

TECHNICAL MEMORANDUM

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DATE: January 13, 2014

SUBJECT: Technical Memorandum
Groundwater Monitoring Well Installation
Owens Lake Groundwater Development Program
As-Needed Geotechnical Services
Task Order No. 19, LADWP Agreement No. 47805

ATTACHMENTS: Plate 1 – Site Location Map
Appendix A – Boring Logs
Appendix B – Soil Core Photographs
Appendix C – Soil Analytical Results
Appendix D – Well Construction Diagrams
Appendix E – Pumping Test Results
Appendix F – Water Quality Results

1 INTRODUCTION

Kleinfelder West, Inc. (Kleinfelder) is pleased to present this technical memorandum summarizing the groundwater monitoring well installation, well development, and limited pumping tests performed for the Los Angeles Department of Water and Power's (LADWP) Owens Lake Groundwater Development Program. This memorandum was prepared in accordance with our authorized scope of services for Task Order 19 presented in our proposal dated June 14, 2013 (authorized June 24, 2013), and amended based on our email dated November 8, 2013 (authorized November 20, 2013).

2 BACKGROUND

Owens Lake is located in the southern part of Owens Valley, which is a generally north–south trending valley in the western part of the Basin and Range geomorphic province (CGS, 2002). Owens Valley is an asymmetrical down dropped fault block, or graben, located between the Sierra Nevada on the west and the White and Inyo Mountains on

the east. The Owens Valley is incised by one major stream, the Owens River, which meanders southward to its terminus at the Owens Lake Playa. Numerous tributaries of the Owens River drain the Sierra Nevada on the west and have formed extensive coalesced alluvial fans along the west side of the valley. The fans form a prominent alluvial apron that nearly extends to the middle of the valley. Alluvial deposits on the east side of the valley are much smaller and disconnected, providing the valley's asymmetrical appearance (Hollett et al, 1991).

Glaciation in the Sierra Nevada produced abundant sediments that continue to be transported to the Owens Valley by perennial streams. The valley fill is comprised of a heterogeneous mixture of unconsolidated to moderately consolidated sediments that range in size from large boulders to glacial flour and lacustrine silts and clays. The various sediments are deposited in a complex arrangement of inter-fingering and layering caused by fluvial, lacustrine, alluvial fan, littoral, deltaic, colluvial and glacial deposits. Sediments within the Owens Lake basin range in thickness from a few feet at the valley margins to over 8,000 feet beneath the Owens Lake Playa (Hollett et al, 1991).

3 PROJECT DESCRIPTION

The Owens Lake Playa is an approximately 110 square-mile part of the Owens Valley Planning Area, in Inyo County, California (Plate 1, Site Location Map). Owens Lake Playa is bounded by State Route (SR) 136 to the north and east, SR 190 to the south, and United States (US) Highway 395 to the west. The project area includes portions of the Bartlett, Dolomite, Keeler, Lone Pine, Olancho, Owens Lake, and Vermillion Canyon 7.5 minute US Geological Survey (USGS) quadrangles. The nearest community to the project site is Lone Pine, about 2 miles north of the northern limits of the project area. Other nearby communities include Swansea, Dolomite, and Keeler to the east and Cartago and Olancho to the south.

This project is part of a larger groundwater monitoring program to study the effects of potential LADWP groundwater pumping for dust mitigation activities at Owens Lake. This project consists of constructing groundwater monitoring wells for developing a baseline of water levels in the shallow aquifer underlying Owens Lake playa and adjacent areas; and to serve as observation points during pumping tests for future studies. The following sections summarize the scope of services provided under this Task Order.

4 FIELD EXPLORATION AND MONITORING WELL CONSTRUCTION

4.1 Field Exploration

Kleinfelder installed groundwater monitoring wells (4-inch diameter) within fourteen borings advanced using sonic drilling technology. The fourteen borings were drilled between July 17th and September 29th, 2013 using a Prosonic 600C sonic drilling rig provided by Cascade Drilling LLC of La Habra, California, equipped with 8-inch nominal diameter steel conductor casing and a 6-inch nominal diameter core barrel. Depending on conditions encountered, 7-inch- and 9-inch-diameter conductor casings were also utilized during part of the drilling. The 9-inch casing was used in the upper part of several of the borings as a safeguard to control flows if artesian conditions were encountered. The 7-inch casing was used in several borings to increase drilling efficiency, reduce the amount of cuttings generated, and to reduce the amount of materials needed to backfill the over-drilled portion of some borings. The approximate locations of the monitoring wells selected by LADWP, designated wells MW-1 through MW-14 (LADWP ID Numbers T-930, T-931, and T-918 through T-929, respectively), are presented on Plate 1, Site Location Map.

The borings were advanced to depths ranging from 75 feet to 268 feet below ground surface (bgs). The termination depth of each boring was determined in the field by Kleinfelder's field geologist and LADWP's field representative. Factors that influenced termination of the borings included depth of first encountered groundwater, drilling progress, and types of soils encountered.

Soil cores were collected in polyethylene sleeves from each of the sonic borings from sample "runs" that were typically 10-feet long. Kleinfelder provided a California-licensed Certified Engineering Geologist to log the cores and provide drilling oversight. Our staff visually classified the soil in general accordance with the Unified Soil Classification System (USCS) and ASTM D2488 and maintained logs of the soil stratigraphy. Logs of Kleinfelder's borings (including a Key to Log of Boring) are presented in Appendix A, Boring Logs, in gINT[®] (Bentley Systems Inc., 2012) format.

4.2 Soil Core Photographs

Photographs of the cores were taken in the field under natural light after they were logged. The photos depict the sediments and stratigraphy recovered in the soil cores.

The photographs have been saved to a Digital Video Disk (DVD) and are presented as Appendix B, Soil Core Photographs.

4.3 Soil Analytical Sampling and Testing

As requested by LADWP, Kleinfelder collected soil samples to test for Volatile Organic Compounds (VOCs), Total Petroleum Hydrocarbons (TPH), and California Title 22 metals. Composite samples, generally from the upper 20 feet bgs at each boring were collected for analytical testing. Samples were collected in 4-ounce glass jars and capped with tight-fitting Teflon® lined plastic lids. Samples were labeled and kept in a cooler containing ice until they were transported to our subcontractor lab, Enviro-Chem, under chain-of-custody protocol. The remainder of each soil core was stockpiled pending results of the analytical testing.

Environmental laboratory tests performed consisted of the following:

- VOCs using United States Environmental Protection Agency (US EPA) Method 8260B;
- TPH using US EPA Method 8015B;
- California Code of Regulations (CCR) Title 22 metals using US EPA Methods 6010B and 7471A ;

Results of the analytical testing were presented to LADWP. Upon receipt of the analytical testing results, LADWP spread the stockpiled soil cores on the ground in the vicinity of boring location. Copies of the chain-of-custody documentation and laboratory reports are provided in Appendix C, Laboratory Analytical Reports.

4.4 Monitoring Well Construction

At the completion of drilling activities, groundwater monitoring wells were constructed. The borings for wells MW-2 through MW-4 and MW-10 through MW-14 (T-931, T-918, T-919, and T-925 through T-929, respectively) were drilled deeper than the depth required for well installation. Prior to constructing these wells, the overdrilled portion of the boring was backfilled with a grout mixture consisting of Portland cement and approximately 5 percent bentonite powder. The grout was placed by tremie and allowed to cure overnight.

Monitoring wells were constructed with 4-inch diameter Schedule 10 A304 stainless steel well casing. All groundwater monitoring wells constructed for this project include a

30-foot screened interval, 5-foot stainless steel sump, and stainless steel bottom cap. The screened interval consists of three 10-foot segments of wire wrapped screen with 0.050-inch slots.

Filter media consists of 8 x 16 gradation (8-mesh) washed well-sand. The length of the filter media surrounding the well screen varies. The filter media extends from between 2 to 5 feet below the bottom of the sump and from 5 to 20 feet above the screen.

A minimum 22-foot sanitary seal was installed above the filter media and, in general, consisted of at least 5-feet of bentonite pellets in submerged intervals and hydrated bentonite chips in dry intervals (dry bentonite chips were placed and then hydrated with water). The interval above the bentonite pellets or chips was backfilled with the same grout mixture used to backfill the overdrilled portion of the boreholes.

The wells were constructed such that the top of the well casing was approximately 2 to 3 feet above ground surface. The above-ground well casing was protected by a 12-inch diameter well monument with a hinged and lockable lid. One of the well heads (MW-10 T-925) was constructed with valves, etc. due to the presence or potential presence of artesian pressures. Well construction diagrams for each well are presented in Appendix D, Well Construction Diagrams. We understand that LADWP crews constructed concrete pads around each well and installed concrete-filled bollards at the corners of the pads to protect the wellheads. Well locations are summarized in Table 1 below and presented on Plate 1.

Table 1. Summary of Well Locations

Well ID	LADWP ID	Northing*	Easting*	Ground Elevation*	Top of Casing (TOC) Elevation (ft., NAVD 88)
		(NAD 83)	(NAD 83)	(ft., NAVD 88)	
MW-1	T-930	2082073.922	6834844.218	4231.589	4233.522
MW-2	T-931	2079365.935	6849069.180	3616.905	3620.069
MW-3	T-918	2074993.217	6843937.347	3604.901	3606.203
MW-4	T-919	2065111.190	6848664.894	3599.726	3601.722
MW-5	T-920	2063270.236	6843092.912	3810.684	3812.925
MW-6	T-921	2046600.064	6843511.625	3811.330	3813.187
MW-7	T-922	2037549.126	6848889.481	3669.468	3671.309
MW-8	T-923	2020517.887	6849558.507	3650.283	3653.137
MW-9	T-924	2000709.956	6845353.119	3760.374	3762.287
MW-10	T-925	1991137.072	6858068.020	3618.750	3621.795
MW-11	T-926	1971445.096	6864406.827	3715.439	3717.093
MW-12	T-927	2020539.137	6888289.951	3635.118	3636.858
MW-13	T-928	2049346.862	6901459.383	3633.461	3635.116
MW-14	T-929	2082260.919	6875121.507	3632.190	3634.112

*Survey data presented in the Table 1 was provided by LADWP

4.5 Monitoring Well Development

To complete well construction, the groundwater monitoring wells were developed using a combination of surging, bailing, and pumping. Well development took place between September 24th and October 3rd, 2013. The intent of the well development was to remove sediments from within the well casing and improve water flow through the filter media into the well casing. Observations of well performance and groundwater-level recovery rates were used to assess whether the wells could sustain reasonable pumping rates for subsequent constant rate pumping tests. Table 2, below, provides a summary of general well construction details and methods applied at each well.

Table 2. Well Development Summary

Well ID	LADWP ID	Boring Depth BGS (ft.)	Well Depth BGS (ft.)	Screened Interval BGS (ft.)	Water Level BTOC* (ft.)	Date (2013)	Development Methods			Recovery Monitored
							Surge	Bail	Pump	
MW-1	T-930	75	73	38-68	38.2	9-26	Yes	Yes	No	Yes
MW-2	T-931	127	62	27-57	14.02	9-24	Yes	Yes	No	No
MW-3	T-918	197	68	33-63	20.52	10-3	Yes	Yes	No	Yes
MW-4	T-919	220	73	38-68	17.5	9-30	Yes	Yes	@ 3 GPM	Yes
MW-5	T-920	256.5	253	218-248	210.25	9-27	Yes	Yes	No	No
MW-6	T-921	268	263	228-258	230.08	10-1	Yes	Yes	No	No
MW-7	T-922	140	133	98-128	89.8	10-1	Yes	Yes	No	No
MW-8	T-923	118	113	78-108	69.6	10-2	Yes	Yes	No	No
MW-9	T-924	188	183	148-178	137.9	9-27	Yes	Yes	No	No
MW-10	T-925	132	78	43-73	~-4.0	10-2	Yes	Yes	@ 35 GPM	Yes
MW-11	T-926	172	98	63-93	29.36	9-24	Yes	Yes	@ 3 GPM	Yes
MW-12	T-927	154	68	33-63	28.7	9-25	Yes	Yes	@ 3 GPM	No
MW-13	T-928	196	93	58-88	27.92	9-25	Yes	Yes	@ 3 GPM	No
MW-14	T-929	200	93	58-88	8.1	9-26	Yes	Yes	@ 3.25 GPM	No

*BTOC – Below Top of Casing

5 AQUIFER PUMPING TESTS

Based on the results of drawdown and recovery during well development, nine wells (MW-2, MW-5 and MW-7 through MW-14) were selected by LADWP to undergo pumping tests. Pumping tests were performed between September 24th and October 4th, 2013.

5.1 Pumping Test Procedures

The pumping tests utilized 0.33 to 5 horsepower submersible electric pumps powered by portable generators. The pumps, generators, and support vehicles for the aquifer pumping tests were provided by Jet Drilling of Signal Hill California. During the pumping tests, the discharge rates and volumes were monitored and recorded using an electronic flow meter and totalizer (GPI model TM200-N). A graduated 5-gallon bucket was used to manually measure flow rate periodically to validate that the flow meter was working properly. The pumping tests were performed at flow rates that ranged from approximately 3 gpm to approximately 100 gpm. The pumping rates were adjusted

during the first few minutes of each test to a rate that could be sustained without causing water level drawdown to the pump intake elevation. The duration of the pumping tests ranged from 45 to 120 minutes.

Water-level data were collected before, during, and after aquifer pumping tests. A non-vented 100 pound-per square inch (psi) water-level transducer was pre-programmed to record data at a frequency of 30 seconds at wells MW-9 (T-924) and MW-12 (T-927). Data was recorded at 2-second intervals for wells MW-2, MW-5, MW-7, MW-8, MW-10, and MW-13 (T-931, T-920, T-922, T-923, T-925, and T-928, respectively). The transducer was attached to the pump assembly and lowered into the pumping well. The transducer recorded data for approximately 10 minutes before pumping to establish baseline conditions. The transducer was also checked frequently throughout the test period to ensure it was working properly and recording data. Post-pumping water-levels were measured to monitor recovery of the aquifer and the time to return to approximately 95 percent of pre-pumping water-levels.

A summary of the pumping test data is presented in Table 3, Pumping Test Summary, in Section 5.2. Table 3 includes pumping rates measured by the flow meter, flow rates measured manually, and the quantity of groundwater pumped during the pumping test.

5.2 Pumping Test Data Analysis

Kleinfelder's hydrogeologist analyzed the pumping test data using AQTESOLV® Professional v.4.50.002 (HydroSOLVE, Inc., 2007) using the Tartakovsky-Neuman (Tartakovsky and Neuman, 2007) method of analysis. This method uses corrections for unconfined conditions that incorporate well construction specifications, and aquifer thickness. Following are the assumptions implicit in the selected method:

- aquifer has infinite areal extent;
- aquifer is homogeneous and of uniform thickness;
- aquifer potentiometric surface is initially horizontal;
- pumping well is fully or partially penetrating;
- flow is unsteady; and
- aquifer is unconfined with delayed gravity response.

The results of the pumping test analyses are presented in Appendix E, Pumping Test Results. Transmissivity, specific yield, and storativity values estimated from our

analysis are provided in Table 3 below. Hydraulic conductivity was calculated using the depth to water table at the time of the pumping test to the bottom of the screened interval of the monitoring well.

Table 3. Pumping Test Summary

Well ID	LADWP ID	Date Tested (2013)	Initial Water Level BGS (ft.)	Q (GPM)	Drawdown (ft.)	Volume pumped (Gallons)	Duration of Pumping (minutes)	Estimated Transmissivity (T) (ft ² /day)	Estimated Specific Yield (Sy)	Storativity (S)	Anisotropy Ratio (Kz/Kr)	Hydraulic Conductivity (K) (ft/day)
MW-2	T-931	10/03	14.27	35	11.73	3,910	120	731	0.2	0.002869	0.5012	17.11
MW-5	T-920	10/03	210.1	45	7.83	3,041	75	3,113	0.2	0.000119	0.1	82.14
MW-7	T-922	10/04	90.01	33	4.14	1,830	75	1,490	0.05	0.000119	0.5188	39.22
MW-8	T-923	10/04	69.75	39	10.01	2,941	75	1,792	0.2	0.000119	1.0	46.85
MW-9	T-924	10/01	138.07	33	13.14	1,903	60	879	0.2	0.000119	1.0	22.01
MW-10	T-925	10/04	~4 ft. of head (Artesian)	50	47.65	2,369	45	436	0.2	0.000119	0.26	6.34
MW-11	T-926	09/24	29.36	3	60.04	180	60	~8	0.2	0.2076	0.01084	0.13
MW-12	T-927	10/02	30.5	100	18.45	12,108	120	2,422	0.2	0.000903	1.0	73.51
MW-13	T-928	10/02	27.99	65	31.06	8,828	105	1,505	0.2	0.000514	0.537	25.08

Q – Flow rate measured in gallons per minute

6 WATER QUALITY ANALYSIS

Kleinfelder assisted LADWP personnel collect groundwater samples from the 14 monitoring wells after well development had occurred. Kleinfelder provided submersible sampling pumps, electric generator, and labor to deploy and operate the equipment. LADWP personnel collected the samples and transported them to their environmental laboratory in Los Angeles. The results of the water quality analyses are summarized in Table 4, Water Quality Results for 14 Owens Lake Monitoring Wells (prepared by LADWP). The results of the Water Quality Analyses and graphical presentations of concentrations of metals and general chemistry (prepared by LADWP) are provided in Appendix F, Water Quality Results.

Table 4 - Water Quality Results for 14 Owens Lake Monitoring Wells

Method	Analysis Requested	Well Number														MCL (mg/L)	PHG (mg/L)	Secondary MCL (mg/L)
		T918	T919	T920	T921	T922	T923	T924	T925	T926	T927	T928	T929	T930	T931			
EPA 300.0	Nitrite-N (mg/L)	< 0.03	< 0.03	1.34	0.44	0.43	< 0.03	0.19	0.02	< 0.03	< 0.03	< 0.03	0.23	0.31	< 0.03	1	1	
EPA 300.0	Chloride (mg/L)	2080	228	5.07	25.1	8.84	577	5.39	34.3	20.8	1727	232	77	18.3	16.0			250
EPA 300.0	Phosphate (mg/L)	0.69	< 0.1	< 0.1	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1			
EPA 300.0	Sulfate (mg/L)	141	151	6.86	30.6	9.12	275	46.1	43.8	15.4	806	416	14.9	57.2	51.5			
SM 2540 C	TDS (mg/L)	6250	1603	154	290	125	2858	257	227	246	4490	1213	646	456	453			500
SM 4500 NH3 G	Ammonia-N (mg/L)	67.7	2.45	< 0.2	0.42	< 0.2	2.13	< 0.2	< 0.2	< 0.2	0.30	< 0.2	5.69	< 0.2	3.44			
SM 2320 B	Alkalinity (mg/L)	2468	912	80	188	74	1198	126	58	152	172	230	410	254	310			
SM 2320 B	Carbonate (mg/L)	2320	92	0	88	0	0	0	20	0	0	104	0	0	0			
SM 5310 C	TOC (mg/L)	37	2.9	< 0.4	2.6	< 0.4	1.8	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.79	0.77	2.5			
SM 4500 H+B	pH	10.65	12.0	7.43	11.03	7.44	6.81	7.39	9.12	7.72	6.95	8.75	7.75	7.5	7.08			6.5 - 8.5
EPA 120.1	Specific Conductivity (us/cm)	10350	5050	204	732	202	4570	367	170	390	7010	2070	1120	710	790			
EPA 180.1	Turbidity (ntu)	938	32.2	35.7	284	3.74	98.3	< 1	< 1	13.4	4.42	2.14	2.14	208	9.52			
EPA 200.7	Boron (mg/L)	25.5	3.93	< 0.009	0.105	< 0.009	21.0	0.05	0.055	0.432	22.8	8.46	1.75	0.088	0.309			
EPA 200.7	Lithium (mg/L)	0.319	0.124	0.025	0.057	0.043	0.849	0.053	0.149	0.030	0.752	0.319	0.779	0.061	0.060			
EPA 200.7	Magnesium (mg/L)	29.1	0.365	3.93	6.8	6.44	34.0	2.98	10.2	7.31	27.1	4.08	48.8	13.1	18.1			
EPA 200.7	Manganese (mg/L)	0.893	0.028	0.378	0.484	0.146	0.874	0.165	0.937	0.115	0.151	0.398	0.129	0.363	0.586			0.05
EPA 200.7	Sodium (mg/L)	3690	585	14.7	63.1	9.09	957	47.8	17.0	39.5	1790	488	106	86.5	75.7			
EPA 200.7	Antimony (mg/L)	0.0218	ND	ND	ND	0.00580J	ND	0.00610J	ND	ND	ND	ND	0.0145	0.00700J	0.00700J	-	0.0007	
EPA 200.7	Arsenic (mg/L)	0.182	0.0883	ND	0.0238J	ND	0.0351	0.00730J	0.0277	0.0095J	0.0426	0.105	0.0217	0.0399	ND	0.01	0.000004	
EPA 200.7	Barium (mg/L)	0.279	0.0579	0.0503	0.111	0.0149J	0.170	0.0172J	0.00760J	0.0415	ND	0.0214J	0.099	0.0541	0.0808	1	2	
EPA 200.7	Beryllium (mg/L)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.004	0.001	
EPA 200.7	Cadmium (mg/L)	0.00270J	ND	ND	0.00180J	ND	ND	ND	ND	ND	ND	ND	ND	0.00140J	ND	0.005	0.001	
EPA 200.7	Chromium (T) (mg/L)	0.0993	0.0072J	0.0269	0.0867	0.0145J	0.00770J	0.00730J	0.00780J	0.0174J	0.000610J	ND	0.0120J	0.0754	ND	0.05	-	
EPA 200.7	Cobalt (mg/L)	0.0126	ND	ND	0.00770	ND	ND	ND	ND	ND	ND	ND	ND	0.00350J	ND			
EPA 200.7	Copper (mg/L)	0.0332J	ND	ND	0.0182J	ND	ND	ND	ND	ND	ND	ND	0.0110J	ND	ND	1.3*	0.3	1.0
EPA 200.7	Lead (mg/L)	0.0554	0.00900J	0.0113J	0.0233	ND	0.00780J	0.00710J	ND	ND	0.00690J	0.00600J	0.0134J	0.0172J	0.0115J	0.015*	0.0002	
EPA 200.7	Molybdenum (mg/L)	0.133	0.0349	0.0199	0.0496	0.0189	0.0760	0.0333	0.00450J	0.0220	0.0684	0.0147	0.0047J	0.0741	0.00810			
EPA 200.7	Nickel (mg/L)	0.0598	0.0149J	ND	0.0428J	ND	0.0178J	0.0149J	ND	ND	0.0374J	ND	ND	0.0401J	ND			
EPA 200.7	Selenium (mg/L)	0.0304J	0.0210J	0.0126J	0.0145J	ND	0.0197J	0.0274J	ND	ND	ND	ND	0.0201J	ND	ND	0.05	0.03	
EPA 200.7	Silver (mg/L)	ND	ND	ND	ND	ND	ND	0.00400J	ND	0.00600J	0.00620J	ND	ND	ND	ND			0.1
EPA 200.7	Thallium (mg/L)	ND	0.00480J	ND	0.00420J	0.00610J	ND	ND	ND	0.0092J	ND	0.00700J	0.0106J	ND	0.00660J	0.002	0.0001	
EPA 200.7	Vanadium (mg/L)	0.429	ND	ND	0.0811	ND	ND	ND	ND	ND	ND	ND	ND	0.0206J	ND			
EPA 200.7	Zinc (mg/L)	0.166	0.0535	0.0114	0.468	0.205	0.313	0.252	0.501	0.105	0.116	0.0268	0.0777	0.491	0.108			5

* They are called "Action Levels" under the lead and copper rule (not actually MCLs).

RL - Report Limit, MDL - Method Detection Limit
 ND - Not Detected; below method detection limit
 J - concentration above MDL and below RL

Metals

7 LIMITATIONS

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

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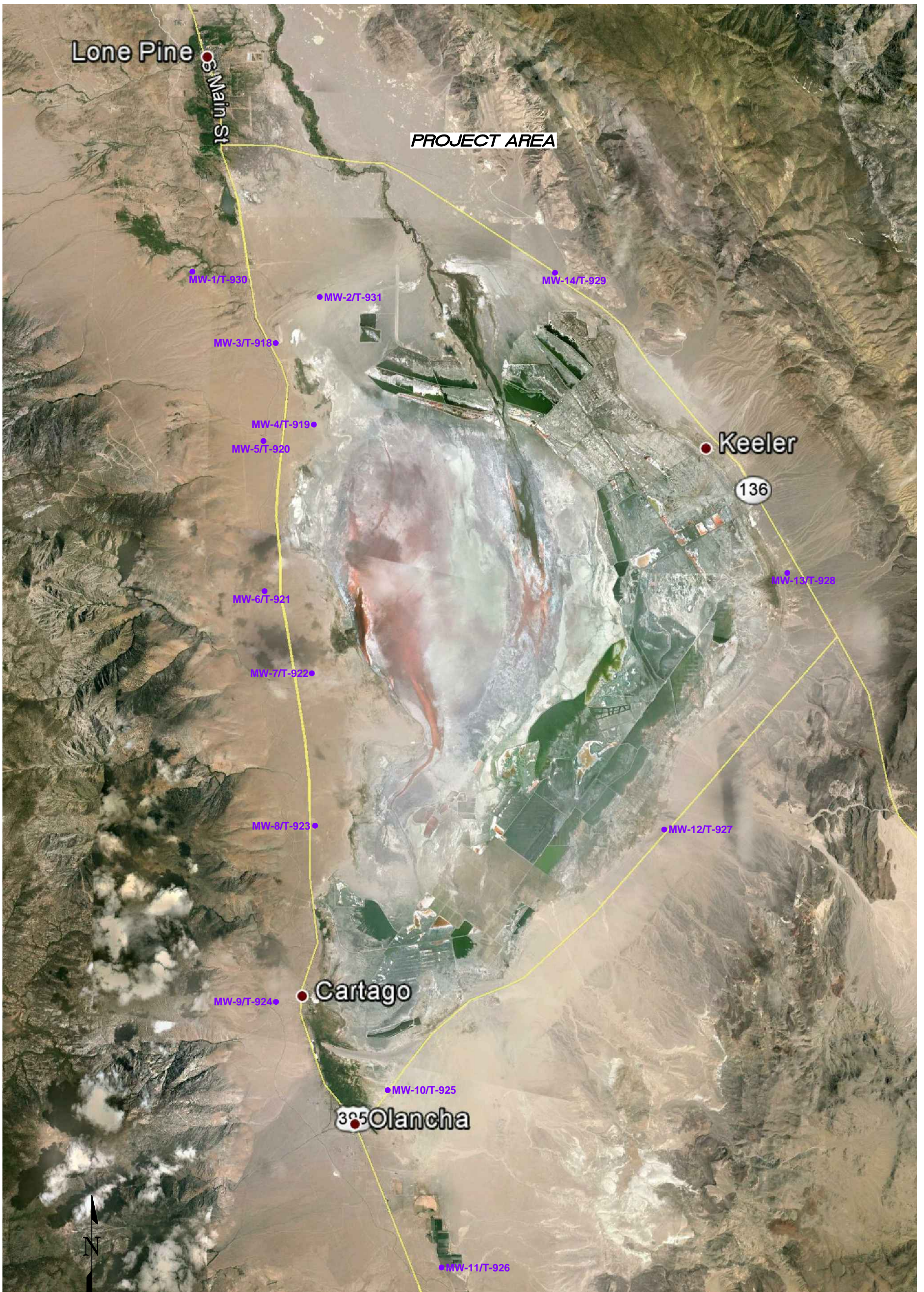
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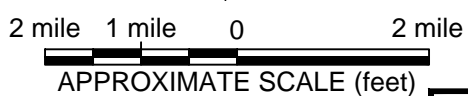
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PLATE



SOURCE: GOOGLE EARTH PRO 2013, DATED 4/09/13.



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PROJECT NO.	135335
DRAWN:	12/2013
DRAWN BY:	MRG
CHECKED BY:	DH
FILE NAME:	135335p1_SLM-v2.dwg

SITE LOCATION MAP

AGREEMENT 47805 TO-19
GROUNDWATER MONITORING WELL INSTALLATION
OWENS LAKE, CALIFORNIA

PLATE

1

APPENDIX A

Boring Logs

CONSISTENCY OF COHESIVE SOILS

Descriptor	Unconfined Compressive Strength (tsf)	Pocket Penetrometer (tsf)	Torvane (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Thumb will penetrate soil more than 1 in.
Soft	0.25 - 0.50	0.25 - 0.50	0.12 - 0.25	Thumb will penetrate soil about 1 in.
Firm	0.50 - 2.0	0.50 - 2.0	0.25 - 1.0	Thumb will indent soil about 1/4 in.
Hard	2.0 - 4.0	2.0 - 4.0	1.0 - 2.0	Thumb will not indent soil but soil is readily indented with thumbnail
Very Hard	> 4.0	> 4.0	> 2.0	Thumbnail will not indent soil

APPARENT DENSITY OF COHESIONLESS SOILS

Descriptor	SPT N ₆₀ - Value (blows / foot)
Very Loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

Descriptor	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Descriptor	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

SOIL PARTICLE SIZE

Descriptor	Size	
Boulder	> 12 inches	
Cobble	3 to 12 inches	
Gravel	Coarse	3/4 inch to 3 inches
	Fine	No. 4 Sieve to 3/4 inch
Sand	Coarse	No. 10 Sieve to No. 4 Sieve
	Medium	No. 40 Sieve to No. 10 Sieve
	Fine	No. 200 Sieve to No. 40 Sieve
Silt and Clay	Passing No. 200 Sieve	

PLASTICITY OF FINE-GRAINED SOILS

Descriptor	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled, and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll, and not much time is required to reach the plastic limit; it cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

CEMENTATION

Descriptor	Criteria
Weak	Crumbles or breaks with handling or little finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

ANGULARITY

Descriptor	Criteria
Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces
Subangular	Particles are similar to angular description but have rounded edges
Subrounded	Particles have nearly plane sides but have well-rounded corners and edges
Rounded	Particles have smoothly curved sides and no edges

CONSISTENCY OF COHESIVE SOILS

Descriptor	Unconfined Compressive Strength (tsf)	Pocket Penetrometer (tsf)	Torvane (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Thumb will penetrate soil more than 1 in.
Soft	0.25 - 0.50	0.25 - 0.50	0.12 - 0.25	Thumb will penetrate soil about 1 in.
Firm	0.50 - 2.0	0.50 - 2.0	0.25 - 1.0	Thumb will indent soil about 1/4 in.
Hard	2.0 - 4.0	2.0 - 4.0	1.0 - 2.0	Thumb will not indent soil but soil is readily indented with thumbnail
Very Hard	> 4.0	> 4.0	> 2.0	Thumbnail will not indent soil

APPARENT DENSITY OF COHESIONLESS SOILS

Descriptor	SPT N ₆₀ - Value (blows / foot)
Very Loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
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Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

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Descriptor	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

SOIL PARTICLE SIZE

Descriptor	Size	
Boulder	> 12 inches	
Cobble	3 to 12 inches	
Gravel	Coarse	3/4 inch to 3 inches
	Fine	No. 4 Sieve to 3/4 inch
Sand	Coarse	No. 10 Sieve to No. 4 Sieve
	Medium	No. 40 Sieve to No. 10 Sieve
	Fine	No. 200 Sieve to No. 40 Sieve
Silt and Clay	Passing No. 200 Sieve	

PLASTICITY OF FINE-GRAINED SOILS

Descriptor	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled, and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll, and not much time is required to reach the plastic limit; it cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

CEMENTATION

Descriptor	Criteria
Weak	Crumbles or breaks with handling or little finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

ANGULARITY

Descriptor	Criteria
Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces
Subangular	Particles are similar to angular description but have rounded edges
Subrounded	Particles have nearly plane sides but have well-rounded corners and edges
Rounded	Particles have smoothly curved sides and no edges

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-918

Sheet 1 of 6

Date(s) Drilled	9/12/13 - 9/13/13	Logged By [Reg. No.]	Michelle Garde [CEG #2604]	Checked By [Reg. No.]	
Drilling Method	Sonic	Drill Bit Size/Type	6-inch Core Barrel	Total Depth of Borehole	197.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3604.9 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	24 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-918/MW-3

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
0	0						
3600	5		1	64%	<p>SILTY SAND WITH GRAVEL (SM): 2.5Y-4/3 olive brown, dry, 70% fine to coarse sand, 15% silt, 15% gravel</p> <p>POORLY GRADED SAND (SP): 2.5Y-4/4 olive brown, dry, fine- to medium-grained, 10% coarse-grained, subangular to subrounded, trace fine gravel</p> <p>WELL GRADED SAND (SW): 2.5YR-4/4 olive brown to 2.5Y-5/6 light olive brown, dry, fine- to coarse-grained, subangular to subrounded, trace fine gravel</p> <p>-Below 5.5 feet bgs 2.5Y-5/6, light olive brown</p>		
3595	10		2	100%	<p>-Below 7 feet bgs 2.5Y-4/4, olive brown</p> <p>-Below 8 feet bgs 2.5Y-5/6, light olive brown</p> <p>-Below 10.3 feet bgs increase in coarse-grained sand</p>		
3590	15		3	90%	<p>POORLY GRADED SAND (SP): 2.5Y-5/4 light olive brown, fine- to medium-grained, 10% coarse-grained, subangular to subrounded, trace fine gravel</p> <p>-Below 12 feet bgs 2.5Y-4/4 olive brown, dry to moist, trace gravel up to 1 inch</p> <p>WELL GRADED SAND (SW): interbedded 2.5Y-5/6 light olive brown, 2.5Y 4/2 dark gray brown, dry to moist, laminae to very thin bedding, fine- to coarse-grained, subangular to subrounded, trace fine gravel</p>		
3585	20				<p>POORLY GRADED SAND (SP): 2.5Y-6/6 olive yellow, fine- to medium-grained, subangular to subrounded</p> <p>-Below 17 feet bgs 2.5Y-5/2 gray brown, medium- to coarse-grained, 10% fines</p>	Driller added water	
3580	25		4	93%	<p>SILTY SAND (SM): 5Y-5/6 olive to 2.5Y-3/2 very dark grayish brown, mottled with 10YR 5/8 yellow brown in top 2 inches, moist, fine-grained sand, 30% silt, micaceous</p> <p>WELL GRADED SAND (SW): 2.5Y-5/6 light olive brown, fine- to coarse-grained, subangular to subrounded</p> <p>POORLY GRADED SAND (SP): 5Y-5/2 olive gray, moist, fine-grained, 10% medium-grained, first 2 inches silty (10-15%), subangular to subrounded</p> <p>-Below 22.5 feet bgs, 2.5Y-6/2 light brownish gray, fine- to medium-grained, 10-15% coarse-grained</p> <p>-Below 23.5 feet bgs, 2.5Y-6/2 light to 2.5Y-5/2 grayish brown, medium- to coarse-grained</p> <p>-Below 24 feet bgs, 2.5Y-5/1 gray to 2.5Y-4/1 dark gray, wet</p> <p>-Below 24.5 feet bgs, 2.5Y-4/1 dark gray to 2.5/1 black, wet</p>	Driller estimates groundwater encountered	
3575	30				<p>SILTY SAND (SM): 2.5Y-3/1 very dark gray to 2.5Y-2.5/1 black, wet, fine-grained sand, 15-20% silt (increased sand toward bottom of run, 15-20% medium-grained sand)</p> <p>-Below 28.5 feet bgs 30% fines (clays and silts)</p>		

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-918

Sheet 2 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
30							
			5	100%		SILTY SAND (SM): 2.5Y-3/1 very dark gray to 2.5Y-2.5/1 black SILTY SAND (SM) to POORLY GRADED SAND WITH SILT (SP): 2.5Y-2.5/1 black, wet, fine-grained -Below 33 feet bgs trace shells -Below 34.5 feet bgs N-2.5/ black, trace shells	
3570	35						
			6	90%		POORLY GRADED SAND (SP): N-2.5/ black, wet, fine-grained, trace medium- to coarse-grained, trace shells -Below 39.5 feet bgs fine- to coarse-grained, predominantly fine- to medium-grained, 5-10% fine gravel (<1 inch), subangular to subrounded, no shells -Below 41 feet bgs coarsening downwards	
3565	40						
						WELL GRADED SAND (SW): N-2.5/ black, wet, fine- to coarse-grained, 10% fine gravel	
3560	45						
						SILTY SAND (SM): 2.5Y/3/1 very dark gray, wet, fine-grained, 40% silt SANDY SILT (ML): 2.5Y/3/1 very dark gray, wet, 40% fine-grained sand, 10-15% clay	
3555	50						
			7	100%		SILTY CLAY (ML-CL): 2.5Y/3/1 very dark gray, moist to wet, 10-15% fine-grained sand, 40% silt, 50% clay	
3550	55						
						SILT (ML): 10Y-3/1 very dark greenish gray, wet, 10% fine-grained sand, 6-inch bed SILTY SAND (SM): 10Y-3/1 very dark greenish gray, wet, fine-grained SANDY SILT (ML): 10Y-3/1 very dark greenish gray, wet, 20% fine-grained sand	
3545	60						
						SILTY CLAY (ML-CL): 10Y-3/1 very dark greenish gray, wet SILTY SAND (SM): 10Y-3/1 very dark greenish gray, wet, fine-grained SILTY CLAY (ML-CL): 10Y-3/1 very dark greenish gray, wet	
			8	85%		SANDY SILT (ML): 10Y-3/1 very dark greenish gray, wet, 20% fine-grained sand SILTY SAND (SM): 10Y-3/1 very dark greenish gray, wet, fine-grained, 20% silt	
3540	65						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
65						SILTY SAND (SM): 10Y-3/1 very dark greenish gray, wet, fine-grained, 20% silt	
3535	70		9	100%		SILTY CLAY (ML-CL): 10Y-4/1 very dark greenish gray, wet, soft	
3530	75					-At 75.5 feet bgs very thin bed of coarse-grained sand	
3525	80		10	100%			
3520	85						
3515	90		11	100%			
3510	95						
3505	100						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
100			12	80%		SILTY CLAY (ML-CL): 10Y-4/1 very dark greenish gray, wet, soft	
3500	105					-Below 107 feet bgs 10Y-3/1 very dark greenish gray	
3495	110		13	100%			
3490	115						
3485	120		14	110%			
3480	125						
3475	130		15	87%		CLAYEY SILT (ML): 10Y-3/1 very dark greenish gray, wet, soft SANDY SILT (ML): 10Y-3/1 very dark greenish gray, wet, medium stiff, 10-30% fine-grained sand SILTY SAND (SM): 10Y-3/1 very dark greenish gray, wet, medium dense, fine-grained, 15-30% silt SILTY CLAY (ML-CL): 10Y-3/1 very dark greenish gray, wet, soft to medium stiff, trace fine- to coarse-grained sand	
3470	135						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-918

Sheet 5 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
135						SILTY CLAY (ML-CL): 10Y-3/1 very dark greenish gray, wet, soft to medium stiff, trace fine- to coarse-grained sand	
3465	140		16	110%		SANDY SILT WITH CLAY (ML): 10Y-3/1 very dark greenish gray, wet, medium, 25% fine-grained sand	
3460	145					SILTY CLAY (ML-CL): 10Y-3/1 very dark greenish gray, wet, soft to medium	
3455	150		17	34%		gradational change to CLAYEY SILT (ML): 10Y-3/1 very dark greenish gray, wet and then to SANDY SILT (ML): 1 10Y-3/1 very dark greenish , wet	Sample fell out of sampler on first try, second try retrieved 3.4 feet of slightly drier soil
3450	155					-Below 154 feet bgs 35% clay, trace sand, soft to medium stiff	
3445	160		18	107%		SANDY CLAY (SC/CL): 5Y 3/2 dark olive gray, wet, 40% fine-grained sand CLAYEY SILT WITH SAND (ML): 5Y-3/2 dark olive gray, moist, medium, 20% fine-grained sand	
3440	165					- Below 5Y-3/2 dark olive gray to 10Y/3/1 very dark greenish gray, wet, up to 10% fine-grained sand	
3435	170						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
170			19	70%		CLAYEY SILT (ML): 10Y-3/1 very dark greenish gray, wet, medium, up to 10% fine-grained sand	
3430	175						
3425	180		20	90%			
3420	185					-Below 184 feet bgs 5GY 3/1 very dark greenish gray	
3415	190		21	0%			No recovery 187 to 197 feet bgs
3410	195						
3405	200					Boring terminated at 197 feet below ground surface. Groundwater measured 9/12/2013 14:15 @ 24.0 feet. Boring completed as groundwater monitoring well.	
3400	205						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-919

Sheet 1 of 7

Date(s) Drilled	8/27/13 - 8/29/13	Logged By [Reg. No.]	Darrin Hasham [CEG #2423]	Checked By [Reg. No.]	
Drilling Method	Sonic	Drill Bit Size/Type	6-inch Core Barrel	Total Depth of Borehole	220.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3599.7 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	14 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-919/MW-4

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
0	0						8/27/2013 13:30
3595	5		1	100%		LOW PLASTICITY SILT (ML): 10Y-8/1 light greenish gray, dry, strongly cemented, fine- to coarse- gravel sized fragments, effervesces slightly in water, no reaction to HCL -At 3 feet, lacks cementation, dry powder	
3590	10		2	100%		POORLY GRADED SAND (SP): 10YR-6/2 light brownish gray, dry, fine-grained sand, few medium- to coarse-grained sand -Increase in medium- to coarse-grained sand -At 9 feet, becomes 10YR-7/3 very pale brown, slightly moist -At 13 feet, becomes 5Y-6/3 pale olive, moist, decrease in coarse grained sand -At 14 feet, becomes wet -At 16 feet, becomes 2.5Y-4/4 olive brown, fine- to medium-grained sand, trace fines content	13:35
3585	15					LEAN CLAY (CL): 10GY-4/1 dark greenish gray, very moist, low-plasticity, little fine-grained sand, strong reaction to HCL -Sand content increases with depth with many thin layers of different shades of gray, olive, and brown	13:40
3580	20		3	100%		POORLY GRADED SAND (SP): 10GY-4/1 dark greenish gray, wet, medium-grained sand, trace silt -At 21 feet, becomes 5G-4/2 grayish green, fine-grained sand -At 25 feet, becomes medium-grained sand	
3575	25						
3570	30						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-919

Sheet 2 of 7

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
30							
			4	100%		<p>POORLY GRADED SAND (SP): 5G-4/2 grayish green, wet, medium-grained sand -2-inch thick fine-grained sand layer</p>	
3565	35					<p>-Increase in fine content (clay), fine- to medium-grained sand</p> <p>-Becomes uniform with subtle changes in average grain size</p>	15:08
3560	40		5	100%			
3555	45					<p>POORLY GRADED SAND (SP): 5G-2.5/1 and 5G-4/1, mottled greenish black and dark greenish gray, very dense, wet, fine-grained sand, weak reaction to HCL, slight "swampy" odor, nonplastic, feels "tacky"</p>	15:35
3550	50		6	100%		<p>-Becomes medium-grained sand, decrease in fines content, few gravel to cobble sized dark greenish gray silt clasts</p>	
3545	55					<p>-Becomes coarser-grained, trace coarse angular gravel, increase gravel content with depth</p> <p>-Becomes uniform</p>	16:27
3540	60		7	100%		<p>-Becomes N2.5 black, decrease in gravel content</p>	
3535	65						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-919

Sheet 3 of 7

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
65							
3530	70		8	100%		<p>POORLY GRADED SAND (SP): N2.5 black, wet, medium grained, trace coarse angular gravel</p> <p>-Becomes 5GY-2.5/1 greenish black, fine-grained sand, trace silt clasts, trace subangular coarse gravel, no reaction to HCL</p>	17:02
3525	75					<p>SILTY SAND (SM): 10Y-4/1 dark greenish gray, very dense, wet, fine-grained sand, trace coarse-grained sand, weakly cemented, nonplastic, weak reaction to HCL</p>	
3520	80		9	100%		<p>POORLY GRADED SAND (SP): 10Y-4/1 dark greenish gray, very dense, wet, fine-grained sand, few medium-grained sand, trace coarse-grained sand, nonplastic, no reaction to HCL</p> <p>-Becomes uniform and consistent, poorly graded sand to 95 feet</p>	8/28/13 09:23
3515	85						
3510	90		10	100%			09:49
3505	95					<p>-Some small zones of 2.5YR-2.5/1 reddish black (possible iron oxide staining)</p> <p>-Trace fines content (clay)</p>	
3500	100		11	100%		<p>-Becomes N 3/1 very dark gray</p>	10:20
							Short runs beginning with Run # 11 are due to heaving of the sand, approximately 50 feet of heaved sand in

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-919

Sheet 4 of 7

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
100							
			12	100%		POORLY GRADED SAND (SP): N 3/1 very dark gray, very dense, wet, fine-grained sand, few medium-grained sand, trace coarse-grained sand, nonplastic, no reaction to HCL	casing 10:55
3495	105						11:19
3490	110		13	100%		SILTY SAND (SM): 10GY-4/1 dark greenish gray, very dense, wet, fine-grained sand, weakly cemented, friable, nonplastic, weak reaction to HCL POORLY GRADED SAND (SP): 5GY-4/1 dark greenish gray, very dense, wet, fine- to medium-grained sand, trace coarse-grained sand	
3485	115						
3480	120		14	100%		SILTY SAND (SM): 10GY-4/1 dark greenish gray, very dense, wet, fine-grained sand, weakly cemented, friable, nonplastic, weak reaction to HCL POORLY GRADED SAND (SP): 5GY-4/1 dark greenish gray, very dense, wet, fine- to medium-grained sand, trace coarse-grained sand POORLY GRADED SAND WITH SILT (SP-SM): 10Y-4/1 dark greenish gray, wet, fine-grained sand, weakly cemented, friable, weak reaction to HCL -At 120 feet, decrease in fines, no cementation POORLY GRADED SAND (SP): 10GY-4/1 dark greenish gray, very dense, wet, fine-grained sand, nonplastic	16:51
3475	125						
3470	130		15	100%		-trace coarse gravel sized silt clasts SILTY SAND (SM): 10GY-4/1 dark greenish gray, very dense, very moist, fine-grained sand, few medium-grained sand, trace coarse-grained sand, weakly cemented, cohesive, friable, no reaction to HCL POORLY GRADED SAND (SP): 10R-5/1 reddish gray, very dense, wet, fine-grained sand, trace medium- to coarse-grained sand, nonplastic, weak reaction to HCL	17:11
3465	135						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-919

Sheet 5 of 7

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
135						POORLY GRADED SAND (SP): 10R-5/1 reddish gray, very dense, wet, fine-grained sand, trace medium- to coarse-grained sand, nonplastic, weak reaction to HCL	
3460	140		16	100%		<p>SILTY SAND (SM): 10GY-4/1 dark greenish gray, very dense, wet, fine-grained sand, cohesive, nonplastic, friable</p> <p>POORLY GRADED SAND (SP): 10Y-4/1 dark greenish gray, very dense, wet, fine-grained sand, few medium-grained sand, trace coarse-grained sand, noncohesive</p> <p>SILTY SAND (SM): 5Y-3/2 dark olive gray, very dense, very moist, fine-grained sand, few medium-grained sand, trace coarse-grained sand, weakly cemented, friable, weak reaction to HCL</p>	8/29/13 08:23
3455	145					-Trace fine angular gravel	09:01
3450	150		17	100%		<p>-Trace cobbles, trace coarse angular gravel, slight "swampy" odor</p> <p>-Becomes 2.5Y-4/2 dark grayish brown, fines content increase with depth</p>	
3445	155					-Little coarse angular gravel	
3440	160		18	100%		<p>-Decrease in gravel content, gradational contact transitional zone to 158.5 feet</p> <p>POORLY GRADED SAND (SP): 10Y-4/1 dark greenish gray, very dense, wet, fine-grained sand, some medium-grained sand, trace angular coarse-grained sand, nonplastic, no reaction to HCL</p>	09:51
3435	165					-Trace coarse angular gravel	
3430	170					<p>SILTY SAND (SM): 5Y-4/1 dark gray, very dense, wet, fine-grained sand, some medium- to coarse-grained sand, trace fine angular gravel, weakly cemented, friable with effort, no reaction to HCL, decrease fines content with depth</p> <p>POORLY GRADED SAND (SP): 10Y-4/1 dark greenish gray, very dense, wet, fine-grained sand, few medium-grained sand, trace angular coarse-grained sand, nonplastic, no reaction to HCL</p> <p>SILTY SAND (SM): 5Y-4/1 dark gray, very dense, wet, fine-grained sand, some medium- to coarse-grained sand, trace fine angular gravel, weakly cemented, friable with effort, no reaction to HCL, decrease fines content with depth</p> <p>-Gradual transition to POORLY GRADED SAND (SP)</p>	10:19

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Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-919

Sheet 6 of 7

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
170			19	100%		<p>POORLY GRADED SAND (SP): 5GY-5/1 greenish gray, very dense, wet, fine-grained sand, few medium-grained sand, trace coarse-grained sand, nonplastic</p> <p>-Trace coarse angular gravel to 190 feet</p>	
3425	175						10:46
3420	180		20	100%			
3415	185						11:14
3410	190		21	100%		<p>-Trace silt "rip-up" clasts</p> <p>-Little fine angular gravel</p>	
3405	195						
3400	200					<p>SILTY SAND (SM): 10Y-4/1 dark greenish gray, very dense, very moist, fine-grained sand, few coarse-grained sand, trace fine angular gravel, weakly cemented, friable</p> <p>-Increase sand content @ end of run 21</p> <p>INTERBEDDED POORLY GRADED SAND (SP) AND SILTY SAND (SM):</p> <p>-SILTY SAND (SM)</p> <p>-POORLY GRADED SAND (SP)</p> <p>-SILTY SAND (SM)</p>	11:37
3395	205		22	100%		<p>POORLY GRADED SAND (SP): 5GY-4/1 dark greenish gray, very dense, very moist, fine-grained sand, few medium- to coarse-grained sand, trace subangular coarse gravel</p>	

