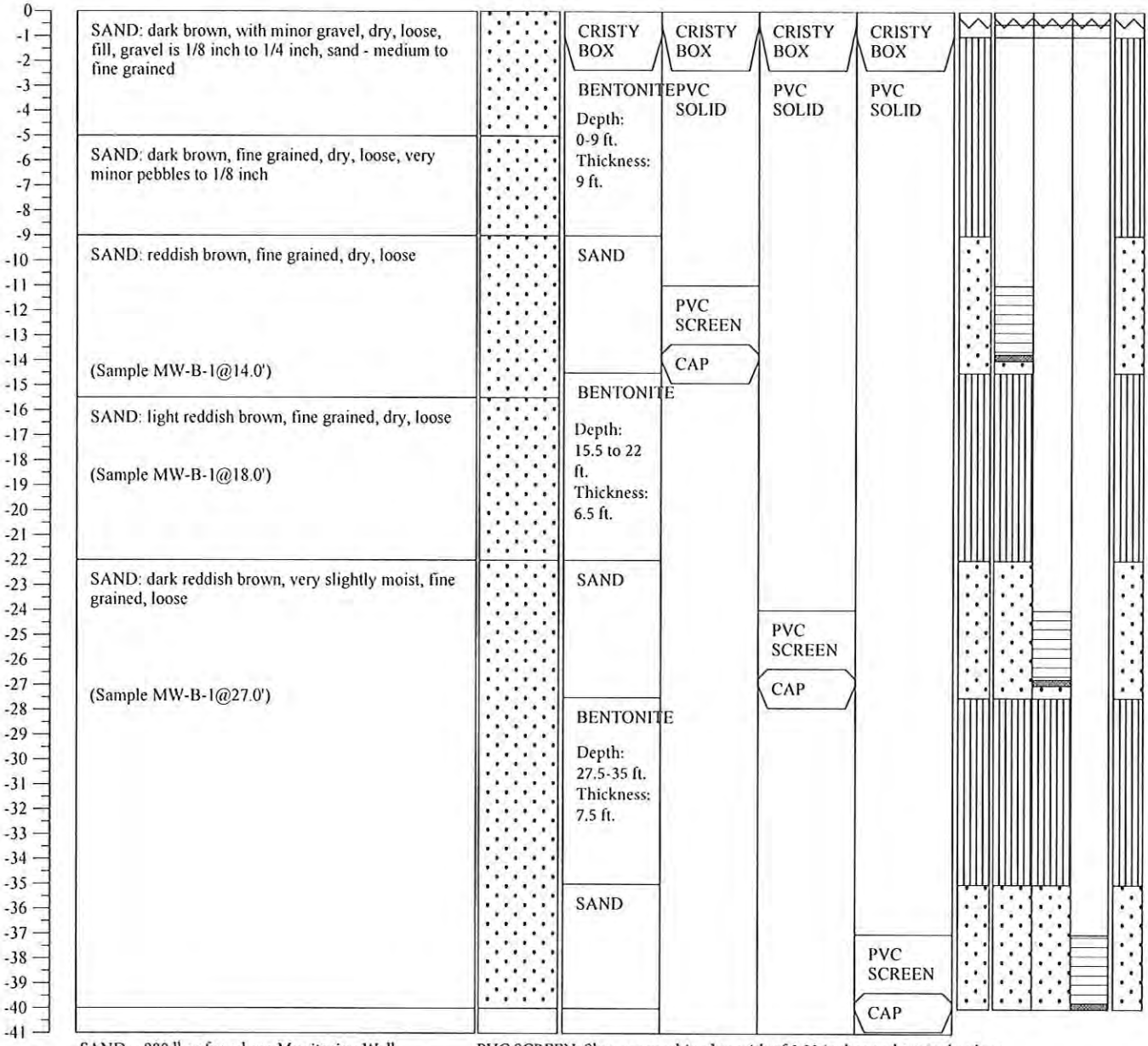
BORING NO. **MW- B-1**

JOB NO. **SL08401-1**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**EDS Monitoring Well Boderson Site**	DRILL RIG:	**CME 75**
DRILLING LOCATION:	**Per Client**	HOLE DIAMETER	**10 Inches**
DATE DRILLED:	**April 21, 2014**	SAMPLING METHOD:	**Bag**
LOGGED BY:	**John Kammer**	START TIME:	**9:13 am**