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
205							
3390	210		23	100%		POORLY GRADED SAND (SP): 5GY-4/1 dark greenish gray, very dense, very moist, fine-grained sand, some medium- to coarse-grained sand, trace subangular coarse gravel	12:44
3385	215					SILTY SAND (SM): 5GY-4/1 dark greenish gray, very dense, very moist, fine-grained sand, few medium- to coarse-grained sand, trace coarse subangular gravel, weakly cemented, friable with effort	
3380	220					POORLY GRADED SAND (SP): 5GY-5/1 greenish gray, very dense, wet, fine-grained sand, few medium- to coarse-grained sand Boring terminated at 220 feet below ground surface. Groundwater encountered at approximately 14 feet during drilling. Boring completed as groundwater monitoring well.	13:20
3375	225						
3370	230						
3365	235						
3360	240						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-920

Sheet 1 of 8

Date(s) Drilled	8/18/13 - 8/21/13	Logged By [Reg. No.]	Darrin Hasham [CEG #2423]	Checked By [Reg. No.]	
Drilling Method	Sonic	Drill Bit Size/Type	6-inch Core Barrel, 8-inch Casing	Total Depth of Borehole	258.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3810.7 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	218 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-920/MW-5

Elevation, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
	Depth, feet	Run Interval	Run/Sample Identification			
3810	0				POORLY GRADED SAND (SP): pale yellowish brown, dry, fine- to medium-grained sand, few coarse-grained sand, trace silt, weak reaction to HCL	8/18/13 12:05
			1	100%	-Trace fine rootlets	
3805	5				-Becomes slightly moist, increase coarseness with depth	
			2	100%	-Trace fine gravel	12:13
3800	10				-Increase in coarse-grained sand, trace coarse gravel	
			3	100%	-Becomes light yellowish brown, increase in moisture, slightly moist to moist	
3795	15				-Continues to increase coarseness with depth, trace cobble	12:24
			4	100%	-At 25 feet, becomes yellowish brown, moist	
3785	25					12:40
					-Becomes strong brown, increase in coarse gravel	
30	30					

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Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-920

Sheet 2 of 8

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3780	30					POORLY GRADED SAND (SP): strong brown, trace fine gravel, increase in coarse-grained sand, trace coarse gravel, few cemented layers, no reaction to HCL	
							12:51
							Cobble stuck in shoe, sample very hot, water sprayed on core barrel boiled, driller begins to add water so sample remains in core barrel
3775	35		5	22%		POORLY GRADED SAND WITH GRAVEL (SP): pale brown, fine- to medium-grained sand, little coarse-grained sand, fine and coarse gravel, trace cobble	
							Recoverd about 4 feet of material that had fallen out of this interval in Run # 6
3770	40					-Some slough from 35-41 feet is moderately cemented	
			6	233%			14:00
							14:52
3765	45					POORLY GRADED GRAVEL WITH SAND (GP): yellowish brown, moist, coarse gravel up to 3-inches diameter, subangular, little fine angular gravel, little fine- to coarse-grained sand	
			7	100%		POORLY GRADED SAND WITH GRAVEL (SP): strong brown, moist, fine- to coarse-grained sand, little fine and coarse subangular gravel up to 3-inches diameter	
3760	50					POORLY GRADED GRAVEL WITH SAND (GP): strong brown, moist, coarse gravel, subangular, with subangular to angular fine gravel, little fine- to coarse-grained sand, trace cobbles up to 5-inches diameter	
							15:24
3755	55		8	0%			15:29
							15:48
						-Slight increase in moisture	
			9	160%		POORLY GRADED SAND (SP): dark yellowish brown, moist, fine- to medium-grained sand, trace coarse-grained sand (pea gravel), few cemented layers	
3750	60						16:00
						SILTY SAND (SM): dark yellowish brown, moist, fine- to medium-grained sand, moderately cemented, no reaction to HCL	
						-Uniform and consistent for entire run	
			10	100%			
	65						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-920

Sheet 3 of 8

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3745	65					SILTY SAND (SM): dark yellowish brown, moist, fine- to medium-grained sand, moderately cemented, no reaction to HCL	
						-Cementation may be from silt, sample feels "tacky", increase in fines content	16:48
3740	70		11	100%		-At 72 feet, decrease in fines content, weakly cemented	
						POORLY GRADED SAND (SP): dark yellowish brown, very dense, moist, fine- to medium-grained sand, trace silt	8/19/13 07:05
3735	75					-Some crude indistinct bedding, trace fine angular gravel, increase coarseness with depth	
			12	100%		-Becomes fine- to coarse-grained sand, some fine and coarse angular gravel	
3730	80					-No gravel, becomes fine- to medium-grained sand, few fines content	
						-POORLY GRADED SAND WITH GRAVEL (SP) layer @ 84 feet	08:20
3725	85					SILTY SAND (SM): strong brown, very dense, very moist, fine- to medium-grained sand, trace angular coarse gravel, nonplastic, "tacky" feeling, no reaction to HCL	Requested driller to wait 5 min to check if groundwater is present
			13	100%			
3720	90					POORLY GRADED SAND (SP): yellowish brown, very dense, moist, fine- to medium-grained sand, nonplastic, trace fines	
3715	95					SILTY SAND (SM): strong brown, very dense, moist, fine- to medium-grained sand, trace fine and coarse gravel, angular to subrounded, moderately cemented, nonplastic, no reaction to HCL	08:42 Hot sample
			14	100%			
	100						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-920

Sheet 4 of 8

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3710	100					SILTY SAND (SM): strong brown, very dense, moist, fine- to medium-grained sand, trace fine and coarse gravel, angular to subrounded, moderately cemented, nonplastic, no reaction to HCL	
3705	105		15	100%		POORLY GRADED SAND (SP): light brown, moist, fine-grained sand, trace fines content -Some coarse-grained sand -From 106.5 to 109 feet, occasional 1/4 to 1/2-inch thick silt lenses	09:44
3700	110						10:12
3695	115		16	100%			
3690	120					POORLY GRADED SAND WITH GRAVEL (SP): light brown, very dense, moist, fine-grained sand, little subrounded coarse gravel, moderately cemented POORLY GRADED SAND (SP): light brown, moist, fine-grained sand, trace fines	11:09 Hot sample
3685	125		17	100%			
3680	130					SILTY SAND (SM): strong brown, moist, fine-grained sand, few medium-grained sand, trace coarse-grained sand, nonplastic, cohesive, weak reaction to HCL -moderately cemented, little fine gravel POORLY GRADED SAND (SP): light brown, moist, fine-grained sand, nonplastic, no reaction to HCL	11:46 Hot sample
135						SILTY SAND (SM): brown, very dense, moist, fine-grained sand	

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014








Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-920

Sheet 5 of 8

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3675	135		18	100%		<p>SILTY SAND (SM): brown, very dense, moist, fine-grained sand</p> <p>-Rock fragments in sample</p>	
3670	140					<p>POORLY GRADED GRAVEL WITH SAND (GP): very dense, moist, coarse gravel, subangular to subrounded, in silty sand matrix, some gravels pulverized into rock "flour"</p>	
3665	145		19	100%		<p>SILTY SAND (SM): strong brown, very dense, moist, fine-grained sand, cohesive, nonplastic</p> <p>-Rock "flour" and rock fragments on top of sample</p> <p>-Becomes SILTY SAND WITH GRAVEL (SM), with coarse subangular gravel up to 2-inches diameter</p> <p>-Occasional 1/2-inch thick hard silt lenses</p>	<p>13:13</p> <p>Driller adding water to keep temperature down</p> <p>Hot sample</p>
3660	150					<p>POORLY GRADED SAND WITH GRAVEL (SP): strong brown, very dense, moist, fine- to medium-grained sand, little subangular to angular fine and coarse gravel, nonplastic</p>	
3655	155		20	100%		<p>SILTY SAND (SM): strong brown, very dense, moist, fine- to medium-grained sand, few coarse-grained sand, trace coarse angular gravel, moderately cemented</p>	13:55
3650	160					<p>POORLY GRADED SAND (SP): light brown, moist, fine-grained sand, few silt</p> <p>-Little medium- to coarse-grained sand, little fine and coarse gravel</p> <p>-Moderately cemented</p> <p>-Fine- to medium-grained sand</p> <p>-Increase in fines content</p>	15:07
3645	165		21	100%		<p>-Less cemented</p>	
170	170						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3640	170					POORLY GRADED SAND (SP): light brown, very dense, moist, fine- to medium-grained sand, few coarse-grained sand, few fine and coarse subangular gravels, few fines	
			22	100%			15:40 Very hot sample, some sample lost when sample bag melted
3635	175						
3630	180						16:39
3625	185		23	100%		-At 184.5 feet, no gravel observed	
3620	190					-Slight increase in fines content	8/20/13 08:04
3615	195		24	100%		SILTY SAND (SM): strong brown, moist, fine- to medium-grained sand, few coarse-grained sand, trace fine and coarse subangular to subrounded gravel, nonplastic, no reaction to HCL	
3610	200					POORLY GRADED SAND (SP): light yellowish brown, moist, fine- to medium-grained sand, trace coarse-grained sand, trace fine subangular gravel, nonplastic	
						-Becomes dark yellowish brown, increase in moisture, very moist, trace coarse subangular gravel up to 3-inches diameter	09:00 Very hot sample
205	205					-Increase fines content	

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-920

Sheet 7 of 8

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3605	205		25	100%	<p>POORLY GRADED SAND (SP): dark yellowish brown, moist, fine- to medium-grained sand, trace coarse-grained sand, trace fine subangular gravel, nonplastic</p> <p>-Gradational transition</p>		
3600	210				<p>SILTY SAND (SM): dark yellowish brown, very dense, very moist, fine-grained sand, few medium- to coarse-grained sand, trace subangular coarse gravel, nonplastic, feels "tacky", no reaction to HCL</p>	09:46	
3595	215		26	100%		End of sample was wet, driller requeste to wait 5 min and check groundwater	
3590	220				<p>POORLY GRADED SAND (SP): dark yellowish brown, very dense, wet, fine-grained sand, few medium- to coarse-grained sand, trace fines, nonplastic</p>		
3585	225		27	100%	<p>-Trace fine and coarse subrounded gravel</p> <p>-Trace cobbles</p> <p>-Occasional pockets/lenses of fine-grained sand and silty sand up to 2-inches thick</p>	10:28	
3580	230					8/21/13 10:07	
3575	235		28	100%	<p>-Becomes medium- to coarse-grained sand, trace coarse subangular gravel, trace silt</p> <p>-Becomes fine- to medium-grained sand, few fine subangular gravel</p>		
240					<p>-Trace coarse subangular gravel, trace coarse-grained sand</p>	10:41	

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Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-920

Sheet 8 of 8

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3570	240		29	100%		<p>POORLY GRADED SAND (SP): dark yellowish brown, trace coarse subangular gravel, trace coarse-grained sand -At 241 feet, slightly finer grained sand, slight increase in fines content, becomes brown</p>	
3565	245						
3560	250		30	100%		<p>SILTY SAND (SM): strong brown, very dense, very moist, fine-grained sand, few coarse-grained sand, trace fine subangular gravel, no reaction to HCL</p>	11:50
						<p>POORLY GRADED SAND (SP): mottled olive gray and strong brown, very dense, very moist, fine- to medium-grained sand, olive gray zones are silty</p>	12:38
3555	255		31	100%		<p>SILT (ML): gray, very moist, low plasticity</p>	13:15
					<p>SILTY SAND TO SANDY SILT WITH GRAVEL (SM/ML): below 254 feet sample was disturbed and contained "mixed bag" of granitic rock fragments, brown silty sand, and gray silt layers</p>		
3550	260					<p>Boring terminated at 258 feet below ground surface. Groundwater encountered at approximately 218 feet during drilling. Boring completed as groundwater monitoring well.</p>	
3545	265						
3540	270						
275							

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Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-921

Sheet 1 of 8

Date(s) Drilled	8/31/13 - 9/4/13	Logged By [Reg. No.]	Darrin Hasham [CEG #2423]	Checked By [Reg. No.]	
Drilling Method	Sonic	Drill Bit Size/Type	6-inch Core Barrel	Total Depth of Borehole	268.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3811.3 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	233 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-921/MW-6

Elevation, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
	Depth, feet	Run Interval	Run/Sample Identification			
3810	0		1	100%	<p>SILTY SAND (SM): 7.5YR-4/6 strong brown, dense, dry, fine- to medium-grained sand, few coarse-grained sand, nonplastic, no reaction to HCL, trace angular fine and coarse gravel, weakly cemented, friable</p> <p>-little coarse angular gravel</p> <p>-Trace cobbles, sample contains "rock flour" from gravels which are increasing with depth</p>	Hot sample
3805	5		2	100%	<p>POORLY GRADED GRAVEL (GP): 2.5Y-6/3 light yellowish brown, very dense, dry, coarse gravel, angular, little fine-grained sand, few medium- to coarse-grained sand, few silt, nonplastic, soil matrix has strong reaction to HCL</p> <p>-At 10 feet, decrease in gravel content</p>	08:47
3800	10		3	100%	<p>POORLY GRADED SAND WITH GRAVEL (SP): 2.5Y-6/3 light yellowish brown, dry, fine- to coarse-grained sand, little subangular to angular fine and coarse gravel, nonplastic, strong reaction to HCL</p> <p>POORLY GRADED GRAVEL (GP): 2.5Y-6/3 light yellowish brown, dry, fine and coarse gravel, subangular to angular, little fine-grained sand, few medium- to coarse-grained sand</p> <p>-At 14 feet, coring through cobbles</p>	08:54
3795	15				<p>-Little fine- to coarse-grained sand, trace silt, nonplastic, strong reaction to HCL</p>	Driller added water to keep temperature down
3790	20				<p>-From 25-27 feet, no recovery</p>	09:30
3785	25				<p>POORLY GRADED GRAVEL (GP): 2.5Y-6/2 light brownish gray, dry, fine and coarse gravel, subangular, little fine- to coarse-grained sand, nonplastic, strong reaction to HCL</p>	No recovery from 25-27 feet, very hard drilling
	30					

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014




Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-921

Sheet 2 of 8

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3780	30		4	80%		<p>POORLY GRADED GRAVEL (GP): 2.5Y-6/2 light brownish gray, dry, fine and coarse gravel, subangular, with fine- to coarse-grained sand, nonplastic, strong reaction to HCl</p> <p>-At 32 feet, increase in sand content around gravel, but may be pulverized rock</p> <p>-Trace cobbles</p>	<p>Sample was very hot, left to cool</p>
3775	35		5	71%			
3770	40		6	500%		<p>POORLY GRADED SAND (SP): 2.5Y-5/3 light olive brown, moist, fine-grained sand, few medium- to coarse-grained sand, trace coarse angular gravel</p> <p>POORLY GRADED GRAVEL (GP): 2.5Y-6/2 light brownish gray, very dense, dry, coarse gravel, subangular, with fine-grained sand, some fine gravel, some medium- to coarse-grained sand</p>	<p>11:10</p> <p>Ran to 47 feet, retrieved loss from previous run</p>
3765	45		7	100%			
3760	50		8	100%		<p>-Becomes 2.5Y-5/3 light olive brown, very dense, moist</p> <p>-Mostly freshly broken rock fragments</p>	<p>13:16</p>
3755	55		9	100%			
3750	60						
65	65						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-921

Sheet 3 of 8

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3745	65					<p>POORLY GRADED GRAVEL (GP): 2.5Y-5/3 light olive brown, very dense, moist, coarse gravel, angular, few cobbles, little fine-grained sand, few medium- to coarse-grained sand, nonplastic, strong reaction to HCL -Increase in sand content, weakly cemented, friable, strong reaction to HCL</p>	13:44
3740	70		10	100%			
3735	75					<p>POORLY GRADED SAND (SP): 2.5Y-5/4 light olive brown, very dense, moist, fine- to medium-grained sand, few coarse-grained sand, trace coarse angular gravel</p>	Raining
3730	80		11	100%			
3725	85					<p>POORLY GRADED GRAVEL WITH SAND (GP): 2.5Y-4/3 olive brown, very dense, moist, fine and coarse gravel/rock fragments, angular, little fine-grained sand, strong reaction to HCL -Decrease in the 2 to 3-inch gravel range, mostly 1/2 to 1 1/2-inch diameter -Gravels up to 3-inches diameter</p>	14:00
3720	90		12	100%			
3715	95					<p>POORLY GRADED SAND (SP): 10YR-5/4 yellowish brown, very dense, moist, fine-grained sand, few medium- to coarse-grained sand, trace fine and coarse gravel, nonplastic, weak reaction to HCL, locally weakly cemented, friable -Slight increase in moisture, becomes 10YR-4/4 dark yellowish brown -Few zones with an increase in coarse-grained sand and fine gravels, typically 6-inches thick</p>	
3710	98						
3705	100					<p>10YR-4/4 dark yellowish brown, very dense, moist, fine-grained sand, few medium- to coarse-grained sand, trace fine and coarse gravel, trace silt -Increase coarseness with depth -Becomes 2.5Y-4/4 olive brown, slight increase in cementation, decrease in coarse-grained sand and gravels</p>	15:12
3700	102						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014





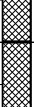
Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-921

Sheet 4 of 8

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3710	100		13	100%	 <p>POORLY GRADED SAND (SP): 2.5Y-4/4 olive brown, very dense, moist, fine grained sand, few medium to coarse grained sand, trace fine and coarse gravel, trace silt</p>		
3705	105				-Increase in coarse gravel		
3700	110		14	88%	 <p>POORLY GRADED GRAVEL WITH SAND (GP): 10YR-4/2 dark grayish brown, very dense, moist, dark grayish brown, fine and coarse gravel little cobbles, little fine-grained sand, few medium- to coarse-grained sand, strong reaction to HCL -At 108 feet, generally smaller gravels, angular</p>	16:01	
3695	115		15	150%	 <p>POORLY GRADED SAND (SP): 5Y-4/3 olive, very dense, moist, fine-grained sand, some medium- to coarse-gained sand, with coarse angular gravel, trace silt, weakly cemented, strong reaction to HCL</p>	Drilled to 115 feet, 1 foot of sample fell back down into hole, recovered on next run	
3690	120		16	100%	 <p>POORLY GRADED GRAVEL WITH SAND (GP): 5Y-5/2 olive gray, very dense, moist, fine and coarse gravel, angular to subrounded, little fine-grained sand, few coarse-grained sand, strong reaction to HCL</p>	9/1/13 08:04 Picked up 1 foot from previous run	
3685	125		17	50%	 <p>POORLY GRADED SAND WITH GRAVEL (SP): 2.5Y-4/3 olive brown, very dense, fine-grained sand, little fine and coarse angular gravel, little silt, nonplastic, strong reaction to HCL -Increasing gravel content with depth</p>	08:29 Hot sample	
3680	130				-Decrease in gravel content		
3680	130				SILTY SAND (SM): 2.5Y-5/2 grayish brown, very dense, moist, weakly cemented, very fine grained sand, little silt		
3680	130				-Decrease in silt content, few medium- to coarse-grained sand, increasing coarseness with depth		
3680	130				-Run #17 recovered sample is consistent with the silty sand described above	08:51	
3680	130				-Decrease in silt content	Approximately 50% of sample lost above ground when sample bag melted and sample fell out	

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-921

Sheet 5 of 8

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3675	135					SILTY SAND (SM): 2.5Y-5/2 grayish brown, very dense, moist, weakly cemented, very fine grained sand, little silt	09:40
3670	140		18	100%		LOW PLASTICITY SILT (ML): 2.5Y-4/2 dark grayish brown, moist, laminated with thin interbedded sand layers, low plasticity, no reaction to HCL, locally with very fine-grained sand	
3665	145					POORLY GRADED SAND (SP): 7.5YR-6/4 light brown, very dense, moist, fine- to medium-grained sand, few coarse-grained angular sand, few angular to subrounded fine and coarse gravel, no reaction to HCL -Increase in coarseness with depth, little coarse gravel, subangular to subrounded, trace cobbles and "rock flour" towards end of run	
3660	150		19	100%		POORLY GRADED GRAVEL (GP): coarse gravel, subangular to subrounded, little cobbles and boulders, little medium- to coarse-grained sand	10:20 Very hot sample, had to let core barrel and sampler cool before handling
3655	155						
3650	160		20	100%		-Cored granite boulder in shoe, smaller and more rounded gravel, sample is mostly "rock flour"	11:50 Hot sample, drillers used water to cool tooling
3645	165						
						POORLY GRADED SAND (SP): 5YR-7/1 light gray, moist, medium- to coarse-grained sand, mostly rock chips and fragments, trace rounded gravel	13:45
170	170		21	71%		POORLY GRADED GRAVEL (GP): gray from "rock flour", fine and coarse gravel, subangular to rounded, little medium- to coarse-grained sand	

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-921

Sheet 6 of 8

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3640	170					POORLY GRADED GRAVEL (GP): gray from "rock flour", fine and coarse gravel, subangular to rounded, little medium- to coarse-grained sand	
						SILTY SAND WITH GRAVEL (SM): 5Y-5/1 gray, very dense, moist, fine-grained sand, little fine and coarse gravel, subangular to subrounded, nonplastic, no reaction to HCL	
3635	175		22	100%		POORLY GRADED GRAVEL (GP): sample consists of an overheated mixture of coarse rounded gravel, rock fragments, and cored rock segments in a "rock flour" matrix	9/2/13 07:35 Hot sample
							08:10 Driller starting to circulate water throughout rods and core barrel
3630	180		23	50%		-Sample consists of coarse rounded gravel and cobbles, all fines have been washed out, sand was observed at bottom of sample but may not be in-situ	
3625	185					POORLY GRADED SAND (SP): 7.5YR-6/1 gray, sample consists of coarse-grained sand and trace coarse gravel and cobbles	09:52
3620	190		24	60%		POORLY GRADED SAND (SP): 7.5YR-6/1 gray, sample consists of coarse-grained sand and trace coarse gravel and cobbles	
	195					LOW PLASTICITY SILT (ML): 2.5Y-5/3 light olive brown, hard, moist, trace fine gravel, laminated, no reaction to HCL	
3615						POORLY GRADED SAND WITH GRAVEL (SP): 2.5Y-5/3 light olive brown, fine- to coarse-grained sand, little fine and coarse gravel, subrounded, trace cobbles	13:40
	200		25	100%		SILTY SAND (SM): 2.5Y-4/1 dark gray, very dense, moist, fine-grained sand, some medium- to coarse-grained sand, moderately cemented, nonplastic, no reaction to HCL	
						POORLY GRADED SAND (SP): 10YR-2/3 very pale brown, very dense, dry to slightly moist, fine- to medium-grained sand, trace coarse rounded gravel, no reaction to HCL, possible cemented silty layers	
3610							
						From 203-227 feet, no recovery	17:03
							No recovery from 203-227 feet
	205						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
205						From 203-227 feet, no recovery	
3605							
210							
3600							
215							
3595							
220							
3590							
225							9/4/13 08:55 Flapper bit run cleared out approximately 10 feet of cuttings, hole open to 227 feet
3585							
230						POORLY GRADED SAND (SP): 10YR-6/4 light yellowish brown, very dense, wet, medium-grained sand, few fine- and coarse-grained sand, no reaction to HCL	09:05
3580			26	100%			
235						-trace coarse rounded gravel -At 235 feet, approximately 4-inch thick fine-grained layer	8/31/13 08:39
3575							
240						-Becomes 10YR-4/4 dark yellowish brown, wet, few silt, gradational transition SILTY SAND (SM): 10YR-4/4 dark yellowish brown, very dense, very moist.	09:22

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-921

Sheet 8 of 8

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3570	240		27	100%		fine-grained sand, some medium-grained sand, nonplastic, weak reaction to HCL -Trace coarse-grained sand, becomes 2.5Y-4/2 dark grayish brown	
3565	245					SILTY SAND (SM): 2.5Y-4/2 dark grayish brown, very dense, very moist, fine-grained sand, few medium-grained sand, trace coarse-grained sand, nonplastic, weak reaction to HCL	12:29
3560	250		28	100%		-Trace coarse subangular gravel -Increase in coarse sand, subangular, feldspar -Increase fines content with depth	
3555	255					-Increase in coarse-grained sand content and fine and coarse gravel	
3550	260		29	100%		-A 260 feet, abrupt decrease in coarse-grained sand and gravel, trace coarse-grained sand, trace fine and coarse gravel, slight decrease in fines, predominantly fine- to medium-grained sand	13:30
3545	265					SANDY SILT (ML): 2.5Y-5/3 light olive brown, hard, moist, little fine-grained sand, low plasticity, no reaction to HCL SILTY SAND (SM): 2.5Y-4/2 dark grayish brown, very dense, moist, fine-grained sand, few angular coarse-grained sand, few angular fine gravel, few layers approximately 2-inches thick of clean fine-grained sand, laminated zones of silt and fine-grained sand	14:29
3540	270					Boring terminated at 268 feet below ground surface. Groundwater encountered at approxiamtely 233 feet during drilling. Boring completed as groundwater monitoring well.	
3540	275						

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Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-922

Sheet 1 of 5

Date(s) Drilled	9/15/13 - 9/19/13	Logged By [Reg. No.]	Michelle Garde [CEG #2604]	Checked By [Reg. No.]	Darrin Hasham [CEG #2423]
Drilling Method	Sonic	Drill Bit Size/Type	7-inch Core Barrel, 8-inch Casing	Total Depth of Borehole	138.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3669.5 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	78.2 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-922/MW-7

Elevation, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
	Depth, feet	Run Interval	Run/Sample Identification			
0					POORLY GRADED SAND (SP): 2.5Y-4/4 olive brown, fine to medium grained, dry, 15%-20% coarse sand, little subangular to angular, trace of fine gravel	9/15/2013 13:40
3665	5		1	75%	POORLY GRADED SAND WITH SILT(SP): 2.5Y-3/3 dark olive brown, fine to medium grained, dry, 15-20% coarse, 10% silt, little subangular to angular, trace of fine gravel	
3660	10		2	90%	POORLY GRADED SAND (SP): 2.5Y-4/3 olive brown, fine to coarse grained, 20% coarse, 70% fine, 10 % medium, 10-15 silt, subangular to subrounded - at 8 feet coarse sand/fine gravel layer, 2" thick, subangular to angular - similar to 5 feet, 10 % silt, 90% sand, similar to 7 feet	14:50
3655	15		3	100%	- fine- to medium-grained, 10% coarse sand, 10% silt - coarse grained, 15% fine to medium grained, subangular grains - 30% fine grained - 2.5Y-4/2, dark gray brown, fine grained (fine beach sand) - 15% medium to coarse sand, subangular - 0% coarse sand, 30 % fine, 10% medium sand, subangular to angular	
3650	20		4	83%	SILTY SAND (SM): 2.5Y-4/4, olive brown, dry, 15% silt, 85 % sand (85% fine, 15% fine to coarse sand) 15% silt, 85% sand, (10-15 medium to coarse/ 85-90% fine - trace gravel, up to 3/4", dry to moist - dark gray brown 2.5Y-4/2	14:00
3645	25		5	83%	POORLY GRADED SAND (SP): 2.5Y-5/6, light olive brown, coarse sand 80%, 20% fine to medium sand, subangular to angular POORLY GRADED SAND WITH SILT(SP): 2.5Y-5/3, light olive brown, medium to coarse sand 90%, silt 10%, subangular to subrounded - 2.5Y-5/4, light olive brown, medium grained 90%, 10% fine and coarse sand	14:20
3640	30					

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-922

Sheet 2 of 5

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
	30					POORLY GRADED SAND WITH SILT(SP): 2.5Y-5/4, light olive brown, fine grained 85%, 15% medium to coarse	14:40
						WELL GRADED SAND (SW): fine to coarse sand, becomes less coarse downwards	
3635	35		6	100%		POORLY GRADED SAND (SP): 2.5Y-5/4-5/6, light olive brown, dry, fine to medium grained, 15% coarse	
						SILTY SAND (SM): 2.5Y-4/3, olive brown, dry, fine to medium grained, 15% coarse sand, trace of cobbles up to 3", trace of gravel - 2.5Y-5/4 light olive brown, 90% fine, 10% medium to coarse sand - 15% fine gravel and coarse sand	15:10
3630	40					POORLY GRADED SAND (SP): 2.5Y-4/3.5, olive brown, dry, fine to coarse grained	
						SILTY SAND (SM): 2.5Y-4/3.5, olive brown, dry, fine grained, 15% silt	
						WELL GRADED SAND (SW): 2.5Y-4/2, dark grayish brown and 2.5Y-5/4, light olive brown, dry, fine to coarse sand, subangular	
3625	45		7	92%		SILTY SAND (SM): 2.5Y-5/4, light olive brown with very dark gray, 2.5Y-3/1, and dark gray, 2.5Y-4/1, fine grained	
						POORLY GRADED SAND (SP): 2.5Y-5/3, light olive brown, dry, fine to coarse, predominately fine to medium 20% coarse - 2.5Y-4/3.5, olive brown, medium dense, moist, fine to coarse, predominately fine to medium, 10-15% coarse, trace to 10% gravel and cobbles, weakly cemented	15:30
3620	50						
3615	55		8	100%		POORLY GRADED SAND (SP): 2.5Y-5/3, light olive brown, dry, fine to coarse, predominately fine to medium 20% coarse - 2.5Y-4/3.5, olive brown, medium dense, moist, fine to coarse, predominately fine to medium, 10-15% coarse, trace to 10% gravel and cobbles, weakly cemented	
						SILTY SAND (SM): 2.5Y-3/1, very dark gray, dry to moist, fine to coarse sand, 10% coarse, 25% silt, weakly cemented	15:55
						- lacks cementation	
3610	60					POORLY GRADED SAND (SP): 2.5Y-4/3- 10YR-5/4, olive brown to yellowish brown, moist, 50% fine and coarse sand 30%, few medium, trace to 10% silt	
						SILTY SAND (SM): 10YR-5/3 to 10YR-4/4, brown to dark yellow brown, medium dense, 15% silt, 85% sand (90% fine, 10% medium to coarse)	
						POORLY GRADED SAND (SP): 10YR-4/4 to 10YR-4/2, dark yellowish brown to dark grayish brown, moist, fine and coarse sand, 15% medium, trace of fine gravel - 10 YR-4/4-4/6, dark yellowish brown, fine to medium sand, trace of coarse - up to 10% coarse sand, trace (5%) of fine gravel	16:30
3605	65		9	100%			

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Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-922

Sheet 3 of 5

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
65						POORLY GRADED SAND (SP): 2.5Y-5/4-5/6, light olive brown, medium dense, fine to medium grained with 3" granitic cobbles	
						SILTY SAND (SM): 10YR-5/6, yellowish brown, moist, fine grained, trace medium to coarse and fine gravel - 2.5Y-5/4, light olive brown,	
3600	70		10	100%		POORLY GRADED SAND (SP): 10YR-5/4, yellowish brown, fine to medium grained 85%, coarse sand 15% - medium to coarse sand 85%, fine 15% - 10YR-5/6, yellowish brown, moist, medium to coarse sand (predominately medium)	
						WELL GRADED SAND (SW): 10Y-5/4, yellowish brown, moist, fine to coarse sand	
						POORLY GRADED SAND (SP): 10 YR-4/4-4/6, dark yellowish brown, fine grained 90%, 10% medium to coarse sand, interbedded with 1-2" fine to coarse sand	
						SILTY SAND (SM): 2.5Y-4/3, olive brown, 15% silt, 85% fine sand	
3595	75					POORLY GRADED SAND (SP): 10YR-5/4-5/6, yellowish brown, 90% fine, 10% medium, subangular, trace fine gravel and coarse sand	
						- fine to coarse sand, predominately fine to medium sand 10YR-5/6, yellowish brown to 10 YR4/6 dark yellowish brown, very dense, moist, fine grained, up to 20% medium to coarse sand and fine gravel, subangular	07:55
			11	100%		SILTY SAND (SM): 2.5Y-4/3.5, olive brown, 15% silt,	08:15
3590	80		12	100%		POORLY GRADED SAND (SP): 2.5Y-5/4, light olive brown, fine to medium grained, trace of coarse sand, subangular to angular, trace of fine gravel - 10 YR-4/6, dark yellowish brown, fine grained trace, medium to coarse sand, trace fine gravel	
						POORLY GRADED SAND WITH GRAVEL (SP): 10YR-4/6, dark yellowish brown, 60% fine sand, 10% coarse to medium sand, 25% gravel, subrounded to subangular	
3585	85					WELL GRADED SAND (SW): 2.5Y-3/2-4/2, very dark grayish brown, fine to coarse sand, 10% fine to coarse gravel WELL GRADED SAND WITH GRAVEL (SW): light olive brown to olive brown, cobbles in a matrix of well graded sand, broken cobbles up to 0.3', fine to coarse sand, 15% fine to coarse gravel - 2.5Y-5/6, light olive brown, very dense, moist, fine to coarse sand, subangular to subrounded, trace to 10% fine gravel	
						POORLY GRADED SAND (SP): 2.5Y-5/4-5/6, light olive brown, 80% fine to medium sand, 20% coarse subangular to subrounded,	
3580	90		13	100%		WELL GRADED SAND (SW): 10YR-4/6, dark yellowish brown, fine to coarse sand POORLY GRADED SAND (SP): 10YR-4/6, dark yellowish brown, to light olive brown 2.5Y-05/6, fine to medium grained, 10% coarse	
						WELL GRADED SAND WITH CLAY (SW): 10YR-4/6, dark yellowish brown, very dense, wet, up to 25% cobbles and gravel, fine to coarse sand, coarser in bottom 5" cohesive	
						POORLY GRADED SAND (SP): 10YR-4/6, dark yellowish brown, to 2.5Y-5/6, light olive brown, to 2.5Y-4/3, olive brown, very dense, wet, predominately medium to coarse sand, 15% fine sand, trace gravel, subrounded to subangular	10:20
3575	95					SANDY SILT (ML): 10YR-4/6, dark yellowish brown, fine grained, 25% fine sand	
						WELL GRADED SAND (SW): 10YR-4/6, dark yellowish brown, very dense, wet, 85% medium grained, 15% fine and coarse sand	
3570	100						

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Project: Owens Lake Groundwater Program

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Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-922

Sheet 4 of 5

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
100						WELL GRADED SAND (SW): 2.5Y-5/4, light olive brown	
			14	95%		SILTY SAND (SM): 2.5Y-5/3, light olive brown, fine sand, 15% silt - 2.5Y-4/3, olive brown - 2.5Y-5/3, light olive brown - 2.5Y-5/6, light olive brown	
3565	105					POORLY GRADED SAND (SP): 10YR-4/6, dark yellowish brown, fine to coarse sand, 15% medium	11:15
			15	91%		SILTY SAND (SM): 2.5Y-4/3, olive brown, fine grained, 15% silt POORLY GRADED SAND (SP): 2.5Y-4/3, olive brown, 80% fine and coarse sand, 20% medium, 40% fine gravel, 90% fine grained, 10% medium to coarse - fine to coarse sand, predominately fine to medium, 20% coarse	12:15
3560	110					SILTY SAND (SM): 2.5Y-4/3, olive brown, wet, medium to coarse sand, 10% fine gravel, 15% silt, 75% fine sand	
			16	90%		WELL GRADED SAND (SW): 2.5Y-4/3, olive brown, very dense, wet, fine to coarse sand, trace gravel and cobble, up to 2" subangular to subrounded	
3555	115					SILTY SAND (SM): 10YR-4/2, dark grayish brown, fine grained, 15% silt, cobble up to 0.4 feet rounded	12:35
						POORLY GRADED SAND (SP): 10YR-4/2, dark grayish brown, fine to medium sand - 10YR-4/2, dark grayish brown, to 10YR-4/3, brown, medium to coarse sand, 10% fine grained, trace of fine gravel	
3550	120		17	100%		- very dense, wet, thin bed of fine sand - increase in fine sand	
						- dark grayish brown, very dense, wet, 90% fine grained, 10% medium to coarse sand - 80% fine gravel, 15% medium to coarse, trace fine gravel (5% fines)	13:35
3545	125					- 10% medium to coarse sand, 85% fine, 5% fines	
			18	100%		SILTY SAND (SM): 2.5Y-4/2, dark grayish brown, fine grained, 15% silt	14:00
3540	130						
			19	100%		POORLY GRADED SAND (SP): 2.5Y-4/2, dark grayish brown, very dense, wet, medium to coarse sand, 15% fine sand, 5-7% silt - 2.5Y-4/1, dark grayish, weakly cemented, subangular grains, high energy	14:20
3535	135						

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Project: Owens Lake Groundwater Program
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 Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-922

Sheet 5 of 5

Elevation, feet	Depth, feet	CORE SAMPLES			MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length		
	135		20	100%	POORLY GRADED SAND (SP): 2.5Y-4/1, dark grayish, weakly cemented, subangular grains, high energy	14:30 Sand heaved into casing
3530	140				Boring terminated at 138 feet below ground surface. Groundwater encountered at approximately 78.2 feet during drilling. Boring completed as groundwater monitoring well.	
3525	145					
3520	150					
3515	155					
3510	160					
3505	165					
3500	170					

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-923

Sheet 1 of 4

Date(s) Drilled	9/27/13 - 9/28/13	Logged By [Reg. No.]	Michael Cook [CEG #1716]	Checked By [Reg. No.]	Darrin Hasham [CEG #2423]
Drilling Method	Sonic	Drill Bit Size/Type	6-inch Core Barrel	Total Depth of Borehole	118.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3650.3 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	67 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-923/MW-8

Elevation, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
	Depth, feet	Run Interval	Run/Sample Identification			
3650	0				Alluvial Fan Deposit SILTY SAND (SM): 10YR-6/6 brownish yellow, dry	15:00 9/27/13
			1	71%	POORLY GRADED GRAVEL WITH SAND (GP): 7.5YR-7/1 light gray, dense, fine and coarse grained gravel, fine-grained sand	
3645	5				POORLY GRADED SAND (SP): 10YR-8/1 white, dense, dry, medium- to coarse-grained sand, fine gravel < 15%	15:18 15:20
3640	10		2	100%	POORLY GRADED SAND (SP): 2.5YR-6/3 light yellowish brown, fine-grained sand @ 10 ft becomes 10YR-6/6, brownish yellow, medium-grained sand, fine gravel < 15% few 1-inch sized gravel	Add 9-inch casing
					SILTY SAND (SM): 10YR-7/2 light gray, dense, dry, fine-grained sand, <15% gravel	15:30 15:35
3635	15		3	86%	POORLY GRADED SAND WITH GRAVEL (SP): 10YR-6/6 brownish yellow, fine- to medium-grained sand, little fine gravel	
					POORLY GRADED SAND (SP): 10YR-6/3 pale brown, medium- to coarse-grained sand	15:48 15:51
3630	20				SILTY SAND (SM): 10YR-8/2 very pale brown, dense, dry, fine-grained sand	16:01 16:02
			5	100%	POORLY GRADED SAND (SP): 10YR-7/6 yellow, dense, dry, medium-grained, very clean washed sand	
					POORLY GRADED GRAVEL WITH SAND (GP): 10YR-7/3 very pale brown, fine and coarse gravel, > 15% sand	
3625	25				@ 24.5-25 ft cobbles within sand matrix	16:06 16:23
			6	100%	POORLY GRADED SAND WITH GRAVEL (SP): 10YR-5/4 yellowish brown, dense, slightly moist, fine- to medium-grained sand, fine gravel	
					SILTY SAND WITH GRAVEL (SM): 10YR-4/4 dark yellowish brown, fine-grained sand, fine gravel	16:36 16:43
					POORLY GRADED SAND WITH GRAVEL (SP): 10YR-5/4 yellowish brown,	
	30					

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-923

Sheet 2 of 4

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3620	30		7	100%		dense, dry, fine- to medium-grained sand, > 15% gravel, fine gravel, clean washed sand, no fines POORLY GRADED SAND WITH GRAVEL (SP): 10YR-5/4 yellowish brown, dense, dry, fine- to medium-grained sand, > 15% gravel, fine gravel, clean washed sand, no fines	
3615	35					POORLY GRADED SAND (SP): 10YR-6/6 brownish yellow, fine-grained sand, clean washed sand @35.5 ft coarse gravel, rounded POORLY GRADED SAND(SP): 10YR-8/2 very pale brown, dense, dry, fine-grained sand, <15% fine gravel	16:56 9/28/13 07:40
3610	40		8	100%		POORLY GRADED SAND WITH GRAVEL (SP): 10YR-7/3 very pale brown, medium-grained sand, >15% gravel, fine gravel @40-40.5 ft becomes reddish brown, weakly cemented POORLY GRADED SAND WITH GRAVEL (SP): reddish brown, dense, dry, >15% gravel,	
3605	45		9	100%		POORLY GRADED SAND (SP): 10YR-7/6 yellow, dense, dry, fine-grained sand POORLY GRADED GRAVEL WITH SAND (GP): 10YR-6/6 brownish yellow, dense, dry to moist, coarse gravel, fine-grained sand	07:49 07:54
3600	50		10	100%		MOTTLED POORLY GRADED SAND (SP) TO SILTY SAND (SM): red orange and gray, very dense, dry, clayey sand in tip POORLY GRADED SAND WITH GRAVEL (SP): 5YR-5/8 yellowish red, fine-grained sand, fine gravel @ 48.5 ft 3-inch thick SILT (ML): 2.5YR-7/2 light gray POORLY GRADED SAND (SP): 10YR-6/8 brownish yellow, dry, dense, fine-grained sand	07:58 08:40
3595	55		11	100%		SILT (ML) TO POORLY GRADED SAND (SP): 10YR-7/3 very pale brown, soft, slightly moist, fine-grained sand POORLY GRADED SAND (SP): 10YR-5/8 yellowish brown, dense, dry, medium-grained sand SILT (ML): 10YR-4/6 dark yellowish brown, soft, slightly moist, few mica POORLY GRADED SAND WITH GRAVEL (SP): 5YR-4/4 to 10R-3/6 reddish brown, dense, dry, gravel up to approximately 2-inches, cemented POORLY GRADED SAND (SP): 10YR-6/6 brownish yellow, dense, dry, medium- to coarse-grained sand, clean washed, < 15% gravel	09:09 09:14
3590	60		12	100%		SANDY SILT (ML): 10YR-6/6 brownish yellow, slightly moist, micaceous POORLY GRADED SAND (SP): 2.5YR-7/3 light reddish brown, dense, dry, medium- to coarse-grained sand, very clean washed, with few coarse gravel up to 2-inches diameter SILTY SAND WITH GRAVEL (SM): 2.5 YR-4/4 reddish brown, slightly moist, fine-grained sand, fine gravel, few coarse gravel up to 1-inch diameter	09:25 09:45
	65					POORLY GRADED SAND (SP): 10YR-6/4 light brownish yellow, slightly moist,	09:55 10:05

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-923

Sheet 3 of 4

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3585	65		13	100%		fine- to medium-grained sand, clean washed @ 66 ft few gravel	10:20 10:23
3580	70		14	100%		POORLY GRADED SAND (SP): 5BG-4/1 dark greenish gray, wet, medium- to coarse-grained sand, clear washed @ 70 ft dense	
3575	75					LEAN CLAY (CL): 5G-5/1 greenish gray, stiff, moist, mottled with iron oxide staining POORLY GRADED SAND (SP): 10Y-4/1 dark greenish gray, dense, wet, medium- to coarse-grained sand, clean washed	
3570	80		15	100%		10GY-4/1 dark greenish gray, loose, wet, coarse-grained sand, <15% gravel, fine gravel, rounded	10:32 11:05
3565	85					@ 86 ft few fine gravel, rounded sample loss due to heaving sands	11:50 13:08
3560	90		16	80%		10B-4/1 dark bluish gray, medium-grained sand, <15% gravel, fine gravel, rounded 10B-2.5/1 bluish black, dense, wet, fine- to medium-grained sand, weakly cemented	
3555	95					SILT (ML) TO POORLY GRADED SAND (SP): 5GY-4/1 dark greenish gray, dense POORLY GRADED SAND (SP): 5G-4/1 dark greenish gray, dense, fine- to medium-grained sand, very clean sand	13:40 14:15
	100						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-923

Sheet 4 of 4

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3550	100		17	80 %		SILTY SAND (SM): 10Y-5/1 greenish gray, wet, fine-grained sand, micaceous	
3545	105					POORLY GRADED SAND (SP): 5G-3/1 very dark greenish gray, wet, medium- to coarse-grained sand, <15% gravel, fine gravel, rounded, some isolated gravels up to 1/2-inch diameter 5GY-4/1 dark greenish gray, fine-grained sand	14:25 15:01
3540	110		18	100%		SILTY SAND (SM): 10Y-4/1 dark greenish gray, dense, wet, fine-grained sand POORLY GRADED SAND WITH GRAVEL (SP): 10Y-5/1 greenish gray, fine-grained sand, little fine gravel	
3535	115		19	100%		POORLY GRADED SAND (SP): 5GY-4/1 dark greenish gray, fine- to medium-grained sand, <15% gravel 10Y-5/1 greenish gray, medium- to coarse-grained sand, well rounded coarse grains, < 15% gravel	15:10 15:50
3530	120					Boring terminated at 118 feet below ground surface. Groundwater encountered at approximately 67 feet during drilling. Boring converted to groundwater monitoring well.	16:07
3525	125						
3520	130						
135							

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Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-924

Sheet 1 of 6

Date(s) Drilled	9/23/13 - 9/26/13	Logged By [Reg. No.]	Michael Cook [CEG #1716]	Checked By [Reg. No.]	Darrin Hasham [CEG #2423]
Drilling Method	Sonic	Drill Bit Size/Type	7-inch Core Barrel, 8-inch Casing	Total Depth of Borehole	188.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3760.4 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	137 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-924/MW-9

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3760	0		1	100%		POORLY GRADED SAND (SP): 10YR-4/2, dark grayish brown, dry, fine to coarse grained, 5-10% fine gravel, subangular to angular - 10YR-4/3 brown, fine grained, 10-15% medium to coarse grained, trace gravel - 10YR-4/2, dark grayish brown, fine to coarse grained, 5-10% fine gravel - up to 20% medium to coarse sand, 10-15% gravel - 2.5Y-4/4 olive brown, to -5/6, light olive brown, 50% fine, 50% medium to coarse, 10-15% gravel, up to 3" cobble - up to 20% medium to coarse sand	9:40 AM 9/23/2013
	5		2	100%		- 60-30% fine to 30-60% medium sand, 10% coarse, trace gravel up to 2"	9:45 AM
3755			3	200%		- 2.5Y-4/4 light brown, to -5/6, olive brown, 60-30% fine to 30-60% medium sand, 10% coarse, trace gravel up to 2"	10:10 AM soaked by added water
	10		4	66%		- 80% fine grained sand, 15% medium to coarse grained sand, 5-10% gravel, up to 4" cobbles	
3750			5	150%		POORLY GRADED SAND WITH GRAVEL (SP): 2.5Y-4/4, olive brown, dry, 60-65% fine grained sand, 20% medium grained sand, 10-15% gravel, subangular to angular - 10YR-4/4, dark yellowish brown, dry, 60% fine grained sand, 20-30% medium grained sand, 20% coarse gravel, up to 2"	10:25 AM 10:40 AM hot sample
3745	15		6	100%		- 10YR-5/4, yellowish-brown - 10YR-4/2, dark grayish brown, coarse sand- fine gravel, 20-25 % - 2.5Y-5/4, light olive brown	
			7	100%		- 2.5Y-4/4, olive brown, 60% fine, 20-30% medium, 20% coarse and gravel	10:45 AM, double bagged
3740	20		8	63%		- 80% fine grained sand, 10-15% medium grained sand, 5-10% gravel/cobbles, subangular to angular - 10YR-4/6, dark yellowish brown, very dense, 90% fine grained sand, 10% coarse grained sand and gravel, up to 2.5", subangular to angular - 80% fine to medium grained sand, 15% coarse grained sand, 5% fine gravel - 10YR-4/6, dark yellowish brown - 5YR-4/6, yellowish red,	10:55 AM double bagged
3735	25				- 10YR-5/4-5/6, yellowish brown, 80% fine grained sand, 10% medium and coarse sand, 10% gravel and cobbles	11:00 AM	
	30				WELL GRADED SAND (SW): 10YR-5/3, brown, fine to coarse sand, subangular to angular, coarse sand subrounded, 10% fine coarse gravel, up to 2"		

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Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olanha, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-924

Sheet 2 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3730	30		9	100%		WELL GRADED SAND (SW): 7.5YR-5/8, dark yellowish brown, subrounded to subangular POORLY GRADED SAND WITH GRAVEL (SP): 2.5Y-5/4, light olive brown, dry, very dense, 80% fine to medium, 15% coarse sand, 5% fine gravel, subangular to angular - 2.5Y-4/3, olive brown, 60% cobbles, 25% fine to medium grained sand, 15% coarse and fine gravel, subangular to angular	12:00 PM, very disturbed due to drilling
3725	35		10	100%		- fine to medium grained, 15% coarse grained sand, 10% gravel	hot sample
			11	100%		- 0.5' thick cobble zone, granite boulders or granodiorite pulverized in sand matrix, fine to coarse	12:20 PM bag melted, contents lost except solid rock
			12	150%		- 10YR-4/2, grayish brown, medium to coarse sand, 10% gravel	1:25 PM hot
			13	100%		- 2.5Y-4/1-3/2, dark gray to very dark grayish brown, very dense, cobbles in matrix, up to 6" and greater, fine to coarse grained matrix, 40% cobbles, 30% fine to medium sand, 20% coarse sand, 10% gravel	2:00 PM, bag melted
3720	40		14	100%		- 2.5 Y-4/1, dark gray, fine to coarse grained sand matrix, 50% cobbles	7:55 AM 9/24/2013
3715	45		15	100%		- 2.5YR-8/1, white, cobbles, fine to medium grained sand matrix	8:05 AM
						- very dense, dry, cobbles broken, fine to medium sand matrix	
						- 5YR-5/8, yellowish red, cobbles, fine to medium sand matrix	
3710	50		16	100%		- 2.5Y-6/3, light yellowish brown, very dense, coarse gravel, fine to medium sand matrix, cobbles greater than 8"	8:28 AM sample very hot
			17	100%		POORLY GRADED SAND (SP): 10YR-6/4, light brownish brown, medium grained, less than 15% gravel - 10YR-7/4, very pale brown cobbles in a fine sand matrix POORLY GRADED GRAVEL WITH SAND (GP): 10YR-6/4 light yellowish brown, coarse to medium gravel, fine to medium sand	8:45 AM part broke on drill rig at 08:59, switched out, bad casing; resumed drilling at 09:10
3705	55					- 10YR-7/2, light gray, coarse gravel	9:10 AM
3700	60		18	100%		POORLY GRADED SAND WITH GRAVEL (SP): 10YR-5/3, brown, very dense, - few coarse gravel, medium grained sand little fine gravel	
						- coarse gravel ~ 2" in diameter	
	65						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-924

Sheet 3 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3695	65					- coarse gravel layer with caliche along cobble	
						POORLY GRADED SAND WITH GRAVEL (SP): 10YR-6/4, yellowish brown, very dense, fine to medium sand, fine gravel, local coarse gravel	10:01 AM
3690	70		19	100%		- cobbles greater than 8", very hard	10:05, hot
						POORLY GRADED GRAVEL WITH SAND (GP): 10YR-7/3, very pale brown, very dense, fine to medium sand, medium grained gravel, subrounded	
			20	100%		POORLY GRADED SAND WITH GRAVEL (SP): 10YR-7/4, very pale brown, dense, dry, fine sand, fine gravel, well rounded to subrounded gravels	10:32 AM
3685	75					10YR-7/1, light gray	
			21	100%		10YR-6/4, light yellowish brown, very dense, dry, fine to medium sand, fine to coarse gravel	11:20 AM, difficult to advance, likely very hard cobble and boulders
3680	80						12:02 PM
			22	100%		POORLY GRADED GRAVEL (GP): medium to coarse grained, well rounded	
						POORLY GRADED SAND WITH GRAVEL (SP): 10YR-6/4, light yellowish brown, fine grained, few coarse sand, fine to coarse gravel, well rounded sand	
3675	85						
						- very dense, dry, few coarse gravel, greater than 15% gravel	12:45 PM
			23	100%			
3670	90					POORLY GRADED SAND (SP): 10YR-6/4, light yellowish brown, dry, fine sand, few fine gravel	1:05 PM, very hot, bag melted, changed tip
			24	100%			
						- cobbles ~8" thick - fine to medium sand, few fine gravel	1:15 PM
3665	95		25	100%		10YR-5/6, yellowish brown, fine sand, few fine gravel	
						POORLY GRADED SAND WITH GRAVEL (SP): 10YR-6/4 light yellowish brown, dense, fine-grained sand, >15% fine gravel, rounded, few coarse gravel	rig broke down at 02:15 PM
			26	100%			8:45 AM 9/25/2013, repairs completed at 08:30 AM
	100						

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Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3660	100					<p>POORLY GRADED SAND WITH GRAVEL (SP): 10YR-6/4 light yellowish brown, dense, fine-grained sand, >15% fine gravel, rounded, few coarse gravel</p> <p>POORLY GRADED GRAVEL WITH SAND (GP): 10YR-8/2 very pale brown, dense, coarse gravel, angular</p> <p>POORLY GRADED SAND WITH GRAVEL (SP): 10YR-6/4 to 10YR-6/8 light yellowish brown to brownish yellow, dry, dense, fine-grained sand, few fine gravel, coarse gravels up to 2-inches diameter, subrounded</p>	9:07 AM, added 8" casing
3655	105		27	100%		<p>- from 106 to 108 ft no recovery, very dense</p> <p>- from 108-109.5 ft rock flour likely due to pulverized cobbles, light gray to white</p> <p>- 10YR-6/8, brownish yellow, very dense, >15% gravel, gravels subrounded</p>	9:48:00 AM, clean hole/changed tip at 09:45 AM for sample collection, slow advanced, possibly cobbles
3650	110		28	60%		<p>- cobbles at 111 ft</p> <p>- 10YR-8/2, very pale brown, dense, little fine gravel</p>	10:00
3645	115		29	100%		<p>- at 113 ft flat cobble approximately 8-inch by 1-inch thick</p> <p>POORLY GRADED GRAVEL WITH SAND (GP): very dense, coarse gravel up to 2-inches diameter, > 15% sand, fine- to medium-grained sand</p> <p>- cobble/boulder at 114.5-115 ft</p> <p>- at 116 ft cobble, gray, fragmented by drill, 10YR-7/6 to 10YR-5/6 yellow to yellowish brown, fine-grained sand, fine gravel</p>	10:27 AM, cleaning hole after advanc 10 feet of
			30	100%		<p>POORLY GRADED SAND (SP): very fine-grained sand, < 15% gravel</p> <p>POORLY GRADED SAND WITH SILT (SP-SM): 10YR-7/3 very pale brown, few fine gravel, rounded</p>	10:52 AM
3640	120		31	100%		<p>POORLY GRADED SAND (SP): 10YR-7/3 very pale yellowish brown, dense, dry, fine-grained sand, very consistent, possible eolian sand</p> <p>- no gravel from 120-123 ft</p> <p>POORLY GRADED SAND WITH GRAVEL (SP) to POORLY GRADED GRAVEL WITH SAND (GP): 2.5Y-6/3 light yellowish brown, coarse-grained sand, angular gravels, cobbles up to approximately 4-inches diameter</p>	
3635	125		32	100%		<p>POORLY GRADED SAND WITH GRAVEL (SP): 2.5Y-7/4, very dense, fine-grained sand, < 15% gravel, fine gravels</p> <p>- 10YR-5/4 yellowish brown, dry to slightly moist, dense, fine- to medium-grained sand, >15% gravel, medium and coarse gravels</p>	11:35 AM
3630	130		33	100%		<p>- increase in gravel, some up to 2-inches diameter</p> <p>POORLY GRADED SAND WITH GRAVEL (SP) to POORLY GRADED GRAVEL WITH SAND (GP): 10YR-5/4 yellowish brown, slightly moist, fine- to medium-grained sand, fine gravel with some coarse gravel</p> <p>- at 133 ft cobble and coarse gravel</p>	10:15 AM
	135						

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Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-924

Sheet 5 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3625	135					GRAVEL WITH SAND (GP): 10YR-5/4 yellowish brown, moist	
						POORLY GRADED SAND WITH GRAVEL (SP): 10YR-4/4 yellowish brown dark yellowish brown, dense, wet, fine- to medium-grained sand, medium and coarse gravel, angular to subrounded	1:04 PM, driller indicated possible moisture at 137 feet, wet at 137-139 feet
3620	140		34	100%		POORLY GRADED SAND (SP): 10YR-4/6 dark yellowish brown, wet, medium-grained sand, free water, no gravel - wet, fine- to medium-grained sand, <15% gravel, few coarse angular gravel	
3615	145					POORLY GRADED SAND WITH GRAVEL (SP): dense, wet, fine- to medium-grained sand, fine to coarse gravel	
						POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM): 10YR-4/6 dark yellowish brown, dense, wet, fine-grained sand	1:50 PM
						POORLY GRADED SAND (SP): wet, medium-grained sand, <15% gravel, fine and coarse gravel, angular	
3610	150		35	100%		POORLY GRADED SAND WITH GRAVEL (SP): 10YR-5/8 yellowish brown, wet, medium- to coarse-grained sand, fine and coarse gravel	
3605	155					POORLY GRADED SAND WITH SILT (SP-SM): 10YR-4/6, dark yellowish brown, wet, fine-grained sand, approximately 4-inches thick	
						POORLY GRADED SAND WITH GRAVEL (SP): 10YR-5/8 yellowish brown, wet, fine- to medium-grained sand, coarse gravels up to 3-inches diameter	2:08 PM
3600	160		36	100%		POORLY GRADED SAND (SP): 10YR-4/6 dark yellowish brown, wet, fine- to medium-grained sand - 10YR-5/8 yellowish brown, wet, fine- to medium-grained sand, <15% gravel, few fine gravel, rounded, few coarse gravels up to 2-inches diameter	
3595	165					- cobble	
						- 10YR-5/2 brown, wet, medium-grained sand, few coarse gravel up to 1-inch diameter	7:30 AM
170						POORLY GRADED SAND (SP): 10YR-6/4 light yellowish brown, wet, medium- to coarse-grained sand, no gravel	

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Project: Owens Lake Groundwater Program

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Log of Borehole T-924

Sheet 6 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3590	170		37	100%		POORLY GRADED SAND (SP): 10YR-6/4 light yellowish brown, wet, medium- to coarse-grained sand, no gravel - 10YR-5/4 yellowish brown, <15% gravel, few coarse gravels up to approximately 3-inches diameter, subrounded - 7.5YR-5/4 brown, medium-grained sand POORLY GRADED SAND WITH GRAVEL (SP): 7.5YR-6/5 reddish yellow, wet, medium-grained sand, >15% gravel coarse gravel, rounded POORLY GRADED SAND (SP): 10YR-5/6 yellowish brown, wet, fine- to medium-grained sand POORLY GRADED SAND WITH SILT AND GRAVEL (SP): 7.5YR-5/8 strong brown, wet, very coarse gravel to cobbles, subrounded, fine-grained sand/silt matrix, slightly cemented	8:33 AM, advanced 8" casing 8:48 AM no recovery ~183 to 181 feet
3585	175		38	100%			
3580	180		39	30%			
3575	185						
3570	190					Boring terminated at 188 feet. Groundwater encountered at approximately 137 feet during drilling. Boring converted to groundwater monitoring well.	8:55 AM
3565	195						
3560	200						
205							

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-925

Sheet 1 of 4

Date(s) Drilled	7/22/13 - 7/23/13	Logged By [Reg. No.]	Darrin Hasham [CEG #2423]	Checked By [Reg. No.]	
Drilling Method	Sonic	Drill Bit Size/Type	7-inch Core Barrel, 8-inch Casing	Total Depth of Borehole	132.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3618.8 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	Artesian	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-925/MW-10

Elevation, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
	Depth, feet	Run Interval	Run/Sample Identification			
0					POORLY GRADED SAND (SP): 2.5Y-6/3 light yellowish brown, moist, fine-grained sand, weak reaction to HCl	15:38 7/22/2013
3615			1	100%	↓ Becomes weakly cemented, strong reaction to HCl, increased cementation and increased moisture with depth ↓ Becomes 7.5YR-4/4 brown, wet ↓ Becomes 2.5Y-6/3 light yellowish brown, very dense, fine- to medium-grained sand ← Trace coarse gravel ↓ Becomes 5GY-4/1 dark greenish gray, fine-grained sand ↓ Becomes 5GY-3/1 very dark greenish gray, medium-grained sand	15:44
3610					↓ Alternating 6-inch layers of fine-grained and medium-grained sand ↓ Becomes fine-grained sand, nearing silt sized particles	
3605			2	100%		
3600					SILT (ML): 5Y-4/2 olive gray, firm, moist, high plasticity, strong reaction to HCl POORLY GRADED SAND (SP): 10Y-3/4 very dark greenish gray, very dense, very moist, fine-grained sand SILT (ML): 2.5Y-5/2 grayish brown, firm, moist, high plasticity, strong reaction to HCl ↓ Becomes interbedded layers of gleyed medium-grained sand and silt	
3595			3	4/4		
3590					POORLY GRADED SAND (SP): N-3/ very dark gray, very dense, wet, fine- to medium-grained sand, trace coarse-grained sand, trace silt, shell fragments, non-plastic, weak reaction to HCl	
30			4	100%		

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
30							
						POORLY GRADED SAND (SP): N-3/ very dark gray, very dense, wet, fine- to medium-grained sand, trace coarse-grained sand, trace silt, shell fragments, non-plastic, weak reaction to HCl	
						▼ Becomes fine-grained sand, increase in silt	
3585						▼ Becomes medium-grained sand, decrease in silt	
						▼ Approximately 5% fines, possibly clay	
3580			5	100%		▼ Becomes fine-grained sand	
						▼ Becomes 10Y-4/1 dark greenish gray, dense, wet, fine-grained sand, approximately 5% clayey fines, non-plastic, strong reaction to HCl	
3575			6	100%			8:00 7/23/2013 1 foot collected on clean out run, 44 to 45 feet
3570			7	100%			
						▼ Becomes 2.5Y-5/2 grayish brown, no longer gleyed	
3565							9:00
						▼ Some iron oxide staining	
3560			8	100%		POORLY GRADED SAND WITH SILT (SP-SM): gleyed 10Y-4/1 dark greenish gray	
						← Gravel sized fragments of moderately cemented sand	
						▼ Becomes fine-grained sand	9:24
3555							
65							

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
65						← Abundant shell fragments, 65 to 66 feet	
3550	70		9	100%		POORLY GRADED SAND (SP): 10Y-4/1 dark greenish gray, very dense, wet, fine-grained sand, trace silt, non-plastic, strong reaction to HCl	10:15
3545	75		10	30%			Driller reported pushing run without vibrations, sample collected was fully saturated, poor recovery
3540	80					SILT (ML): 10GY-5/1 greenish gray, firm, moist to wet, some fine-grained sand, trace pea gravel sized calcium carbonate nodules, medium plasticity, weak reaction to HCl	10:40
3535	85		11	100%		POORLY GRADED SAND (SP): 5GY-3/1 very dark greenish gray, very dense, wet, fine-grained sand, trace silt, nonplastic, strong reaction to HCl POORLY GRADED SAND (SP): 5GY-3/1 very dark greenish gray, very dense, wet, fine-grained sand, trace silt, nonplastic, strong reaction to HCl	
3530	90						11:50
3525	95		12	100%		Trace clayey silt	
3520							
100							

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-925

Sheet 4 of 4

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
100							
3515	105		13	100%		POORLY GRADED SAND (SP): 5GY-3/1 very dark greenish gray, very dense, wet, fine-grained sand, trace silt, nonplastic, strong reaction to HCl	11:50
3510	110						
3505	115		14	100%		POORLY GRADED SAND WITH SILT (SP-SM): 5GY-3/1 very dark greenish gray, very dense, wet, fine-grained sand, trace clay, nonplastic, strong reaction to HCl	12:30 Switch over to 6-inch core barrel 8:00 7/24/2013
3500	120						
3495	125		15	100%			8:30 2 feet collected on clean out run, 122 to 124 feet
3490	130		16	50%			
3485	135					Boring terminated at 132 feet below ground surface due to poor sample recovery and progress. Boring completed as groundwater monitoring well. Backfilled overdrilled portion with portland cement/bentonite grout to a depth of 75 feet below ground surface.	

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-926

Sheet 1 of 6

Date(s) Drilled	7/17/13 - 7/21/13	Logged By [Reg. No.]	Darrin Hasham [CEG #2423]	Checked By [Reg. No.]	
Drilling Method	Sonic	Drill Bit Size/Type	6-inch Core Barrel, 8-inch Casing	Total Depth of Borehole	172.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3715.4 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	28.5 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-926/MW-11

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3715	0		1	100%		<p>POORLY GRADED SAND WITH SILT (SP-SM): 10YR-6/4 light yellowish brown, loose, dry, fine-grained sand, some medium- to coarse-grained sand, subangular, non-plastic, few gravel</p> <p>▼ Decrease in gravel, no reaction to HCl</p>	16:15 17/7/2013
3710	5					<p>SILTY SAND (SM): 10YR-6/4 light yellowish brown, loose, dry, fine-grained sand, some medium- to coarse-grained sand, angular, non-plastic, strong reaction to HCl</p>	16:24
3705	10		2	100%		<p>POORLY GRADED SAND WITH SILT (SP-SM): 10YR-7/3 very pale brown, loose, dry, fine- to medium-grained sand, some coarse-grained sand, angular, non-plastic</p> <p>▼ Becomes dry to moist, slight increase in average grain size</p> <p>▼ Becomes fine-grained sand</p> <p>▼ Occasional zones are weakly cemented, cemented zones are broken up while drilling, react strongly to HCl</p>	16:30
3700	15		3	66%		<p>POORLY GRADED SAND (SP): 10YR-7/3 very pale brown, loose, dry, fine-grained sand, some medium- to coarse-grained sand, trace silt, angular, non-plastic</p> <p>▼ Trace fine gravel</p> <p>▼ Becomes 7.5YR-6/4 light brown</p>	8:20 18/7/2013
3695	20		4	100%		<p>POORLY GRADED SAND WITH GRAVEL (SP): 7.5YR-6/4 light brown, loose, dry, fine-grained sand, some medium- to coarse-grained sand, fine and coarse gravel, trace silt, angular, non-plastic, weak reaction to HCl</p> <p>SILTY SAND (SM): 7.5YR-5/3 brown, wet, fine-grained sand, trace coarse-grained sand, low plasticity, weak reaction to HCl</p> <p>POORLY GRADED SAND (SP): 7.5YR-4/4 brown, wet, medium grained sand, occasional silt layer <1-inch thick (disturbed, 2.5Y-4/3 olive brown)</p>	8:32
3690	25						
	30						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-926

Sheet 2 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3685	30		5		<p>SANDY SILT (ML): 2.5Y-5/4 light olive brown, firm, wet, fine-grained sand, low plasticity, weak reaction to HCl</p> <p>LEAN CLAY (CL): 5Y-6/4 pale olive, firm, moist, low plasticity, some iron oxide mottling</p> <p>POORLY GRADED SAND (SP): 2.5-Y-4/4 olive brown, wet, medium-grained sand, nonplastic</p>		
3680	35				Trace coarse sand	9:00	
3675	40				6	100%	<p>SILTY SAND (SM): 2.5Y-4/3 olive brown, fine-grained sand, trace coarse-grained sand and fine gravel, occasional cemented nodules, low plasticity, weak reaction to HCl</p> <p>▼ Becomes 5Y-6/2 light olive gray, trace calcium carbonate nodules, strong reaction to HCl</p>
3670	45		<p>POORLY GRADED SAND WITH SILT (SP-SM): 5Y-4/3 olive, wet, fine-grained sand</p> <p>▼ Becomes fine- to medium-grained sand, trace coarse-grained sand</p> <p>▼ Becomes fine-grained sand</p> <p>▼ Becomes fine- to medium-grained sand, some coarse-grained sand, abundant mica</p>	9:45			
3665	50		7	100%	<p>SILTY SAND (SM): 2.5Y-4/4 olive brown, wet, fine-grained sand, nonplastic, medium reaction to HCl</p> <p>POORLY GRADED SAND (SP): 10YR-4/6 dark yellowish brown, dense, wet,</p>		
3660	55				<p>POORLY GRADED GRAVEL (GP): basal gravel layer</p> <p>SILTY SAND (SM): 5Y-5/3 olive, very dense, wet, medium-grained sand, low plasticity, medium reaction to HCl</p> <p>POORLY GRADED SAND (SP): 5Y-5/3 olive, very dense, wet, fine- to coarse-grained sand, subangular</p> <p>▼ Becomes 2.5Y-4/2 dark grayish brown, fine-grained sand, weak reaction to HCl, coarsens with depth</p>	10:30	
3655	60				<p>LEAN CLAY (CL): 5Y-6/4 pale olive, hard, moist, medium plasticity, trace sand</p> <p>CLAYEY SAND (SC): 10YR-4/3 brown, very dense, moist, fine- to medium-grained sand, some coarse-grained sand, medium plasticity, some silt</p> <p>Becomes 2.5Y-4/2 dark grayish brown</p> <p>Decrease in fines downward until about 65 feet, then abrupt increase in fines</p>		
	65		8	100%			

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-926

Sheet 3 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3650	65					<p>SILTY SAND (SM): 2.5Y-4/4 olive brown, very dense, wet, fine-grained sand, abundant calcium carbonate filaments, strong reaction to HCl</p> <p>Occasional ~2-inch layers of sandier material, decrease in calcium carbonate filaments</p>	10:55
3645	70		9	100%		<p>SANDY SILT (ML): 10YR-7/3 very pale brown, firm to hard, wet, fine-grained sand, medium plasticity, trace coarse gravel sized cemented nodules, strong reaction to HCl</p> <p>Becomes 10YR-4/4 dark yellowish brown</p>	
3640	75					<p>SILTY SAND (SM): 2.5Y-5/4 light olive brown, very dense, wet, fine-grained sand nonplastic</p> <p>Trace to some coarse-grained sand</p> <p>Becomes very homogenous</p>	12:00
3635	80		10	100%		<p>2-inch lens of poorly graded to well graded sand (SP to SW)</p> <p>Becomes 7.5YR-4/4 brown, decrease in fines</p>	
3630	85					<p>Coarse gravel sized cemented nodules, no reaction to HCl</p> <p>POORLY GRADED SAND WITH SILT (SP-SM): 10YR-4/4 dark yellowish brown, very dense, wet, fine-grained sand, nonplastic, no reaction to HCl</p> <p>SILTY SAND (SM): 10YR-5/3 brown, very dense, wet, fine-grained sand, trace coarse-grained sand, nonplastic, weak reaction to HCl</p>	12:49 19/7/2013
3625	90		11	100%			
3620	95					<p>SILT (ML): 2.5Y-5/3 light olive brown, hard, moist to wet, few fine-grained sand, low plasticity, strong reaction to HCl</p> <p>SILTY SAND (SM): 2.5Y-4/4 olive brown, very dense, wet, fine-grained sand, trace coarse-grained sand, subrounded, nonplastic, no reaction to HCl</p>	13:25
			12			<p>WELL GRADED SAND WITH SILT (SW-SM): 2.5Y-4/4 olive brown, very dense, wet, subangular, nonplastic</p> <p>SILTY SAND (SM): 2.5Y-4/3 olive brown, very dense, wet, fine-grained sand, trace coarse-grained sand, subangular, nonplastic, strong reaction to HCl</p>	
	100						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-926

Sheet 4 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3615	100				<ul style="list-style-type: none"> ↙ Increase in silt, calcium carbonate filaments, strong reaction to HCl ↙ No calcium carbonate filaments, sand coarsens with depth ← 2-inch lens of well graded sand (SW) 		
3610	105		13	100%	<ul style="list-style-type: none"> POORLY GRADED SAND WITH SILT (SP-SM): 2.5Y-4/4 olive brown, very dense, wet, fine-grained sand, trace coarse-grained sand, subrounded, nonplastic, no reaction to HCl SILTY SAND (SM): 10YR-5/4 yellowish brown, very dense, wet, fine-grained sand, subangular, nonplastic, mottled with black organic specks, no reaction to HCl 	14:00	
3605	110				<ul style="list-style-type: none"> POORLY GRADED SAND WITH SILT (SP-SM): 2.5Y-5/4 light olive brown, very dense, wet, fine-grained sand, subangular, nonplastic, weak reaction to HCl ↙ Becomes 7.5YR-4/4 brown, iron oxide staining ↙ Becomes 7.5YR-5/3 brown, medium- to coarse-grained sand 		
3600	115		14	100%	<ul style="list-style-type: none"> ↙ Becomes 10YR-5/2 grayish brown, multicolored grains, fine- to medium grained sand, primarily quartz and feldspar, possibly well graded sand, occasional silty lenses ↙ Becomes 5Y-6/2 light olive gray, increase in fines SILTY SAND (SM): 5Y-6/2 light olive gray, very dense, wet, fine-grained sand, subangular, nonplastic, no reaction to HCl 	14:45	
3595	120				<ul style="list-style-type: none"> POORLY GRADED SAND (SP): 5Y-6/2 light olive gray, very dense, wet, medium- to coarse-grained sand, subangular, nonplastic, no reaction to HCl ↙ Becomes fine-grained sand 		
3590	125		15	100%	<ul style="list-style-type: none"> LEAN CLAY (CL): 2.5Y-5/4 light olive brown, hard, moist, medium plasticity, no reaction to HCl POORLY GRADED SAND WITH SILT (SP-SM): 2.5Y-4/2 dark grayish brown, very dense, wet, subangular, nonplastic, weak reaction to HCl, occasional layers ~2.5-inches thick with more fines 		
3585	130				<ul style="list-style-type: none"> ↙ Becomes medium-grained sand Becomes fine- to coarse-grained sand 		
135						16:09	

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-926

Sheet 5 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3580	135						
			16	70%		<p>SILTY SAND (SM): 2.5Y-5/4 light olive brown, very dense, wet, fine-grained sand, trace coarse-grained sand, subrounded, nonplastic, weak reaction to HCl</p> <p>▼ Becomes 10YR-5/4 yellowish brown, fine-grained sand, trace medium-grained sand, subangular, increase in fines</p>	
3575	140						
						<p>POORLY GRADED SAND (SP): 2.5Y-4/3 olive brown, multicolored grains, primarily quartz and feldspar, wet, subangular, nonplastic, trace fines, trace gravel, weak reaction to HCl</p> <p>SILTY SAND (SM): 10YR-4/3 brown, very dense, wet, fine-grained sand, subangular, nonplastic, weak reaction to HCl</p>	17:10
3570	145		17	150%		<p>▼ Trace coarse-grained sand, increased fines</p> <p>▼ Becomes fine-grained sand, no coarse-grained sand</p> <p>▼ Trace coarse-grained sand</p>	
3565	150						8:50 20/7/2013
						<p>SANDY SILT (ML): 10YR-5/4 yellowish brown, hard, moist, fine-grained sand, trace fine gravel, low plasticity, no reaction to HCl</p> <p>SILTY SAND (SM): 7.5YR-4/2 brown, very dense, moist, fine- to coarse-grained sand, subangular, nonplastic, no reaction to HCl</p>	
3560	155		18	95%		<p>▼ Becomes fine-grained sand</p> <p>▼ Becomes 2.5Y-5/3 light olive brown</p> <p>▼ Fines content decreases with depth</p>	
3555	160						9:30
						<p>POORLY GRADED SAND (SP): 10YR-4/3 brown, very dense, wet, medium- to coarse-grained sand, subrounded, nonplastic,</p> <p>▼ Becomes medium-grained sand</p> <p>▼ Trace coarse gravel up to ~3-inches in diameter</p>	
3550	165		19	90%		<p>▼ Becomes medium- to coarse-grained sand</p> <p>▼ Becomes medium-grained sand</p>	
170						<p>SILTY SAND (SM): 10YR-4/4 dark yellowish brown, very dense, wet, fine-grained sand, some medium-grained sand, trace coarse-grained sand, subangular,</p>	

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3545	170		20	90%		nonplastic, weak reaction to HCl	10:20 2 feet collected on clean out run, 170 to 172 feet
						POORLY GRADED SAND (SP): multicolored grains, very dense, wet, fine- to coarse-grained sand, some fine gravel, subangular, nonplastic	
						Boring terminated at 172 feet below ground surface due to heaving sand, 42-43 feet of slough heaved into casing.	11:24
3540	175					Groundwater observed during logging core @ 28.5 feet Groundwater measured 7/18/2013 10:25 @ 26.7 feet Groundwater measured 7/19/2013 12:15 @30.0 feet Groundwater measured 7/20/2013 8:00 @33.5 feet Groundwater measured 7/20/2013 12:15 @ 38.0 feet	
						Boring completed as groundwater monitoring well.	
3535	180						
3530	185						
3525	190						
3520	195						
3515	200						
205							

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-927

Sheet 1 of 5

Date(s) Drilled	7/30/13 - 7/31/13	Logged By [Reg. No.]	Michelle Garde [CEG #2604]	Checked By [Reg. No.]	Darrin Hasham [CEG #2423]
Drilling Method	Sonic	Drill Bit Size/Type	6-inch Core Barrel	Total Depth of Borehole	154.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3635.1 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	30.75 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-927/MW-12

Elevation, feet	Depth, feet	CORE SAMPLES			MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length		
3635	0		1	100%	<p>SILTY SAND (SM): 10YR-6/3 pale brown, dry, fine-grained sand, strong reaction to HCl</p> <p>WELL GRADED SAND (SW): 10YR-5/4 yellowish brown, dry, fine- to coarse-grained sand, few gravel, few cobbles, strong reaction to HCl</p> <p>POORLY GRADED GRAVEL WITH COBBLES (GP): 10YR-6/3 pale brown, dry, strong reaction to HCl</p> <p>POORLY GRADED SAND (SP): 10YR-5/4 yellowish brown, moist, mostly fine-grained sand, some medium-grained sand, few coarse-grained sand, few gravel and cobbles, subangular to subrounded, strong reaction to HCl</p>	10:45 7/30/2013
3630	5				<p>SILTY SAND (SM): 2.5Y-5/4 light olive brown, dry to moist, fine-grained sand, weak reaction to HCl</p> <p>POORLY GRADED SAND (SP): 10YR-6/3 pale brown, dry, fine- to medium-grained sand, trace coarse-grained sand and fine gravel, trace fines, strong reaction to HCl</p>	11:54
3625	10		2	100%	<p>SILTY GRAVEL (GM): 10YR-6/3 pale brown, moist, mostly gravel and cobbles, little sand, strong reaction to HCl</p> <p>POORLY GRADED SAND WITH SILT (SP): 10YR-5/4 yellowish brown, moist, fine- to medium-grained sand, strong reaction to HCl</p> <p>POORLY GRADED SAND (SP): 2.5Y-6/4 light yellowish brown, moist, mostly fine- to medium-grained sand, little coarse-grained sand, strong reaction to HCl</p> <p>SILTY SAND (SM): 2.5Y-6/3 light yellowish brown, moist, fine-grained sand, strong reaction to HCl</p> <p>POORLY GRADED SAND (SP): 2.5Y-5/3 light olive brown, moist, fine- to medium-grained sand, strong reaction to HCl</p> <p>-Below 11 feet, becomes mostly fine- to medium-grained sand with few to little coarse-grained sand and few gravel</p> <p>-Below 13 feet, becomes 2.5Y-6/3 light yellowish brown, fine- to medium-grained sand</p>	12:00
3620	15				<p>WELL GRADED SAND WITH GRAVEL AND COBBLES (SW): 2.5Y-5/3 light olive brown, moist, fine- to coarse-grained sand, dark gray gravel, strong reaction to HCl</p> <p>POORLY GRADED SAND WITH SILT (SP-SM): 2.5Y-6/3 light yellowish brown, moist, fine- to medium-grained sand, ~1-inch thick silty sand interbeds, strong reaction to HCl</p> <p>-Below 16.5 feet, becomes 2.5Y-5/3 light olive brown, trace to few gravel and cobbles</p>	12:15
3615	20		3	100%	<p>SILTY SAND (SM): 2.5Y-5/3 light olive brown, moist, mostly fine- to medium-grained sand, few coarse-grained sand and fine gravel, strong reaction to HCl</p> <p>POORLY GRADED SAND WITH SILT (SP-SM): 2.5Y-6/3 light yellowish brown, moist, fine- to medium-grained, trace fine gravel, trace clay, strong reaction to HCl</p> <p>-Below 21.5 feet, becomes 5Y-6/3 pale olive</p>	Hot sample
3610	25		4	100%	<p>POORLY GRADED SAND (SP): 5Y-6/2 light olive gray, dry to moist, mostly fine- to medium-grained sand, little coarse-grained sand, few gravel and cobbles, strong reaction to HCl</p> <p>-Below 23.5 feet, becomes fine- to medium-grained sand</p>	12:45
			5	100%	<p>POORLY GRADED SAND WITH SILT (SP-SM): 5Y-6/2 light olive gray, dry to moist, fine-grained sand, strong reaction to HCl</p> <p>SILTY SAND (SM): 5Y-4/1 dark gray, dry to moist, fine-grained sand, trace medium- to coarse-grained sand, strong reaction to HCl</p> <p>POORLY GRADED SAND (SP): 5Y-5/2 olive gray to 5Y6/2 light olive gray, dry to moist, fine-grained sand, strong reaction to HCl</p>	Hot
	30					

Report: LADWP_SONIC; File: 135335 COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-927

Sheet 2 of 5

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3605	30					-Below 30 feet, becomes 5Y-5/2 olive gray, moist, fine- to medium-grained sand	
						-Below 32 feet, becomes 10YR-4/3 brown, wet, fine-grained sand	13:33
						-Below 33 feet, becomes 10YR-2/1 black, some mica	
3600	35		6			SANDY LEAN CLAY (CL): 5GY-4/1 dark greenish gray, soft to firm, wet, fine- to medium-grained sand, medium plasticity, strong reaction to HCl	
						POORLY GRADED SAND WITH SILT (SP-SM): 5GY-3/1 very dark greenish gray with 2.5Y-8/2 pale yellow shells, wet, strong reaction to HCl	
3595	40					-Below 40.6 feet, becomes 5GY-2.5/1 greenish black, increased coarse-grained sand	
						LEAN CLAY (CL): 10Y-5/1 greenish gray, soft to firm, wet, medium plasticity, strong reaction to HCl	14:00
3590	45		7	75%		POORLY GRADED SAND WITH CLAY (SP-SC): 5GY-3/1 very dark greenish gray, wet, fine- to medium-grained sand, with shells, strong reaction to HCl	
3585	50		8			POORLY GRADED SAND (SP): wet, fine- to medium-grained sand, possibly 1 or 2, 1-2 foot clay beds, <5% cobbles (by volume) up to 3.5 inches in diameter, strong reaction to HCl	14:25 Sample is fully saturated and liquefied in a 5 gallon bucket for logging.
3580	55					POORLY GRADED SAND WITH SILT (SP-SM): 5GY-4/1 dark greenish gray, wet, fine-grained sand, strong reaction to HCl	14:50
						-Below 54.5 feet, becomes 10Y-3/1 very dark greenish gray, fine- to medium-grained sand, trace shells	
						WELL GRADED SAND WITH GRAVEL (SW): 10Y-4/1 dark greenish gray, wet, fine gravel up to 1.5 inch in diameter, rounded gravel, strong reaction to HCl	
			9	100%		POORLY GRADED SAND WITH SILT (SP-SM): 10Y-3/1 very dark greenish gray, fine-grained sand, strong reaction to HCl	
						-Below 58 feet, becomes fine- to medium-grained sand	
3575	60					-At 59 feet, 6-inch lens of gravel up to 2-inches in diameter	
						-At 59.5 feet, 2-inch lens of sandy clay (CL)	
						-Below 60 feet, becomes 10Y-4/1 dark greenish gray	
						SILTY SAND (SM): 5Y-3/2 dark olive gray, wet, fine-grained sand, trace gravel up to 1.5 inches in diameter, strong reaction to HCl	15:30
						-At 63.5 feet, 6-inch lens of bimodal fine- and coarse-grained sand	
65						CLAYEY SAND (SC): 2.5Y-3/2 very dark grayish brown, firm, wet, fine-grained	

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Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-927

Sheet 3 of 5

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3570	65		10	100%		sand, micaceous, strong reaction to HCl	16:10
						SILTY SAND (SM): 2.5Y-3/1 very dark gray, wet, fine-grained sand, strong reaction to HCl	
						CLAYEY SAND (SC): 2.5Y-3/2 very dark grayish brown, wet, fine-grained sand, micaceous, strong reaction to HCl	
3565	70					SILTY SAND (SM): 2.5Y-3/1 very dark gray, wet, fine-grained sand, micaceous	
						SANDY SILT (ML): 2.5Y-3/1 very dark gray, firm, wet, fine-grained sand, weak reaction to HCl	
						SILTY CLAY (CL-ML): 5Y-4/1 dary gray, hard, wet, low to medium plasticity, weak reaction to HCl	
						SILT (ML): 5GY-3/1 very dark greenish gray, firm, wet, low to medium plasticity	
3560	75		11			-Below 76 feet, becomes 5GY-4/1 dark greenish gray	
						POORLY GRADED SAND (SP): 5GY-2.5/1 greenish black, wet, fine- to medium-grained sand, strong reaction to HCl	
						SILT (ML): 5GY-4/1 dark greenish gray, firm, wet, weak reaction to HCl	
3555	80					POORLY GRADED SAND (SP): 5GY-2.5/1 greenish black, wet, fine- to medium-grained sand, weak reaction with HCl	8:00 7/31/2013
						SANDY SILT (ML): 5GY-4/1 dark greenish gray, wet, soft, fine-grained sand, trace clay	
						LEAN CLAY (CL): 5GY-4/1 dark greenish gray, stiff, wet, trace silt	
3545	90		12	60%		SANDY LEAN CLAY (CL): 5GY-4/1 dark greenish gray, firm, wet, fine-grained sand, some interbedded sands	8:20
						POORLY GRADED SAND (SP): 5GY-3/1 very dark greenish gray, wet, fine- to medium-grained sand, trace shells	
						WELL GRADED SAND (SW): 5GY-3/1 very dark greenish gray, wet, fine- to coarse-grained sand, few to little fine gravel up to 3/8 inch in diameter, trace fine, subrounded sand	
3540	95		13	100%		-At 95 feet, 6-inch lens of well graded sand with silt (SP-SM), trace organics	
						-Below 97.5 feet, becomes 10Y-3/1 very dark greenish gray	
	100						

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Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-927

Sheet 5 of 5

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3500	135		17	100%		<p>-Below 136 feet, large gravel sized subrounded sandstone pieces up to 3-inches in diameter</p> <p>-Below 138.5 feet, sandstone clasts up to 5-inches in diameter</p>	
3495	140					<p>-Below 140 feet, becomes fine- to medium-grained sand, trace coarse-grained sand</p> <p>POORLY GRADED SAND WITH SILT (SP-SM): 10Y-4/1 dark greenish gray, wet, fine-grained sand, strong reaction to HCl</p> <p>POORLY GRADED SAND (SP): 10YR-4/1 dark gray to 10YR-5/1 gray, wet, fine-grained sand, strong reaction to HCl</p>	13:25
3490	145		18	83%		<p>POORLY GRADED SAND WITH CLAY (SP-SC): 10Y-5/1 greenish gray, wet, fine-grained sand, trace fine and coarse gravel sized siltstone pieces, strong reaction to HCl</p> <p>-Below 146 feet, fine and coarse gravel sized siltstone pieces up to 2-inches in diameter</p> <p>-Below 148 feet, becomes 2.5Y-4/1 dark gray, fine and coarse gravel sized white siltstone pieces up to 1.5 inches in diameter</p>	
3485	150					<p>-Below 150 feet, becomes 5Y-4/1 dark gray, fine and coarse gravel sized siltstone clasts up to 1.5-inches in diameter</p>	
3480	155					<p>Boring terminated at 154 feet below ground surface.</p> <p>Groundwater measured 7/30/2013 3:25 @ 30.0 feet Groundwater measured 7/31/2013 8:30 @ 45.6 feet Groundwater measured 7/31/2013 12:50 @ 30.0 feet</p> <p>Boring completed as groundwater monitoring well.</p>	
3475	160						
3470	165						
	170						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-928

Sheet 1 of 6

Date(s) Drilled	8/2/13 - 8/3/13	Logged By [Reg. No.]	Michelle Garde / Michael Cook	Checked By [Reg. No.]	
Drilling Method	Sonic	Drill Bit Size/Type	9-inch to 19 feet, 8-inch to 100 feet, 7-inch to 196 feet	Total Depth of Borehole	196.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3633.5 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	28.25 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-928/MW-13

Elevation, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
	Depth, feet	Run Interval	Run/Sample Identification			
0					SILTY GRAVEL (GM): 2.5Y-6/2 light brownish gray, dry, fine and coarse gravel, cobbles up to 5 inches in diameter -Below 1 foot, becomes moist	8/2/2013
3630		1	86%		-At 1.75 feet, 3-inch lens of poorly graded gravel with silt (GP-GM), fine and coarse gravel sized limestone up to 1.5-inches in diameter, subrounded SILTY SAND (SM): 2.5Y-5/4 light olive brown, moist, fine-grained sand, strong reaction to HCl	
3625		2	100%			11:20
3620		3	100%		POORLY GRADED SAND (SP): 5Y-4/2 olive gray, dry to moist, fine- to medium-grained sand, trace coarse-grained sand, trace fine and coarse gravel, strong reaction to HCl WELL GRADED SAND (SW): 5Y-5/3 olive, dry to moist, fine- to coarse-grained sand, few fine and coarse gravel, subangular clast of limestone, strong reaction to HCl POORLY GRADED SAND (SP): 5Y-4/4 olive, moist, fine-grained sand, caliche, strong reaction to HCl SANDY LEAN CLAY (CL): 5Y-5/2 olive gray, firm, moist, fine-grained sand, strong reaction to HCl CLAYEY SAND (SC): 5Y-6/3 pale olive, moist, fine- to medium-grained sand, strong reaction to HCl POORLY GRADED GRAVEL WITH SAND (GP): 5Y-7/2 light gray, moist, coarse gravel, cobble up to 4 inches in diameter, strong reaction to HCl WELL GRADED GRAVEL WITH CLAY AND SAND (GW-GC): 5Y 4/4 olive, moist, coarse gravel, medium-grained sand, rounded gravel, some iron oxide staining along grains, strong reaction to HCl POORLY GRADED GRAVEL WITH SAND (GP): 5Y-4/4 olive, dry to moist, fine gravel, rounded, clast up to 2-inch in diameter, strong reaction to HCl	11:35
3615		4	100%		-Below 25 feet, becomes moist to wet -At 27 feet, 6-inch lens of cobbles CLAYEY SAND (SC): 2.5Y-3/3 dark olive brown, moist to wet, trace gravel, strong reaction to HCl CLAYEY GRAVEL WITH SAND (GC): well rounded gravel, strong reaction to HCl POORLY GRADED SAND (SP): 2.5Y-4/3 olive brown, moist, fine-grained sand,	1:50
3610						
3605						
30						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

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Log of Borehole T-928

Sheet 2 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3600	30				strong reaction to HCl GRAVELLY LEAN CLAY (CL): 2 -3/1 very dark greenish gray, coarse gravel, strong reaction to HCl CLAYEY GRAVEL WITH SAND (GC): 5Y-4/2 olive, wet, rounded gravel, strong reaction to HCl POORLY GRADED GRAVEL WITH SAND (GP): 5GY -2.5/1 greenish black, wet, coarse gravel up to 3-inch in diameter, coarse gravel, strong reaction to HCl	2:05	
3595	35		5	100%	Becomes 10R3/2 dark red CLAYEY GRAVEL WITH SAND (GC): 10B 2 -2.5/1 bluish black, dry, rounded gravel, strong reaction to HCl -At 41.5 feet, 6-inch cobble -At 42.5 feet, 6-inch cobble	2:30	
3590	40				POORLY GRADED SAND (SP): 5GY 4/1 dark greenish gray, dry, fine- to medium-grained sand, strong reaction to HCl -At 44 feet, 6-inch cobble POORLY GRADED GRAVEL WITH SAND (GP): 10 B-3/1 very dark bluish gray, wet, rounded, strong reaction to HCl FAT CLAY WITH GRAVEL (CH): 10B 5/1 bluish gray, moist, strong reaction to HCl POORLY GRADED SAND WITH GRAVEL (SP): 5B 2.5/1 bluish black, wet, rounded gravel, strong reaction to HCl FAT CLAY WITH GRAVEL (CH): 10 G-3/1 very dark greenish gray, wet, rounded gravel, strong reaction to HCl POORLY GRADED SAND WITH CLAY AND GRAVEL (SP-SC): 5 PB-2.5/1, wet, fine and coarse gravel, rounded gravel, strong reaction to HCl		
3585	45		6	100%			
3580	50				CLAYEY SAND WITH GRAVEL (SC): 5GB-4/1 dark greenish gray, moist, strong reaction to HCl POORLY GRADED GRAVEL WITH CLAY AND SAND (GP-GC): 5BC-4/1 dark greenish gray, wet, rounded gravel, strong reaction to HCl POORLY GRADED SAND (SP): 10 B-2.5/1 black, wet, medium-grained sand, strong reaction to HCl POORLY GRADED GRAVEL WITH CLAY AND SAND (GP-GC): 10 B-3/1 very dark bluish gray, wet, coarse gravel, strong reaction to HCl	3:15	
3575	55		7	100%			
3570	60				CLAYEY GRAVEL WITH SAND (GC): 5 BG-4/1 very dark greenish gray, moist, coarse gravel, subrounded to rounded, strong reaction to HCl POORLY GRADED GRAVEL (GP): 10B-4/1 dark bluish gray, moist, few sand, strong reaction to HCl GRAVELLY CLAY (GC): 10 GB -5/1 bluish gray, moist, strong reaction to HCl	3:50	
3565	65						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

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Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-928

Sheet 3 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3565	65		8	100%		POORLY GRADED GRAVEL WITH SAND (GP): wet, coarse gravel up to 3-inches in diameter	
	70					-Below 68.5 feet, increase in sand -Below 70 feet, becomes 5B-2.5/1 bluish black, medium-grained sand, some coarse gravel	4:15
3555	75		9	100%		CLAYEY GRAVEL WITH SAND (GC): 10GY-4/1 dark greenish gray, moist, coarse gravel, rounded, strong reaction to HCl POORLY GRADED SAND WITH GRAVEL (SP) to POORLY GRADED GRAVEL WITH SAND (GP): 5GY-4/1 dark greenish gray, wet, fine-grained sand, coarse gravel up to 2 inches in diameter, rounded to angular, strong reaction to HCl	
3550	80					POORLY GRADED SAND WITH GRAVEL (SP): 5GY-4/1 dark greenish gray, wet, fine-grained sand, coarse gravel, strong reaction to HCl POORLY GRADED GRAVEL (GP): 10Y-2.5/1 greenish black, wet, fine and coarse gravel, strong reaction to HCl	4:45
3545	85		10	100%		-At 85 feet, 2-inch lens of coarse-grained sand -Below 86 feet, becomes coarse gravel	
	90					POORLY GRADED GRAVEL WITH CLAY AND SAND (GP-GC): wet, subrounded to angular, strong reaction to HCl POORLY GRADED SAND (SP): 5GY-2.5/1 greenish black, wet, medium- to coarse-grained sand, strong reaction to HCl	
3540	95		11	100%		POORLY GRADED GRAVEL WITH SILT (GP-GM): 5GY-4/1 dark greenish gray, wet, coarse gravel up to 3 inches in diameter, angular to subangular, few medium-grained sand	7:50 8/3/2013
						POORLY GRADED SAND (SP): 5GY-4/1 dark greenish gray, wet, fine-grained sand	
						POORLY GRADED GRAVEL WITH SAND (GP): 5GY-5/1 greenish gray, wet, fine-grained sand, well rounded gravel	
						CLAYEY GRAVEL WITH SAND (GC): 10Y-5/1 greenish gray, wet, coarse gravel, subrounded to angular	
						POORLY GRADED GRAVEL (GP): wet, coarse gravel, angular	
3535						CLAYEY GRAVEL (GC): 5GY-5/1 greenish gray, wet	
						POORLY GRADED GRAVEL (GP): 5GY-3/1 very dark greenish gray, wet, coarse gravel, few sand	
100	100					POORLY GRADED GRAVEL WITH CLAY AND SAND (GP-GC): 5YG-4/1 dark	

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Log of Borehole T-928

Sheet 4 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
100						greenish gray, wet, fine-grained sand, rounded to subrounded	
						POORLY GRADED GRAVEL (GP): 10Y-4/1 dark greenish gray, wet, coarse gravel, rounded	8:20
3530						CLAYEY GRAVEL WITH SAND (GC): 10YR-5/2 grayish brown, dense, moist, coarse gravel up to 2 inches in diameter, subrounded	
			12	100%			
3525							
						POORLY GRADED GRAVEL WITH SAND (GP): 10Y-5/1 greenish gray, wet, coarse gravel, fine-grained sand, rounded, some iron oxide staining along clast	
						CLAYEY GRAVEL (GC): 10Y-6/1 greenish gray, dense	8:54
3520						POORLY GRADED GRAVEL (GP): 10Y-6/1 greenish gray, few sand, fine gravel	
						CLAYEY GRAVEL (GC): 10Y-6/1 greenish gray, moist, few sand	
						CLAYEY SAND (SC): 10Y-5/1 greenish gray, few gravel	
						POORLY GRADED SAND WITH GRAVEL (SP): 10YR-5/2 grayish brown, moist, fine-grained sand, coarse gravel	
			13	100%		SILTY SAND (SM): 10Y-6/1 greenish gray, loose, wet, few fine and coarse gravel up to 1 inch in diameter	
3515							
						-Below 120 feet, becomes fully saturated	
						POORLY GRADED SAND (SP): 10Y-4/1 dark greenish gray, loose, wet, fine-grained sand	9:20
3510						POORLY GRADED GRAVEL WITH SAND (GP): 10YR-5/2 grayish brown, loose, wet, fine-grained sand, coarse gravel up to 2 inches in diameter	
						-Below 125 feet, decreased sand	
						SANDY LEAN CLAY (CL): 10YR-5/2 grayish brown, soft to firm, moist to wet	
			14	100%		POORLY GRADED GRAVEL WITH SAND (GP): 10YR-4/2 dark grayish brown, loose, wet, fine-grained sand, fine and coarse gravel	
3505							
3500							9:45
135							

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Log of Borehole T-928

Sheet 5 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
135							
			15	100%		<p>POORLY GRADED GRAVEL WITH SAND (GP): 10YR-4/2 dark grayish brown, loose, wet, fine-grained sand, fine and coarse gravel</p> <p>POORLY GRADED SAND (SP): 10YR-4/2 dark grayish brown, very dense, moist, fine-grained sand, few fine and coarse gravel up to 1 inch in diameter -Below 138 feet, becomes fine-grained sand</p>	
3495							
						POORLY GRADED GRAVEL (GP): 10YR-5/2 grayish brown, loose, wet, coarse gravel, rounded	
140							
						CLAYEY GRAVEL (GC) to LEAN CLAY WITH GRAVEL (CL): 10YR-6/4 light yellowish brown, moist to wet, few sand, subrounded to rounded gravel	10:15
3490							
			16	100%			
145							
						-At 148 feet, 6-inch cobble	
3485						POORLY GRADED GRAVEL (GP): 10YR-5/6 yellowish brown, loose, wet, few sand	
150							
						CLAYEY SAND (SC): 10YR-5/3 brown, wet, fine-grained sand, few gravel -At 151 feet, 6-inch cobble	
3480						CLAYEY SAND WITH GRAVEL (SC): 10YR-6/4 light yellowish brown, dense, wet	10:45
						POORLY GRADED SAND WITH GRAVEL (SP): 10YR-6/3 pale brown, wet, coarse-grained sand, fine gravel	
155							
			17	100%			
						CLAYEY SAND WITH GRAVEL (SC): 10YR-5/1 gray, loose, wet, fine-grained sand, fine gravel, subangular gravel	
3475						LEAN CLAY WITH GRAVEL (CL): 10YR-5/2 grayish brown, soft, moist	
160							
						POORLY GRADED GRAVEL WITH SAND (GP): 10YR-4/2 dark grayish brown, dense, wet, fine gravel	
3470							11:10
			18	100%			
165						CLAYEY GRAVEL (GC): 10YR-5/6 yellowish brown, very dense, moist, locally wet, few sand, rounded gravel	
3465							
170							