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **40.0 Feet**

DEPTH	SOIL DESCRIPTION	LITHOLOGY	ANNULAR MATERIAL	14 FEET WELL CASING MATERIAL	27 FEET WELL CASING MATERIAL	40 FEET WELL CASING MATERIAL	WELL CROSS SECTION



SAND: ~800 lbs of sand per Monitoring Well

PVC SCREEN: Slots are machined to with of 0.02 inches and 1.5 inches long symmetrically cut around the pipe (typical)

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

Monitoring Well Log

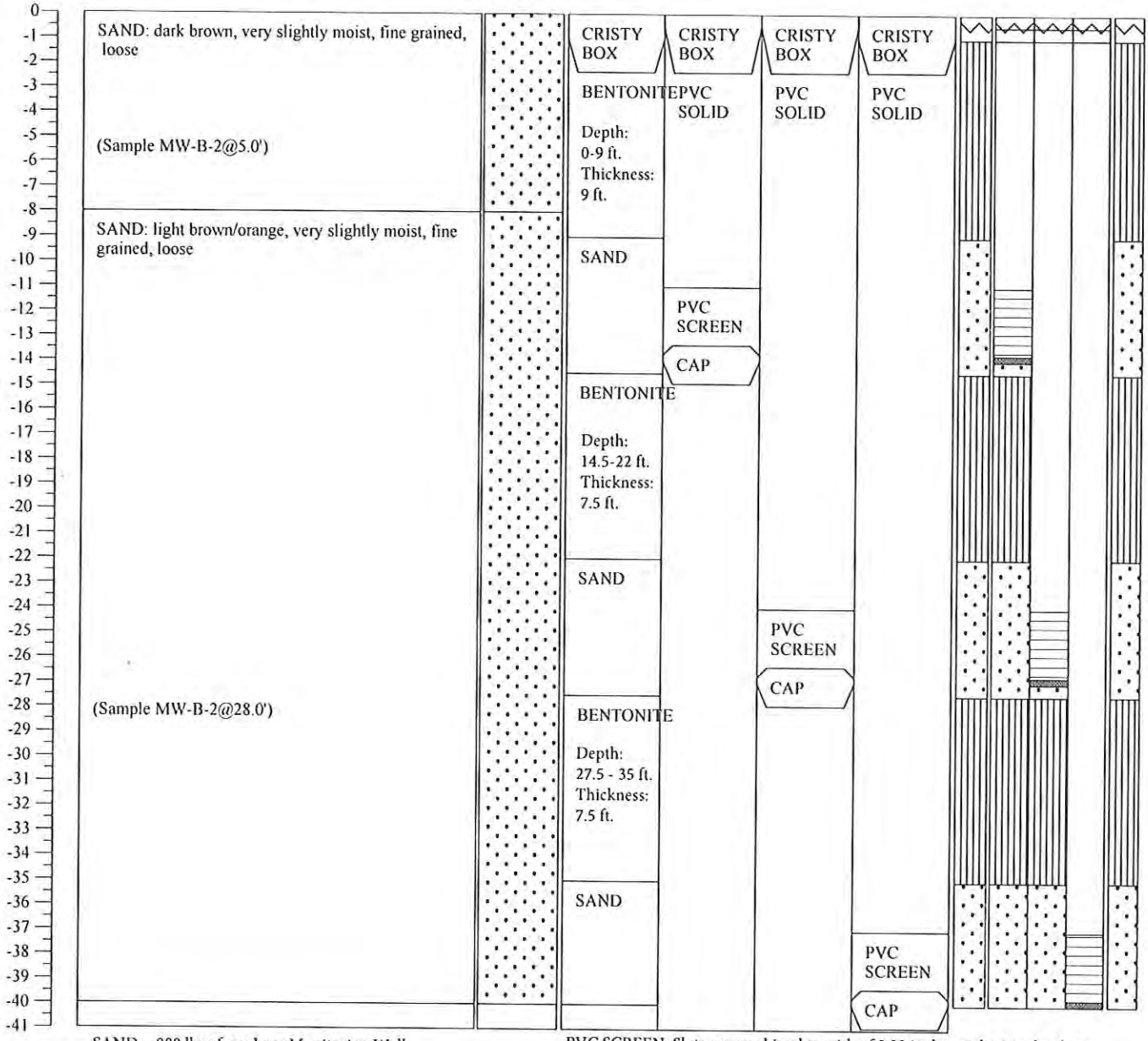
BORING NO. **MW- B-2**

JOB NO. **SL08401-1**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**EDS Monitoring Well Boderson Site**	DRILL RIG:	**CME 75**
DRILLING LOCATION:	**Per Client**	HOLE DIAMETER	**10 Inches**
DATE DRILLED:	**April 21, 2014**	SAMPLING METHOD:	**Bag**
LOGGED BY:	**John Kammer**	START TIME:	**1:18 pm**

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **40.0 Feet**

DEPTH	SOIL DESCRIPTION	LITHOLOGY	ANNULAR MATERIAL	14 FEET WELL CASING MATERIAL	27 FEET WELL CASING MATERIAL	40 FEET WELL CASING MATERIAL	WELL CROSS SECTION



SAND: ~800 lbs of sand per Monitoring Well

PVC SCREEN: Slots are machined to with of 0.02 inches and 1.5 inches long symmetrically cut around the pipe (typical)