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Log of Borehole T-928

Sheet 6 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
170							
3460	175		19	100%	<p>CLAYEY GRAVEL (GC): 10YR-5/6 yellowish brown, very dense, moist, locally wet zone, few sand, rounded gravel</p> <p>-At 175.5 feet, lens of lean clay with gravel, large gravel up to 2 inches in diameter</p> <p>POORLY GRADED GRAVEL (GP): 10YR-4/4 dark yellowish brown, loose, wet, few sand, fine and coarse gravel up to 1 inch in diameter, rounded gravel</p> <p>CLAYEY GRAVEL (GC): 10YR-5/4 yellowish brown, dense, moist to wet, few medium- to coarse-gained sand, angular to subrounded gravel</p>	11:45	
3455	180						
3450	185						
3445	190		20	100%	<p>-Below 182 feet, becomes very dense</p>	2:40	
3440	195						
3435	200				<p>-At 195 feet. cobble</p> <p>Boring terminated at 196 feet below ground surface. Groundwater encountered @ 28.25 feet. Boring completed as groundwater monitoring well.</p>		
3430	205						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-929

Sheet 1 of 6

Date(s) Drilled	8/5/13 - 8/8/13	Logged By [Reg. No.]	Michelle Garde [CEG #2604]	Checked By [Reg. No.]	Darrin Hasham [CEG #2423]
Drilling Method	Sonic	Drill Bit Size/Type	6-inch Core Barrel	Total Depth of Borehole	200.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3632.2 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	8.1 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-929/MW-14

Elevation, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
	Depth, feet	Run Interval	Run/Sample Identification			
0					SILTY SAND (SM): 2.5Y-5/2 grayish brown, dry, fine-grained sand, little fine gravel	
3630			1	100%	POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM): 2.5Y-5/2 grayish brown, dry to moist, fine gravel, subangular to subrounded, some fine sand POORLY GRADED GRAVEL WITH SAND (GP): 2.5Y-5/2 grayish brown, dry to moist, fine gravel, subangular to subrounded, some fine sand POORLY GRADED GRAVEL (GP): 2.5Y-5/2 grayish brown, dry to moist, fine and coarse gravel up to 2" diameter, angular POORLY GRADED SAND (SP): 10YR-5/3 brown, dry, fine- to medium- grained sand, trace coarse sand	8/5/13
3625					SILTY SAND (SM): 10YR-5/3 brown, moist, fine grained sand POORLY GRADED SAND (SP): 10YR-5/3.5 brown, dry to moist, fine grained sand, trace silt POORLY GRADED GRAVEL WITH SAND (GP): 10YR-5/2 grayish brown, dry to moist, oblong fine gravel, some fine- to medium- grained sand	15:30
3620			2	100%	SILTY SAND (SM): 10YR-5/4 yellowish brown, moist, fine grained sand, trace fine and coarse gravel up to 2" diameter POORLY GRADED GRAVEL (GP): 2.5Y-4/1 dark gray, dry, coarse gravel with cobbles, angular -At 8 feet little fine- to medium- grained sand POORLY GRADED SAND (SP): 2.5Y-5/3 light olive brown, moist, fine- to medium- grained sand, few coarse sand and fine gravel up to 1/2" diameter WELL GRADED SAND (SW): 2.5Y-4/1 dark gray, moist, fine- to coarse- grained sand, oblong, well rounded POORLY GRADED SAND (SP): 2.5Y-5/2 gray brown, dry to moist, fine- to medium- grained sand, little coarse sand SANDY SILT (ML): 2.5Y-6/2 light brownish gray, dry to moist, some fine grained sand	
3615			3	100%	POORLY GRADED SAND (SP): 5Y-6/2 Light olive gray, dry to moist, fine- to medium- grained sand SILTY SAND (SM): 5Y-6/2 light gray, dry to moist, fine grained sand POORLY GRADED SAND (SP): 2.5Y-4/1 dark gray, fine- to medium- grained sand -At 15.5 feet 3" of well rounded coarse sand	16:00 Hot
3610			4	86%	SILTY SAND (SM): 5Y-7/1 light gray, moist, fine grained sand WELL GRADED SAND (SW): 5Y-6/2 light olive gray, moist, fine- to coarse- grained sand, well rounded to subrounded, trace fine and coarse gravel SILTY SAND (SM): 10Y-6/1 greenish gray, moist, fine grained sand, trace fine gravel POORLY GRADED SAND (SP): 5Y-4/3 olive, moist, fine- to medium- grained sand, little coarse grained sand, subangular to subrounded SILTY SAND (SM): 5Y-6/2 light olive gray, moist to wet POORLY GRADED SAND (SP): 5Y-6/2 light olive gray, moist to wet, fine grained sand, few coarse grained sand -At 22 feet, fine- to medium- grained sand -At 22.5 feet, 5Y-5/2 olive gray, trace fine gravel	16:20
3605					POORLY GRADED SAND (SP): 5Y-4/3-4/2 olive to olive gray, moist to wet, fine grained sand, few coarse grained sand and fine gravel -At 24.5 feet, increase in moisture content POORLY GRADED SAND (SP): 10Y-3/2 very dark greenish gray, moist to wet, fine grained sand	
30					LOW PLASTICITY SILT (ML): 10Y-3/1 very dark greenish gray, wet, very soft	7:30 8/6/13 At 28 feet, very soft, no vibration drilling used, pushed only

Report: LADWP_SONIC; File: 135335 COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-929

Sheet 2 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3600	30					LOW PLASTICITY SILT (ML): 10Y-3/1 very dark greenish gray, wet, very soft	
3595	35		5	7%			
3590	39					POORLY GRADED SAND (SP): 5Y-3/2 dark olive gray, moist to wet, fine grained sand, few medium grained sand, subrounded lithic and quartz grains	
3585	45		6	27%		LOW PLASTICITY SILT (ML): 10Y-3/1 very dark greenish gray, wet, very soft, sulfur odor	8:30 Clean out run after Run 6, produced a hopper full of silt (from 42-52 feet bgs), filled casing to 25 feet
3580	51					-At 51 feet, 5Y-4/2-3/2 olive gray to dark olive gray, moist to wet, some fine grained sand	
3575	55		7	100%		LEAN CLAY (CL): N 3/1 very dark gray, wet, very soft	8:45
	55					POORLY GRADED SAND WITH SILT (SP-SM): 2.5Y-4/3, moist, fine grained sand, trace medium- to coarse- grained sand, trace subangular gravel up to 1" diameter	
	55					LOW PLASTICITY SILT (ML): N 3/1 very dark gray, wet, very soft, no reaction to HCL	
3570	60		8	100%			11:50
3570	65						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-929

Sheet 3 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
65						LOW PLASTICITY SILT (ML): N 3/1 very dark gray, wet, very soft, no reaction to HCL	
3565						-At 67 feet, 10Y-3/1 very dark greenish gray, very soft	12:40
70							
3560			9	100%		-At 71 feet, 10Y-4/1-3/1 dark greenish gray to very dark greenish gray, very soft to soft	
75						-At 75 feet, 10Y-4-1 dark greenish gray, soft to medium stiff, slightly more clayey, stiffer and drier	
3555						5Y-3/2 dark olive gray, moist to wet, medium stiff, micaceous, trace organics, brown brittle plant fragments	13:05
80						-AT 79 feet, 10Y-4/1 dark greenish gray, less micaceous	
3550			10	100%		-At 81 feet, 5Y-3/2 dark olive gray, increasingly clayey, possible CL-ML	
85						-At 85 feet, 10Y-3/1, soft, decrease in clay	
3545						CLAYEY/SILTY GRAVEL (GM): 10Y-3/1 dark greenish gray, moist to wet, coarse and fine gravel up to 2" diameter	13:50
90						POORLY GRADED SAND (SP): 5GY-3/1 very dark greenish gray, fine grained sand	
3540			11	100%		CLAYEY SANDY GRAVEL (GC): 5GY-3/1 very dark greenish gray, moist to wet, fine and coarse gravel	
95						SANDY SILT (ML): 10Y-3/1 very dark greenish gray, moist to wet, soft to medium stiff, little fine grained sand	
3535						-At 93 feet, N 3/1 very dark gray	
100						LEAN CLAY (CL): N 3/1 very dark gray, moist to wet, soft to medium stiff	
						-At 95 feet, N 2.5/1 black, medium stiff, organic odor	
						LOW PLASTICITY SILT (ML): N 2.5/1 black, wet, soft, organic odor	14:35
						LEAN CLAY (CL): N 2.5/1 black, moist to wet, medium stiff	
						LOW PLASTICITY SILT (ML): N 2.5/1 black, moist to wet, medium stiff	

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014






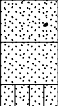

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-929

Sheet 4 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3530	100		12	100%	 <p>LOW PLASTICITY SILT (ML): N 2.5/1 black, moist to wet, medium stiff -At 101.5 feet, 5Y-3/2 dark olive gray, stiff</p>		
	105				 <p>POORLY GRADED SAND (SP): 5Y3/1.5 dark olive gray to very dark olive gray, moist to wet, fine grained sand</p>		
					 <p>CLAYEY GRAVEL (GC): 5Y-3/1 very dark gray, fine and coarse gravel up to 3" diameter, jumbled angular to subangular</p>		
3525	110		13	100%	<p>LOW PLASTICITY SILT (ML): mottled 5Y-4/3 olive, 5Y-3/2 dark olive gray, and 5Y-2.5/1 black, moist to wet, stiff to very stiff -At 109 feet, 5Y-3/2 dark olive gray -mottled 5Y-5/3 olive and 5Y4/2 olive gray, wet, stiff</p>	14:55	
3520	115				 <p>POORLY GRADED SAND (SP): 5Y-3/2 dark olive gray, wet, fine grained sand -At 115 feet, 5GY-4/1 dark greenish gray, moist to wet</p>	15:30	
3515	120		14	100%	 <p>WELL GRADED GRAVEL WITH CLAY (GW): 5GY-4/1 dark greenish gray, moist to wet, fine and coarse gravel up to 3" diameter POORLY GRADED SAND (SP): 5GY-4/1 dark greenish gray, moist to wet, fine grained sand POORLY GRADED GRAVEL WITH SAND (GP): N 4/1 dark gray, moist to wet, fine gravel up to 1" diameter POORLY GRADED SAND (SP): 10Y-4/1 dark greenish gray, wet, fine grained sand</p>		
3510	125				<p>LOW PLASTICITY SILT (ML): 10Y-6/1 greenish gray, moist to wet, stiff to very stiff SANDY SILT (ML): 5GY-4/1 dark greenish gray, moist to wet, stiff, weak reaction to HCL, interbedded with silty sand -At 125 feet, moist, very stiff</p>	16:00	
3505	130		15	100%	 <p>WELL GRADED SAND (SW): N 4/1 dark gray, moist, fine- to coarse- grained sand POORLY GRADED SAND (SP): 10Y-3/1 very dark greenish gray, moist, fine grained sand SILTY SAND (SM): 5GY-4/1 dark greenish gray, moist, fine grained sand</p>		
					 <p>LOW PLASTICITY SILT (ML): 10Y-4/1 dark greenish gray, moist, stiff, few fine grained sand</p>		
3500	135		16	100%	<p>SILTY SAND (SM): 10Y-4/1 dark greenish gray, moist to wet, fine grained sand, trace fine gravel -At 134 feet, 5GY-4/1 dark greenish gray, weak reaction to HCL</p>	8/7/13 8:45	

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-929

Sheet 5 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
135						SILTY SAND (SM): 10Y-4/1 dark greenish gray, moist to wet, fine grained sand, trace fine gravel	
3495			17	100%		LEAN CLAY (CL): 5GY-4/1 dark greenish gray, moist, medium plasticity, very stiff to hard, weak reaction to HCL -At 139.5, hard -At 141 feet, very stiff, 1-2" SILTY SAND (SM) lense	
3490						SILTY SAND (SM): 10Y-4/1 dark greenish gray, wet, fine grained sand, no reaction to HCL	8:56
145			18	100%		-At 149 feet, 10Y-3.5/1, dark greenish gray to very dark greenish gray	
3485						-10Y-4/1 dark greenish gray, some gravel, weak cementation	9:30
150			19	100%		10Y-3/1 very dark greenish gray, weakly-to-moderately cemented (some intact clasts), micaceous	10:00
3480						moderately cemented, trace cemented clasts up to 3" diameter, micaceous to 164 feet	
155			20	65%		-At 165 feet, wet, slightly more gray, increase fines content, little clay content -At 166 feet, decrease fines content, micaceous	
3475						SILTY AND CLAYEY SAND (SC-SM): interbedded clayey sand, silty sand and sandy silt beds, 0.2 feet thick silt (ML), 0.5 feet thick silty sand (SM)	11:00
160						-At 169 feet, roots or reeds	
3470							
165							
3465							
170							

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014



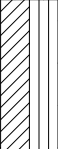


Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-929

Sheet 6 of 6

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
170							
3460			21	73%		SILTY AND CLAYEY SAND (SC-SM): wet to saturated, interbedded silty sand, clayey sand, silt, and clay layers, very thinly to thinly bedded	At 171-182 feet bgs, observed 11 feet of fully saturated material and collected in buckets for logging
175							
3455						SILTY SAND (SM): 10Y-3/1 very dark greenish gray, wet to saturated, fine grained sand, very thinly to thinly bedded	
180						CLAYEY SILT (CL/ML): 10Y-4/1 dark greenish gray, soft-to-medium stiff, some fine grained sand, some small shells and fibrous plant material	
3450							12:00
185						SILTY SAND (SM): 2.5Y-3/1 very dark gray, wet, fine grained sand -At 186 feet, increase fines content, few clay content	
3445							
190			22	94%		INTERBEDDED SILT AND SANDY SILT (ML): 10Y-3/1-5GY-3/1 very dark greenish gray, moist to wet, fine grained sand -At 194.5, locally stiff -10Y-4/1 dark greenish gray, wet, soft to medium stiff, some fine grained sand, very thinly bedded to thinly bedded (average bed 1/2-2" thick) -At 198 feet, INTERBEDDED WITH SILTY SAND (SM): 10Y-3/1 very dark greenish gray, wet, fine grained sand	
3440							
195							
3435							
200						Boring terminated at 200 feet below ground surface. Boring completed as groundwater monitoring well.	13:50
3430							
205							

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-930

Sheet 1 of 3

Date(s) Drilled	8/16/13 - 8/17/13	Logged By [Reg. No.]	Darrin Hasham [CEG #2423]	Checked By [Reg. No.]	
Drilling Method	Sonic	Drill Bit Size/Type	6-inch Core Barrel, 8-inch Casing	Total Depth of Borehole	75.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	4231.6 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	38.2 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-930/MW-1

Elevation, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
	Depth, feet	Run Interval	Run/Sample Identification			
0						
4230			1	100%	SILTY SAND (SM): light yellowish brown, dry, very fine grained sand, weakly cemented locally, non-plastic, weak reaction to HCL trace medium to coarse sand, slight increase in cementation trace to few fine angular gravel	8/16/2013 14:43
4225						
4220			2	100%	POORLY GRADED SAND (SP): pale yellowish brown, dry, fine-to medium-grained sand, some coarse grained sand, some fine angular gravel, trace silt and clay, decrease in fines with depth, gradational transition yellowish brown, trace coarse angular gravel, some gravels are decomposed pale yellowish brown, some gravel have a "waxy" coating that may be a pedogenic clay or weathering product, strong reaction to HCL Ferruginous layers every 2 feet, approximately 1" thick	14:50 Hot sample
4215			3	100%	-At 16 feet, decrease in weathering, light grayish brown, trace cobbles, no reaction to HCL weakly cemented, sample contains many fine to coarse gravel fragments freshly broken	15:03 15:08 Driller begins to add water to keep temperature down
4210			4	100%	increase in fines content, trace clay from weathering light brownish gray, very dense, moist, fine grained sand, slightly cohesive, trace fines, non plastic, no reaction to HCL, abrupt transition	Sample hot to touch
4205					At 26 feet, iron oxide staining, deep reddish brown At 26.5 feet some medium and coarse sand, coarseness increasing downwards light brown, fine- to coarse- grained sand, decomposed granite clasts, rock and mineral structure intact	15:47
30						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-930

Sheet 2 of 3

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
4200	30		5	100%		zone of decomposed granitic clasts, dark gray dark reddish brown dark brown	16:10 Very hot sample
4195	35		6	100%		-At 34 feet, fragment with 1/2 of rounded crystalline cobble in a medium to coarse grained sand with gravel matrix, outside of cobble has well developed clay film fine to medium grained sand, reddish brown (iron oxide staining), fines increase with depth, few silt, trace clay	
4190	40		7	100%		SILTY SAND (SM): light brown, very dense, moist, fine grained sand, few angular unweathered coarse sand and fine gravel, rock fragments uniformly distributed throughout strata, cohesive, non plastic, weak reaction to HCL, abrupt transition to SP below	16:18
					POORLY GRADED SAND (SP): brown, very dense, moist, medium- to coarse-grained sand, trace silt, non plastic, slightly cohesive, weak reaction to HCL		
4185	45				SILTY SAND (SM): light grayish brown, very dense, moist, fine grained sand, trace coarse sand increase in fines content with depth with 10% strong brown mottles from iron oxide staining		
4180	50		8	100%		POORLY GRADED SAND (SP): pale brown, very dense, very moist, fine grained sand, trace silt, cohesive but friable, no reaction to HCL, probably aeolian	
4180	55				possibly wet, increasing coarseness with depth, increase iron oxide staining as irregular zones and mottles, fine to medium grained sand, trace coarse grained sand, trace silt, strong brown heavy iron oxide staining	16:27	
4175	60		9	100%		BEDROCK: granitic rock, pale brownish gray, fine to coarse grained	16:55 Hot sample
4170	65				granitic rock fragments	8/17/2013 08:27	

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
65							
4165					BEDROCK: granitic rock, pale brownish gray, fine to coarse grained	09:10	
	70		11	100%			
4160					pulverized granitic bedrock	10:00	
	75		12	100%			
4155					Boring terminated at 75 feet below ground surface. Boring completed as groundwater monitoring well.		
	80						
4150							
	85						
4145							
	90						
4140							
	95						
4135							
	100						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-931

Sheet 1 of 4

Date(s) Drilled	8/14/13 - 8/14/13	Logged By [Reg. No.]	Darrin Hasham [CEG #2423]	Checked By [Reg. No.]	
Drilling Method	Sonic	Drill Bit Size/Type	6-inch Core Barrel	Total Depth of Borehole	127.0 feet
Drill Rig Type	Prosonic 600 C	Drilling Contractor	Cascade Drilling	Ground Surface Elevation	3616.9 feet NAVD88
Hammer Data [ERi]	NA	Sampling Methods and Drill Rod Use	Continuous Soil Core		
Groundwater Level (s)	14.02 ft	Borehole Completion	Borehole completed as monitoring well	Borehole Location	T-931/MW-2

Elevation, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
	Depth, feet	Run Interval	Run/Sample Identification			
0					POORLY GRADED SAND (SP): olive brown, moist, very fine grained sand, trace silt, trace rootlets	8/14/2013 08:20
3615			1	100%	SANDY SILT (ML): olive gray, moist, with fine grained sand, low plasticity, strong reaction to HCL, some brown mottling -At 3 feet, wet on outside of core -At 4 feet, with black peaty organics -At 4.5 feet, brown -At 5.5 feet, olive gray	
3610					POORLY GRADED SAND (SP): olive gray, moist, fine- to medium- grained sand, no reaction to HCL -At 7 feet, wet, very fine grained sand -At 8.5 feet, medium grained sand -At 10 feet, dark greenish gray	09:05
3605			2	100%	-At 15 feet, alternating layers of fine grained sand, silt peat, and coarser grained sand layers, layers range in thickness from 1/8-1" thick -At 16.5 feet, uniform medium grained sand, no peat or coarse sand layers, coarseness increases with depth	
3600					ORGANIC SOIL (OL): Silt and peat layers from 19.5-20 feet bgs POORLY GRADED SAND (SP): dark gray, wet, fine grained sand	
3595			3	100%	-At 22 feet, fine to medium grained sand -At 25 feet, occasional thin silt and peat layers, silt overlies peat, layers approximately 1/4" thick, trace gravel sized pieces of bark -From 26-26.5 feet bgs interbedded silt, peat, and sand layers -At 26.5 feet, medium grained sand, some coarse grained sand, trace gravel sized peices of bark	09:15
3590						
30						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014







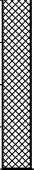
Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-931

Sheet 2 of 4

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
3585	30		4	100%	 <p>POORLY GRADED SAND (SP): dark gray, medium grained sand, some coarse grained sand, trace gravel sized peices of bark -At 32 feet, fine grained sand, weak reaction to HCL -At 34 feet, predominantly medium grained sand with occasional peat and silt lenses</p>		
3580	35				 <p>ORGANIC SOIL (OL): Alternating layers of silt and peat with occasional sand layers</p>		
3575	40		5	110%	 <p>SILTY SAND (SM): wet, sand content increases with depth, lensed with silt and peat, "swampy" odor</p>	09:40	
3570	45		6	N/A	 <p>POORLY GRADED SAND (SP): dark greenish gray, very dense, wet, medium grained sand SILTY SAND (SM): at 41 feet, alternating layers of sand, silty sand, and peat, predominantly fine grained silty sand</p>	09:56 Run # 6, first attempt fell out of barrel, switched to flapper bit and was recovered, sample partially recovered in buckets	
3565	50				 <p>POORLY GRADED SAND WITH SILT (SP-SM): dark greenish gray, wet, fine grained sand, non plastic, weak reaction to HCL, trace clay</p>	10:30	
3560	55		7	100%	 <p>LOW PLASTICITY SILT (ML): dark greenish gray, wet, soft, some fine grained sand, moderate plasticity, weak reaction to HCL, trace clay -At 57 feet, top half of sample recovered is fine- to medium- grained sand (SP), and is probably slough, bottom half is silt (ML) as above</p>	11:17	
3555	60		8	20%	 <p>LOW PLASTICITY SILT (ML): dark greenish gray, wet, soft, some fine grained sand, moderate plasticity, weak reaction to HCL, trace clay</p>	Run #8 to 67 feet, 2 feet recovery, flapper bit used to recover rest of sample, most of the sample was lost	
65	65						

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
65						ELASATIC SILT (MH): dark greenish gray, wet, soft, high plasticity	
3550			8B	100%		dark greenish gray to very dark gray, weak reaction to HCL, mottled 50/50	
70						dark greenish gray to dark gray, very moist	
3545						"rotten egg odor"	
75			9	100%		material consistent and uniform	
3540							
80						Silt layer continues, homogenous and uniform	13:35
3535							
85			10	100%			
3530							
90							
3525							14:05
95							
3520			11	100%			
100							

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

Project: Owens Lake Groundwater Program

Project Location: 3001 Rt. 190 Olancho, CA

Consultant: Kleinfelder Consultant Project No.: 135335

Log of Borehole T-931

Sheet 4 of 4

Elevation, feet	Depth, feet	CORE SAMPLES			Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES AND LAB TEST RESULTS
		Run Interval	Run/Sample Identification	Recovery (ft) / Run Length			
100							
3515					dark greenish gray to dark gray, very moist		
					ELASTIC SILT (MH): dark greenish gray and dark gray, very moist, soft, high plasticity, weak reaction to HCL	14:39	
105							
3510							
			12	100%			
110							
3505							
115							
3500					trace coarse sand sized calcium carbonate nodules, some very tiny, very shiny, crystals interpreted as selenite (gypsum), nodules react strongly with HCL	14:55	
120							
3495			13	100%	decrease moisture content with depth, firm when pressing downwards, splits easily between indistinct bedding, trace coarse sand sized calcium carbonate nodules that react strongly with HCL, increasing number of very tiny, very shiny crystal (selenite gypsum)		
125							
3490							15:15
					Boring terminated at 127 feet below ground surface.		
					Boring completed as groundwater monitoring well.		
130							
3485							
135							

Report: LADWP_SONIC; File: 135335 - COMPLETE BORING LOGS_11012013.GPJ; 1/10/2014

APPENDIX B

Soil Core Photographs

(PROVIDED ON CD)

APPENDIX C

Soil Analytical Results

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: August 2, 2013

Mr. Eric Philips
Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(949)727-4466 Email:ephilips@kleinfelder.com

Project: **Owens Lake Groundwater Program / 135335**
Lab I.D.: **130726-6, -7**

Dear Mr. Philips:

The **analytical results** for the soil samples, received by our laboratory on July 26, 2013, are attached. The samples were received chilled, intact and accompanying chain of custody.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,



Curtis Desilets
Vice President/Program Manager



Andy Wang
Laboratory Manager

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(949)727-4466 Email:ephipilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program / 135335**

MATRIX: SOIL

DATE SAMPLED: 07/25/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 07/26/13

DATE EXTRACTED: 07/30/13

DATE ANALYZED: 07/30/13

DATE REPORTED: 08/02/13

TOTAL PETROLEUM HYDROCARBONS (TPH) - CARBON CHAIN ANALYSIS

METHOD: EPA 8015B

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

SAMPLE I.D.	LAB I.D.	C4-C10	C11-C22	C23-C35	DF
<u>T-925</u>	130726-6	ND	ND	ND	1
<u>T-926</u>	130726-7	ND	ND	ND	1
<u>METHOD BLANK</u>		ND	ND	ND	1
	PQL	10	10	50	

COMMENTS

C4-C10 = GASOLINE RANGE

C11-C22 = DIESEL RANGE

C23-C35 = MOTOR OIL RANGE

DF = DILUTION FACTOR

PQL = PRACTICAL QUANTITATION LIMIT

ACTUAL DETECTION LIMIT = DF X PQL

ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

Data Reviewed and Approved by: 

CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (949) 727-4466 Email: ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program / 135335**

MATRIX: SOIL

DATE RECEIVED: 07/26/13

DATE SAMPLED: 07/25/13

DATE ANALYZED: 07/29&30/13

REPORT TO: Mr. ERIC PHILIPS

DATE REPORTED: 08/02/13

SAMPLE I.D.: **T-925**

LAB I.D.: 130726-6

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony (Sb)	ND	1.0	1	500	15	6010B
Arsenic (As)	12.8	0.3	1	500	5.0	6010B
Barium (Ba)	41.6	5.0	1	10,000	100	6010B
Beryllium (Be)	ND	0.5	1	75	0.75	6010B
Cadmium (Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total (Cr)	6.70	0.5	1	2,500	560/500	6010B
Chromium VI (Cr6)	--	0.2	-	500	5.0	7196A
Cobalt (Co)	2.57	1.0	1	8,000	80	6010B
Copper (Cu)	3.63	1.0	1	2,500	25	6010B
Lead (Pb)	2.03	0.5	1	1,000	5.0	6010B
Mercury (Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum (Mo)	ND	5.0	1	3,500	350	6010B
Nickel (Ni)	2.62	2.5	1	2,000	20	6010B
Selenium (Se)	ND	1.0	1	100	1.0	6010B
Silver (Ag)	ND	1.0	1	500	5.0	6010B
Thallium (Tl)	ND	1.0	1	700	7.0	6010B
Vanadium (V)	28.8	5.0	1	2,400	24	6010B
Zinc (Zn)	11.3	0.5	1	5,000	250	6010B

COMMENTS

DF = Dilution Factor

PQL = Practical Quantitation Limit

Actual Detection Limit = PQL X DF

ND = Below the Actual Detection Limit or non-detected

TTLC = Total Threshold Limit Concentration

STLC = Soluble Threshold Limit Concentration


@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5

* = STLC analysis for the metal is recommended (if marked)

** = Additional Analysis required, please call to discuss (if marked)

*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

-- = Not analyzed/not requested

Data Reviewed and Approved by: 

CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(949)727-4466 Email:ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program / 135335

MATRIX:SOIL DATE RECEIVED:07/26/13
DATE SAMPLED:07/25/13 DATE ANALYZED:07/29&30/13
REPORT TO:Mr. ERIC PHILIPS DATE REPORTED:08/02/13

SAMPLE I.D.: T-926

LAB I.D.: 130726-7

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 7 columns: ELEMENT ANALYZED, SAMPLE RESULT, PQL, DF, TTLC LIMIT, STLC LIMIT, EPA METHOD. Lists various elements like Antimony, Arsenic, Barium, etc., with their respective values and limits.

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: [Signature]
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.

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METHOD BLANK REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(949)727-4466 Email:ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program / 135335

MATRIX:SOIL DATE RECEIVED:07/26/13
DATE SAMPLED:07/25/13 DATE ANALYZED:07/29&30/13
REPORT TO:Mr. ERIC PHILIPS DATE REPORTED:08/02/13

METHOD BLANK FOR LAB I.D.: 130726-6, -7

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 7 columns: ELEMENT ANALYZED, SAMPLE RESULT, PQL, DF, TTLC LIMIT, STLC LIMIT, EPA METHOD. Lists various elements like Antimony, Arsenic, Barium, etc., with their respective limits and methods.

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: [Signature]
CAL-DHS ELAP CERTIFICATE No.: 1555

QA/QC for Metals Analysis --TTL--SOLID/SOIL MATRIX

Matrix Spike/ Matrix Spike Duplicate/ LCS :

ANALYSIS DATE: 7/29/2013

Unit : mg/Kg(ppm)

Analysis	Spk.Sample ID	CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Arsenic(As)	130726-17	50.0	100	PASS	2.60	50.0	53.2	101%	51.8	98%	3%
Chromium(Cr)	130726-17	50.0	96	PASS	24.5	50.0	70.5	92%	71.3	94%	2%
Lead(Pb)	130726-17	50.0	100	PASS	2.85	50.0	52.1	99%	52.3	99%	0%

ANALYSIS DATE. : 7/30/2013

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Mercury (Hg)	130729-30	0.125	94	PASS	0	0.125	0.104	83%	0.108	86%	4%

MS/MSD Status:

Analysis	%MS	%MSD	%LCS	%RPD
Arsenic(As)	PASS	PASS	PASS	PASS
Chromium(Cr)	PASS	PASS	PASS	PASS
Lead(Pb)	PASS	PASS	PASS	PASS
Mercury (Hg)	PASS	PASS	PASS	PASS
Accepted Range	75 ~ 125	75 ~ 125	85 ~ 115	0 ~ 20

Batch For Samples:130726-6,7

ANALYST: _____

FINAL REVIEWER: _____

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel(949)727-4466 Email:ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program / 135335**

MATRIX: **SOIL** DATE RECEIVED: **07/26/13**
 DATE SAMPLED: **07/25/13** DATE ANALYZED: **07/30/13**
 REPORT TO: **Mr. ERIC PHILIPS** DATE REPORTED: **08/02/13**

SAMPLE I.D.: **T-925**

LAB I.D.: **130726-6**

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROBENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
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SAMPLE I.D.: **T-925**

LAB I.D.: 130726-6

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
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Los Angeles, CA 90014
Tel(949)727-4466 Email:ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program / 135335

MATRIX:SOIL DATE RECEIVED:07/26/13
DATE SAMPLED:07/25/13 DATE ANALYZED:07/30/13
REPORT TO:Mr. ERIC PHILIPS DATE REPORTED:08/02/13

SAMPLE I.D.: T-926

LAB I.D.: 130726-7

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROBENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
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PROJECT: **Owens Lake Groundwater Program / 135335**

MATRIX: SOIL DATE RECEIVED: 07/26/13
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 REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 08/02/13

SAMPLE I.D.: **T-926**

LAB I.D.: 130726-7

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

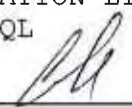
PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



METHOD BLANK REPORT

CUSTOMER: Kleinfelder
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (949) 727-4466 Email: ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program / 135335

MATRIX: SOIL DATE RECEIVED: 07/26/13
 DATE SAMPLED: 07/25/13 DATE ANALYZED: 07/30/13
 REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 08/02/13

METHOD BLANK FOR LAB I.D.: 130726-6, -7

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROBENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel(949)727-4466 Email:ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program / 135335**

MATRIX: SOIL DATE RECEIVED: 07/26/13
 DATE SAMPLED: 07/25/13 DATE ANALYZED: 07/30/13
 REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 08/02/13

METHOD BLANK FOR LAB I.D.: 130726-6, -7

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766

Tel (909)590-5905

Fax (909)590-5907

8260B QA/QC Report

Date Analyzed: 7/30/2013

Machine: C

Matrix: Solid/Soil/Liquid

Unit: mg/Kg (PPM)

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 130730-LCS1/2

BATCH ID: 130730-LCS1/2

Analyte	S.R.	spk conc	MS	%RC	MSD	%RC	%RPD	ACP %RC	ACP RPD
Benzene	0	0.050	0.055	110%	0.060	120%	9%	75-125	0-20
Chlorobenzene	0	0.050	0.043	86%	0.044	88%	2%	75-125	0-20
1,1-Dichloroethene	0	0.050	0.051	102%	0.055	111%	9%	75-125	0-20
Toluene	0	0.050	0.057	113%	0.057	115%	2%	75-125	0-20
Trichloroethene (TCE)	0	0.050	0.054	108%	0.056	112%	4%	75-125	0-20

Lab Control Spike (LCS):

Analyte	spk conc	LCS	%RC	ACP %RC
Benzene	0.050	0.059	119%	75-125
Chlorobenzene	0.050	0.044	88%	75-125
Chloroform	0.050	0.056	112%	75-125
1,1-Dichloroethene	0.050	0.058	116%	75-125
Ethylbenzene	0.050	0.048	96%	75-125
o-Xylene	0.050	0.049	98%	75-125
m,p-Xylene	0.100	0.094	94%	75-125
Toluene	0.050	0.060	120%	75-125
1,1,1-Trichloroethane	0.050	0.054	108%	75-125
Trichloroethene (TCE)	0.050	0.056	113%	75-125

Surrogate Recovery	spk conc	ACP %RC	MB %RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			M-BLK	130726-6	130726-7	130729-21	130729-23	130729-41	130729-24
Dibromofluoromethane	50.0	70-130	130%	265*	126%	110%	119%	130%	106%
Toluene-d8	50.0	70-130	107%	92%	103%	98%	109%	110%	95%
4-Bromofluorobenzene	50.0	70-130	102%	72%	100%	89%	100%	101%	63*

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			130729-25	130729-26	130729-27	130729-28	130729-29	130729-30	
Dibromofluoromethane	50.0	70-130	113%	104%	102%	97%	90%	0*	
Toluene-d8	50.0	70-130	100%	99%	97%	99%	98%	108%	
4-Bromofluorobenzene	50.0	70-130	77%	73%	73%	73%	67*	97%	

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.									
Dibromofluoromethane	50.0	70-130							
Toluene-d8	50.0	70-130							
4-Bromofluorobenzene	50.0	70-130							

* = Surrogate fail due to matrix interference; LCS, MS, MSD are in control therefore the analysis is in control.

S.R. = Sample Results


%RC = Percent Recovery

spk conc = Spike Concentration

ACP %RC = Accepted Percent Recovery

MS = Matrix Spike

MSD = Matrix Spike Duplicate

Analyzed/Reviewed By: 

Final Reviewer: 

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: August 12, 2013

Mr. Eric Philips
Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213)622-3749 Email:Ephilips@kleinfelder.com

Project: **Owens Lake Groundwater Program 135335**
Lab I.D.: **130805-1**

Dear Mr. Philips:

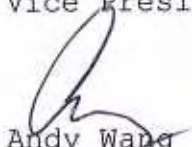
The **analytical results** for the soil sample, received by our laboratory on August 5, 2013, are attached. The sample was received chilled, intact and accompanying chain of custody.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,



Curtis Desilets
Vice President/Program Manager



Andy Wang
Laboratory Manager

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**

MATRIX: SOIL

DATE SAMPLED: 08/04/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/05/13

DATE EXTRACTED: 08/06/13

DATE ANALYZED: 08/07/13

DATE REPORTED: 08/12/13

TOTAL PETROLEUM HYDROCARBONS (TPH) - CARBON CHAIN ANALYSIS

METHOD: EPA 8015B

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

SAMPLE I.D.	LAB I.D.	C4-C10	C11-C22	C23-C35	DF
<u>Well-MW-13@38</u>	<u>130805-1</u>	<u>ND</u>	<u>ND</u>	<u>ND</u>	<u>1</u>
<u>METHOD BLANK</u>		<u>ND</u>	<u>ND</u>	<u>ND</u>	<u>1</u>
	PQL	10	10	50	

COMMENTS

C4-C10 = GASOLINE RANGE

C11-C22 = DIESEL RANGE

C23-C35 = MOTOR OIL RANGE

DF = DILUTION FACTOR

PQL = PRACTICAL QUANTITATION LIMIT

ACTUAL DETECTION LIMIT = DF X PQL

ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

Data Reviewed and Approved by: 

CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro Chem, Inc

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

8015B Soil/Solid QC

Date Analyzed: 8/7/2013

Units: mg/Kg (PPM)

Matrix: Solid/Sludge

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Batch I.D. : 130807

Spiked Sample Lab I.D.: **130805-1 MS/MSD**

Analyte	SR	spk conc	MS	%MS	MSD	%MSD	%RPD	ACP %MS	ACP RPD
C11~C22 Range	0	200	171	86%	182	91%	6%	75-125	0-20%

LCS STD RECOVERY:

Analyte	spk conc	LCS	% REC	ACP
C11~C22 Range	200	168	84%	75-125

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.		MB	130805-1	130805-2					
O-Terphenyl	60-140%	93%	107%	73%					
Octacosane	60-140%	82%	122%	82%					

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.									
O-Terphenyl	60-140%								
Octacosane	60-140%								

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.									
O-Terphenyl	60-140%								
Octacosane	60-140%								

Analyzed and Reviewed By: 

Final Reviewer: 

* = Surrogate fail due to matrix interference

Note: LCS, MS, MSD are in control therefore results are in control.

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**

MATRIX: **SOIL**

DATE SAMPLED: **08/04/13**

REPORT TO: **Mr. ERIC PHILIPS**

DATE RECEIVED: **08/05/13**

DATE ANALYZED: **08/05-06/13**

DATE REPORTED: **08/12/13**

SAMPLE I.D.: **Well-MW-13@38**

LAB I.D.: **130805-1**

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLIC LIMIT	STLC LIMIT	EPA METHOD
Antimony (Sb)	ND	1.0	1	500	15	6010B
Arsenic (As)	7.73	0.3	1	500	5.0	6010B
Barium (Ba)	44.7	5.0	1	10,000	100	6010B
Beryllium (Be)	ND	0.5	1	75	0.75	6010B
Cadmium (Cd)	1.15	0.5	1	100	1.0	6010B
Chromium Total (Cr)	28.5	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt (Co)	4.48	1.0	1	8,000	80	6010B
Copper (Cu)	16.7	1.0	1	2,500	25	6010B
Lead (Pb)	27.0	0.5	1	1,000	5.0	6010B
Mercury (Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum (Mo)	ND	5.0	1	3,500	350	6010B
Nickel (Ni)	15.4	2.5	1	2,000	20	6010B
Selenium (Se)	ND	1.0	1	100	1.0	6010B
Silver (Ag)	ND	1.0	1	500	5.0	6010B
Thallium (Tl)	ND	1.0	1	700	7.0	6010B
Vanadium (V)	38.8	5.0	1	2,400	24	6010B
Zinc (Zn)	92.7	0.5	1	5,000	250	6010B

COMMENTS

DF = Dilution Factor

PQL = Practical Quantitation Limit

Actual Detection Limit = PQL X DF

ND = Below the Actual Detection Limit or non-detected

TTLIC = Total Threshold Limit Concentration

STLC = Soluble Threshold Limit Concentration


@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5

* = STLC analysis for the metal is recommended (if marked)

** = Additional Analysis required, please call to discuss (if marked)

*** = The concentration exceeds the TTLIC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

-- = Not analyzed/not requested

Data Reviewed and Approved by: 

CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213)622-3749 Email:Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335

MATRIX:SOIL

DATE RECEIVED:08/05/13

DATE SAMPLED:08/04/13

DATE ANALYZED:08/05-06/13

REPORT TO:Mr. ERIC PHILIPS

DATE REPORTED:08/12/13

METHOD BLANK FOR LAB I.D.: 130805-1

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 7 columns: ELEMENT ANALYZED, SAMPLE RESULT, PQL, DF, TTLC LIMIT, STLC LIMIT, EPA METHOD. Lists various elements like Antimony, Arsenic, Barium, etc., with their respective limits and detection results.

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: [Signature]
CAL-DHS ELAP CERTIFICATE No.: 1555

QA/QC for Metals Analysis --TTL C--SOLID/SOIL MATRIX

Matrix Spike/ Matrix Spike Duplicate/ LCS :

ANALYSIS DATE: 8/6/2013

Unit : mg/Kg(ppm)

Analysis	Spk.Sample ID	CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Arsenic(As)	130805-2	50.0	103	PASS	15.1	50.0	62.8	95%	60.5	91%	5%
Chromium(Cr)	130805-2	50.0	103	PASS	35.2	50.0	77.1	84%	74.4	78%	7%
Lead(Pb)	130805-2	50.0	94	PASS	3.41	50.0	42.3	78%	40.8	75%	4%

ANALYSIS DATE : 8/5/2013

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Mercury (Hg)	130802-33	0.125	95	PASS	0	0.125	0.110	88%	0.112	90%	2%

MS/MSD Status:

Analysis	%MS	%MSD	%LCS	%RPD
Arsenic(As)	PASS	PASS	PASS	PASS
Chromium(Cr)	PASS	PASS	PASS	PASS
Lead(Pb)	PASS	PASS	PASS	PASS
Mercury (Hg)	PASS	PASS	PASS	PASS
Accepted Range	75 ~ 125	75 ~ 125	85 ~ 115	0 ~ 20

Batch For Samples:130802-7,8,130805-1,2,27~~40

ANALYST: _____

FINAL REVIEWER: _____

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213)622-3749 Email:Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335
MATRIX:SOIL
DATE SAMPLED:08/04/13
REPORT TO:Mr. ERIC PHILIPS

DATE RECEIVED:08/05/13
DATE ANALYZED:08/06/13
DATE REPORTED:08/12/13

SAMPLE I.D.: Well-MW-13@38

LAB I.D.: 130805-1

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: _____

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213) 622-3749 Email:Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335
MATRIX:SOIL
DATE RECEIVED:08/05/13
DATE SAMPLED:08/04/13
DATE ANALYZED:08/06/13
REPORT TO:Mr. ERIC PHILIPS
DATE REPORTED:08/12/13

SAMPLE I.D.: Well-MW-13@38 LAB I.D.: 130805-1

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 3 columns: PARAMETER, SAMPLE RESULT, PQL X1. Lists various chemical compounds and their detection results (ND) and PQL values.

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
DATA REVIEWED AND APPROVED BY:
CAL-DHS CERTIFICATE # 1555

METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel(213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**
 MATRIX: **SOIL**
 DATE SAMPLED: 08/04/13
 REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/05/13
 DATE ANALYZED: 08/06/13
 DATE REPORTED: 08/12/13

METHOD BLANK FOR LAB I.D.: 130805-1

ANALYSIS: **VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2**
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLORO BENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**

MATRIX: **SOIL**

DATE SAMPLED: **08/04/13**

REPORT TO: **Mr. ERIC PHILIPS**

DATE RECEIVED: **08/05/13**

DATE ANALYZED: **08/06/13**

DATE REPORTED: **08/12/13**

METHOD BLANK FOR LAB I.D.: 130805-1

ANALYSIS: **VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2**

UNIT: **mg/Kg = MILLIGRAM PER KILOGRAM = PPM**

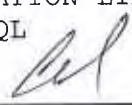
PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766

Tel (909)590-5905

Fax (909)590-5907

8260B QA/QC Report

Date Analyzed: 8/6/2013

Machine: C

Matrix: Solid/Soil/Liquid

Unit: mg/Kg (PPM)

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 130806-LCS1/2

BATCH ID: 130806-LCS1/2

Analyte	S.R.	spk conc	MS	%RC	MSD	%RC	%RPD	ACP %RC	ACP RPD
Benzene	0	0.050	0.042	85%	0.049	97%	13%	75-125	0-20
Chlorobenzene	0	0.050	0.046	91%	0.051	101%	10%	75-125	0-20
1,1-Dichloroethene	0	0.050	0.042	85%	0.048	97%	12%	75-125	0-20
Toluene	0	0.050	0.044	89%	0.049	98%	10%	75-125	0-20
Trichloroethene (TCE)	0	0.050	0.043	87%	0.049	97%	11%	75-125	0-20

Lab Control Spike (LCS):

Analyte	spk conc	LCS	%RC	ACP %RC
Benzene	0.050	0.059	117%	75-125
Chlorobenzene	0.050	0.057	114%	75-125
Chloroform	0.050	0.059	119%	75-125
1,1-Dichloroethene	0.050	0.054	108%	75-125
Ethylbenzene	0.050	0.058	117%	75-125
o-Xylene	0.050	0.059	118%	75-125
m,p-Xylene	0.100	0.113	113%	75-125
Toluene	0.050	0.056	113%	75-125
1,1,1-Trichloroethane	0.050	0.060	119%	75-125
Trichloroethene (TCE)	0.050	0.056	111%	75-125

Surrogate Recovery	spk conc	ACP %RC	MB %RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			M-BLK	130802-12	130802-13	130802-14	130802-15	130802-45	130802-46
Dibromofluoromethane	50.0	70-130	115%	117%	108%	105%	103%	109%	112%
Toluene-d8	50.0	70-130	103%	105%	101%	98%	95%	100%	69*
4-Bromofluorobenzene	50.0	70-130	94%	96%	96%	105%	82%	77%	58*

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			130805-21-23	130805-1	130805-2	130805-26	130805-46		
Dibromofluoromethane	50.0	70-130	99%	166*	0*	100%	96%		
Toluene-d8	50.0	70-130	92%	109%	102%	101%	101%		
4-Bromofluorobenzene	50.0	70-130	78%	101%	89%	98%	91%		

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.									
Dibromofluoromethane	50.0	70-130							
Toluene-d8	50.0	70-130							
4-Bromofluorobenzene	50.0	70-130							

* = Surrogate fail due to matrix interference; LCS, MS, MSD are in control therefore the analysis is in control.

S.R. = Sample Results

%RC = Percent Recovery

spk conc = Spike Concentration

ACP %RC = Accepted Percent Recovery

MS = Matrix Spike

MSD = Matrix Spike Duplicate

Analyzed/Reviewed By: 

Final Reviewer: _____

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: August 12, 2013

Mr. Eric Philips
Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213)622-3749 Email:Ephilips@kleinfelder.com

Project: **Owens Lake Groundwater Program 135335**
Lab I.D.: **130805-2**

Dear Mr. Philips:

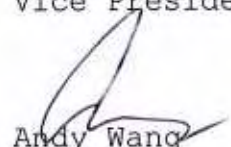
The **analytical results** for the soil sample, received by our laboratory on August 5, 2013, are attached. The sample was received chilled, intact and accompanying chain of custody.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,



Curtis Desilets
Vice President/Program Manager



Andy Wang
Laboratory Manager

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**

MATRIX: SOIL
DATE SAMPLED: 07/31/13
REPORT TO: Mr. ERIC PHILIPS


DATE RECEIVED: 08/05/13
DATE EXTRACTED: 08/06/13
DATE ANALYZED: 08/07/13
DATE REPORTED: 08/12/13

TOTAL PETROLEUM HYDROCARBONS (TPH) - CARBON CHAIN ANALYSIS
METHOD: EPA 8015B
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

SAMPLE I.D.	LAB I.D.	C4-C10	C11-C22	C23-C35	DF
<u>T927 (MW12)</u>	<u>130805-2</u>	<u>ND</u>	<u>ND</u>	<u>ND</u>	<u>1</u>
<u>METHOD BLANK</u>		<u>ND</u>	<u>ND</u>	<u>ND</u>	<u>1</u>
	PQL	10	10	50	

COMMENTS

C4-C10 = GASOLINE RANGE
C11-C22 = DIESEL RANGE
C23-C35 = MOTOR OIL RANGE
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = DF X PQL
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

Data Reviewed and Approved by: 
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro Chem, Inc

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

8015B Soil/Solid QC

Date Analyzed: 8/7/2013

Units: mg/Kg (PPM)

Matrix: **Solid/Sludge**

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Batch I.D. : 130807

Spiked Sample Lab I.D.: **130805-1 MS/MSD**

Analyte	SR	spk conc	MS	%MS	MSD	%MSD	%RPD	ACP %MS	ACP RPD
C11~C22 Range	0	200	171	86%	182	91%	6%	75-125	0-20%

LCS STD RECOVERY:

Analyte	spk conc	LCS	% REC	ACP
C11~C22 Range	200	168	84%	75-125

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.		MB	130805-1	130805-2					
O-Terphenyl	60-140%	93%	107%	73%					
Octacosane	60-140%	82%	122%	82%					

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.									
O-Terphenyl	60-140%								
Octacosane	60-140%								

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.									
O-Terphenyl	60-140%								
Octacosane	60-140%								

Analyzed and Reviewed By: *Am*

Final Reviewer: *Q*

* = Surrogate fail due to matrix interference

Note: LCS, MS, MSD are in control therefore results are in control.

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213)622-3749 Email:Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335

MATRIX:SOIL

DATE SAMPLED:07/31/13

REPORT TO:Mr. ERIC PHILIPS

DATE RECEIVED:08/05/13

DATE ANALYZED:08/05-06/13

DATE REPORTED:08/12/13

SAMPLE I.D.: T927 (MW12)

LAB I.D.: 130805-2

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 7 columns: ELEMENT ANALYZED, SAMPLE RESULT, PQL, DF, TTLC LIMIT, STLC LIMIT, EPA METHOD. Lists various elements like Antimony, Arsenic, Barium, etc., with their respective values and limits.

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: [Signature]
CAL-DHS ELAP CERTIFICATE No.: 1555

METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**

MATRIX: SOIL

DATE RECEIVED: 08/05/13

DATE SAMPLED: 07/31/13

DATE ANALYZED: 08/05-06/13

REPORT TO: Mr. ERIC PHILIPS

DATE REPORTED: 08/12/13

METHOD BLANK FOR LAB I.D.: 130805-2

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLIC LIMIT	STLC LIMIT	EPA METHOD
Antimony (Sb)	ND	1.0	1	500	15	6010B
Arsenic (As)	ND	0.3	1	500	5.0	6010B
Barium (Ba)	ND	5.0	1	10,000	100	6010B
Beryllium (Be)	ND	0.5	1	75	0.75	6010B
Cadmium (Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total (Cr)	ND	0.5	1	2,500	560/50	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt (Co)	ND	1.0	1	8,000	80	6010B
Copper (Cu)	ND	1.0	1	2,500	25	6010B
Lead (Pb)	ND	0.5	1	1,000	5.0	6010B
Mercury (Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum (Mo)	ND	5.0	1	3,500	350	6010B
Nickel (Ni)	ND	2.5	1	2,000	20	6010B
Selenium (Se)	ND	1.0	1	100	1.0	6010B
Silver (Ag)	ND	1.0	1	500	5.0	6010B
Thallium (Tl)	ND	1.0	1	700	7.0	6010B
Vanadium (V)	ND	5.0	1	2,400	24	6010B
Zinc (Zn)	ND	0.5	1	5,000	250	6010B

COMMENTS

DF = Dilution Factor

PQL = Practical Quantitation Limit

Actual Detection Limit = PQL X DF

ND = Below the Actual Detection Limit or non-detected

TTLIC = Total Threshold Limit Concentration

STLC = Soluble Threshold Limit Concentration


@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5

* = STLC analysis for the metal is recommended (if marked)

** = Additional Analysis required, please call to discuss (if marked)

*** = The concentration exceeds the TTLIC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

-- = Not analyzed/not requested

Data Reviewed and Approved by: 

CAL-DHS ELAP CERTIFICATE No.: 1555

QA/QC for Metals Analysis --TTLC--SOLID/SOIL MATRIX

Matrix Spike/ Matrix Spike Duplicate/ LCS :

ANALYSIS DATE: 8/6/2013

Unit : mg/Kg(ppm)

Analysis	Spk.Sample ID	CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Arsenic(As)	130805-2	50.0	103	PASS	15.1	50.0	62.8	95%	60.5	91%	5%
Chromium(Cr)	130805-2	50.0	103	PASS	35.2	50.0	77.1	84%	74.4	78%	7%
Lead(Pb)	130805-2	50.0	94	PASS	3.41	50.0	42.3	78%	40.8	75%	4%

ANALYSIS DATE : 8/5/2013

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Mercury (Hg)	130802-33	0.125	95	PASS	0	0.125	0.110	88%	0.112	90%	2%

MS/MSD Status:

Analysis	%MS	%MSD	%LCS	%RPD
Arsenic(As)	PASS	PASS	PASS	PASS
Chromium(Cr)	PASS	PASS	PASS	PASS
Lead(Pb)	PASS	PASS	PASS	PASS
Mercury (Hg)	PASS	PASS	PASS	PASS
Accepted Range	75 ~ 125	75 ~ 125	85 ~ 115	0 ~ 20

Batch For Samples:130805-1,2

ANALYST: 

FINAL REVIEWER: 

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel(213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**
 MATRIX: **SOIL**
 DATE SAMPLED: **07/31/13**
 REPORT TO: **Mr. ERIC PHILIPS**

DATE RECEIVED: **08/05/13**
 DATE ANALYZED: **08/06/13**
 DATE REPORTED: **08/12/13**

SAMPLE I.D.: **T927 (MW12)**

LAB I.D.: **130805-2**

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROENZENE	ND	0.005
1,3-DICHLOROENZENE	ND	0.005
1,4-DICHLOROENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335

MATRIX: SOIL

DATE SAMPLED: 07/31/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/05/13

DATE ANALYZED: 08/06/13

DATE REPORTED: 08/12/13

SAMPLE I.D.: T927 (MW12)

LAB I.D.: 130805-2

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 3 columns: PARAMETER, SAMPLE RESULT, PQL X1. Lists various chemical compounds and their detection results (ND) and PQL values.

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555

Handwritten signature and initials.

METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**
 MATRIX: **SOIL**
 DATE SAMPLED: 07/31/13
 REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/05/13
 DATE ANALYZED: 08/06/13
 DATE REPORTED: 08/12/13

METHOD BLANK FOR LAB I.D.: 130805-2

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROENZENE	ND	0.005
1,3-DICHLOROENZENE	ND	0.005
1,4-DICHLOROENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335

MATRIX: SOIL

DATE SAMPLED: 07/31/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/05/13

DATE ANALYZED: 08/06/13

DATE REPORTED: 08/12/13

METHOD BLANK FOR LAB I.D.: 130805-2

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

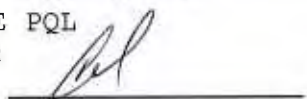
PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766

Tel (909)590-5905

Fax (909)590-5907

8260B QA/QC Report

Date Analyzed: 8/6/2013

Machine: C

Matrix: Solid/Soil/Liquid

Unit: mg/Kg (PPM)

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 130806-LCS1/2

BATCH ID: 130806-LCS1/2

Analyte	S.R.	spk conc	MS	%RC	MSD	%RC	%RPD	ACP %RC	ACP RPD
Benzene	0	0.050	0.042	85%	0.049	97%	13%	75-125	0-20
Chlorobenzene	0	0.050	0.046	91%	0.051	101%	10%	75-125	0-20
1,1-Dichloroethene	0	0.050	0.042	85%	0.048	97%	12%	75-125	0-20
Toluene	0	0.050	0.044	89%	0.049	98%	10%	75-125	0-20
Trichloroethene (TCE)	0	0.050	0.043	87%	0.049	97%	11%	75-125	0-20

Lab Control Spike (LCS):

Analyte	spk conc	LCS	%RC	ACP %RC
Benzene	0.050	0.059	117%	75-125
Chlorobenzene	0.050	0.057	114%	75-125
Chloroform	0.050	0.059	119%	75-125
1,1-Dichloroethene	0.050	0.054	108%	75-125
Ethylbenzene	0.050	0.058	117%	75-125
o-Xylene	0.050	0.059	118%	75-125
m,p-Xylene	0.100	0.113	113%	75-125
Toluene	0.050	0.056	113%	75-125
1,1,1-Trichloroethane	0.050	0.060	119%	75-125
Trichloroethene (TCE)	0.050	0.056	111%	75-125

Surrogate Recovery	spk conc	ACP %RC	MB %RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			M-BLK	130802-12	130802-13	130802-14	130802-15	130802-45	130802-46
Dibromofluoromethane	50.0	70-130	115%	117%	108%	105%	103%	109%	112%
Toluene-d8	50.0	70-130	103%	105%	101%	98%	95%	100%	69*
4-Bromofluorobenzene	50.0	70-130	94%	96%	96%	105%	82%	77%	58*

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			130805-21-23	130805-1	130805-2	130805-26	130805-46		
Dibromofluoromethane	50.0	70-130	99%	166*	0*	100%	96%		
Toluene-d8	50.0	70-130	92%	109%	102%	101%	101%		
4-Bromofluorobenzene	50.0	70-130	78%	101%	89%	98%	91%		

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.									
Dibromofluoromethane	50.0	70-130							
Toluene-d8	50.0	70-130							
4-Bromofluorobenzene	50.0	70-130							

* = Surrogate fail due to matrix interference; LCS, MS, MSD are in control therefore the analysis is in control.

S.R. = Sample Results

%RC = Percent Recovery

spk conc = Spike Concentration

ACP %RC = Accepted Percent Recovery

MS = Matrix Spike

MSD = Matrix Spike Duplicate

Analyzed/Reviewed By: 

Final Reviewer: _____

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: August 16, 2013

Mr. Eric Philips
Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213)622-3749 Email:Ephilips@kleinfelder.com

Project: **Owens Lake Groundwater Program 135335**
Lab I.D.: **130809-4**

Dear Mr. Philips:

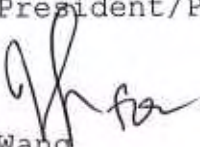
The **analytical results** for the soil sample, received by our laboratory on August 9, 2013, are attached. The sample was received chilled, intact and accompanying chain of custody.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,



Curtis Desilets
Vice President/Program Manager



Andy Wang
Laboratory Manager

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**

MATRIX: SOIL

DATE SAMPLED: 08/08/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/09/13

DATE EXTRACTED: 08/13/13

DATE ANALYZED: 08/13/13

DATE REPORTED: 08/16/13

TOTAL PETROLEUM HYDROCARBONS (TPH) - CARBON CHAIN ANALYSIS

METHOD: EPA 8015B

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

SAMPLE I.D.	LAB I.D.	C4-C10	C11-C22	C23-C35	DF
<u>T929</u>	130809-4	ND	ND	ND	1
<u>METHOD BLANK</u>		ND	ND	ND	1
	PQL	10	10	50	

COMMENTS

C4-C10 = GASOLINE RANGE

C11-C22 = DIESEL RANGE

C23-C35 = MOTOR OIL RANGE

DF = DILUTION FACTOR

PQL = PRACTICAL QUANTITATION LIMIT

ACTUAL DETECTION LIMIT = DF X PQL

ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

Data Reviewed and Approved by:  _____

CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro Chem, Inc

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

8015B Soil/Solid QC

Date Analyzed: 8/13/2013

Units: mg/Kg (PPM)

Matrix: Solid/Sludge

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Batch I.D. : 130813

Spiked Sample Lab I.D.: **130809-4 MS/MSD**

Analyte	SR	spk conc	MS	%MS	MSD	%MSD	%RPD	ACP %MS	ACP RPD
C11~C22 Range	0	200	209	105%	207	104%	1%	75-125	0-20%

LCS STD RECOVERY:

Analyte	spk conc	LCS	% REC	ACP
C11~C22 Range	200	208	104%	75-125

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.		MB	130809-4						
O-Terphenyl	60-140%	66%	70%						
Octacosane	60-140%	70%	73%						

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.									
O-Terphenyl	60-140%								
Octacosane	60-140%								

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.									
O-Terphenyl	60-140%								
Octacosane	60-140%								

Analyzed and Reviewed By: Aw

Final Reviewer: Ⓞ

* = Surrogate fail due to matrix interference

Note: LCS, MS, MSD are in control therefore results are in control.

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335

MATRIX: SOIL

DATE SAMPLED: 08/08/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/09/13

DATE ANALYZED: 08/09-13/13

DATE REPORTED: 08/16/13

SAMPLE I.D.: T929

LAB I.D.: 130809-4

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 7 columns: ELEMENT ANALYZED, SAMPLE RESULT, PQL, DF, TTLC LIMIT, STLC LIMIT, EPA METHOD. Lists various elements like Antimony, Arsenic, Barium, etc., with their respective values and limits.

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: [Signature]
CAL-DHS ELAP CERTIFICATE No.: 1555

METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**

MATRIX: **SOIL**

DATE SAMPLED: **08/08/13**

REPORT TO: **Mr. ERIC PHILIPS**

DATE RECEIVED: **08/09/13**

DATE ANALYZED: **08/09-13/13**

DATE REPORTED: **08/16/13**

METHOD BLANK FOR LAB I.D.: 130809-4

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony (Sb)	ND	1.0	1	500	15	6010B
Arsenic (As)	ND	0.3	1	500	5.0	6010B
Barium (Ba)	ND	5.0	1	10,000	100	6010B
Beryllium (Be)	ND	0.5	1	75	0.75	6010B
Cadmium (Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total (Cr)	ND	0.5	1	2,500	560/50@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt (Co)	ND	1.0	1	8,000	80	6010B
Copper (Cu)	ND	1.0	1	2,500	25	6010B
Lead (Pb)	ND	0.5	1	1,000	5.0	6010B
Mercury (Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum (Mo)	ND	5.0	1	3,500	350	6010B
Nickel (Ni)	ND	2.5	1	2,000	20	6010B
Selenium (Se)	ND	1.0	1	100	1.0	6010B
Silver (Ag)	ND	1.0	1	500	5.0	6010B
Thallium (Tl)	ND	1.0	1	700	7.0	6010B
Vanadium (V)	ND	5.0	1	2,400	24	6010B
Zinc (Zn)	ND	0.5	1	5,000	250	6010B

COMMENTS

DF = Dilution Factor

PQL = Practical Quantitation Limit

Actual Detection Limit = PQL X DF

ND = Below the Actual Detection Limit or non-detected

TTLC = Total Threshold Limit Concentration

STLC = Soluble Threshold Limit Concentration

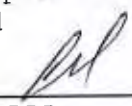
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5

* = STLC analysis for the metal is recommended (if marked)

** = Additional Analysis required, please call to discuss (if marked)

*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

-- = Not analyzed/not requested

Data Reviewed and Approved by: 

CAL-DHS ELAP CERTIFICATE No.: 1555

QA/QC for Metals Analysis --TTLC--SOLID/SOIL MATRIX

Matrix Spike/ Matrix Spike Duplicate/ LCS :

ANALYSIS DATE: 8/13/2013

Unit : mg/Kg(ppm)

Analysis	Spk.Sample ID	CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Arsenic(As)	130809-4	50.0	95	PASS	6.44	50.0	56.0	99%	55.2	98%	2%
Chromium(Cr)	130809-4	50.0	102	PASS	32.3	50.0	74.5	84%	73.0	81%	4%
Lead(Pb)	130809-4	50.0	114	PASS	3.51	50.0	49.4	92%	48.7	90%	2%

ANALYSIS DATE : 8/13/2013

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Mercury (Hg)	130812-2	0.125	95	PASS	0	0.125	0.108	86%	0.112	89%	3%

MS/MSD Status:

Analysis	%MS	%MSD	%LCS	%RPD
Arsenic(As)	PASS	PASS	PASS	PASS
Chromium(Cr)	PASS	PASS	PASS	PASS
Lead(Pb)	PASS	PASS	PASS	PASS
Mercury (Hg)	PASS	PASS	PASS	PASS
Accepted Range	75 ~ 125	75 ~ 125	85 ~ 115	0 ~ 20

Batch For Samples:130809-4

ANALYST: _____

FINAL REVIEWER: _____

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**
MATRIX: SOIL
DATE SAMPLED: 08/08/13
REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/09/13
DATE ANALYZED: 08/09/13
DATE REPORTED: 08/16/13

SAMPLE I.D.: **T929**

LAB I.D.: 130809-4

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROENZENE	ND	0.005
1,3-DICHLOROENZENE	ND	0.005
1,4-DICHLOROENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: _____

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**
MATRIX: **SOIL**
DATE SAMPLED: **08/08/13**
REPORT TO: **Mr. ERIC PHILIPS**

DATE RECEIVED: **08/09/13**
DATE ANALYZED: **08/09/13**
DATE REPORTED: **08/16/13**

SAMPLE I.D.: **T929**

LAB I.D.: 130809-4

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel(213) 622-3749 Email:Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**

MATRIX: SOIL

DATE SAMPLED: 08/08/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/09/13

DATE ANALYZED: 08/09/13

DATE REPORTED: 08/16/13

METHOD BLANK FOR LAB I.D.: 130809-4

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROENZENE	ND	0.005
1,3-DICHLOROENZENE	ND	0.005
1,4-DICHLOROENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**

MATRIX: SOIL

DATE SAMPLED: 08/08/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/09/13

DATE ANALYZED: 08/09/13

DATE REPORTED: 08/16/13

METHOD BLANK FOR LAB I.D.: 130809-4

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

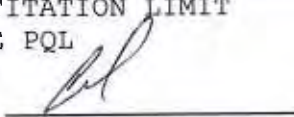
PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766

Tel (909)590-5905

Fax (909)590-5907

8260B QA/QC Report

Date Analyzed: 8/9/2013

Machine: C

Matrix: Solid/Soil/Liquid

Unit: mg/Kg (PPM)

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 130809-LCS1/2

BATCH ID: 130809-LCS1/2

Analyte	S.R.	spk conc	MS	%RC	MSD	%RC	%RPD	ACP %RC	ACP RPD
Benzene	0	0.050	0.044	87%	0.041	82%	6%	75-125	0-20
Chlorobenzene	0	0.050	0.046	92%	0.044	88%	4%	75-125	0-20
1,1-Dichloroethene	0	0.050	0.043	86%	0.043	87%	0%	75-125	0-20
Toluene	0	0.050	0.044	89%	0.043	85%	4%	75-125	0-20
Trichloroethene (TCE)	0	0.050	0.044	88%	0.042	84%	5%	75-125	0-20

Lab Control Spike (LCS):

Analyte	spk conc	LCS	%RC	ACP %RC
Benzene	0.050	0.050	101%	75-125
Chlorobenzene	0.050	0.051	101%	75-125
Chloroform	0.050	0.053	106%	75-125
1,1-Dichloroethene	0.050	0.049	97%	75-125
Ethylbenzene	0.050	0.055	109%	75-125
o-Xylene	0.050	0.055	110%	75-125
m,p-Xylene	0.100	0.109	109%	75-125
Toluene	0.050	0.051	102%	75-125
1,1,1-Trichloroethane	0.050	0.054	107%	75-125
Trichloroethene (TCE)	0.050	0.050	99%	75-125

Surrogate Recovery	spk conc	ACP %RC	MB %RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			M-BLK	130808-18	130808-13	130808-19	130808-15	130809-4	
Dibromofluoromethane	50.0	70-130	109%	111%	109%	104%	129%	102%	
Toluene-d8	50.0	70-130	98%	100%	71%	96%	76%	105%	
4-Bromofluorobenzene	50.0	70-130	91%	91%	67*	88%	74%	76%	

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.									
Dibromofluoromethane	50.0	70-130							
Toluene-d8	50.0	70-130							
4-Bromofluorobenzene	50.0	70-130							

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.									
Dibromofluoromethane	50.0	70-130							
Toluene-d8	50.0	70-130							
4-Bromofluorobenzene	50.0	70-130							

* = Surrogate fail due to matrix interference; LCS, MS, MSD are in control therefore the analysis is in control.

S.R. = Sample Results

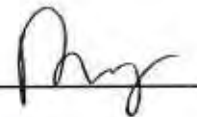
%RC = Percent Recovery

spk conc = Spike Concentration

ACP %RC = Accepted Percent Recovery

MS = Matrix Spike

MSD = Matrix Spike Duplicate

Analyzed/Reviewed By: 

Final Reviewer: 

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: August 29, 2013

Mr. Eric Philips
Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

Project: **Owens Lake Groundwater Program**
Lab I.D.: **130823-91, -92, -93**

Dear Mr. Philips:

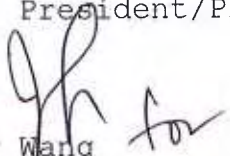
The **analytical results** for the soil samples, received by our laboratory on August 23, 2013, are attached. The samples were received chilled, intact and accompanying chain of custody.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,



Curtis Desilets
Vice President/Program Manager



Andy Wang
Laboratory Manager

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program	DATE RECEIVED: <u>08/23/13</u>
MATRIX: <u>SOIL</u>	DATE EXTRACTED: <u>08/27/13</u>
DATE SAMPLED: <u>08/17&22/13</u>	DATE ANALYZED: <u>08/27/13</u>
REPORT TO: <u>Mr. ERIC PHILIPS</u>	DATE REPORTED: <u>08/29/13</u>

TOTAL PETROLEUM HYDROCARBONS (TPH) - CARBON CHAIN ANALYSIS

METHOD: EPA 8015B

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

SAMPLE I.D.	LAB I.D.	C4-C10	C11-C22	C23-C35	DF
T-931	130823-91	ND	ND	ND	1
T-930	130823-92	ND	ND	ND	1
T-920	130823-93	ND	ND	ND	1
METHOD BLANK		ND	ND	ND	1
	PQL	10	10	50	

COMMENTS

C4-C10 = GASOLINE RANGE

C11-C22 = DIESEL RANGE

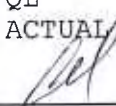
C23-C35 = MOTOR OIL RANGE

DF = DILUTION FACTOR

PQL = PRACTICAL QUANTITATION LIMIT

ACTUAL DETECTION LIMIT = DF X PQL

ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

Data Reviewed and Approved by: 

CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program**

MATRIX: **SOIL**

DATE RECEIVED: **08/23/13**

DATE SAMPLED: **08/17/13**

DATE ANALYZED: **08/26&28/13**

REPORT TO: **Mr. ERIC PHILIPS**

DATE REPORTED: **08/29/13**

SAMPLE I.D.: **T-931**

LAB I.D.: **130823-91**


TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony (Sb)	ND	1.0	1	500	15	6010B
Arsenic (As)	11.0	0.3	1	500	5.0	6010B
Barium (Ba)	61.7	5.0	1	10,000	100	6010B
Beryllium (Be)	ND	0.5	1	75	0.75	6010B
Cadmium (Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total (Cr)	6.48	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt (Co)	3.49	1.0	1	8,000	80	6010B
Copper (Cu)	5.00	1.0	1	2,500	25	6010B
Lead (Pb)	1.94	0.5	1	1,000	5.0	6010B
Mercury (Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum (Mo)	ND	5.0	1	3,500	350	6010B
Nickel (Ni)	3.73	2.5	1	2,000	20	6010B
Selenium (Se)	ND	1.0	1	100	1.0	6010B
Silver (Ag)	ND	1.0	1	500	5.0	6010B
Thallium (Tl)	ND	1.0	1	700	7.0	6010B
Vanadium (V)	22.6	5.0	1	2,400	24	6010B
Zinc (Zn)	18.6	0.5	1	5,000	250	6010B

COMMENTS

- DF = Dilution Factor
- PQL = Practical Quantitation Limit
- Actual Detection Limit = PQL X DF
- ND = Below the Actual Detection Limit or non-detected
- TTLC = Total Threshold Limit Concentration
- STLC = Soluble Threshold Limit Concentration
- @ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
- * = STLC analysis for the metal is recommended (if marked)
- ** = Additional Analysis required, please call to discuss (if marked)
- *** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
- = Not analyzed/not requested

Data Reviewed and Approved by: 
 CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel(213)622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program**

MATRIX: SOIL

DATE RECEIVED: 08/23/13

DATE SAMPLED: 08/17/13

DATE ANALYZED: 08/26&28/13

REPORT TO: Mr. ERIC PHILIPS

DATE REPORTED: 08/29/13

SAMPLE I.D.: **T-930**

LAB I.D.: 130823-92

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLIC LIMIT	STLC LIMIT	EPA METHOD
Antimony (Sb)	ND	1.0	1	500	15	6010B
Arsenic (As)	9.63	0.3	1	500	5.0	6010B
Barium (Ba)	104	5.0	1	10,000	100	6010B
Beryllium (Be)	ND	0.5	1	75	0.75	6010B
Cadmium (Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total (Cr)	7.80	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt (Co)	4.03	1.0	1	8,000	80	6010B
Copper (Cu)	15.9	1.0	1	2,500	25	6010B
Lead (Pb)	2.29	0.5	1	1,000	5.0	6010B
Mercury (Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum (Mo)	ND	5.0	1	3,500	350	6010B
Nickel (Ni)	ND	2.5	1	2,000	20	6010B
Selenium (Se)	ND	1.0	1	100	1.0	6010B
Silver (Ag)	ND	1.0	1	500	5.0	6010B
Thallium (Tl)	ND	1.0	1	700	7.0	6010B
Vanadium (V)	36.5	5.0	1	2,400	24	6010B
Zinc (Zn)	25.4	0.5	1	5,000	250	6010B

COMMENTS

DF = Dilution Factor

PQL = Practical Quantitation Limit

Actual Detection Limit = PQL X DF

ND = Below the Actual Detection Limit or non-detected

TTLIC = Total Threshold Limit Concentration

STLC = Soluble Threshold Limit Concentration

@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5

* = STLC analysis for the metal is recommended (if marked)

** = Additional Analysis required, please call to discuss (if marked)

*** = The concentration exceeds the TTLIC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

-- = Not analyzed/not requested

Data Reviewed and Approved by: 

CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program**

MATRIX: **SOIL**

DATE RECEIVED: **08/23/13**

DATE SAMPLED: **08/22/13**

DATE ANALYZED: **08/26&28/13**

REPORT TO: **Mr. ERIC PHILIPS**

DATE REPORTED: **08/29/13**

SAMPLE I.D.: **T-920**

LAB I.D.: **130823-93**

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony (Sb)	ND	1.0	1	500	15	6010B
Arsenic (As)	5.46	0.3	1	500	5.0	6010B
Barium (Ba)	46.7	5.0	1	10,000	100	6010B
Beryllium (Be)	ND	0.5	1	75	0.75	6010B
Cadmium (Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total (Cr)	7.39	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt (Co)	4.42	1.0	1	8,000	80	6010B
Copper (Cu)	12.0	1.0	1	2,500	25	6010B
Lead (Pb)	2.09	0.5	1	1,000	5.0	6010B
Mercury (Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum (Mo)	ND	5.0	1	3,500	350	6010B
Nickel (Ni)	ND	2.5	1	2,000	20	6010B
Selenium (Se)	ND	1.0	1	100	1.0	6010B
Silver (Ag)	ND	1.0	1	500	5.0	6010B
Thallium (Tl)	ND	1.0	1	700	7.0	6010B
Vanadium (V)	38.1	5.0	1	2,400	24	6010B
Zinc (Zn)	31.2	0.5	1	5,000	250	6010B

COMMENTS

DF = Dilution Factor

PQL = Practical Quantitation Limit

Actual Detection Limit = PQL X DF

ND = Below the Actual Detection Limit or non-detected

TTLC = Total Threshold Limit Concentration

STLC = Soluble Threshold Limit Concentration

@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5

* = STLC analysis for the metal is recommended (if marked)

** = Additional Analysis required, please call to discuss (if marked)

*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

-- = Not analyzed/not requested

Data Reviewed and Approved by: 

CAL-DHS ELAP CERTIFICATE No.: 1555

METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program**

MATRIX: SOIL

DATE RECEIVED: 08/23/13

DATE SAMPLED: 08/17&22/13

DATE ANALYZED: 08/26&28/13

REPORT TO: Mr. ERIC PHILIPS

DATE REPORTED: 08/29/13

METHOD BLANK FOR LAB I.D.: 130823-91, -92, -93

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLT LIMIT	STLT LIMIT	EPA METHOD
Antimony (Sb)	ND	1.0	1	500	15	6010B
Arsenic (As)	ND	0.3	1	500	5.0	6010B
Barium (Ba)	ND	5.0	1	10,000	100	6010B
Beryllium (Be)	ND	0.5	1	75	0.75	6010B
Cadmium (Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total (Cr)	ND	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt (Co)	ND	1.0	1	8,000	80	6010B
Copper (Cu)	ND	1.0	1	2,500	25	6010B
Lead (Pb)	ND	0.5	1	1,000	5.0	6010B
Mercury (Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum (Mo)	ND	5.0	1	3,500	350	6010B
Nickel (Ni)	ND	2.5	1	2,000	20	6010B
Selenium (Se)	ND	1.0	1	100	1.0	6010B
Silver (Ag)	ND	1.0	1	500	5.0	6010B
Thallium (Tl)	ND	1.0	1	700	7.0	6010B
Vanadium (V)	ND	5.0	1	2,400	24	6010B
Zinc (Zn)	ND	0.5	1	5,000	250	6010B

COMMENTS

DF = Dilution Factor

PQL = Practical Quantitation Limit

Actual Detection Limit = PQL X DF

ND = Below the Actual Detection Limit or non-detected

TTLT = Total Threshold Limit Concentration

STLT = Soluble Threshold Limit Concentration

@ = Must meet both the STLT Limit at 560 and EPA-TCLP Limit at 5

* = STLT analysis for the metal is recommended (if marked)

** = Additional Analysis required, please call to discuss (if marked)

*** = The concentration exceeds the TTLT Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

-- = Not analyzed/not requested

Data Reviewed and Approved by: 

CAL-DHS ELAP CERTIFICATE No.: 1555

QA/QC for Metals Analysis --TTL--SOLID/SOIL MATRIX

Matrix Spike/ Matrix Spike Duplicate/ LCS :

ANALYSIS DATE: 8/28/2013

Unit : mg/Kg(ppm)

Analysis	Spk.Sample ID	CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Arsenic(As)	130823-91	50.0	99	PASS	11.0	50.0	59.1	96%	60.6	99%	3%
Copper(Cu)	130823-91	50.0	98	PASS	5.00	50.0	51.9	94%	52.9	96%	2%
Lead(Pb)	130823-91	50.0	103	PASS	1.94	50.0	47.4	91%	48.5	93%	2%

ANALYSIS DATE. : 8/26/2013

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Mercury (Hg)	130826-13	0.125	96	PASS	0	0.125	0.102	82%	0.107	86%	5%

MS/MSD Status:

Analysis	%MS	%MSD	%LCS	%RPD
Arsenic(As)	PASS	PASS	PASS	PASS
Copper(Cu)	PASS	PASS	PASS	PASS
Lead(Pb)	PASS	PASS	PASS	PASS
Mercury (Hg)	PASS	PASS	PASS	PASS
Accepted Range	75 ~ 125	75 ~ 125	85 ~ 115	0 ~ 20

Batch For Samples:130823-91,92,93

ANALYST: _____

FINAL REVIEWER: _____

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program

MATRIX: SOIL

DATE SAMPLED: 08/17/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/23/13

DATE ANALYZED: 08/27/13

DATE REPORTED: 08/29/13

SAMPLE I.D.: T-931

LAB I.D.: 130823-91

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROBENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program**

MATRIX: SOIL

DATE SAMPLED: 08/17/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/23/13

DATE ANALYZED: 08/27/13

DATE REPORTED: 08/29/13

SAMPLE I.D.: **T-931**

LAB I.D.: 130823-91

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

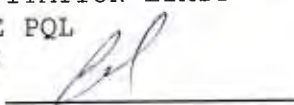
PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



LABORATORY REPORT

CUSTOMER: Kleinfelder
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program
 MATRIX: SOIL
 DATE SAMPLED: 08/17/13
 REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/23/13
 DATE ANALYZED: 08/27/13
 DATE REPORTED: 08/29/13

SAMPLE I.D.: T-930

LAB I.D.: 130823-92

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROBENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY:  _____

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program

MATRIX: SOIL

DATE SAMPLED: 08/17/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/23/13

DATE ANALYZED: 08/27/13

DATE REPORTED: 08/29/13

SAMPLE I.D.: T-930

LAB I.D.: 130823-92

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

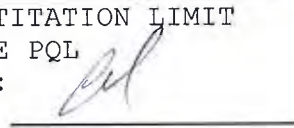
PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



LABORATORY REPORT

CUSTOMER: **Kleinfelder**
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program**

MATRIX: SOIL

DATE SAMPLED: 08/22/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/23/13

DATE ANALYZED: 08/27/13

DATE REPORTED: 08/29/13

SAMPLE I.D.: **T-920**

LAB I.D.: 130823-93

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROBENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: _____

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213)622-3749 Email:Ericphilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program
MATRIX:SOIL
DATE SAMPLED:08/22/13
REPORT TO:Mr. ERIC PHILIPS

DATE RECEIVED:08/23/13
DATE ANALYZED:08/27/13
DATE REPORTED:08/29/13

SAMPLE I.D.: T-920

LAB I.D.: 130823-93

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 3 columns: PARAMETER, SAMPLE RESULT, PQL X1. Lists various chemical compounds and their results (mostly ND) and PQL values.

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555

Handwritten signature

METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program**

MATRIX: SOIL

DATE SAMPLED: 08/17&22/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/23/13

DATE ANALYZED: 08/27/13

DATE REPORTED: 08/29/13

METHOD BLANK FOR LAB I.D.: 130823-91, -92, 93

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROENZENE	ND	0.005
1,3-DICHLOROENZENE	ND	0.005
1,4-DICHLOROENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: _____

METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

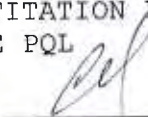
PROJECT: **Owens Lake Groundwater Program**
MATRIX: SOIL
DATE SAMPLED: 08/17&22/13
REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 08/23/13
DATE ANALYZED: 08/27/13
DATE REPORTED: 08/29/13

METHOD BLANK FOR LAB I.D.: 130823-91, -92, 93

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
DATA REVIEWED AND APPROVED BY: 
CAL-DHS CERTIFICATE # 1555

Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766

Tel (909)590-5905

Fax (909)590-5907

8260B QA/QC Report

Date Analyzed: 8/27/2013

Machine: C

Matrix: Solid/Soil/Liquid

Unit: mg/Kg (PPM)

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 130827-LCS1/2

BATCH ID: 130827-LCS1/2

Analyte	S.R.	spk conc	MS	%RC	MSD	%RC	%RPD	ACP %RC	ACP RPD
Benzene	0	0.050	0.043	85%	0.041	82%	3%	75-125	0-20
Chlorobenzene	0	0.050	0.049	98%	0.058	115%	18%	75-125	0-20
1,1-Dichloroethene	0	0.050	0.044	88%	0.050	99%	11%	75-125	0-20
Toluene	0	0.050	0.047	95%	0.046	92%	3%	75-125	0-20
Trichloroethene (TCE)	0	0.050	0.042	83%	0.042	83%	0%	75-125	0-20

Lab Control Spike (LCS):

Analyte	spk conc	LCS	%RC	ACP %RC
Benzene	0.050	0.049	99%	75-125
Chlorobenzene	0.050	0.058	116%	75-125
Chloroform	0.050	0.058	116%	75-125
1,1-Dichloroethene	0.050	0.054	107%	75-125
Ethylbenzene	0.050	0.060	120%	75-125
o-Xylene	0.050	0.060	120%	75-125
m,p-Xylene	0.100	0.120	120%	75-125
Toluene	0.050	0.053	107%	75-125
1,1,1-Trichloroethane	0.050	0.055	110%	75-125
Trichloroethene (TCE)	0.050	0.050	99%	75-125

Surrogate Recovery	spk conc	ACP %RC	MB %RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			M-BLK	130823-2	130823-91	130823-92	130823-93	130826-33	
Dibromofluoromethane	50.0	70-130	126%	138*%	126%	125%	129%	132*%	
Toluene-d8	50.0	70-130	102%	71%	101%	103%	99%	103%	
4-Bromofluorobenzene	50.0	70-130	91%	54*%	81%	88%	82%	92%	

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.									
Dibromofluoromethane	50.0	70-130							
Toluene-d8	50.0	70-130							
4-Bromofluorobenzene	50.0	70-130							

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.									
Dibromofluoromethane	50.0	70-130							
Toluene-d8	50.0	70-130							
4-Bromofluorobenzene	50.0	70-130							

* = Surrogate fail due to matrix interference; LCS, MS, MSD are in control therefore the analysis is in control.

S.R. = Sample Results

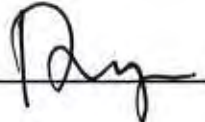
spk conc = Spike Concentration

MS = Matrix Spike

%RC = Percent Recovery

ACP %RC = Accepted Percent Recovery

MSD = Matrix Spike Duplicate

Analyzed/Reviewed By: 

Final Reviewer: 

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: September 13, 2013

Mr. Eric Philips
Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(949)727-4466 Email:ephilips@kleinfelder.com

Project: **Owens Lake Groundwater Program / 135335**
Lab I.D.: **130906-40, -41**

Dear Mr. Philips:

The **analytical results** for the soil samples, received by our laboratory on September 6, 2013, are attached. The samples were received chilled, intact and accompanying chain of custody.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,



Curtis Desilets
Vice President/Program Manager



Andy Wang
Laboratory Manager

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (949) 727-4466 Email: ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program / 135335

MATRIX: SOIL
DATE SAMPLED: 08/30&09/05/13
REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 09/06/13
DATE EXTRACTED: 09/09/13
DATE ANALYZED: 09/09/13
DATE REPORTED: 09/13/13

TOTAL PETROLEUM HYDROCARBONS (TPH) - CARBON CHAIN ANALYSIS

METHOD: EPA 8015B

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 6 columns: SAMPLE I.D., LAB I.D., C4-C10, C11-C22, C23-C35, DF. Rows include T-919, T-921, METHOD BLANK, and PQL values (10, 10, 50).

COMMENTS

C4-C10 = GASOLINE RANGE
C11-C22 = DIESEL RANGE
C23-C35 = MOTOR OIL RANGE
DF = DILUTION FACTOR
PQL = PRACTICAL QUANTITATION LIMIT
ACTUAL DETECTION LIMIT = DF X PQL
ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

Data Reviewed and Approved by: [Signature]
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(949)727-4466 Email:ephipilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program / 135335

MATRIX:SOIL

DATE RECEIVED:09/06/13

DATE SAMPLED:08/30/13

DATE ANALYZED:09/10/13

REPORT TO:Mr. ERIC PHILIPS

DATE REPORTED:09/13/13

SAMPLE I.D.: T-919

LAB I.D.: 130906-40

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 7 columns: ELEMENT ANALYZED, SAMPLE RESULT, PQL, DF, TTLC LIMIT, STLC LIMIT, EPA METHOD. Lists various elements like Antimony, Arsenic, Barium, etc., with their respective results and limits.

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: [Signature]
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (949) 727-4466 Email: ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program / 135335

MATRIX: SOIL DATE RECEIVED: 09/06/13
DATE SAMPLED: 09/05/13 DATE ANALYZED: 09/10/13
REPORT TO: Mr. ERIC PHILLIPS DATE REPORTED: 09/13/13

SAMPLE I.D.: T-921

LAB I.D.: 130906-41

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 7 columns: ELEMENT ANALYZED, SAMPLE RESULT, PQL, DF, TTLC LIMIT, STLC LIMIT, EPA METHOD. Rows include Antimony (Sb), Arsenic (As), Barium (Ba), Beryllium (Be), Cadmium (Cd), Chromium Total (Cr), Chromium VI (Cr6), Cobalt (Co), Copper (Cu), Lead (Pb), Mercury (Hg), Molybdenum (Mo), Nickel (Ni), Selenium (Se), Silver (Ag), Thallium (Tl), Vanadium (V), Zinc (Zn).

COMMENTS

- DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: [Signature]
CAL-DHS ELAP CERTIFICATE No.: 1555

METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (949) 727-4466 Email: ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program / 135335**

MATRIX: SOIL DATE RECEIVED: 09/06/13
 DATE SAMPLED: 08/30&09/05/13 DATE ANALYZED: 09/10/13
 REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 09/13/13

METHOD BLANK FOR LAB I.D.: 130906-40, -41

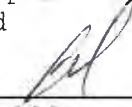
TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLIC LIMIT	STLC LIMIT	EPA METHOD
Antimony (Sb)	ND	1.0	1	500	15	6010B
Arsenic (As)	ND	0.3	1	500	5.0	6010B
Barium (Ba)	ND	5.0	1	10,000	100	6010B
Beryllium (Be)	ND	0.5	1	75	0.75	6010B
Cadmium (Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total (Cr)	ND	0.5	1	2,500	560/500	6010B
Chromium VI (Cr6)	--	0.2	1	500	5.0	7196A
Cobalt (Co)	ND	1.0	1	8,000	80	6010B
Copper (Cu)	ND	1.0	1	2,500	25	6010B
Lead (Pb)	ND	0.5	1	1,000	5.0	6010B
Mercury (Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum (Mo)	ND	5.0	1	3,500	350	6010B
Nickel (Ni)	ND	2.5	1	2,000	20	6010B
Selenium (Se)	ND	1.0	1	100	1.0	6010B
Silver (Ag)	ND	1.0	1	500	5.0	6010B
Thallium (Tl)	ND	1.0	1	700	7.0	6010B
Vanadium (V)	ND	5.0	1	2,400	24	6010B
Zinc (Zn)	ND	0.5	1	5,000	250	6010B

COMMENTS

- DF = Dilution Factor
- PQL = Practical Quantitation Limit
- Actual Detection Limit = PQL X DF
- ND = Below the Actual Detection Limit or non-detected
- TTLIC = Total Threshold Limit Concentration
- STLC = Soluble Threshold Limit Concentration
- @ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
- * = STLC analysis for the metal is recommended (if marked)
- ** = Additional Analysis required, please call to discuss (if marked)
- *** = The concentration exceeds the TTLIC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
- = Not analyzed/not requested

Data Reviewed and Approved by: 
 CAL-DHS ELAP CERTIFICATE No.: 1555

QA/QC for Metals Analysis --TTLIC--SOLID/SOIL MATRIX

Matrix Spike/ Matrix Spike Duplicate/ LCS :

ANALYSIS DATE: 9/10/2013

Unit : mg/Kg(ppm)

Analysis	Spk.Sample ID	CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Arsenic(As)	13090-LCS	50.0	100	PASS	0	50.0	49.9	100%	49.4	99%	1%
Chromium(Cr)	13090-LCS	50.0	91	PASS	0	50.0	49.5	99%	49.0	98%	1%
Lead(Pb)	13090-LCS	50.0	103	PASS	0	50.0	51.2	102%	50.6	101%	1%

ANALYSIS DATE : 9/10/2013

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Mercury (Hg)	130909-71	0.125	95	PASS	0	0.125	0.114	91%	0.110	88%	3%

MS/MSD Status:

Analysis	%MS	%MSD	%LCS	%RPD
Arsenic(As)	PASS	PASS	PASS	PASS
Chromium(Cr)	PASS	PASS	PASS	PASS
Lead(Pb)	PASS	PASS	PASS	PASS
Mercury (Hg)	PASS	PASS	PASS	PASS
Accepted Range	75 ~ 125	75 ~ 125	85 ~ 115	0 ~ 20

Batch For Samples:130906-40,41

ANALYST: _____

FINAL REVIEWER: _____

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (949) 727-4466 Email: ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program / 135335**

MATRIX: SOIL DATE RECEIVED: 09/06/13
 DATE SAMPLED: 08/30/13 DATE ANALYZED: 09/07/13
 REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 09/13/13

SAMPLE I.D.: **T-919**

LAB I.D.: 130906-40

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

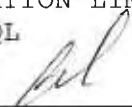
PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (949) 727-4466 Email: ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program / 135335

MATRIX: SOIL DATE RECEIVED: 09/06/13
DATE SAMPLED: 09/05/13 DATE ANALYZED: 09/07/13
REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 09/13/13

SAMPLE I.D.: T-921

LAB I.D.: 130906-41

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROENZENE	ND	0.005
1,3-DICHLOROENZENE	ND	0.005
1,4-DICHLOROENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: _____

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (949) 727-4466 Email: ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program / 135335

MATRIX: SOIL DATE RECEIVED: 09/06/13
DATE SAMPLED: 09/05/13 DATE ANALYZED: 09/07/13
REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 09/13/13

SAMPLE I.D.: T-921

LAB I.D.: 130906-41

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



METHOD BLANK REPORT

CUSTOMER: Kleinfelder
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (949) 727-4466 Email: ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program / 135335

MATRIX: SOIL DATE RECEIVED: 09/06/13
 DATE SAMPLED: 08/30&09/05/13 DATE ANALYZED: 09/07/13
 REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 09/13/13

METHOD BLANK FOR LAB I.D.: 130906-40, -41

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROBENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: _____

METHOD BLANK REPORT

CUSTOMER: Kleinfelder
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (949) 727-4466 Email: ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program / 135335


MATRIX: SOIL
 DATE SAMPLED: 08/30&09/05/13
 REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 09/06/13
 DATE ANALYZED: 09/07/13
 DATE REPORTED: 09/13/13

METHOD BLANK FOR LAB I.D.: 130906-40, -41

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT
 ND = NON-DETECTED OR BELOW THE PQL
 DATA REVIEWED AND APPROVED BY: 
 CAL-DHS CERTIFICATE # 1555

Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766

Tel (909)590-5905

Fax (909)590-5907

8260B QA/QC Report

Date Analyzed: 9/7/2013
Machine: C

Matrix: Solid/Soil/Liquid
Unit: mg/Kg (PPM)

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 130907-LCS1/2

BATCH ID: 130907-LCS1/2

Analyte	S.R.	spk conc	MS	%RC	MSD	%RC	%RPD	ACP %RC	ACP RPD
Benzene	0	0.050	0.048	96%	0.044	88%	8%	75-125	0-20
Chlorobenzene	0	0.050	0.050	100%	0.046	92%	8%	75-125	0-20
1,1-Dichloroethene	0	0.050	0.046	92%	0.046	92%	0%	75-125	0-20
Toluene	0	0.050	0.051	102%	0.047	94%	8%	75-125	0-20
Trichloroethene (TCE)	0	0.050	0.046	92%	0.044	88%	4%	75-125	0-20

Lab Control Spike (LCS):

Analyte	spk conc	LCS	%RC	ACP %RC
Benzene	0.050	0.050	100%	75-125
Chlorobenzene	0.050	0.051	102%	75-125
Chloroform	0.050	0.050	100%	75-125
1,1-Dichloroethene	0.050	0.045	90%	75-125
Ethylbenzene	0.050	0.054	108%	75-125
o-Xylene	0.050	0.054	108%	75-125
m,p-Xylene	0.100	0.108	108%	75-125
Toluene	0.050	0.052	104%	75-125
1,1,1-Trichloroethane	0.050	0.050	100%	75-125
Trichloroethene (TCE)	0.050	0.049	98%	75-125

Surrogate Recovery	spk conc	ACP %RC	MB %RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			M-BLK	130906-40	130906-41	130906-42	130906-43	130906-44	130906-45
Dibromofluoromethane	50.0	70-130	115%	124%	114%	119%	119%	123%	126%
Toluene-d8	50.0	70-130	101%	96%	103%	103%	104%	103%	103%
4-Bromofluorobenzene	50.0	70-130	88%	74%	88%	88%	86%	86%	86%

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			130906-46	130906-47	130906-48	130906-49	130906-50	130906-51	130906-52
Dibromofluoromethane	50.0	70-130	125%	131*	128%	132*	137*	134*	140*
Toluene-d8	50.0	70-130	104%	106%	103%	104%	108%	106%	106%
4-Bromofluorobenzene	50.0	70-130	86%	81%	86%	84%	83%	86%	83%

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			130906-53	130906-27					
Dibromofluoromethane	50.0	70-130	136*	119%					
Toluene-d8	50.0	70-130	105%	104%					
4-Bromofluorobenzene	50.0	70-130	83%	91%					

* = Surrogate fail due to matrix interference; LCS, MS, MSD are in control therefore the analysis is in control.

S.R. = Sample Results

%RC = Percent Recovery

spk conc = Spike Concentration

ACP %RC = Accepted Percent Recovery

MS = Matrix Spike

MSD = Matrix Spike Duplicate

Analyzed/Reviewed By: 

Final Reviewer: _____

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: September 27, 2013

Mr. Eric Philips
Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

Project: **Owens Lake GW Program 135335**
Lab I.D.: **130920-31, -32**

Dear Mr. Philips:


The **analytical results** for the soil samples, received by our laboratory on September 20, 2013, are attached. The samples were received chilled, intact and accompanying chain of custody.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,



Curtis Desilets
Vice President/Program Manager



Andy Wang
Laboratory Manager

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake GW Program 135335**
MATRIX: SOIL
DATE SAMPLED: 09/14&17/13
REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 09/20/13
DATE EXTRACTED: 09/24/13
DATE ANALYZED: 09/24/13
DATE REPORTED: 09/27/13

TOTAL PETROLEUM HYDROCARBONS (TPH) - CARBON CHAIN ANALYSIS
METHOD: EPA 8015B
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

SAMPLE I.D.	LAB I.D.	C4-C10	C11-C22	C23-C35	DF
T918 (MW-3)	130920-31	ND	ND	ND	1
T922 (MW-7)	130920-32	ND	ND	ND	1
METHOD BLANK		ND	ND	ND	1
	PQL	10	10	50	

COMMENTS

C4-C10 = GASOLINE RANGE

C11-C22 = DIESEL RANGE

C23-C35 = MOTOR OIL RANGE

DF = DILUTION FACTOR

PQL = PRACTICAL QUANTITATION LIMIT

ACTUAL DETECTION LIMIT = DF X PQL

ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

Data Reviewed and Approved by: 
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro Chem, Inc

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

8015B Soil/Solid QC

Date Analyzed: 9/24/2013

Units: mg/Kg (PPM)

Matrix: **Solid/Sludge**

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Batch I.D. : 130920-31

Spiked Sample Lab I.D.: **130924-LCS1/2**

Analyte	SR	spk conc	MS	%MS	MSD	%MSD	%RPD	ACP %MS	ACP RPD
C11~C22 Range	0	200	220	110%	221	111%	0%	75-125	0-20%

LCS STD RECOVERY:

Analyte	spk conc	LCS	% REC	ACP
C11~C22 Range	200	222	111%	75-125

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.		MB	130920-31	130920-32					
O-Terphenyl	60-140%	91%	92%	78%					
Octacosane	60-140%	88%	90%	74%					

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.									
O-Terphenyl	60-140%								
Octacosane	60-140%								

Surrogate Recovery	ACP%	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
Sample I.D.									
O-Terphenyl	60-140%								
Octacosane	60-140%								

Analyzed and Reviewed By: 

Final Reviewer: 

* = Surrogate fail due to matrix interference

Note: LCS, MS, MSD are in control therefore results are in control.

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake GW Program 135335

MATRIX: SOIL

DATE SAMPLED: 09/14/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 09/20/13

DATE ANALYZED: 09/24/13

DATE REPORTED: 09/27/13

SAMPLE I.D.: T918 (MW-3)

LAB I.D.: 130920-31

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 7 columns: ELEMENT ANALYZED, SAMPLE RESULT, PQL, DF, TTLC LIMIT, STLC LIMIT, EPA METHOD. Lists various elements like Antimony, Arsenic, Barium, etc., with their respective values and limits.