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

Monitoring Well Log

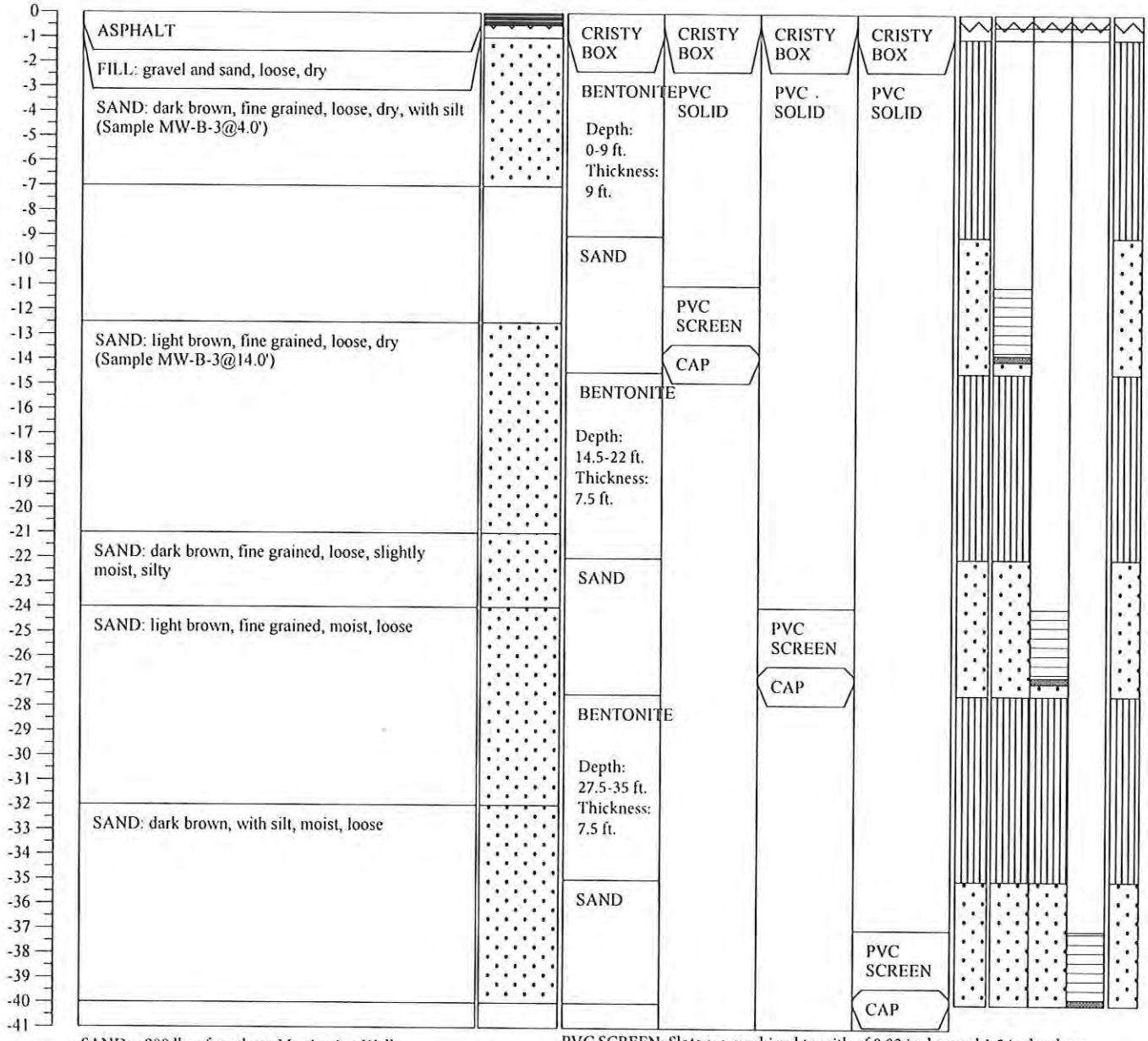
BORING NO. **MW- B-3**

JOB NO. **SL08401-1**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**EDS Monitoring Well Boderson Site**	DRILL RIG:	**CME 75**
DRILLING LOCATION:	**Per Client**	HOLE DIAMETER	**10 Inches**
DATE DRILLED:	**April 23, 2014**	SAMPLING METHOD:	**Bag**
LOGGED BY:	**John Kammer**	START TIME:	**10:50 am**

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **40.0 Feet**

DEPTH	SOIL DESCRIPTION	LITHOLOGY	ANNULAR MATERIAL	14 FEET WELL CASING MATERIAL	27 FEET WELL CASING MATERIAL	40 FEET WELL CASING MATERIAL	WELL CROSS SECTION



SAND: ~800 lbs of sand per Monitoring Well

PVC SCREEN: Slots are machined to with of 0.02 inches and 1.5 inches long symmetrically cut around the pipe (typical)