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: [Signature]
CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake GW Program 135335**
 MATRIX: SOIL
 DATE SAMPLED: 09/17/13
 REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 09/20/13
 DATE ANALYZED: 09/24/13
 DATE REPORTED: 09/27/13

SAMPLE I.D.: **T922 (MW-7)**

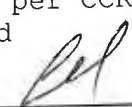
LAB I.D.: 130920-32

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLCLIMIT	STLCLIMIT	EPA METHOD
Antimony (Sb)	ND	1.0	1	500	15	6010B
Arsenic (As)	3.61	0.3	1	500	5.0	6010B
Barium (Ba)	22.4	5.0	1	10,000	100	6010B
Beryllium (Be)	ND	0.5	1	75	0.75	6010B
Cadmium (Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total (Cr)	90.9 **	0.5	1	2,500	560/50	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt (Co)	6.69	1.0	1	8,000	80	6010B
Copper (Cu)	14.2	1.0	1	2,500	25	6010B
Lead (Pb)	3.60	0.5	1	1,000	5.0	6010B
Mercury (Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum (Mo)	ND	5.0	1	3,500	350	6010B
Nickel (Ni)	ND	2.5	1	2,000	20	6010B
Selenium (Se)	ND	1.0	1	100	1.0	6010B
Silver (Ag)	ND	1.0	1	500	5.0	6010B
Thallium (Tl)	ND	1.0	1	700	7.0	6010B
Vanadium (V)	149	5.0	1	2,400	24	6010B
Zinc (Zn)	29.5	0.5	1	5,000	250	6010B

COMMENTS

DF = Dilution Factor
 PQL = Practical Quantitation Limit
 Actual Detection Limit = PQL X DF
 ND = Below the Actual Detection Limit or non-detected
 TTLCL = Total Threshold Limit Concentration
 STLCL = Soluble Threshold Limit Concentration
 @ = Must meet both the STLCL Limit at 560 and EPA-TCLP Limit at 5
 * = STLCL analysis for the metal is recommended (if marked)
 ** = Additional Analysis required, please call to discuss (if marked)
 *** = The concentration exceeds the TTLCL Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
 -- = Not analyzed/not requested

Data Reviewed and Approved by: 
 CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake GW Program 135335

MATRIX: SOIL

DATE SAMPLED: 09/14&17/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 09/20/13

DATE ANALYZED: 09/24/13

DATE REPORTED: 09/27/13

METHOD BLANK FOR LAB I.D.: 130920-31, -32

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 7 columns: ELEMENT ANALYZED, SAMPLE RESULT, PQL, DF, TTLC LIMIT, STLC LIMIT, EPA METHOD. Lists various elements like Antimony, Arsenic, Barium, etc., with their respective limits and detection results.

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: [Signature]

CAL-DHS ELAP CERTIFICATE No.: 1555

QA/QC for Metals Analysis --TTLC--SOLID/SOIL MATRIX

Matrix Spike/ Matrix Spike Duplicate/ LCS :

ANALYSIS DATE: 9/24/2013

Unit : mg/Kg(ppm)

Analysis	Spk.Sample ID	CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Arsenic(As)	130920-31	50.0	108	PASS	26.3	50.0	74.0	95%	74.0	95%	0%
Chromium(Cr)	130920-31	50.0	109	PASS	48.2	50.0	107	118%	106	116%	2%
Lead(Pb)	130920-31	50.0	110	PASS	5.90	50.0	50.2	89%	50.4	89%	0%

ANALYSIS DATE: 9/24/2013

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Mercury (Hg)	130923-27	0.125	94	PASS	0	0.125	0.108	86%	0.110	88%	2%

MS/MSD Status:

Analysis	%MS	%MSD	%LCS	%RPD
Arsenic(As)	PASS	PASS	PASS	PASS
Chromium(Cr)	PASS	PASS	PASS	PASS
Lead(Pb)	PASS	PASS	PASS	PASS
Mercury (Hg)	PASS	PASS	PASS	PASS
Accepted Range	75 ~ 125	75 ~ 125	85 ~ 115	0 ~ 20

Batch For Samples:130920-31,32

ANALYST: _____

FINAL REVIEWER: _____

Enviro - Chem, Inc.

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LABORATORY REPORT

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Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake GW Program 135335

MATRIX: SOIL

DATE SAMPLED: 09/14/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 09/20/13

DATE ANALYZED: 09/24/13

DATE REPORTED: 09/27/13

SAMPLE I.D.: T918 (MW-3)

LAB I.D.: 130920-31

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROBENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

Enviro - Chem, Inc.

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LABORATORY REPORT

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PROJECT: Owens Lake GW Program 135335

MATRIX: SOIL

DATE SAMPLED: 09/14/13

REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 09/20/13

DATE ANALYZED: 09/24/13

DATE REPORTED: 09/27/13

SAMPLE I.D.: T918 (MW-3)

LAB I.D.: 130920-31

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 3 columns: PARAMETER, SAMPLE RESULT, PQL X1. Lists various chemical compounds and their detection results (ND or numerical values) relative to their Practical Quantitation Limits.

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
DATA REVIEWED AND APPROVED BY: [Signature]
CAL-DHS CERTIFICATE # 1555

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
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 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake GW Program 135335**
 MATRIX: **SOIL**
 DATE SAMPLED: **09/17/13**
 REPORT TO: **Mr. ERIC PHILIPS**

DATE RECEIVED: **09/20/13**
 DATE ANALYZED: **09/24/13**
 DATE REPORTED: **09/27/13**

SAMPLE I.D.: **T922 (MW-7)**

LAB I.D.: 130920-32

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROBENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED, ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

LABORATORY REPORT

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PROJECT: **Owens Lake GW Program 135335**

MATRIX: **SOIL**

DATE SAMPLED: **09/17/13**

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DATE ANALYZED: **09/24/13**

DATE REPORTED: **09/27/13**

SAMPLE I.D.: **T922 (MW-7)**

LAB I.D.: **130920-32**

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

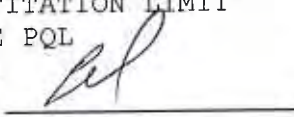
PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake GW Program 135335**
 MATRIX: SOIL
 DATE SAMPLED: 09/14&17/13
 REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 09/20/13
 DATE ANALYZED: 09/24/13
 DATE REPORTED: 09/27/13

METHOD BLANK FOR LAB I.D.: 130920-31, -32

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROBENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

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METHOD BLANK FOR LAB I.D.: 130920-31, -32

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555



Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766

Tel (909)590-5905

Fax (909)590-5907

8260B QA/QC Report

Date Analyzed: 9/24/2013
Machine: C

Matrix: Solid/Soil/Liquid
Unit: mg/Kg (PPM)

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 130920-32 MS/MSD

BATCH ID: 130920-32

Analyte	S.R.	spk conc	MS	%RC	MSD	%RC	%RPD	ACP %RC	ACP RPD
Benzene	0	0.050	0.042	83%	0.050	99%	16%	75-125	0-20
Chlorobenzene	0	0.050	0.046	91%	0.054	108%	17%	75-125	0-20
1,1-Dichloroethene	0	0.050	0.046	92%	0.055	110%	18%	75-125	0-20
Toluene	0	0.050	0.040	80%	0.048	96%	16%	75-125	0-20
Trichloroethene (TCE)	0	0.050	0.045	91%	0.054	107%	17%	75-125	0-20

Lab Control Spike (LCS):

Analyte	spk conc	LCS	%RC	ACP %RC
Benzene	0.050	0.047	94%	75-125
Chlorobenzene	0.050	0.052	104%	75-125
Chloroform	0.050	0.060	120%	75-125
1,1-Dichloroethene	0.050	0.060	120%	75-125
Ethylbenzene	0.050	0.061	122%	75-125
o-Xylene	0.050	0.056	112%	75-125
m,p-Xylene	0.100	0.122	122%	75-125
Toluene	0.050	0.046	92%	75-125
1,1,1-Trichloroethane	0.050	0.058	116%	75-125
Trichloroethene (TCE)	0.050	0.052	104%	75-125

Surrogate Recovery	spk conc	ACP %RC	MB %RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			M-BLK	130920-31	130920-32	130920-1	130920-2	130920-12	130923-35
Dibromofluoromethane	50.0	70-130	114%	126%	109%	130%	112%	127%	107%
Toluene-d8	50.0	70-130	92%	88%	94%	97%	94%	98%	96%
4-Bromofluorobenzene	50.0	70-130	92%	77%	89%	88%	87%	96%	89%

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			130923-36	130923-37					
Dibromofluoromethane	50.0	70-130	113%	125%					
Toluene-d8	50.0	70-130	96%	94%					
4-Bromofluorobenzene	50.0	70-130	92%	90%					

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.									
Dibromofluoromethane	50.0	70-130							
Toluene-d8	50.0	70-130							
4-Bromofluorobenzene	50.0	70-130							

* = Surrogate fail due to matrix interference; LCS, MS, MSD are in control therefore the analysis is in control.

S.R. = Sample Results

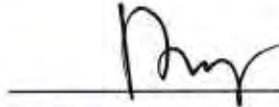
%RC = Percent Recovery

spk conc = Spike Concentration

ACP %RC = Accepted Percent Recovery

MS = Matrix Spike

MSD = Matrix Spike Duplicate

Analyzed/Reviewed By: 

Final Reviewer: 

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: October 8, 2013

Mr. Eric Philips
Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213)622-3749 Email:Ephilips@kleinfelder.com

Project: **Owens Lake Groundwater Program 135335**
Lab I.D.: **131001-23, -24**

Dear Mr. Philips:

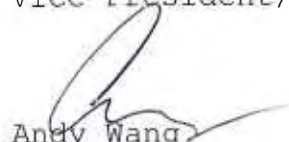
The **analytical results** for the soil samples, received by our laboratory on October 1, 2013, are attached. The samples were received chilled, intact and accompanying chain of custody.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,



Curtis Desilets
Vice President/Program Manager



Andy Wang
Laboratory Manager

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335

MATRIX: SOIL
DATE SAMPLED: 09/26&28/13
REPORT TO: Mr. ERIC PHILIPS

DATE RECEIVED: 10/01/13
DATE EXTRACTED: 10/02/13
DATE ANALYZED: 10/02/13
DATE REPORTED: 10/08/13

TOTAL PETROLEUM HYDROCARBONS (TPH) - CARBON CHAIN ANALYSIS
METHOD: EPA 8015B
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

SAMPLE I.D.	LAB I.D.	C4-C10	C11-C22	C23-C35	DF
<u>T924 (MW-9)</u>	<u>131001-23</u>	<u>ND</u>	<u>ND</u>	<u>ND</u>	<u>1</u>
<u>T923 (MW-8)</u>	<u>131001-24</u>	<u>ND</u>	<u>ND</u>	<u>ND</u>	<u>1</u>
<u>METHOD BLANK</u>		<u>ND</u>	<u>ND</u>	<u>ND</u>	<u>1</u>
	PQL	10	10	50	

COMMENTS

C4-C10 = GASOLINE RANGE

C11-C22 = DIESEL RANGE

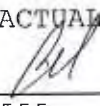
C23-C35 = MOTOR OIL RANGE

DF = DILUTION FACTOR

PQL = PRACTICAL QUANTITATION LIMIT

ACTUAL DETECTION LIMIT = DF X PQL

ND = NON-DETECTED OR BELOW THE ACTUAL DETECTION LIMIT

Data Reviewed and Approved by: 
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213) 622-3749 Email:Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335
MATRIX:SOIL DATE RECEIVED:10/01/13
DATE SAMPLED:09/26/13 DATE ANALYZED:10/02/13
REPORT TO:Mr. ERIC PHILIPS DATE REPORTED:10/08/13

SAMPLE I.D.: T924 (MW-9) LAB I.D.: 131001-23

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 7 columns: ELEMENT ANALYZED, SAMPLE RESULT, PQL, DF, TTLC LIMIT, STLC LIMIT, EPA METHOD. Lists various elements like Antimony, Arsenic, Barium, etc., with their respective values and limits.

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection Limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
* = STLC analysis for the metal is recommended (if marked)
** = Additional Analysis required, please call to discuss (if marked)
*** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
-- = Not analyzed/not requested

Data Reviewed and Approved by: [Signature]
CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**
 MATRIX: SOIL DATE RECEIVED: 10/01/13
 DATE SAMPLED: 09/28/13 DATE ANALYZED: 10/02/13
 REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 10/08/13

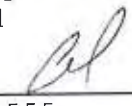
SAMPLE I.D.: **T923 (MW-8)** LAB I.D.: 131001-24

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony (Sb)	ND	1.0	1	500	15	6010B
Arsenic (As)	2.08	0.3	1	500	5.0	6010B
Barium (Ba)	7.06	5.0	1	10,000	100	6010B
Beryllium (Be)	ND	0.5	1	75	0.75	6010B
Cadmium (Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total (Cr)	4.18	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt (Co)	1.34	1.0	1	8,000	80	6010B
Copper (Cu)	3.23	1.0	1	2,500	25	6010B
Lead (Pb)	1.12	0.5	1	1,000	5.0	6010B
Mercury (Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum (Mo)	ND	5.0	1	3,500	350	6010B
Nickel (Ni)	ND	2.5	1	2,000	20	6010B
Selenium (Se)	ND	1.0	1	100	1.0	6010B
Silver (Ag)	ND	1.0	1	500	5.0	6010B
Thallium (Tl)	ND	1.0	1	700	7.0	6010B
Vanadium (V)	8.38	5.0	1	2,400	24	6010B
Zinc (Zn)	8.93	0.5	1	5,000	250	6010B

COMMENTS

DF = Dilution Factor
 PQL = Practical Quantitation Limit
 Actual Detection Limit = PQL X DF
 ND = Below the Actual Detection Limit or non-detected
 TTLC = Total Threshold Limit Concentration
 STLC = Soluble Threshold Limit Concentration
 @ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
 * = STLC analysis for the metal is recommended (if marked)
 ** = Additional Analysis required, please call to discuss (if marked)
 *** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
 -- = Not analyzed/not requested

Data Reviewed and Approved by: 
 CAL-DHS ELAP CERTIFICATE No.: 1555

METHOD BLANK REPORT

CUSTOMER: **Kleinfelder**
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: **Owens Lake Groundwater Program 135335**
 MATRIX: SOIL DATE RECEIVED: 10/01/13
 DATE SAMPLED: 09/26&28/13 DATE ANALYZED: 10/02/13
 REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 10/08/13

METHOD BLANK FOR LAB I.D.: 131001-23, -24

TOTAL THRESHOLD LIMIT CONCENTRATION ANALYSIS
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD
Antimony (Sb)	ND	1.0	1	500	15	6010B
Arsenic (As)	ND	0.3	1	500	5.0	6010B
Barium (Ba)	ND	5.0	1	10,000	100	6010B
Beryllium (Be)	ND	0.5	1	75	0.75	6010B
Cadmium (Cd)	ND	0.5	1	100	1.0	6010B
Chromium Total (Cr)	ND	0.5	1	2,500	560/5@	6010B
Chromium VI (Cr6)	--	0.1	1	500	5.0	7196A
Cobalt (Co)	ND	1.0	1	8,000	80	6010B
Copper (Cu)	ND	1.0	1	2,500	25	6010B
Lead (Pb)	ND	0.5	1	1,000	5.0	6010B
Mercury (Hg)	ND	0.01	1	20	0.2	7471A
Molybdenum (Mo)	ND	5.0	1	3,500	350	6010B
Nickel (Ni)	ND	2.5	1	2,000	20	6010B
Selenium (Se)	ND	1.0	1	100	1.0	6010B
Silver (Ag)	ND	1.0	1	500	5.0	6010B
Thallium (Tl)	ND	1.0	1	700	7.0	6010B
Vanadium (V)	ND	5.0	1	2,400	24	6010B
Zinc (Zn)	ND	0.5	1	5,000	250	6010B

COMMENTS

DF = Dilution Factor
 PQL = Practical Quantitation Limit
 Actual Detection Limit = PQL X DF
 ND = Below the Actual Detection Limit or non-detected
 TTLC = Total Threshold Limit Concentration
 STLC = Soluble Threshold Limit Concentration
 @ = Must meet both the STLC Limit at 560 and EPA-TCLP Limit at 5
 * = STLC analysis for the metal is recommended (if marked)
 ** = Additional Analysis required, please call to discuss (if marked)
 *** = The concentration exceeds the TTLC Limit, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)
 -- = Not analyzed/not requested

Data Reviewed and Approved by: 
 CAL-DHS ELAP CERTIFICATE No.: 1555

QA/QC for Metals Analysis -- TTLC--SOLID/SOIL MATRIX

Matrix Spike/ Matrix Spike Duplicate/ LCS :

Unit : mg/Kg(ppm)

ANALYSIS DATE: 10/2/2013											
Analysis	Spk.Sample ID	CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Arsenic(As)	131001-24	50.0	95	PASS	2.08	50.0	51.0	98%	52.1	100%	2%
Cadmium(Cd)	131001-24	50.0	103	PASS	0	50.0	52.3	105%	53.5	107%	2%
Lead(Pb)	131001-24	50.0	105	PASS	1.12	50.0	48.8	95%	50.2	98%	3%

ANALYSIS DATE. : 10/2/2013

Analysis	Spk.Sample ID	LCS CONC.	LCS %Rec.	LCS STATUS	Sample Result	Spike Conc.	MS	% Rec MS	MSD	% Rec MSD	% RPD
Mercury (Hg)	131001-45	0.125	95	PASS	0	0.125	0.109	87%	0.101	81%	8%

MS/MSD Status:

Analysis	%MS	%MSD	%LCS	%RPD
Arsenic(As)	PASS	PASS	PASS	PASS
Cadmium(Cd)	PASS	PASS	PASS	PASS
Lead(Pb)	PASS	PASS	PASS	PASS
Mercury (Hg)	PASS	PASS	PASS	PASS
Accepted Range	75 ~ 125	75 ~ 125	85 ~ 115	0 ~ 20

Batch For Samples:131001-23,24

ANALYST: _____

FINAL REVIEWER: _____

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213) 622-3749 Email:Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335

MATRIX:SOIL

DATE SAMPLED:09/26/13

REPORT TO:Mr. ERIC PHILIPS

DATE RECEIVED:10/01/13

DATE ANALYZED:10/01/13

DATE REPORTED:10/08/13

SAMPLE I.D.: T924 (MW-9)

LAB I.D.: 131001-23

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2

UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROBENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROBENZENE	ND	0.005
1,3-DICHLOROBENZENE	ND	0.005
1,4-DICHLOROBENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: _____

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

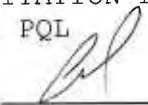
CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel(213) 622-3749 Email:Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335
MATRIX:SOIL
DATE SAMPLED:09/26/13
REPORT TO:Mr. ERIC PHILIPS
DATE RECEIVED:10/01/13
DATE ANALYZED:10/01/13
DATE REPORTED:10/08/13

SAMPLE I.D.: T924 (MW-9) LAB I.D.: 131001-23

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
DATA REVIEWED AND APPROVED BY: 
CAL-DHS CERTIFICATE # 1555

LABORATORY REPORT

CUSTOMER: Kleinfelder
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel (213) 622-3749 Email: Ephillips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335

MATRIX: SOIL DATE RECEIVED: 10/01/13
 DATE SAMPLED: 09/28/13 DATE ANALYZED: 10/01/13
 REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 10/08/13

SAMPLE I.D.: T923 (MW-8) LAB I.D.: 131001-24

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROENZENE	ND	0.005
1,3-DICHLOROENZENE	ND	0.005
1,4-DICHLOROENZENE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335
MATRIX: SOIL DATE RECEIVED: 10/01/13
DATE SAMPLED: 09/28/13 DATE ANALYZED: 10/01/13
REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 10/08/13

SAMPLE I.D.: T923 (MW-8) LAB I.D.: 131001-24

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

Table with 3 columns: PARAMETER, SAMPLE RESULT, PQL X1. Lists various chemical compounds and their detection results (ND) and practical quantitation limits (PQL).

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT
ND = NON-DETECTED OR BELOW THE PQL
DATA REVIEWED AND APPROVED BY: [Signature]
CAL-DHS CERTIFICATE # 1555

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

METHOD BLANK REPORT

CUSTOMER: Kleinfelder
523 West 6th Street, Suite 620
Los Angeles, CA 90014
Tel (213) 622-3749 Email: Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335
MATRIX: SOIL DATE RECEIVED: 10/01/13
DATE SAMPLED: 09/26&28/13 DATE ANALYZED: 10/01/13
REPORT TO: Mr. ERIC PHILIPS DATE REPORTED: 10/08/13

METHOD BLANK FOR LAB I.D.: 131001-23, -24

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
ACETONE	ND	0.020
BENZENE	ND	0.005
BROMOBENZENE	ND	0.005
BROMOCHLOROMETHANE	ND	0.005
BROMODICHLOROMETHANE	ND	0.005
BROMOFORM	ND	0.005
BROMOMETHANE	ND	0.005
2-BUTANONE (MEK)	ND	0.020
N-BUTYLBENZENE	ND	0.005
SEC-BUTYLBENZENE	ND	0.005
TERT-BUTYLBENZENE	ND	0.005
CARBON DISULFIDE	ND	0.010
CARBON TETRACHLORIDE	ND	0.005
CHLOROBENZENE	ND	0.005
CHLOROETHANE	ND	0.005
CHLOROFORM	ND	0.005
CHLOROMETHANE	ND	0.005
2-CHLOROTOLUENE	ND	0.005
4-CHLOROTOLUENE	ND	0.005
DIBROMOCHLOROMETHANE	ND	0.005
1,2-DIBROMO-3-CHLOROPROPANE	ND	0.005
1,2-DIBROMOETHANE	ND	0.005
DIBROMOMETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,3-DICHLOROETHANE	ND	0.005
1,4-DICHLOROETHANE	ND	0.005
DICHLORODIFLUOROMETHANE	ND	0.005
1,1-DICHLOROETHANE	ND	0.005
1,2-DICHLOROETHANE	ND	0.005
1,1-DICHLOROETHENE	ND	0.005
CIS-1,2-DICHLOROETHENE	ND	0.005
TRANS-1,2-DICHLOROETHENE	ND	0.005
1,2-DICHLOROPROPANE	ND	0.005

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: 

METHOD BLANK REPORT


CUSTOMER: Kleinfelder
 523 West 6th Street, Suite 620
 Los Angeles, CA 90014
 Tel(213) 622-3749 Email:Ephilips@kleinfelder.com

PROJECT: Owens Lake Groundwater Program 135335
 MATRIX:SOIL
 DATE SAMPLED:09/26&28/13
 REPORT TO:Mr. ERIC PHILIPS
 DATE RECEIVED:10/01/13
 DATE ANALYZED:10/01/13
 DATE REPORTED:10/08/13

METHOD BLANK FOR LAB I.D.: 131001-23, -24

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
 UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

PARAMETER	SAMPLE RESULT	PQL X1
1,3-DICHLOROPROPANE	ND	0.005
2,2-DICHLOROPROPANE	ND	0.005
1,1-DICHLOROPROPENE	ND	0.005
CIS-1,3-DICHLOROPROPENE	ND	0.005
TRANS-1,3-DICHLOROPROPENE	ND	0.005
ETHYLBENZENE	ND	0.005
2-HEXANONE	ND	0.020
HEXACHLOROBUTADIENE	ND	0.005
ISOPROPYLBENZENE	ND	0.005
4-ISOPROPYLTOLUENE	ND	0.005
4-METHYL-2-PENTANONE (MIBK)	ND	0.020
METHYL tert-BUTYL ETHER (MTBE)	ND	0.005
METHYLENE CHLORIDE	ND	0.010
NAPHTHALENE	ND	0.005
N-PROPYLBENZENE	ND	0.005
STYRENE	ND	0.005
1,1,1,2-TETRACHLOROETHANE	ND	0.005
1,1,2,2-TETRACHLOROETHANE	ND	0.005
TETRACHLOROETHENE (PCE)	ND	0.005
TOLUENE	ND	0.005
1,2,3-TRICHLOROBENZENE	ND	0.005
1,2,4-TRICHLOROBENZENE	ND	0.005
1,1,1-TRICHLOROETHANE	ND	0.005
1,1,2-TRICHLOROETHANE	ND	0.005
TRICHLOROETHENE (TCE)	ND	0.005
TRICHLOROFLUOROMETHANE	ND	0.005
1,2,3-TRICHLOROPROPANE	ND	0.005
1,2,4-TRIMETHYLBENZENE	ND	0.005
1,3,5-TRIMETHYLBENZENE	ND	0.005
VINYL CHLORIDE	ND	0.005
M/P-XYLENE	ND	0.010
O-XYLENE	ND	0.005

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT
 ND = NON-DETECTED OR BELOW THE PQL
 DATA REVIEWED AND APPROVED BY: 
 CAL-DHS CERTIFICATE # 1555

Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766

Tel (909)590-5905

Fax (909)590-5907

8260B QA/QC Report

Date Analyzed: 10/1-2/2013

Matrix: Solid/Soil/Liquid

Machine: C

Unit: mg/Kg (PPM)

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 131001-LCS1/2

BATCH ID: 131001-LCS1/2

Analyte	S.R.	spk conc	MS	%RC	MSD	%RC	%RPD	ACP %RC	ACP RPD
Benzene	0	0.050	0.048	96%	0.045	90%	6%	75-125	0-20
Chlorobenzene	0	0.050	0.044	88%	0.042	84%	4%	75-125	0-20
1,1-Dichloroethene	0	0.050	0.058	116%	0.055	110%	6%	75-125	0-20
Toluene	0	0.050	0.049	98%	0.046	92%	6%	75-125	0-20
Trichloroethene (TCE)	0	0.050	0.042	84%	0.040	80%	4%	75-125	0-20

Lab Control Spike (LCS):

Analyte	spk conc	LCS	%RC	ACP %RC
Benzene	0.050	0.051	102%	75-125
Chlorobenzene	0.050	0.044	88%	75-125
Chloroform	0.050	0.041	82%	75-125
1,1-Dichloroethene	0.050	0.054	108%	75-125
Ethylbenzene	0.050	0.044	88%	75-125
o-Xylene	0.050	0.048	96%	75-125
m,p-Xylene	0.100	0.089	89%	75-125
Toluene	0.050	0.051	102%	75-125
1,1,1-Trichloroethane	0.050	0.045	90%	75-125
Trichloroethene (TCE)	0.050	0.044	88%	75-125

Surrogate Recovery	spk conc	ACP %RC	MB %RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			M-BLK	131001-6	131001-8	131001-18	131001-19	131001-17	131001-23
Dibromofluoromethane	50.0	70-130	88%	98%	104%	90%	98%	89%	97%
Toluene-d8	50.0	70-130	108%	107%	108%	108%	107%	102%	107%
4-Bromofluorobenzene	50.0	70-130	103%	106%	103%	104%	106%	103%	112%

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.			131001-24						
Dibromofluoromethane	50.0	70-130	90%						
Toluene-d8	50.0	70-130	105%						
4-Bromofluorobenzene	50.0	70-130	106%						

Surrogate Recovery	spk conc	ACP %RC	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Sample I.D.									
Dibromofluoromethane	50.0	70-130							
Toluene-d8	50.0	70-130							
4-Bromofluorobenzene	50.0	70-130							

* = Surrogate fail due to matrix interference; LCS, MS, MSD are in control therefore the analysis is in control.

S.R. = Sample Results


%RC = Percent Recovery

spk conc = Spike Concentration

ACP %RC = Accepted Percent Recovery

MS = Matrix Spike

MSD = Matrix Spike Duplicate

Analyzed/Reviewed By: 

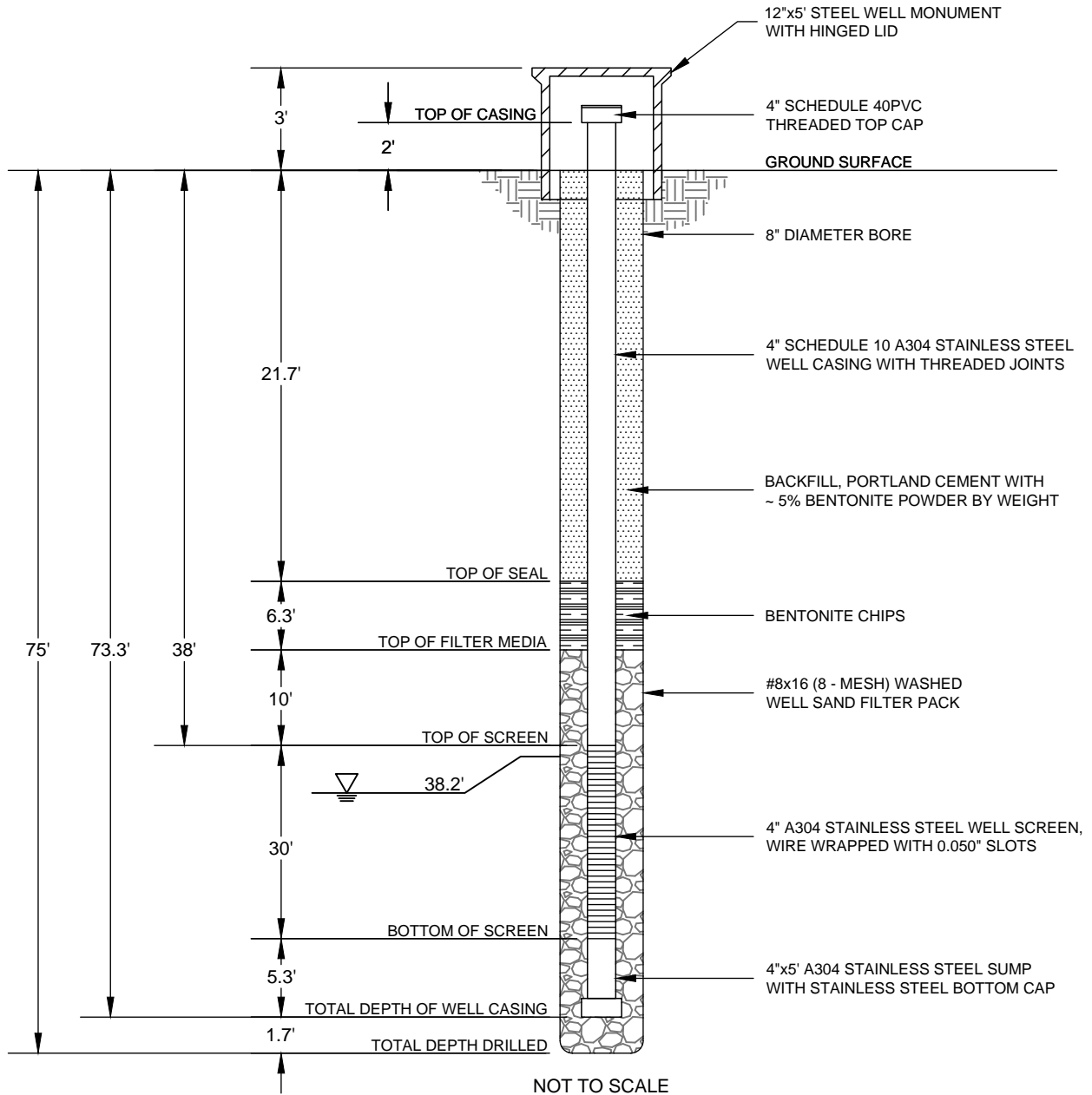
Final Reviewer: _____

APPENDIX D

Well Construction Diagrams

PLOTTED: 14 Jan 2014, 11:39am, mgriffin

CAD FILE: L:\CADD\2014\135335\OwensLake-CA_1-2014\ LAYOUT: D-1



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ATTACHED IMAGES: Images: td_wcd-draft.jpg

ATTACHED XREFS: LONG BEACH, CA



PROJECT NO.	135335
DRAWN:	12/2013
DRAWN BY:	MRG
CHECKED BY:	DH
FILE NAME:	135335pD-1toD-14_WCD.dwg

WELL CONSTRUCTION DIAGRAM
MW-1 (T-930)

AGREEMENT 47805 TO-19
OWNES LAKE GROUNDWATER
DEVELOPMENT PROGRAM
OWENS LAKE, CALIFORNIA

PLATE

D-1

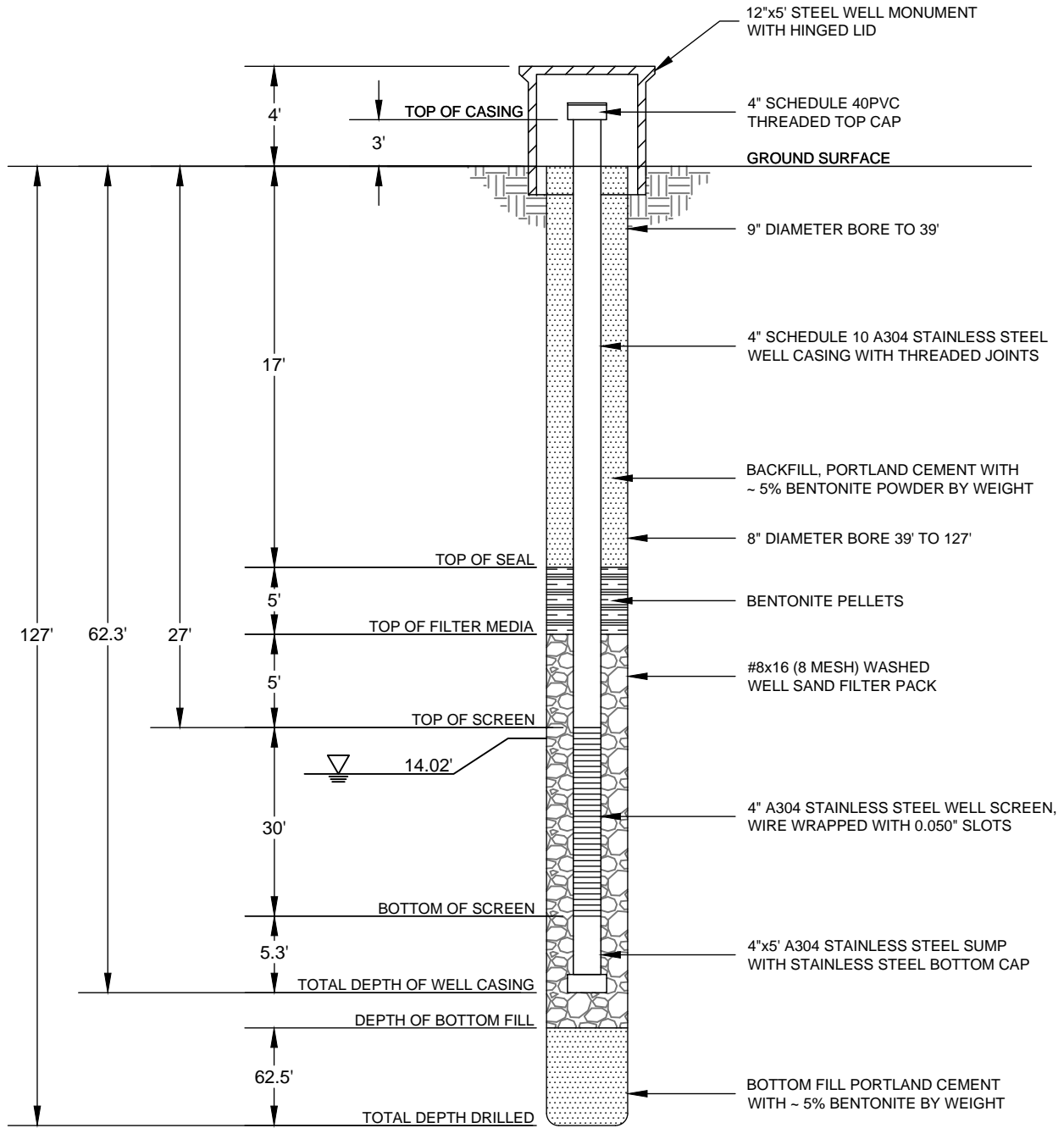
PLOTTED: 14 Jan 2014, 11:39am, mgriffin

LAYOUT: D-2

CAD FILE: L:\CADD\2014\135335\OwensLake-CA_1-2014\

Images: td_wcd-draft.jpg

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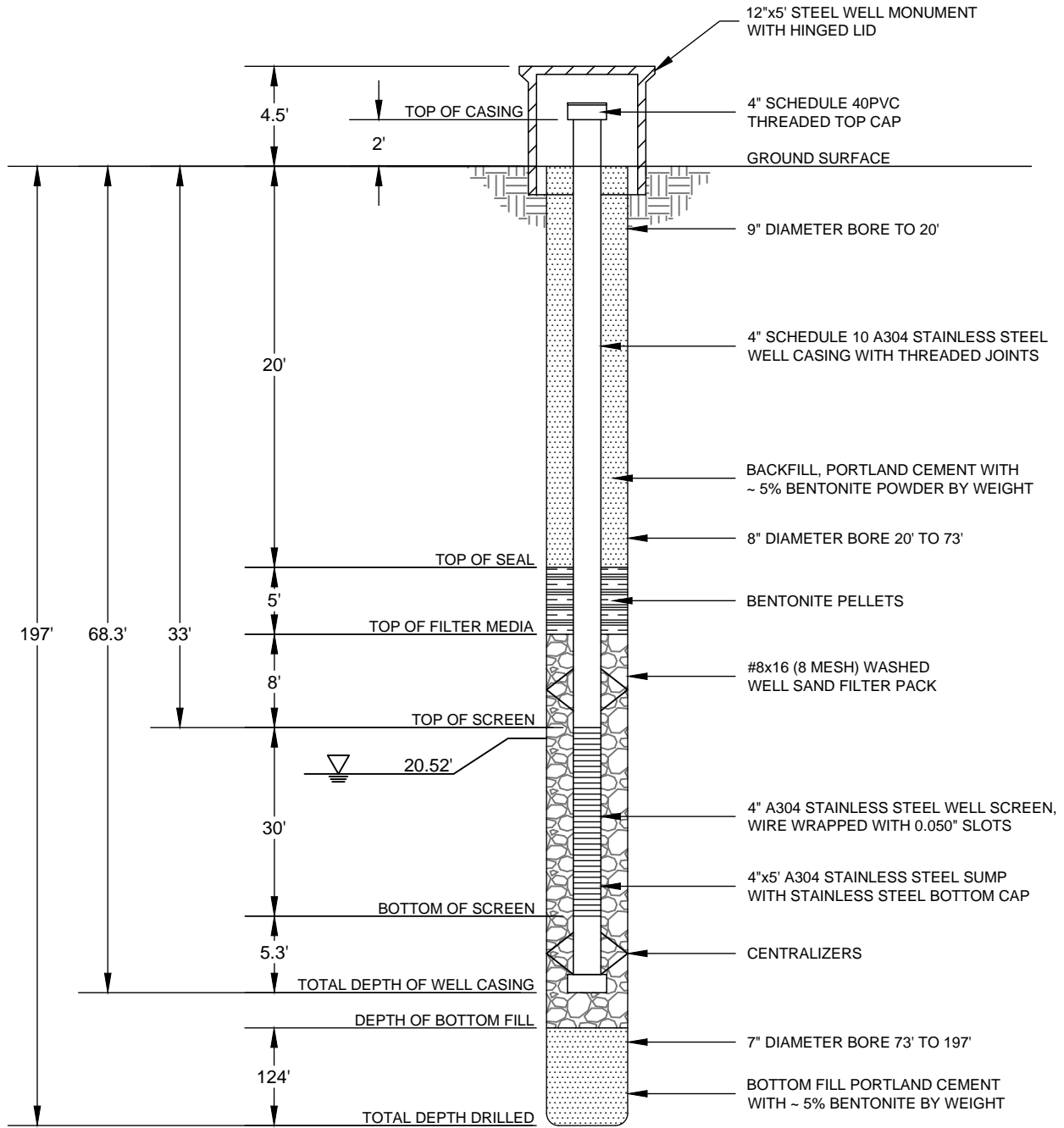
**WELL CONSTRUCTION DIAGRAM
MW-2 (T-931)**

AGREEMENT 47805 TO-19
OWNES LAKE GROUNDWATER
DEVELOPMENT PROGRAM
OWENS LAKE, CALIFORNIA

PLATE
D-2

PLOTTED: 14 Jan 2014, 11:39am, mgriffin

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ATTACHED XREFS: LONG BEACH, CA



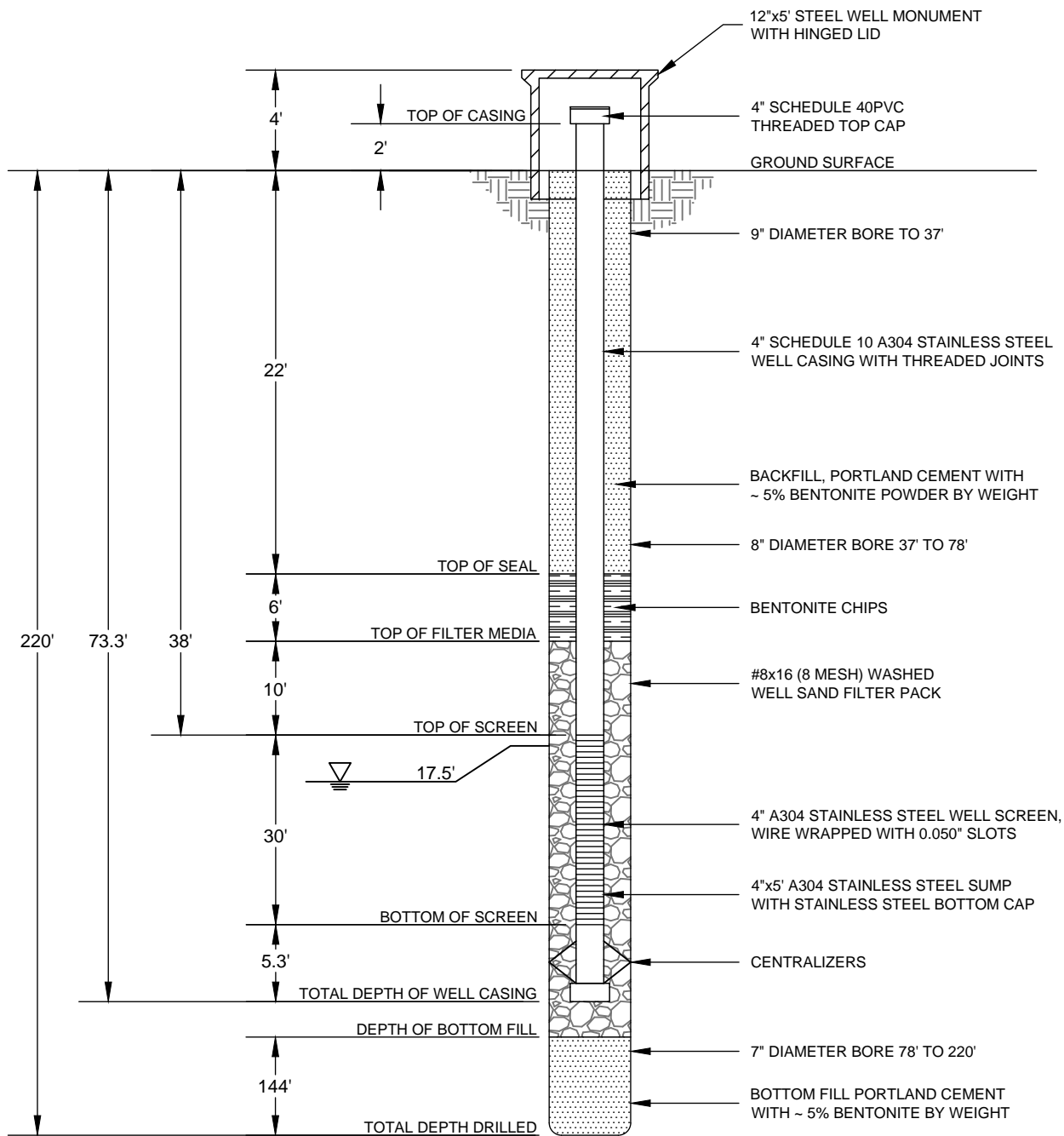
PROJECT NO.	135335
DRAWN:	12/2013
DRAWN BY:	MRG
CHECKED BY:	DH
FILE NAME:	135335pD-1toD-14_WCD.dwg

WELL CONSTRUCTION DIAGRAM
MW-3 (T-918)

AGREEMENT 47805 TO-19
OWNES LAKE GROUNDWATER
DEVELOPMENT PROGRAM
OWENS LAKE, CALIFORNIA

PLATE

D-3



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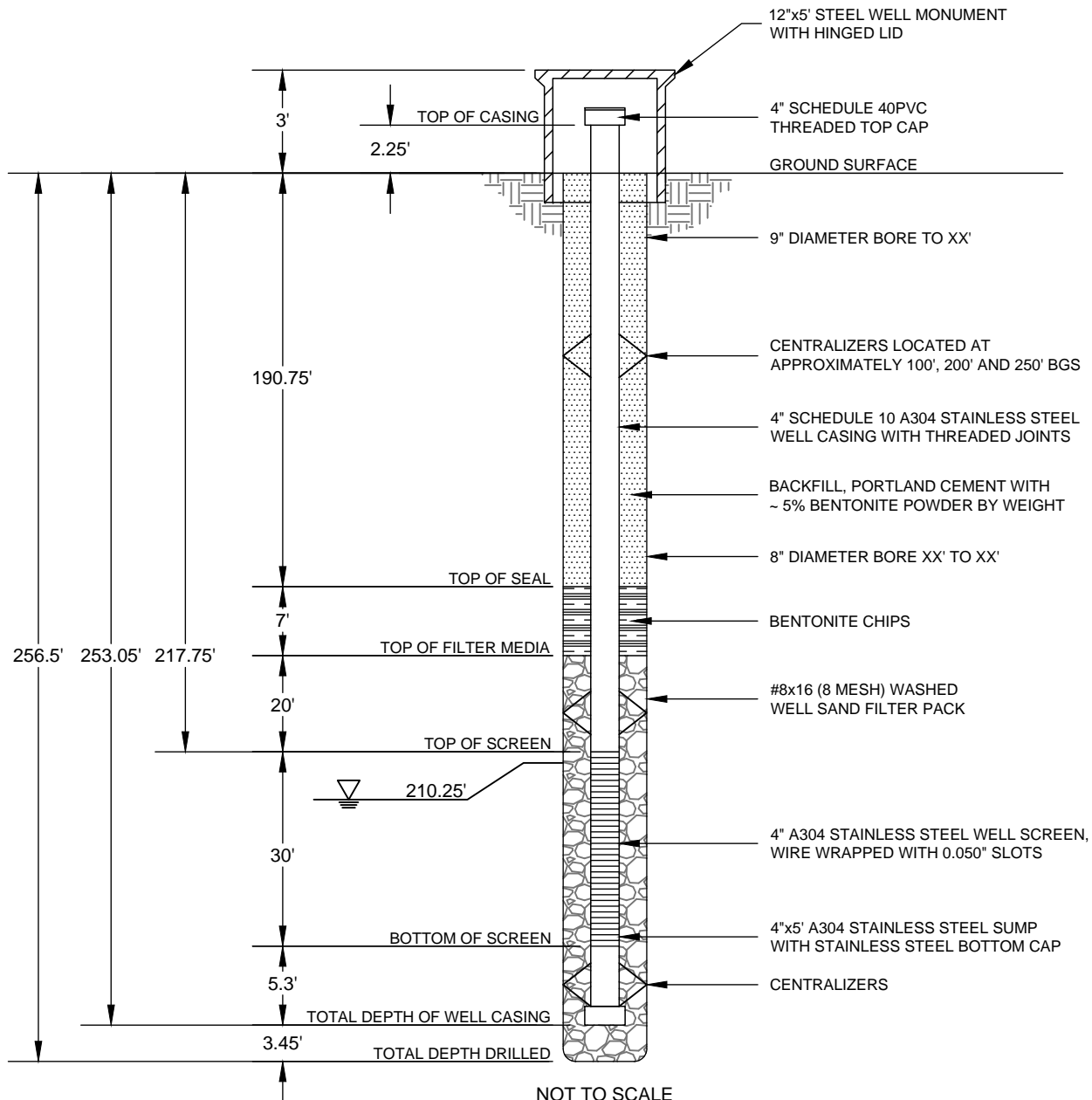
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WELL CONSTRUCTION DIAGRAM MW-4 (T-919)

PLATE
D-4



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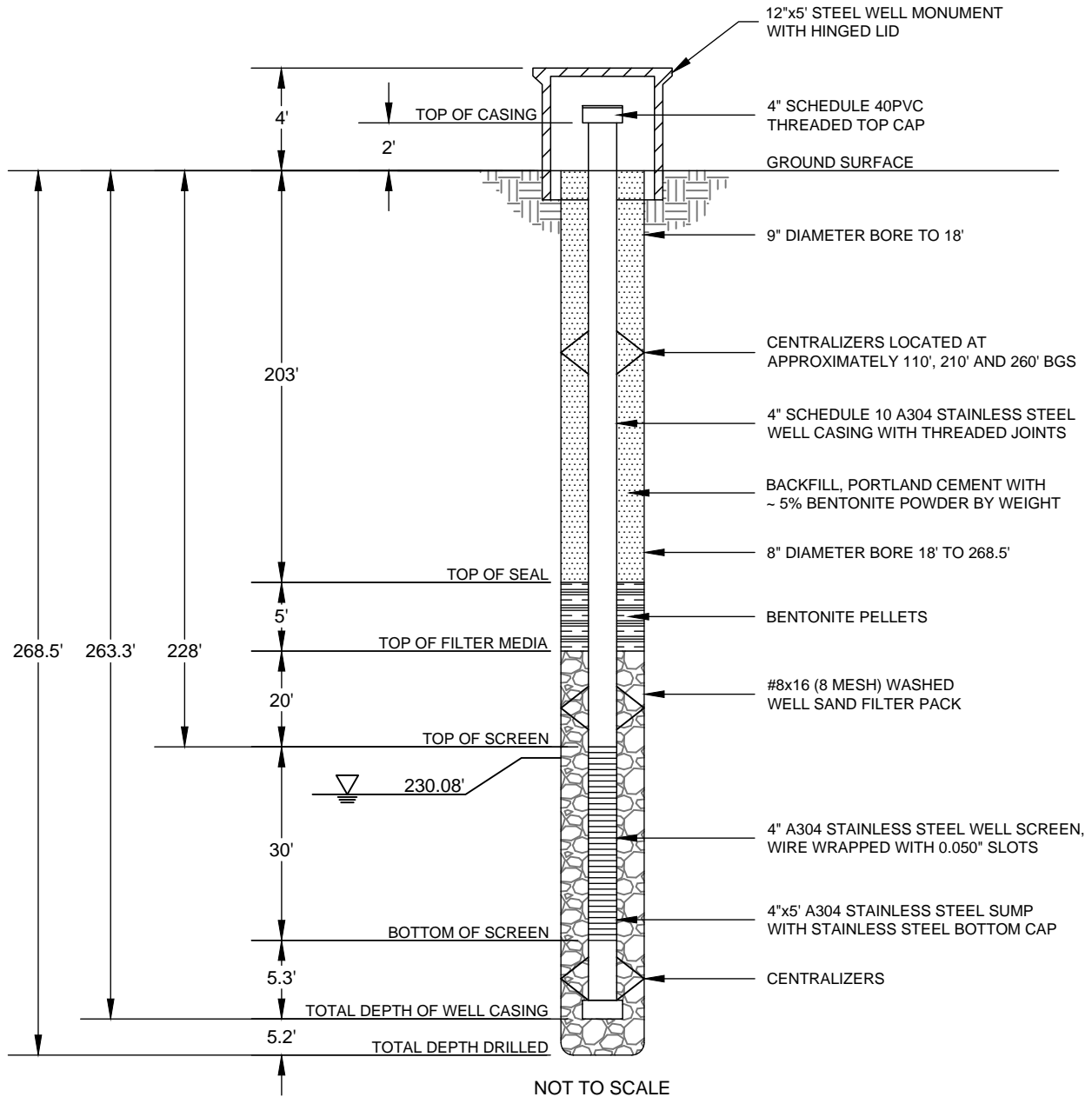
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DRAWN:	12/2013
DRAWN BY:	MRG
CHECKED BY:	DH
FILE NAME:	135335pD-1toD-14_WCD.dwg

**WELL CONSTRUCTION DIAGRAM
MW-5 (T-920)**

AGREEMENT 47805 TO-19
OWNES LAKE GROUNDWATER
DEVELOPMENT PROGRAM
OWENS LAKE, CALIFORNIA

PLATE
D-5

ATTACHED IMAGES: Images: td_wcd-draft.jpg
 ATTACHED XREFS: LONG BEACH, CA
 CAD FILE: L:\CADD\2014\135335\OwensLake-CA_1-2014\ LAYOUT: D-6
 PLOTTED: 14 Jan 2014, 11:40am, mgriffin



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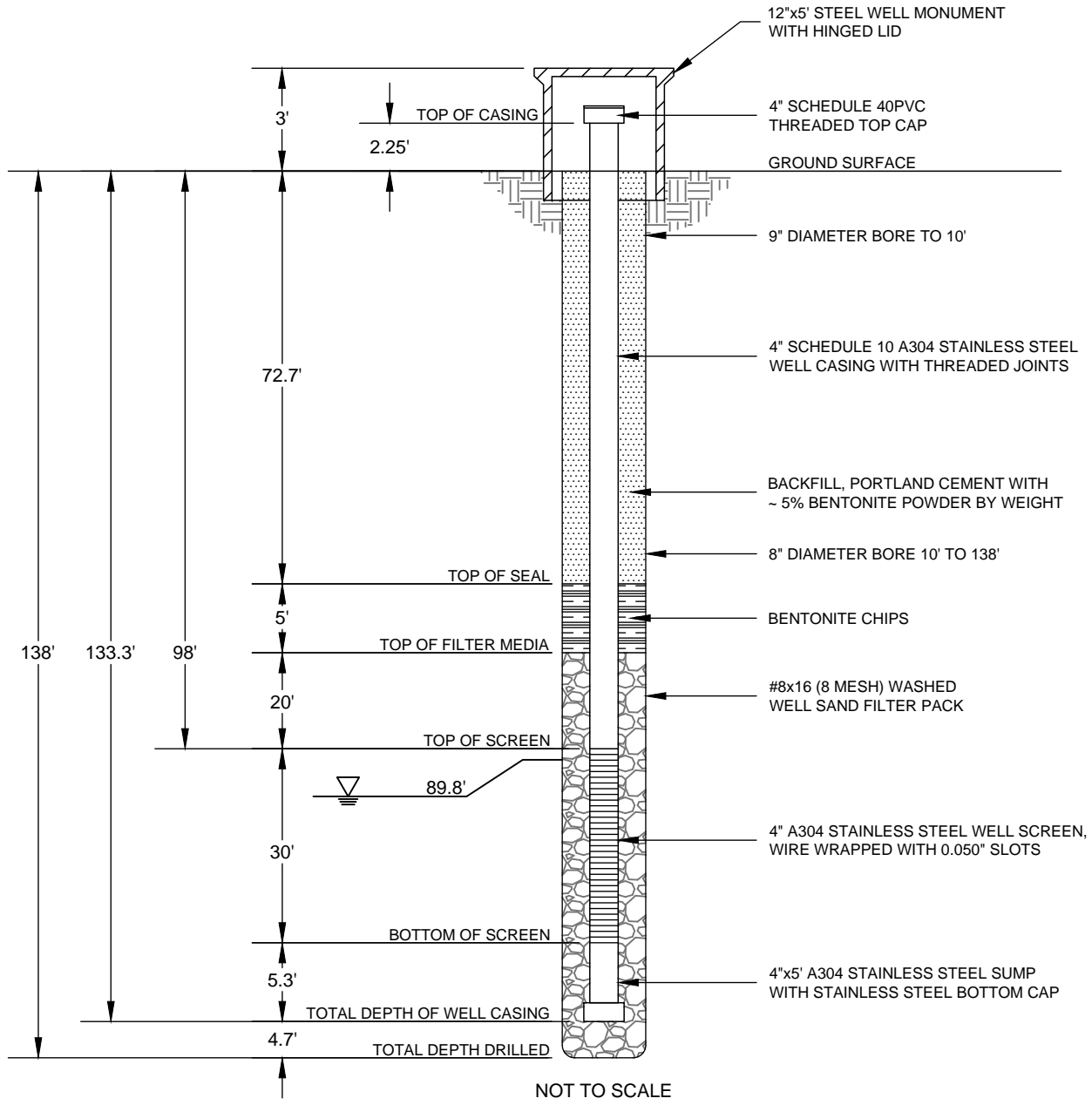
PROJECT NO.	135335
DRAWN:	12/2013
DRAWN BY:	MRG
CHECKED BY:	DH
FILE NAME:	135335pD-1toD-14_WCD.dwg

**WELL CONSTRUCTION DIAGRAM
 MW-6 (T-921)**


AGREEMENT 47805 TO-19
 OWNES LAKE GROUNDWATER
 DEVELOPMENT PROGRAM
 OWENS LAKE, CALIFORNIA

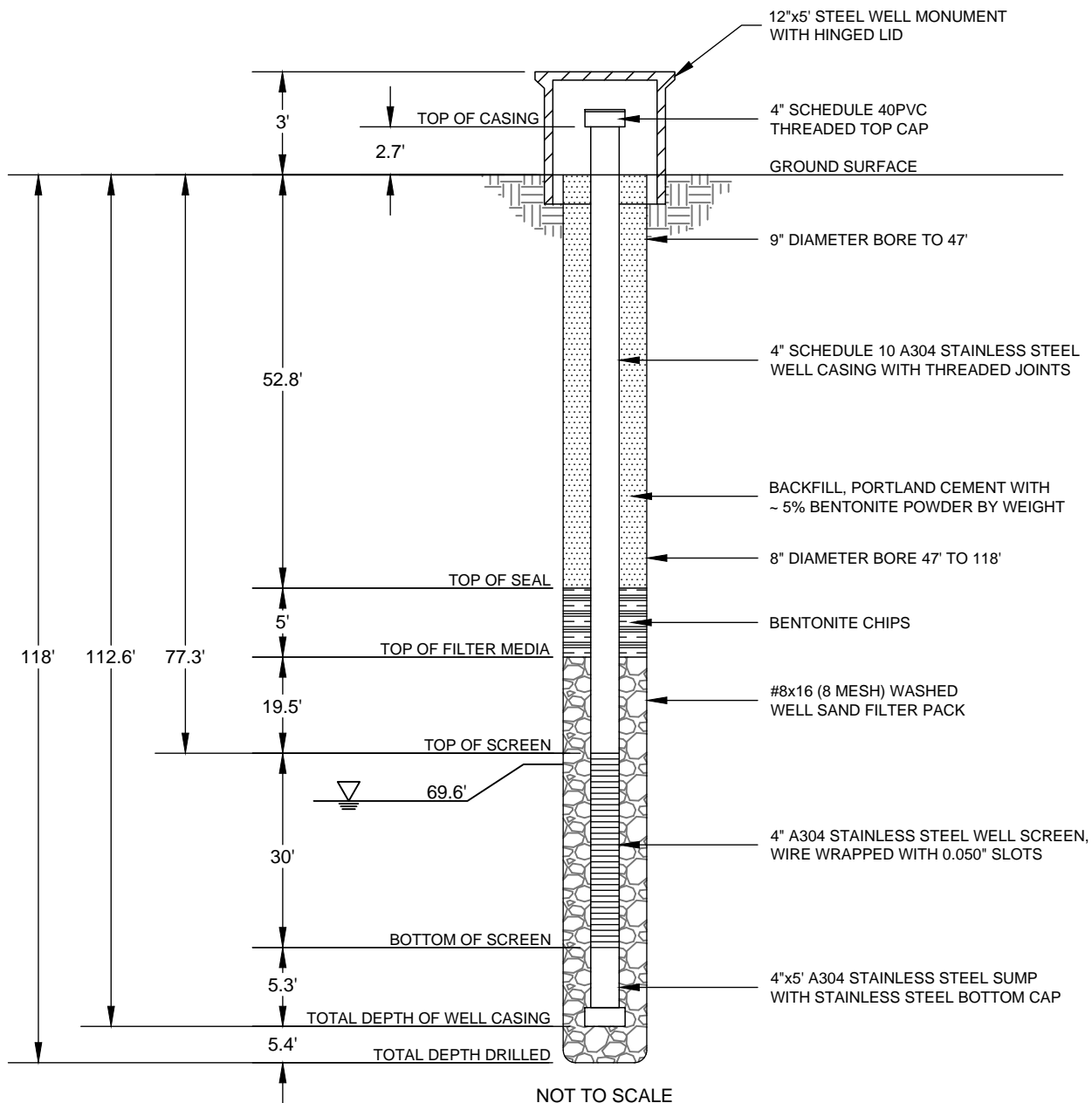
PLATE
D-6

ATTACHED IMAGES: Images: td_wcd-draft.jpg
 ATTACHED XREFS: LONG BEACH, CA
 CAD FILE: L:\CAD\2014\135335\OwensLake-CA_1-2014\ LAYOUT: D-7
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	PROJECT NO. 135335	WELL CONSTRUCTION DIAGRAM MW-7 (T-922) AGREEMENT 47805 TO-19 OWNES LAKE GROUNDWATER DEVELOPMENT PROGRAM OWENS LAKE, CALIFORNIA	PLATE D-7
	DRAWN: 12/2013		
	DRAWN BY: MRG		
	CHECKED BY: DH		
FILE NAME: 135335pD-1toD-14_WCD.dwg			



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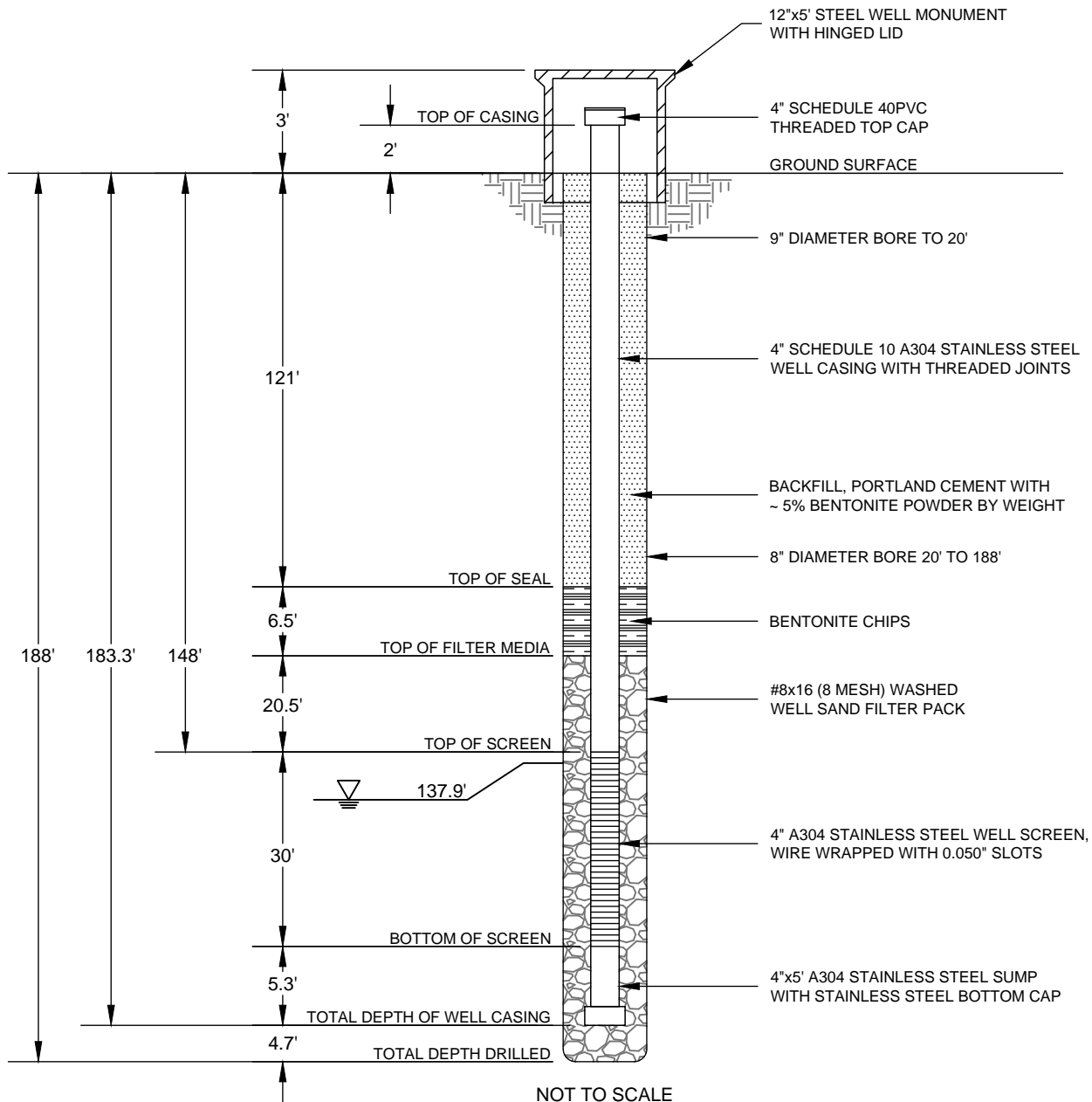


PROJECT NO.	135335
DRAWN:	12/2013
DRAWN BY:	MRG
CHECKED BY:	DH
FILE NAME:	135335pD-1toD-14_WCD.dwg

**WELL CONSTRUCTION DIAGRAM
MW-8 (T-923)**

AGREEMENT 47805 TO-19
OWNES LAKE GROUNDWATER
DEVELOPMENT PROGRAM
OWENS LAKE, CALIFORNIA

PLATE
D-8



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WELL CONSTRUCTION DIAGRAM MW-9 (T-924)	
AGREEMENT 47805 TO-19 OWNES LAKE GROUNDWATER DEVELOPMENT PROGRAM OWENS LAKE, CALIFORNIA	

PLATE
D-9

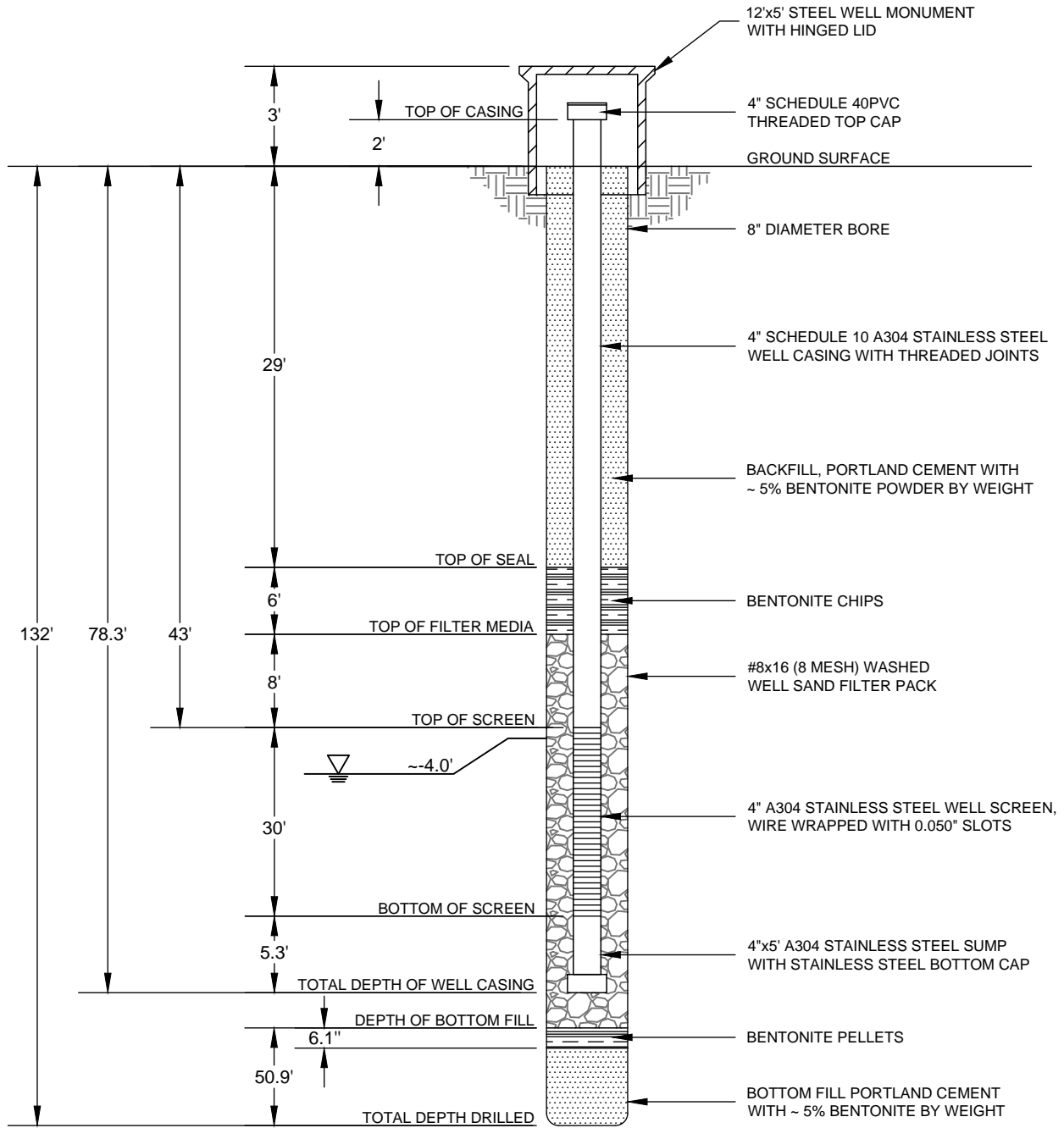
PLOTTED: 14 Jan 2014, 11:40am, mgriffin

LAYOUT: D-10

CAD FILE: L:\CADD\2014\135335\OwensLake-CA_1-2014\

Images: td_wcd-draft.jpg

ATTACHED IMAGES:
ATTACHED XREFS:
LONG BEACH, CA



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**WELL CONSTRUCTION DIAGRAM
MW-10 (T-925)**

AGREEMENT 47805 TO-19
OWNES LAKE GROUNDWATER
DEVELOPMENT PROGRAM
OWENS LAKE, CALIFORNIA

PLATE
D-10

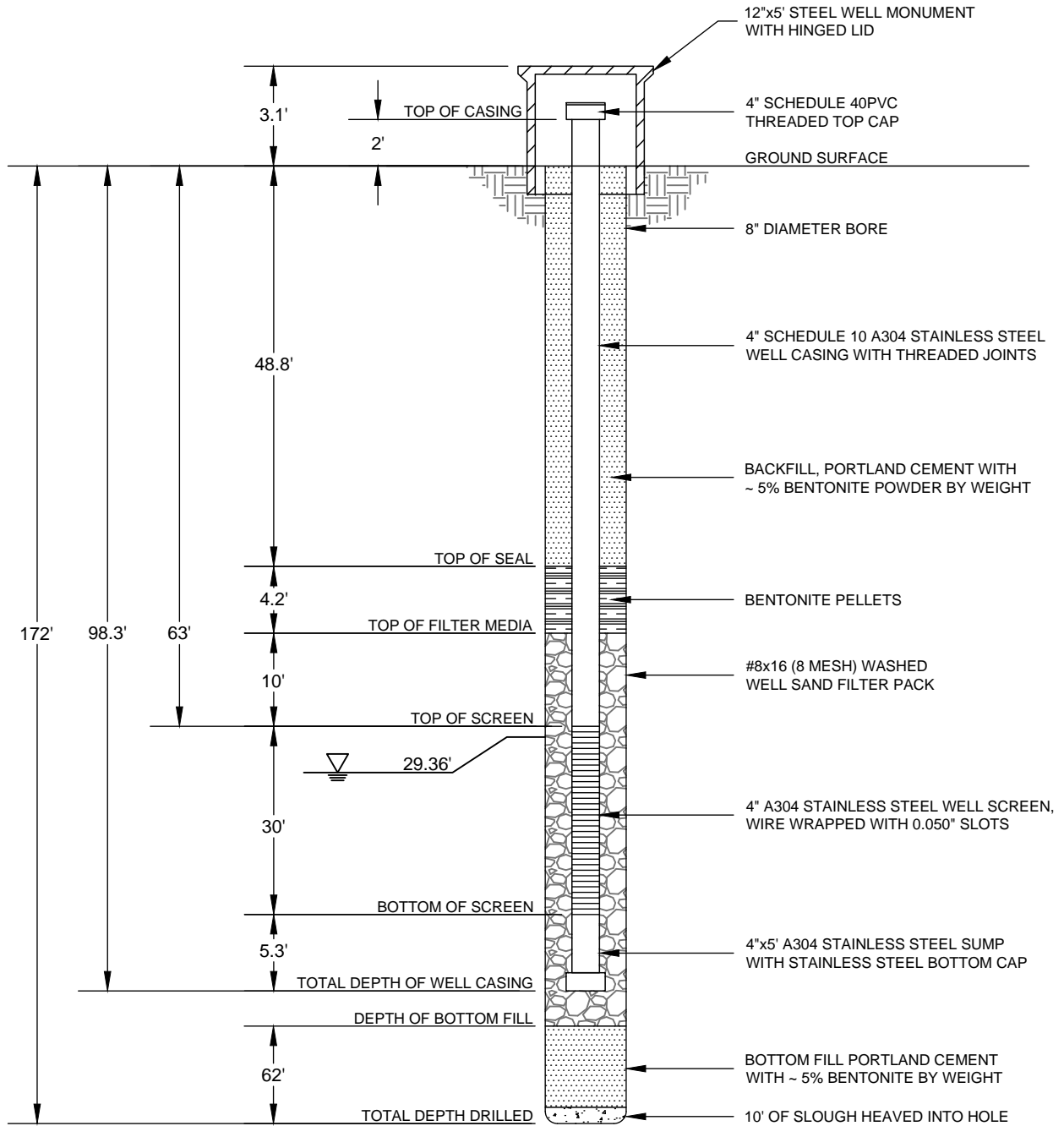
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LAYOUT: D-11

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WELL CONSTRUCTION DIAGRAM
MW-11 (T-926)

AGREEMENT 47805 TO-19
OWNES LAKE GROUNDWATER
DEVELOPMENT PROGRAM
OWENS LAKE, CALIFORNIA

PLATE
D-11

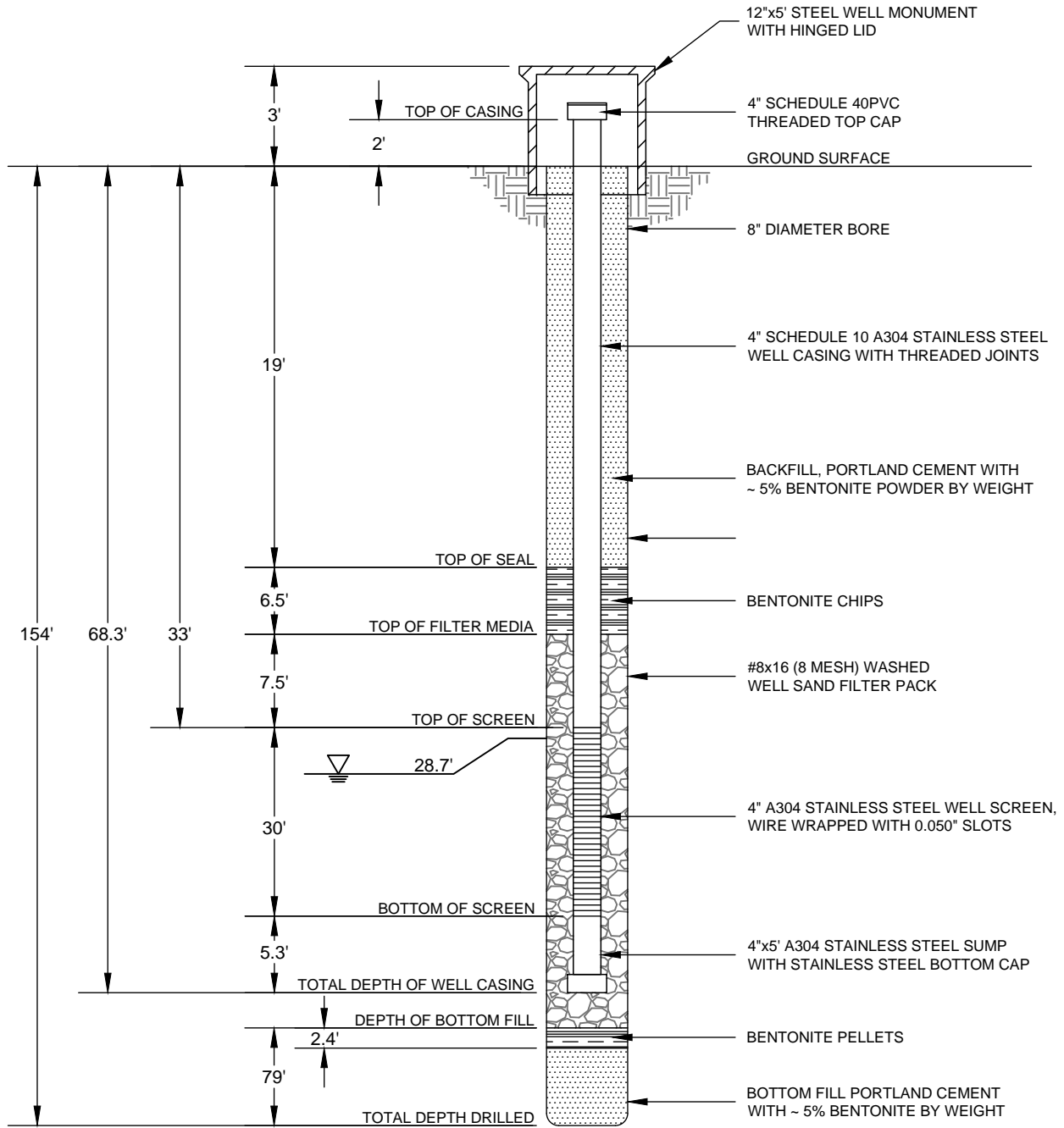
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LAYOUT: D-12

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Images: td_wcd-draft.jpg

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DRAWN:	12/2013
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**WELL CONSTRUCTION DIAGRAM
MW-12 (T-927)**

AGREEMENT 47805 TO-19
OWNES LAKE GROUNDWATER
DEVELOPMENT PROGRAM
OWENS LAKE, CALIFORNIA

PLATE
D-12

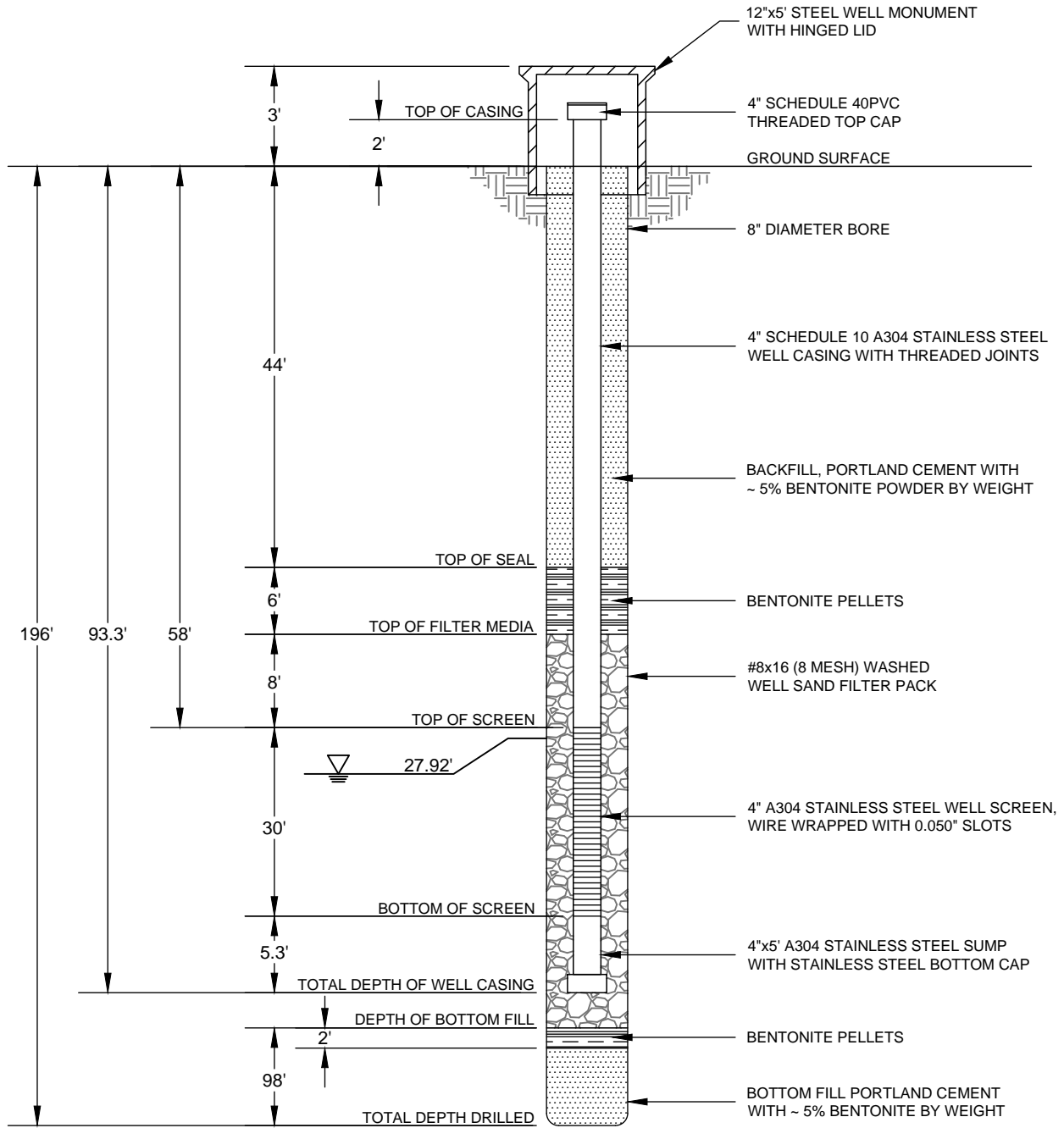
PLOTTED: 14 Jan 2014, 11:42am, mgriffin

LAYOUT: D-13

CAD FILE: L:\CADD\2014\135335\OwensLake-CA_1-2014\

Images: td_wcd-draft.jpg

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DRAWN:	12/2013
DRAWN BY:	MRG
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FILE NAME:	135335pD-1toD-14_WCD.dwg

**WELL CONSTRUCTION DIAGRAM
MW-13 (T-928)**

AGREEMENT 47805 TO-19
OWNES LAKE GROUNDWATER
DEVELOPMENT PROGRAM
OWENS LAKE, CALIFORNIA

PLATE
D-13

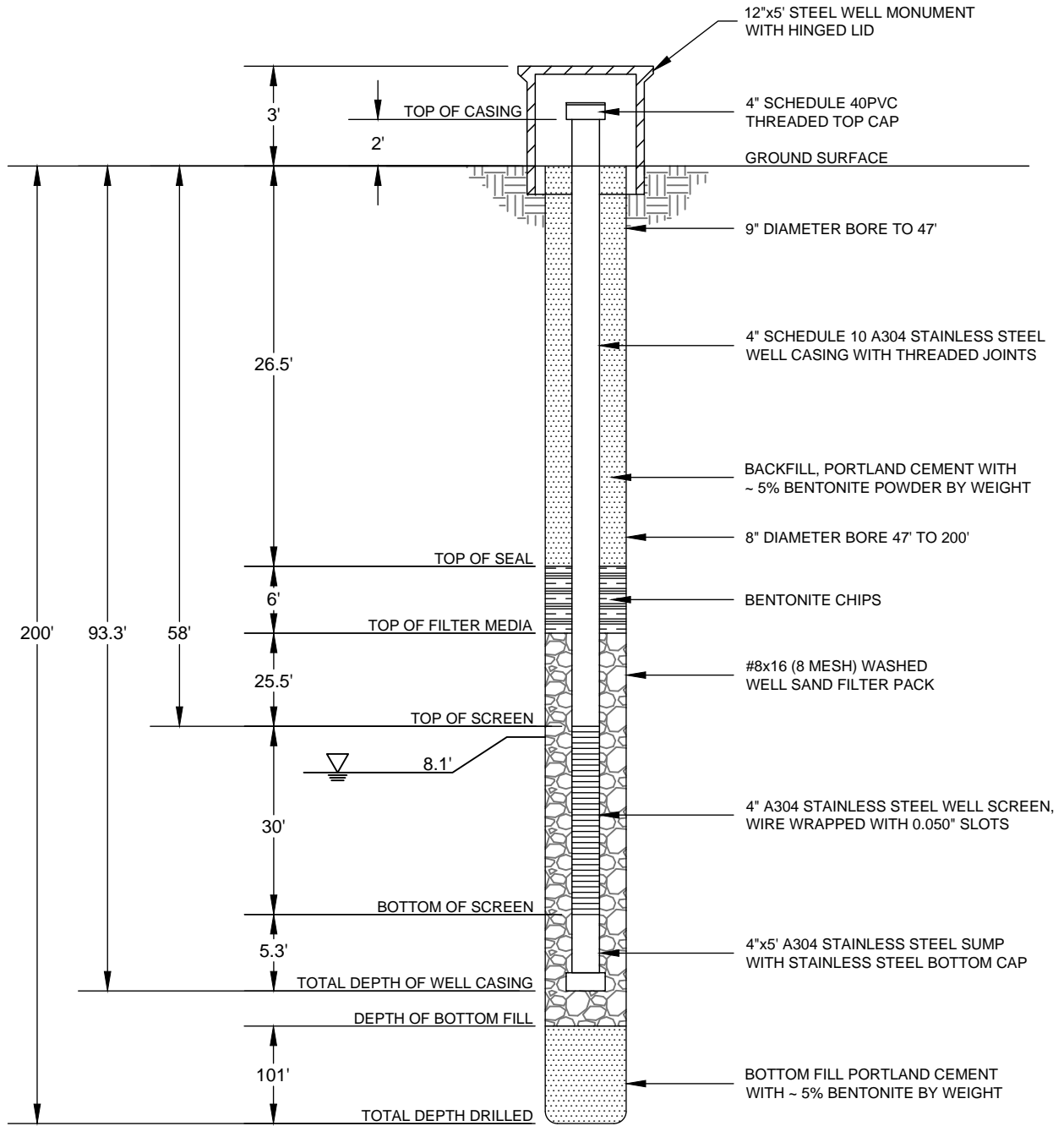
PLOTTED: 14 Jan 2014, 11:42am, mgriffin

LAYOUT: D-14

CAD FILE: L:\CADD\2014\135335\OwensLake-CA_1-2014\

Images: td_wcd-draft.jpg

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PROJECT NO.	135335
DRAWN:	12/2013
DRAWN BY:	MRG
CHECKED BY:	DH
FILE NAME:	135335pD-1toD-14_WCD.dwg

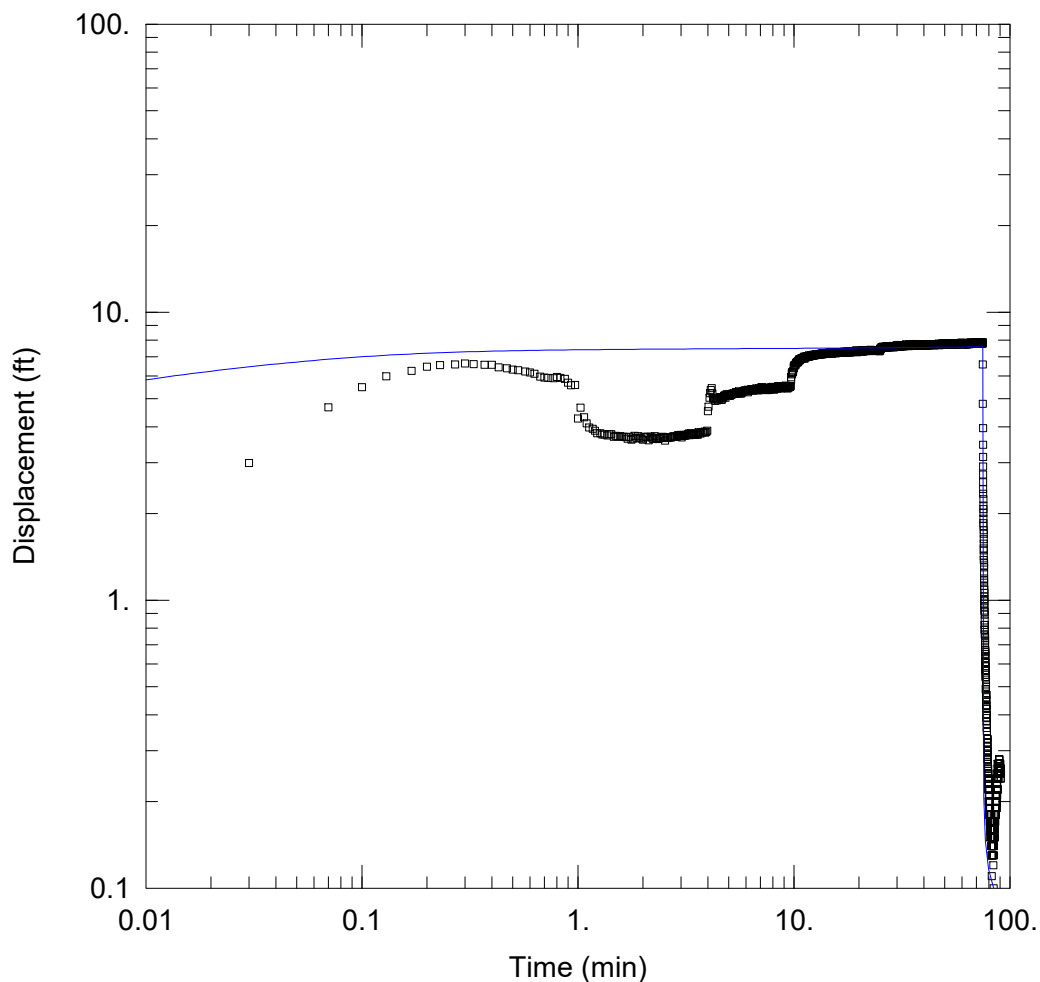
**WELL CONSTRUCTION DIAGRAM
MW-14 (T-929)**

AGREEMENT 47805 TO-19
OWNES LAKE GROUNDWATER
DEVELOPMENT PROGRAM
OWENS LAKE, CALIFORNIA

PLATE
D-14

APPENDIX E

Pumping Test Results



OWENS VALLEY AQUIFER PUMPING TEST

Data Set: C:\...\T-920_Tartakovsky-Neuman.aqt

Date: 12/09/13

Time: 15:30:43

PROJECT INFORMATION

Company: Kleinfelder

Client: LADWP

Project: 135335/003.2

Location: Owens Lake, CA

Test Well: MW-5 / T-920

Test Date: 10/3/2013

AQUIFER DATA

Saturated Thickness: 100. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
MW-5 / T-920	0	0

Well Name	X (ft)	Y (ft)
□ MW-5 / T-920	0	0

SOLUTION

Aquifer Model: Unconfined

Solution Method: Tartakovsky-Neuman

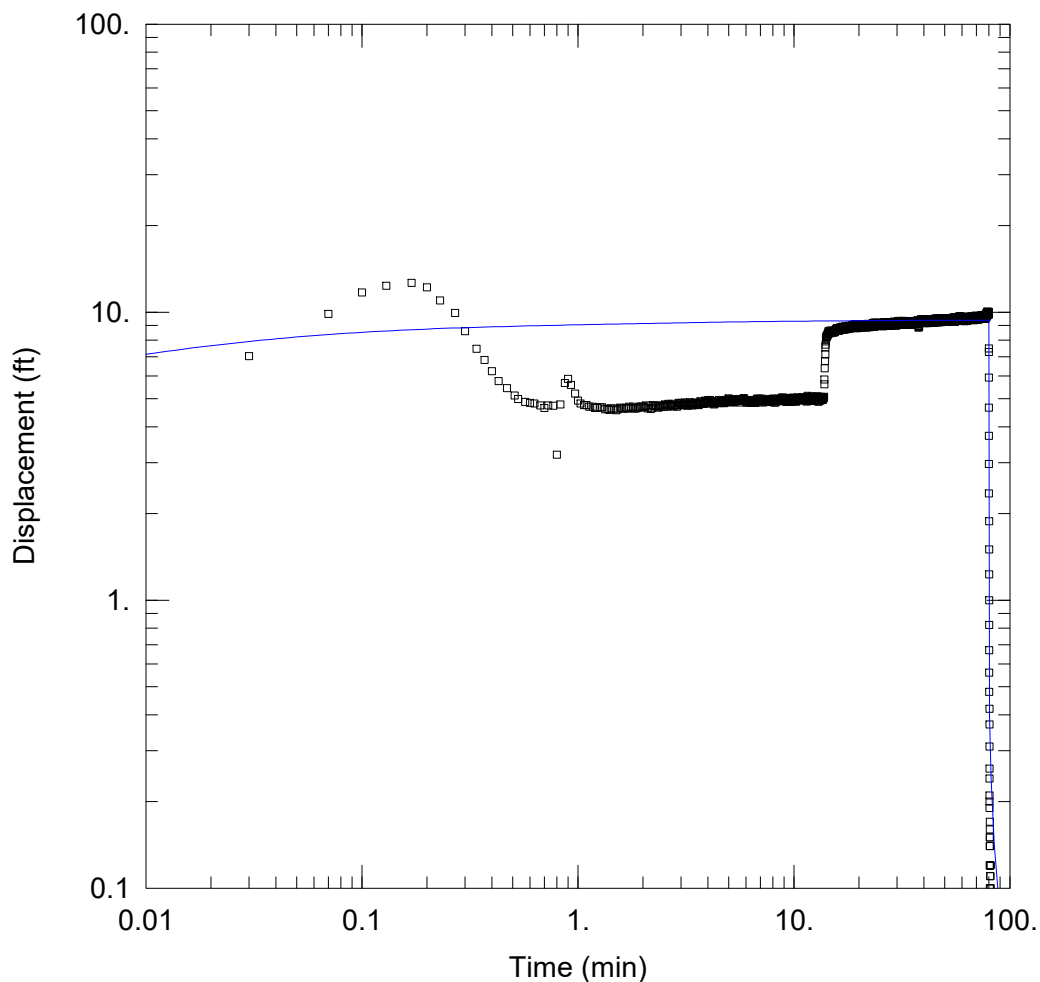
T = 3113.3 ft²/day

S = 0.000119

Sy = 0.2

Kz/Kr = 0.1

kD = 1.334



OWENS VALLEY AQUIFER PUMPING TEST

Data Set: C:\...\T-922_Tartakovsky-Neuman.aqt

Date: 12/09/13

Time: 15:31:46

PROJECT INFORMATION

Company: Kleinfelder

Client: LADWP

Project: 135335/003.2

Location: Owens Lake, CA

Test Well: MW-7 / T-922

Test Date: 10/4/2013

AQUIFER DATA

Saturated Thickness: 100. ft

Anisotropy Ratio (Kz/Kr): 0.5188

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW-7 / T-922	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ MW-7 / T-922	0	0

SOLUTION

Aquifer Model: Unconfined

Solution Method: Tartakovsky-Neuman

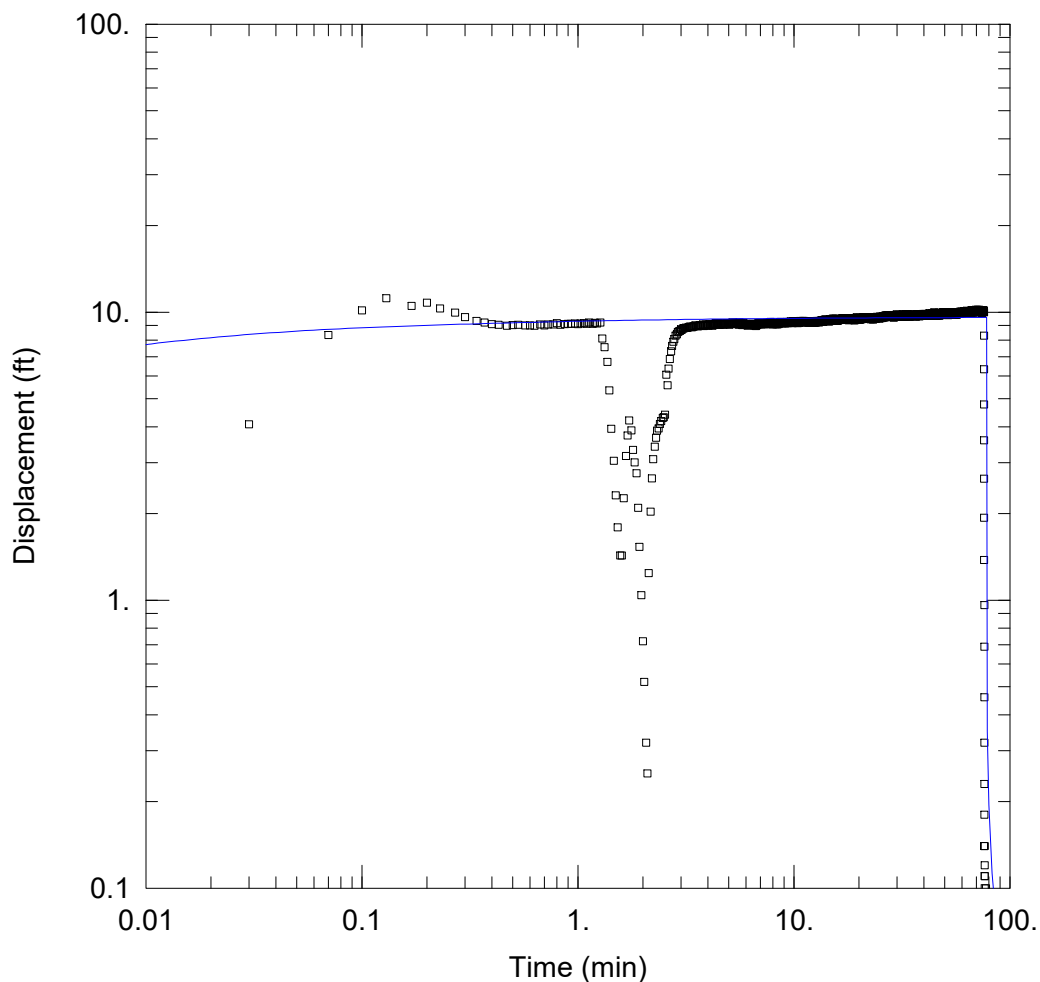
T = 1490.1 ft²/day

S = 0.000119

Sy = 0.05

Kz/Kr = 0.5188

kD = 2.661E-5



OWENS VALLEY AQUIFER PUMPING TEST

Data Set: C:\...\T-923_Tartakovsky-Neuman.aqt

Date: 12/09/13

Time: 15:32:40

PROJECT INFORMATION

Company: Kleinfelder

Client: LADWP

Project: 135335/003.2

Location: Owens Lake, CA

Test Well: MW-8 / T-923

Test Date: 10/4/2013

AQUIFER DATA

Saturated Thickness: 100. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
MW-8 / T-923	0	0

Well Name	X (ft)	Y (ft)
□ MW-8 / T-923	0	0

SOLUTION

Aquifer Model: Unconfined

Solution Method: Tartakovsky-Neuman

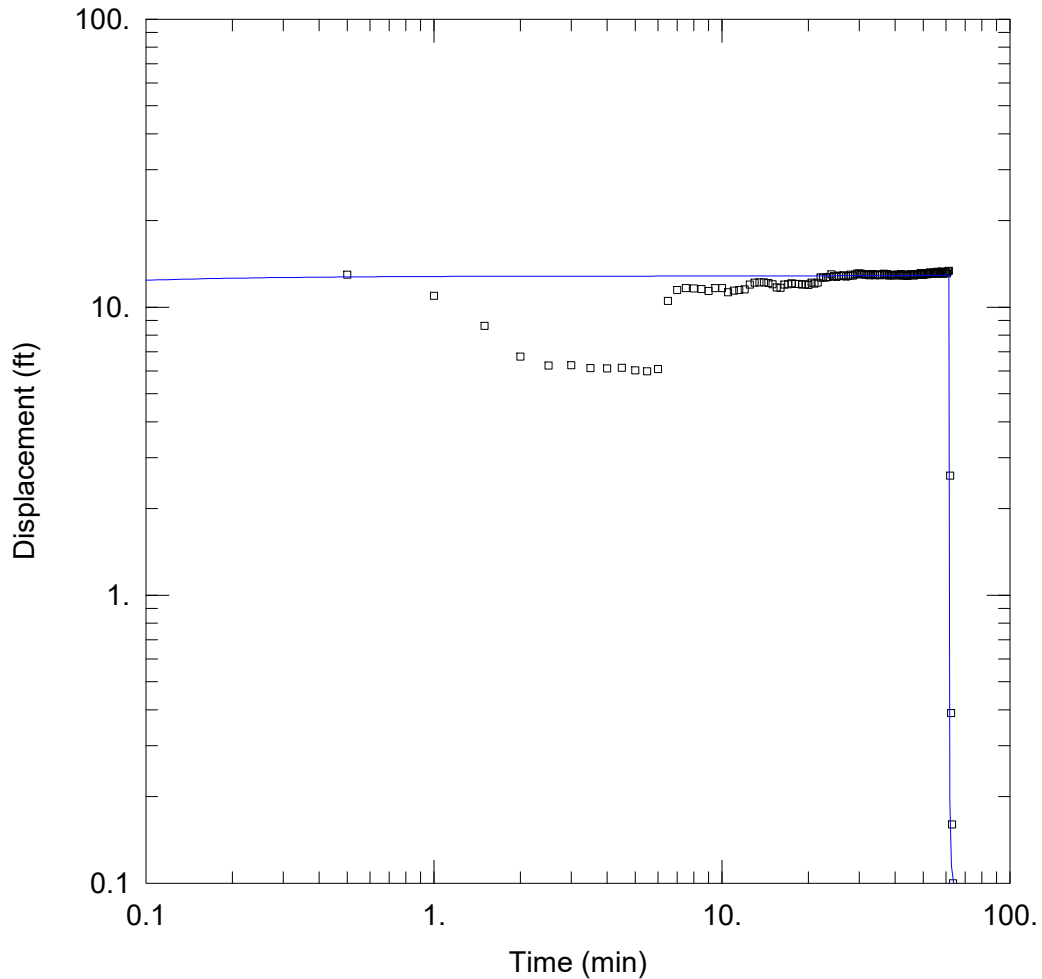
T = 1791.5 ft²/day

S = 0.000119

Sy = 0.2

Kz/Kr = 1.

kD = 0.0002985



OWENS VALLEY AQUIFER PUMPING TEST

Data Set: C:\...\T-924_Tartakovsky-Neuman.aqt
 Date: 12/09/13

Time: 15:33:58

PROJECT INFORMATION

Company: Kleinfelder
 Client: LADWP
 Project: 135335/003.2
 Location: Owens Lake, CA
 Test Well: MW-9 / T-924
 Test Date: 10/1/2013

AQUIFER DATA

Saturated Thickness: 100. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
MW-9 / T-924	0	0

Well Name	X (ft)	Y (ft)
□ MW-9 / T-924	0	0

SOLUTION

Aquifer Model: Unconfined

Solution Method: Tartakovsky-Neuman

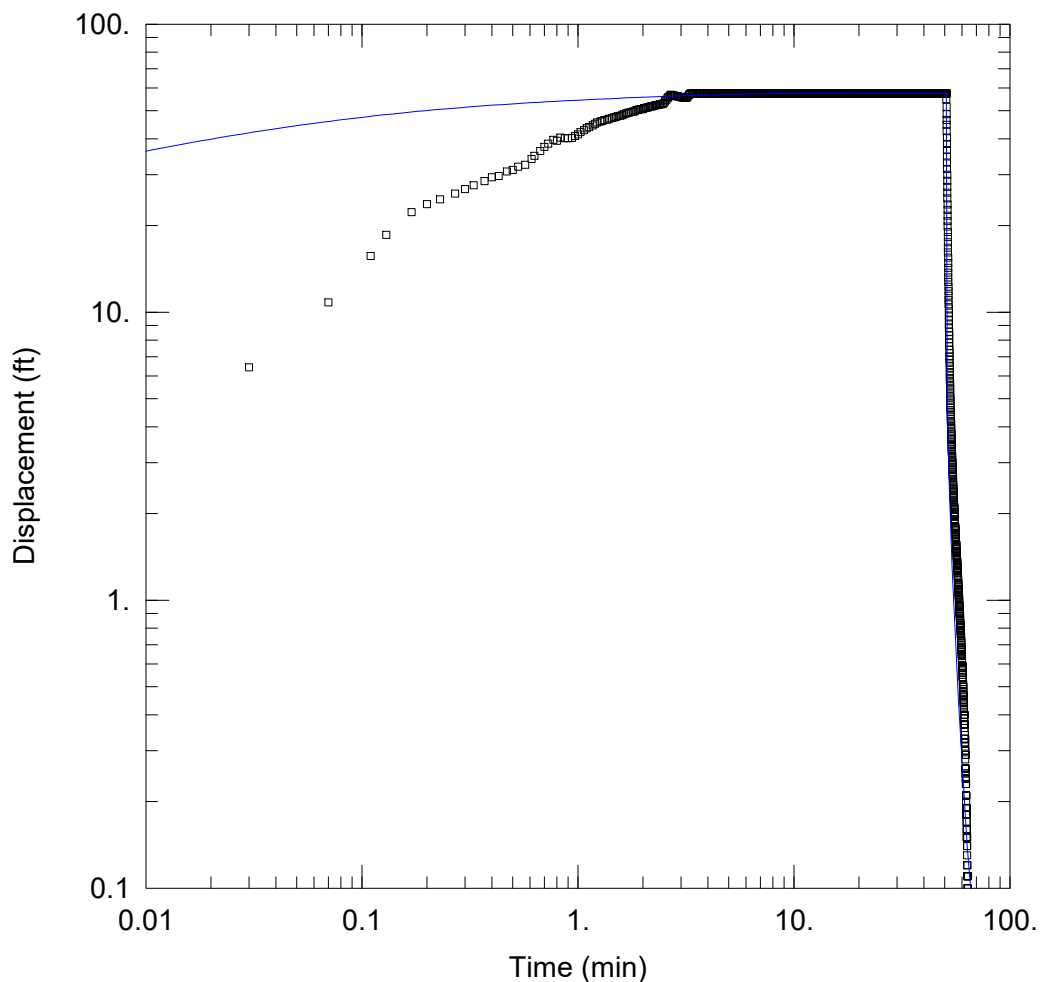
T = 879.2 ft²/day

S = 0.000119

Sy = 0.2

Kz/Kr = 1.

kD = 100.