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

Monitoring Well Log

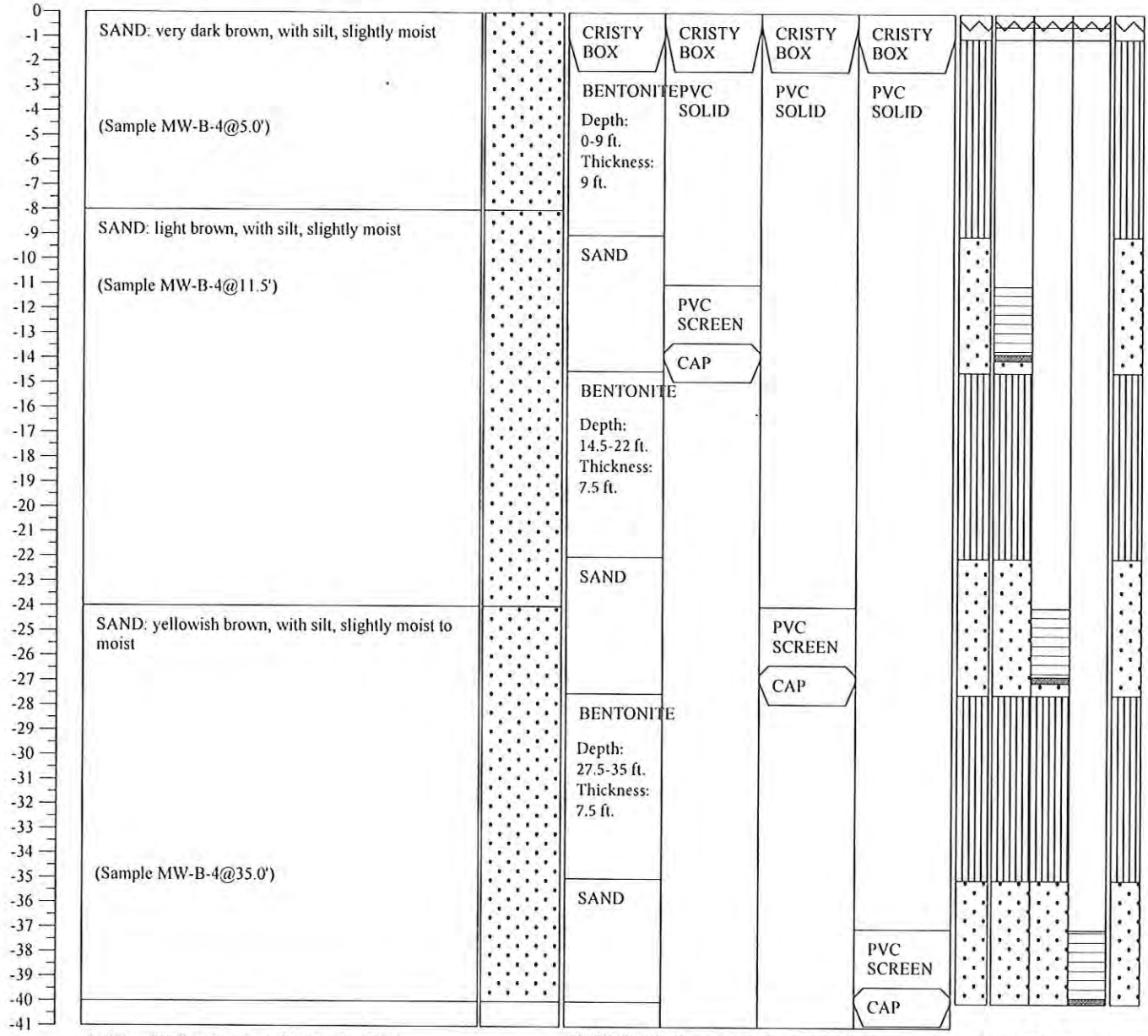
BORING NO. **MW- B-4**

JOB NO. **SL08401-1**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**EDS Monitoring Well Boderson Site**	DRILL RIG:	**CME 75**
DRILLING LOCATION:	**Per Client**	HOLE DIAMETER	**10 Inches**
DATE DRILLED:	**April 22, 2014**	SAMPLING METHOD:	**Bag**
LOGGED BY:	**Jeff Pfost**	START TIME:	**8:15 am**

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **40.0 Feet** Page 4 of 5

DEPTH	SOIL DESCRIPTION	LITHOLOGY	ANNULAR MATERIAL	14 FEET WELL CASING MATERIAL	27 FEET WELL CASING MATERIAL	40 FEET WELL CASING MATERIAL	WELL CROSS SECTION



SAND: ~800 lbs of sand per Monitoring Well

PVC SCREEN: Slots are machined to with of 0.02 inches and 1.5 inches long â€©symmetrically cut around the pipe (typical)

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

Monitoring Well Log

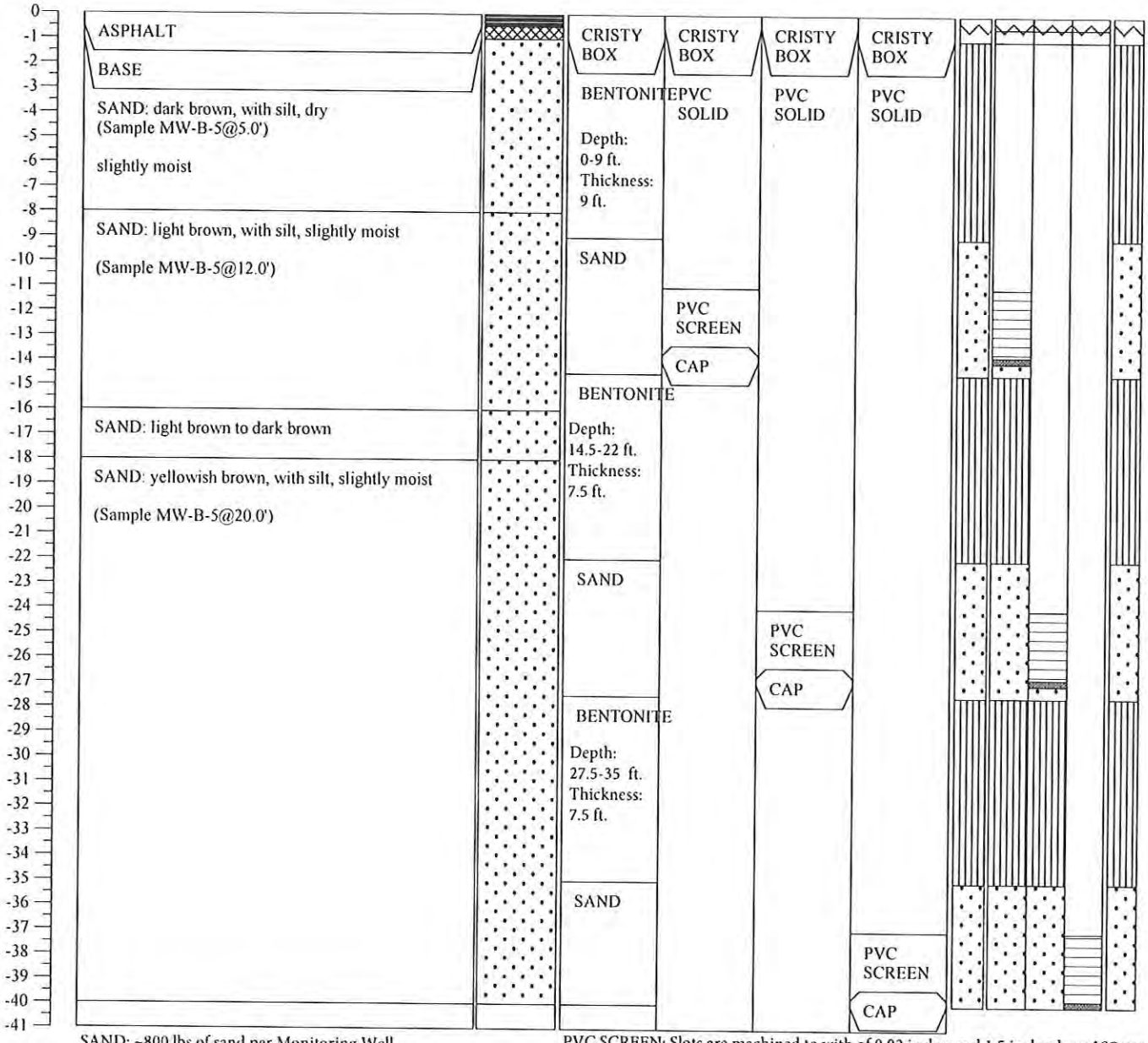
BORING NO. **MW- B-5**

JOB NO. **SL08401-1**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**EDS Monitoring Well Boderson Site**	DRILL RIG:	**CME 75**
DRILLING LOCATION:	**Per Client**	HOLE DIAMETER	**10 Inches**
DATE DRILLED:	**April 22, 2014**	SAMPLING METHOD:	**Bag**
LOGGED BY:	**Jeff Pfost**	START TIME:	**11:34 am**

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **40.0 Feet**

DEPTH	SOIL DESCRIPTION	LITHOLOGY	ANNULAR MATERIAL	14 FEET WELL CASING MATERIAL	27 FEET WELL CASING MATERIAL	40 FEET WELL CASING MATERIAL	WELL CROSS SECTION



SAND: ~800 lbs of sand per Monitoring Well

PVC SCREEN: Slots are machined to with of 0.02 inches and 1.5 inches long â€©symmetrically cut around the pipe (typical)