OWENS VALLEY AQUIFER PUMPING TEST

Data Set: C:\...\T-925_Tartakovsky-Neuman.aqt

Date: 12/09/13

Time: 15:29:40

PROJECT INFORMATION

Company: Kleinfelder

Client: LADWP

Project: 135335/003.2

Location: Owens Lake, CA

Test Well: MW-10 / T-925

Test Date: 10/4/2013

AQUIFER DATA

Saturated Thickness: 100. ft

Anisotropy Ratio (Kz/Kr): 0.26

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
MW-10 / T-925	0	0

Well Name	X (ft)	Y (ft)
□ MW-10 / T-925	0	0

SOLUTION

Aquifer Model: Unconfined

Solution Method: Tartakovsky-Neuman

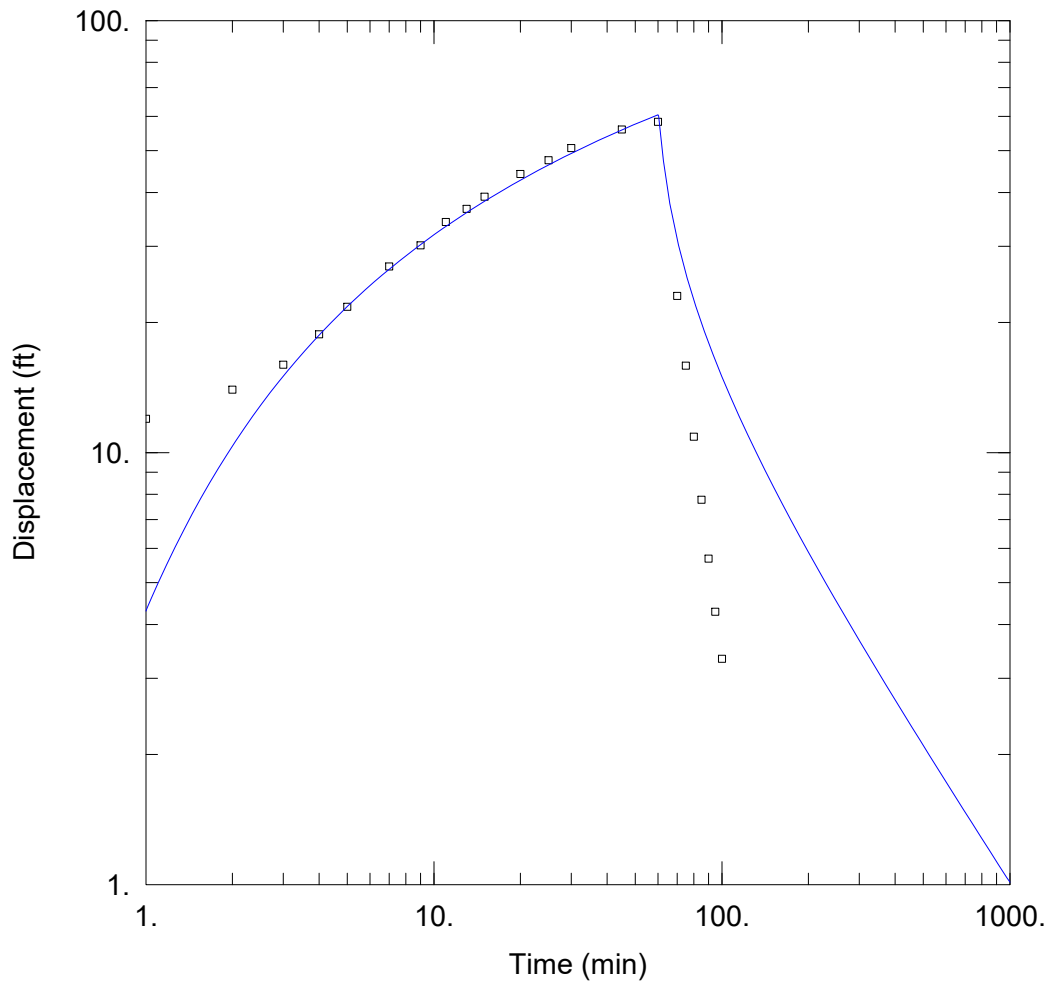
T = 436.2 ft²/day

S = 0.000119

Sy = 0.2

Kz/Kr = 0.26

kD = 17.78



OWENS VALLEY AQUIFER PUMPING TEST

Data Set: C:\...\T-926_TN.aqt
 Date: 12/09/13

Time: 15:38:41

PROJECT INFORMATION

Company: Kleinfelder
 Client: LADWP
 Project: 135335/003.2
 Location: Owens Lake, CA
 Test Well: MW-11 / T-926
 Test Date: 10/3/2013

AQUIFER DATA

Saturated Thickness: 100. ft

Anisotropy Ratio (Kz/Kr): 0.01084

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
MW-11 / T-926	0	0

Well Name	X (ft)	Y (ft)
□ MW-11 / T-926	0	0

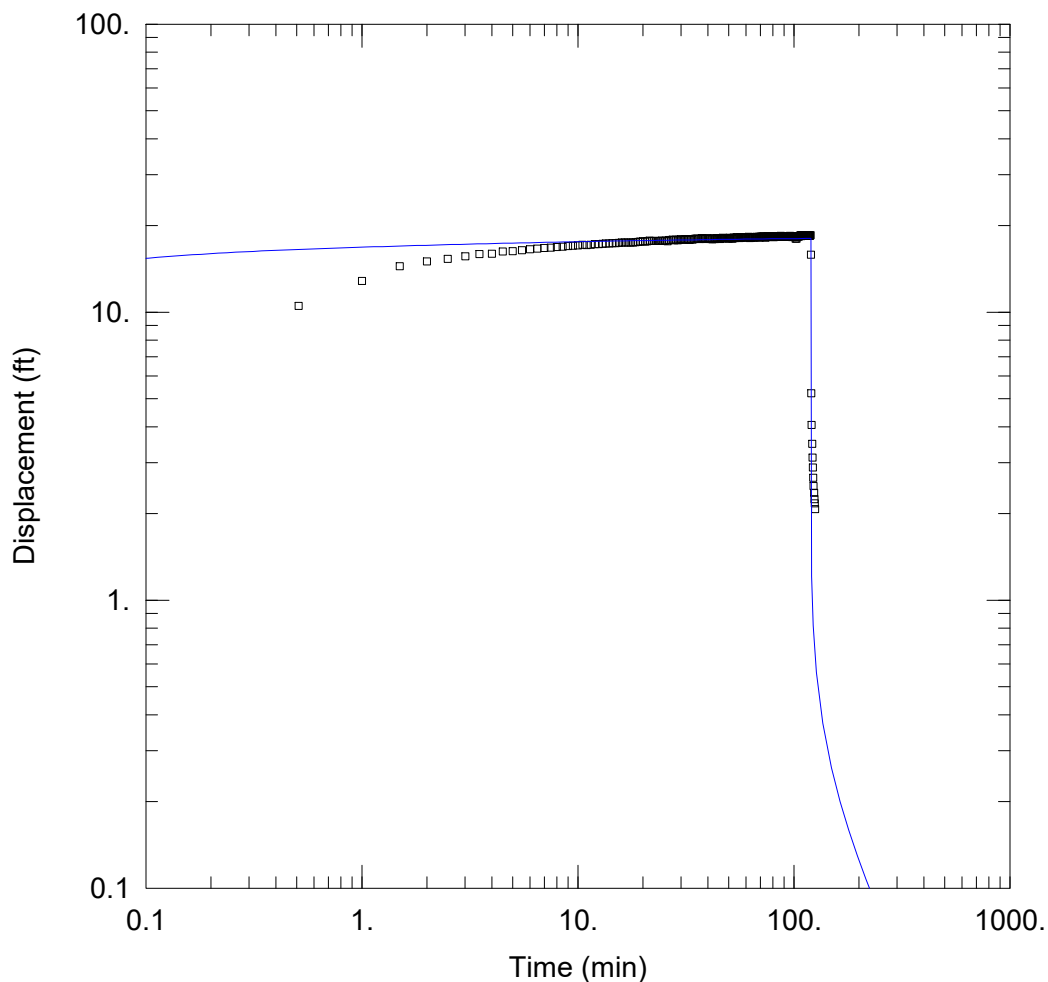
SOLUTION

Aquifer Model: Unconfined

Solution Method: Tartakovsky-Neuman

T = 9.155 ft²/day
 Sy = 0.2
 kD = 66.83

S = 0.2076
 Kz/Kr = 0.01084



OWENS VALLEY AQUIFER PUMPING TEST

Data Set: C:\...\T-927_Tartakovsky-Neuman.aqt
 Date: 12/09/13

Time: 15:40:36

PROJECT INFORMATION

Company: Kleinfelder
 Client: LADWP
 Project: 135335/003.2
 Location: Owens Lake, CA
 Test Well: MW-12 / T-927
 Test Date: 10/2/2013

AQUIFER DATA

Saturated Thickness: 100. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
MW-12 / T-927	0	0

Well Name	X (ft)	Y (ft)
□ MW-12 / T-927	0	0

SOLUTION

Aquifer Model: Unconfined

Solution Method: Tartakovsky-Neuman

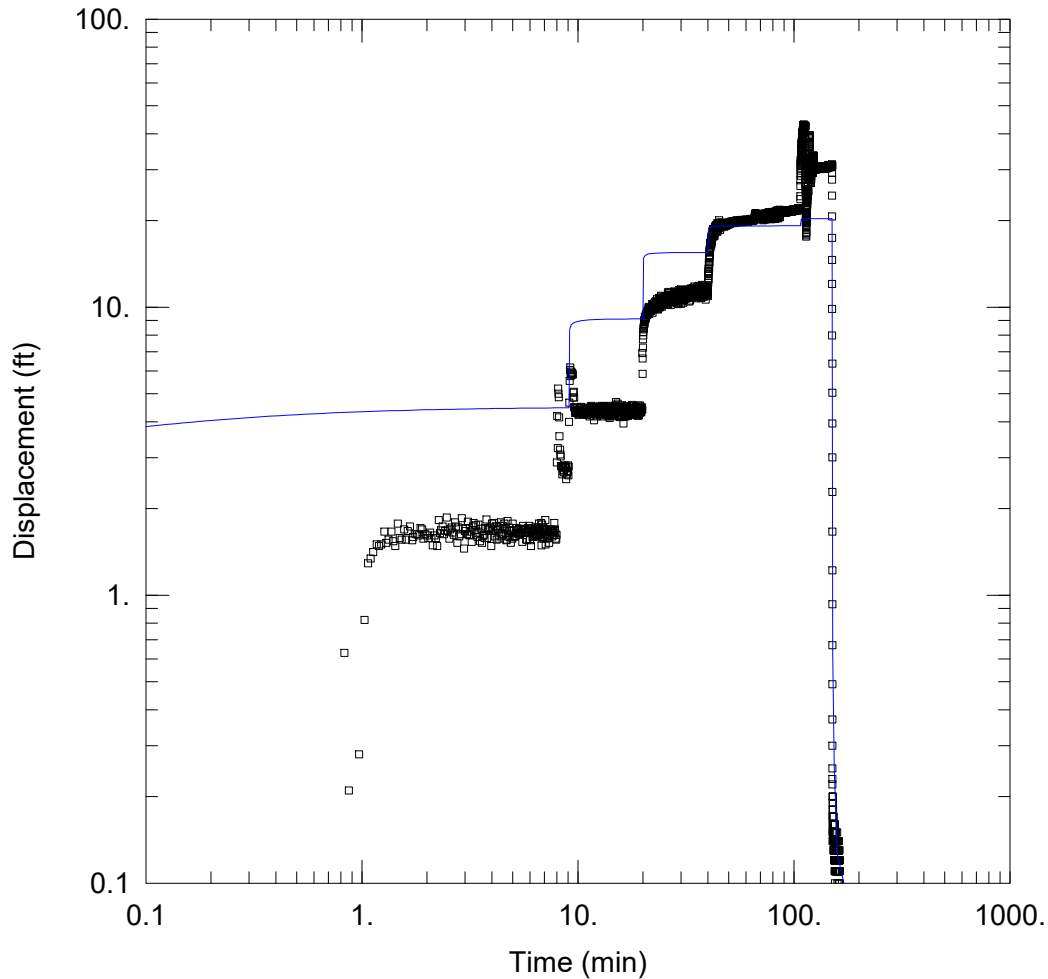
T = 2421.9 ft²/day

S = 0.0009034

Sy = 0.2

Kz/Kr = 1.

kD = 0.05309



OWENS VALLEY AQUIFER PUMPING TEST

Data Set: C:\...\T-928_Tartakovsky-Neuman.aqt
 Date: 12/09/13

Time: 15:42:55

PROJECT INFORMATION

Company: Kleinfelder
 Client: LADWP
 Project: 135335/003.2
 Location: Owens Lake, CA
 Test Well: MW-13 / T-928
 Test Date: 10/2/2013

AQUIFER DATA

Saturated Thickness: 100. ft

Anisotropy Ratio (Kz/Kr): 0.537

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
MW-13 / T-928	0	0

Well Name	X (ft)	Y (ft)
□ MW-13 / T-928	0	0

SOLUTION

Aquifer Model: Unconfined

Solution Method: Tartakovsky-Neuman

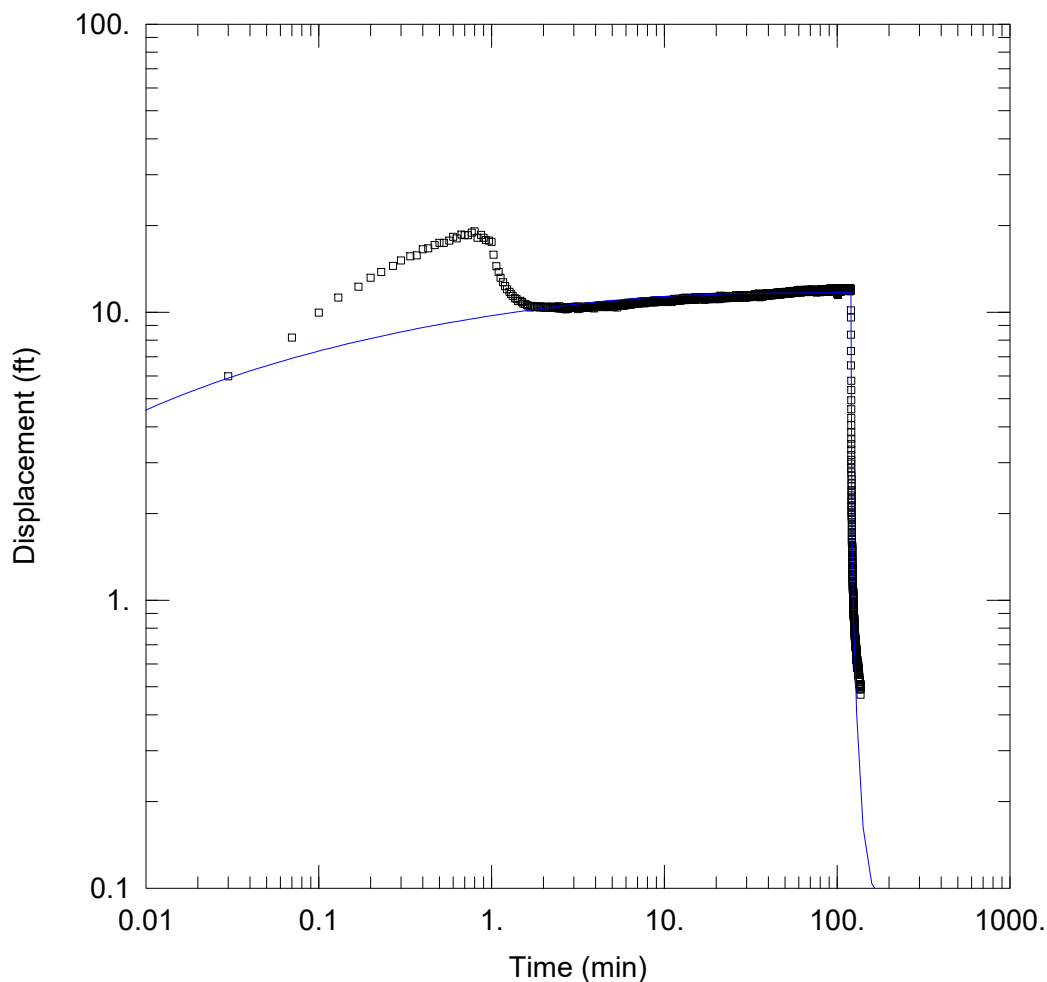
T = 1504.9 ft²/day

S = 0.0005135

Sy = 0.2

Kz/Kr = 0.537

kD = 17.78



OWENS VALLEY AQUIFER PUMPING TEST

Data Set: C:\...\T-931_Tartakovsky-Neuman.aqt
 Date: 12/09/13

Time: 15:45:01

PROJECT INFORMATION

Company: Kleinfelder
 Client: LADWP
 Project: 135335/003.2
 Location: Owens Lake, CA
 Test Well: MW-2 / T-931
 Test Date: 10/3/2013

AQUIFER DATA

Saturated Thickness: 50.73 ft

Anisotropy Ratio (Kz/Kr): 0.5012

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
MW-2 / T-931	0	0

Well Name	X (ft)	Y (ft)
□ MW-2 / T-931	0	0

SOLUTION

Aquifer Model: Unconfined

Solution Method: Tartakovsky-Neuman

T = 731.3 ft²/day

S = 0.002869

Sy = 0.2

Kz/Kr = 0.5012

kD = 77.69

APPENDIX F

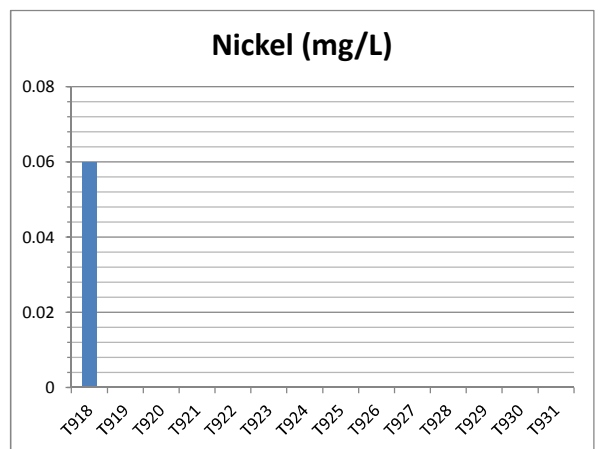
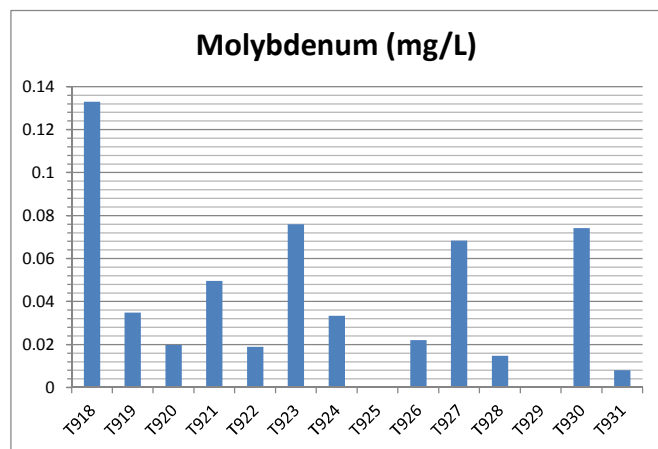
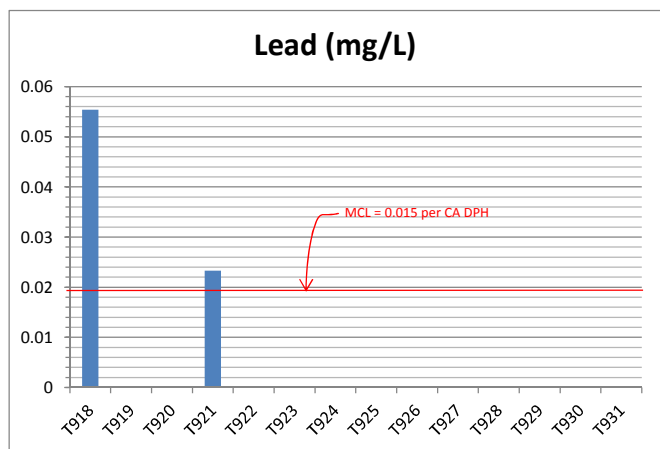
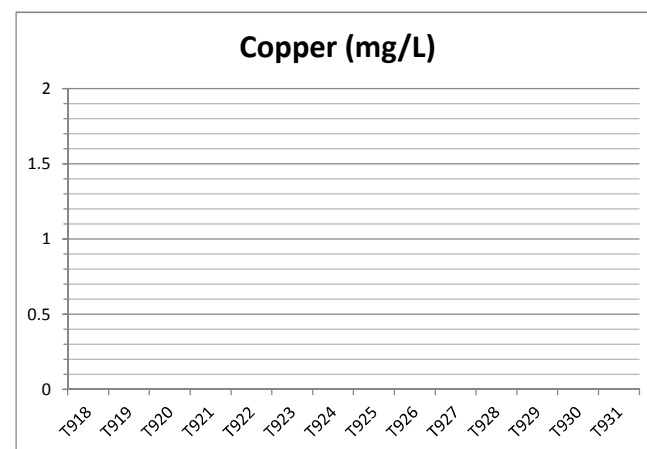
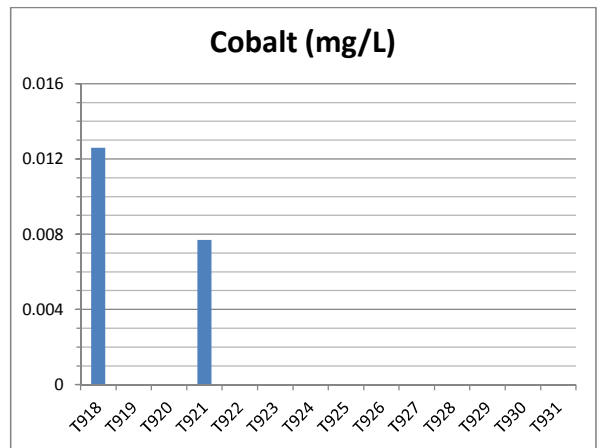
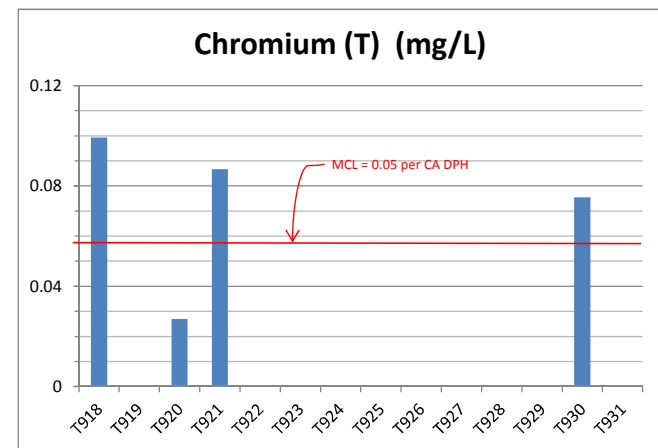
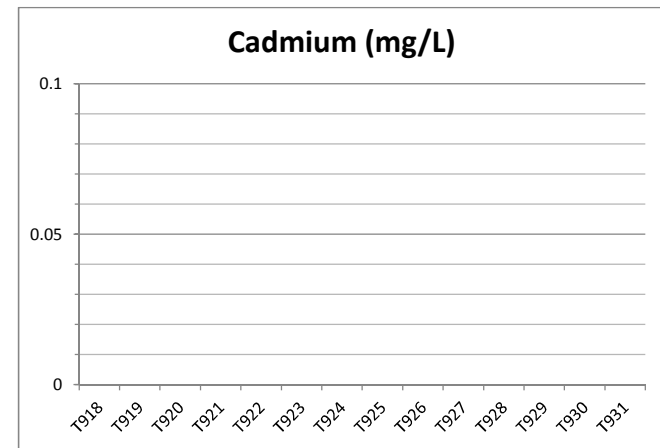
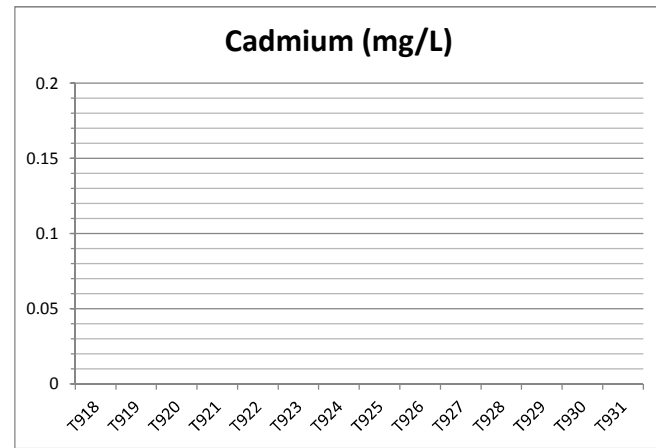
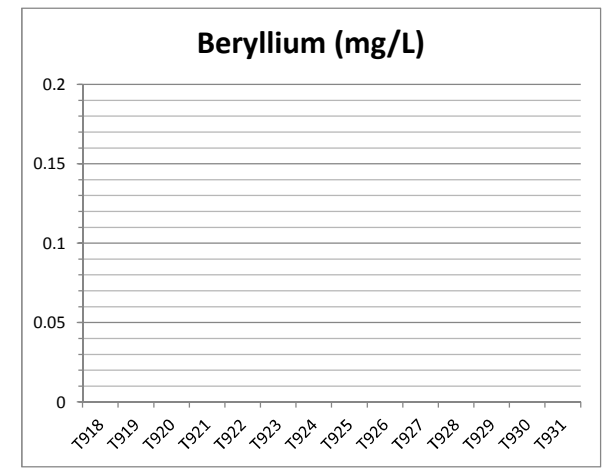
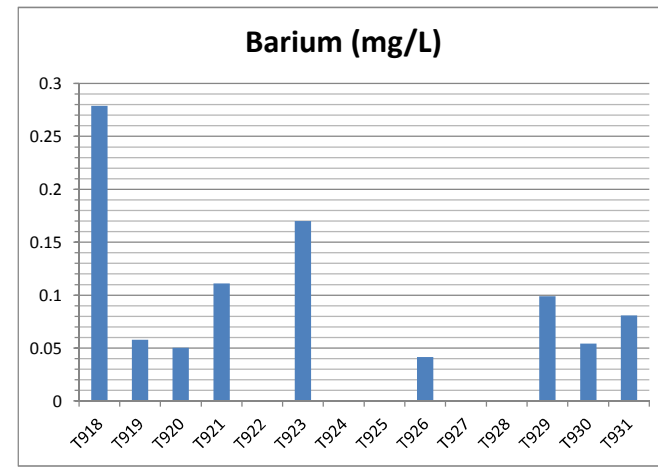
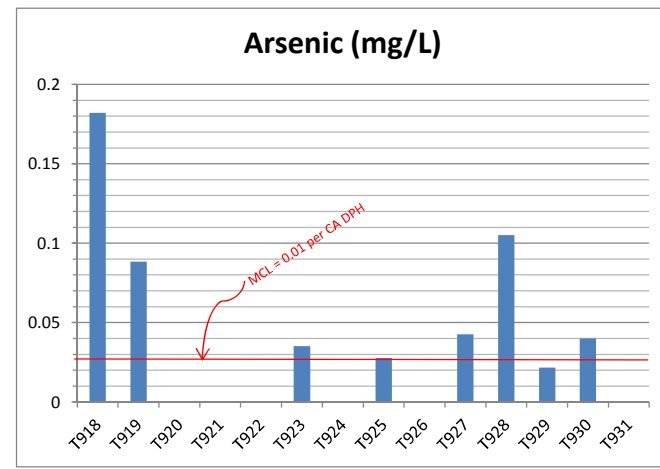
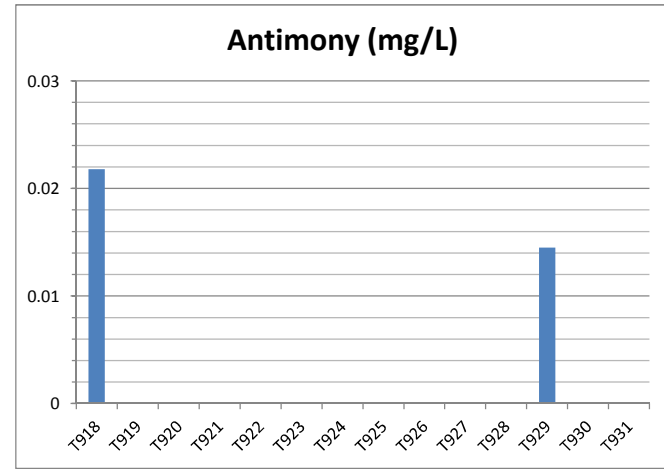
Water Quality Results

Water Quality Results for 14 Owens Lake Monitoring Wells

Method	Analysis Requested	Well Number														MCL (mg/L)	PHG (mg/L)	Secondary MCL (mg/L)	Noticeable Effects above the secondary MCL
		T918	T919	T920	T921	T922	T923	T924	T925	T926	T927	T928	T929	T930	T931				
EPA 300.0	Nitrite-N (mg/L)	< 0.03	< 0.03	1.34	0.44	0.43	< 0.03	0.19	0.02	< 0.03	< 0.03	< 0.03	0.23	0.31	< 0.03	1	1		
EPA 300.0	Chloride (mg/L)	2080	228	5.07	25.1	8.84	577	5.39	34.3	20.8	1727	232	77	18.3	16.0			250	
EPA 300.0	Phosphate (mg/L)	0.69	< 0.1	< 0.1	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1				
EPA 300.0	Sulfate (mg/L)	141	151	6.86	30.6	9.12	275	46.1	43.8	15.4	806	416	14.9	57.2	51.5				
SM 2540 C	TDS (mg/L)	6250	1603	154	290	125	2858	257	227	246	4490	1213	646	456	453			500	hardness; deposits; colored water; staining; salty taste
SM 4500 NH3 G	Ammonia-N (mg/L)	67.7	2.45	< 0.2	0.42	< 0.2	2.13	< 0.2	< 0.2	< 0.2	0.30	< 0.2	5.69	< 0.2	3.44				
SM 2320 B	Alkalinity (mg/L)	2468	912	80	188	74	1198	126	58	152	172	230	410	254	310				
SM 2320 B	Carbonate (mg/L)	2320	92	0	88	0	0	0	20	0	0	104	0	0	0				
SM 5310 C	TOC (mg/L)	37	2.9	< 0.4	2.6	< 0.4	1.8	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.79	0.77	2.5				
SM 4500 H+B	pH	10.65	12.0	7.43	11.03	7.44	6.81	7.39	9.12	7.72	6.95	8.75	7.75	7.5	7.08			6.5 - 8.5	low pH: bitter metallic taste; corrosion high pH: slippery feel; soda taste; deposits
EPA 120.1	Specific Conductivity (us/cm)	10350	5050	204	732	202	4570	367	170	390	7010	2070	1120	710	790				
EPA 180.1	Turbidity (ntu)	938	32.2	35.7	284	3.74	98.3	< 1	< 1	13.4	4.42	2.14	2.14	208	9.52				
EPA 200.7	Boron (mg/L)	25.5	3.93	< 0.009	0.105	< 0.009	21.0	0.05	0.055	0.432	22.8	8.46	1.75	0.088	0.309				
EPA 200.7	Lithium (mg/L)	0.319	0.124	0.025	0.057	0.043	0.849	0.053	0.149	0.030	0.752	0.319	0.779	0.061	0.060				
EPA 200.7	Magnesium (mg/L)	29.1	0.365	3.93	6.8	6.44	34.0	2.98	10.2	7.31	27.1	4.08	48.8	13.1	18.1				
EPA 200.7	Manganese (mg/L)	0.893	0.028	0.378	0.484	0.146	0.874	0.165	0.937	0.115	0.151	0.398	0.129	0.363	0.586			0.05	black to brown color; black staining; bitter metallic taste
EPA 200.7	Sodium (mg/L)	3690	585	14.7	63.1	9.09	957	47.8	17.0	39.5	1790	488	106	86.5	75.7				
EPA 200.7	Antimony (mg/L)	0.0218	ND	ND	ND	0.00580J	ND	0.00610J	ND	ND	ND	ND	0.0145	0.00700J	0.00700J	-	0.0007		
EPA 200.7	Arsenic (mg/L)	0.182	0.0883	ND	0.0238J	ND	0.0351	0.00730J	0.0277	0.0095J	0.0426	0.105	0.0217	0.0399	ND	0.01	0.000004		
EPA 200.7	Barium (mg/L)	0.279	0.0579	0.0503	0.111	0.0149J	0.170	0.0172J	0.00760J	0.0415	ND	0.0214J	0.099	0.0541	0.0808	1	2		
EPA 200.7	Beryllium (mg/L)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.004	0.001		
EPA 200.7	Cadmium (mg/L)	0.00270J	ND	ND	0.00180J	ND	ND	ND	ND	ND	ND	ND	ND	0.00140J	ND	0.005	0.001		
EPA 200.7	Chromium (T) (mg/L)	0.0993	0.0072J	0.0269	0.0867	0.0145J	0.00770J	0.00730J	0.00780J	0.0174J	0.000610J	ND	0.0120J	0.0754	ND	0.05	-		
EPA 200.7	Cobalt (mg/L)	0.0126	ND	ND	0.00770	ND	ND	ND	ND	ND	ND	ND	ND	0.00350J	ND				
EPA 200.7	Copper (mg/L)	0.0332J	ND	ND	0.0182J	ND	ND	ND	ND	ND	ND	ND	0.0110J	ND	ND	1.3*	0.3	1.0	
EPA 200.7	Lead (mg/L)	0.0554	0.00900J	0.0113J	0.0233	ND	0.00780J	0.00710J	ND	ND	0.00690J	0.00600J	0.0134J	0.0172J	0.0115J	0.015*	0.0002		
EPA 200.7	Molybdenum (mg/L)	0.133	0.0349	0.0199	0.0496	0.0189	0.0760	0.0333	0.00450J	0.0220	0.0684	0.0147	0.0047J	0.0741	0.00810				
EPA 200.7	Nickel (mg/L)	0.0598	0.0149J	ND	0.0428J	ND	0.0178J	ND	ND	ND	0.0374J	ND	ND	0.0401J	ND				
EPA 200.7	Selenium (mg/L)	0.0304J	0.0210J	0.0126J	0.0145J	ND	0.0197J	0.0274J	ND	ND	ND	ND	0.0201J	ND	ND	0.05	0.03		
EPA 200.7	Silver (mg/L)	ND	ND	ND	ND	ND	ND	0.00400J	ND	0.00600J	0.00620J	ND	ND	ND	ND			0.1	skin discoloration; graying of the white part of eye
EPA 200.7	Thallium (mg/L)	ND	0.00480J	ND	0.00420J	0.00610J	ND	ND	ND	0.0092J	ND	0.00700J	0.0106J	ND	0.00660J	0.002	0.0001		
EPA 200.7	Vanadium (mg/L)	0.429	ND	ND	0.0811	ND	ND	ND	ND	ND	ND	ND	ND	0.0206J	ND				
EPA 200.7	Zinc (mg/L)	0.166	0.0535	0.0114	0.468	0.205	0.313	0.252	0.501	0.105	0.116	0.0268	0.0777	0.491	0.108			5	metallic taste

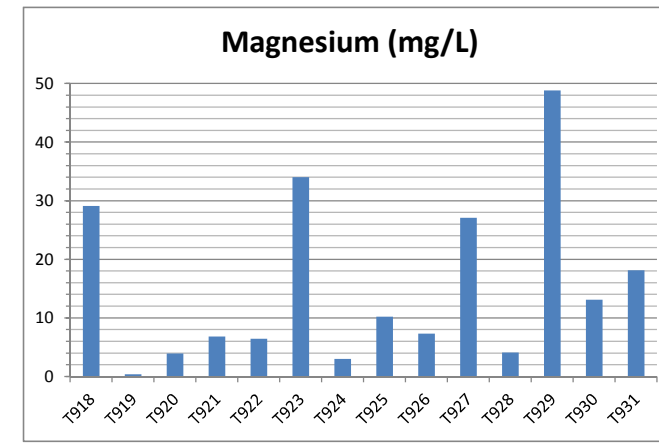
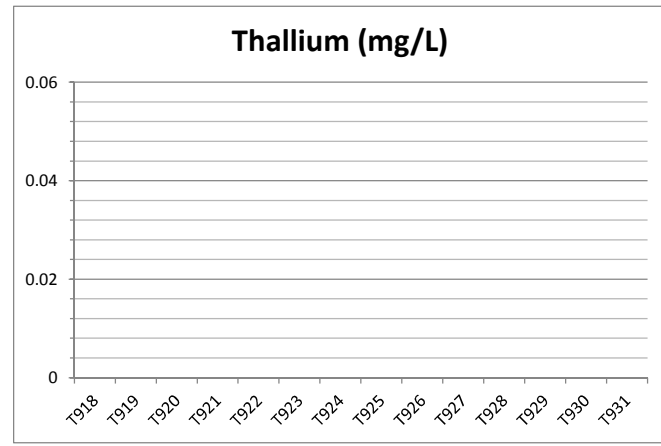
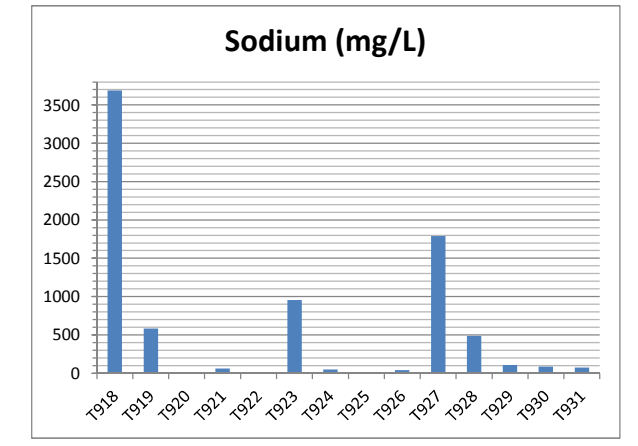
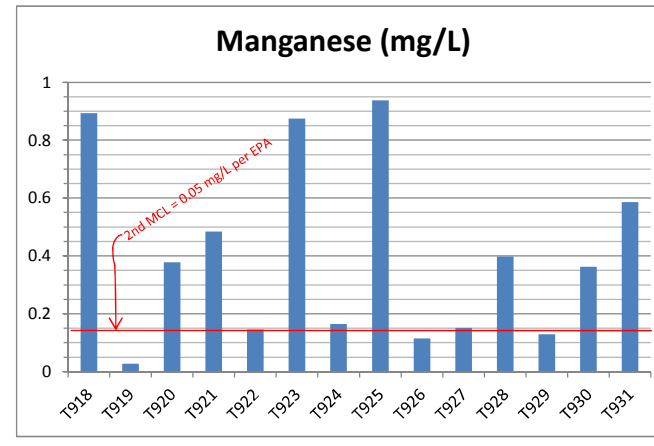
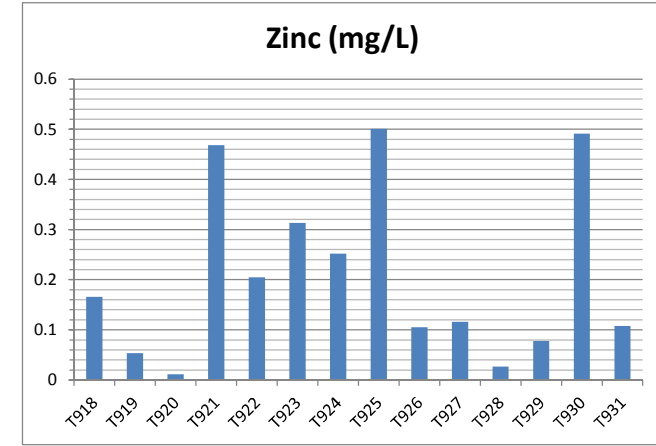
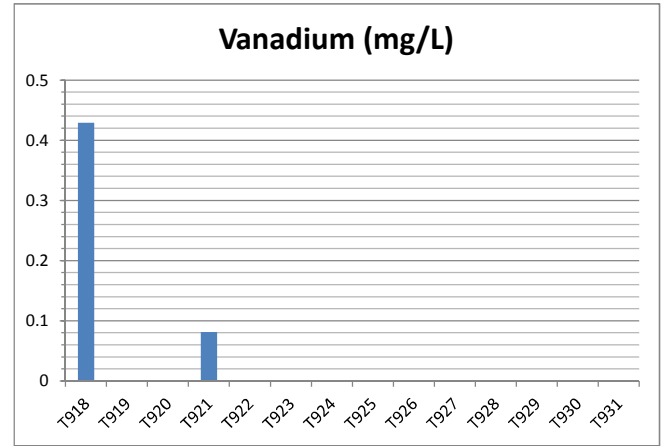
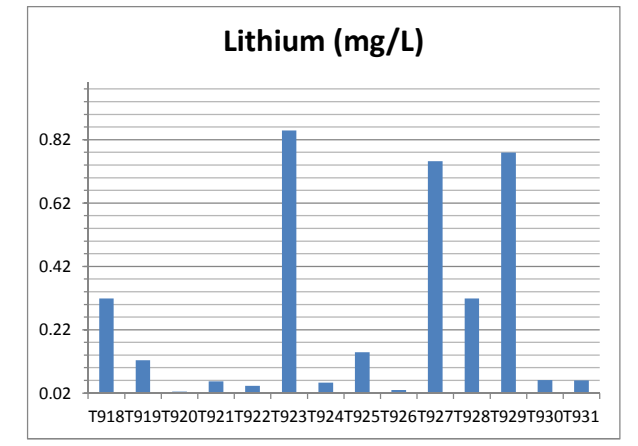
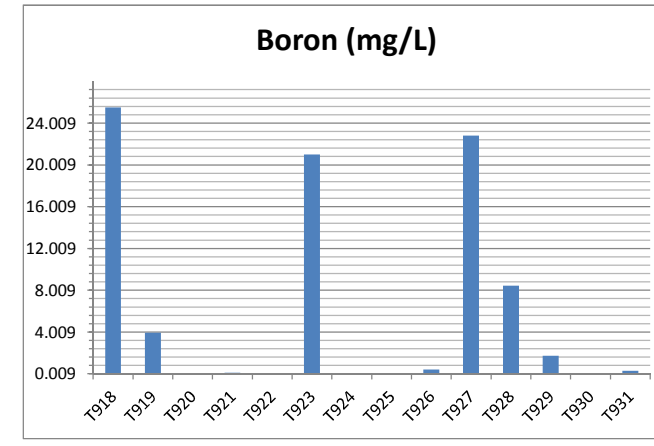
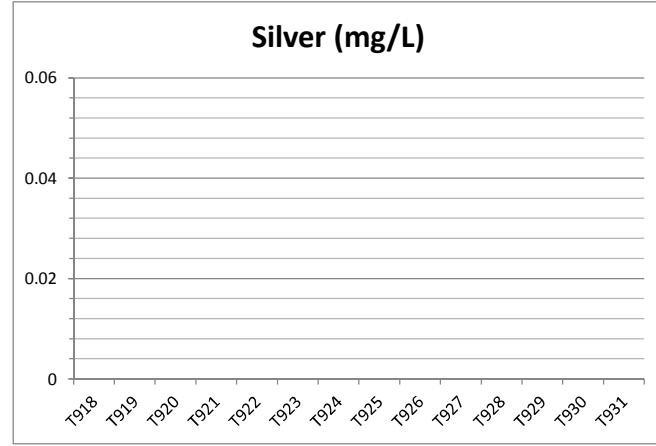
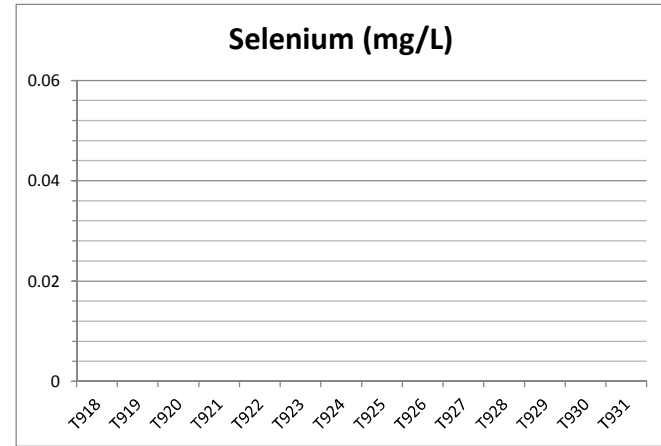
* They are called "Action Levels" under the lead and copper rule (not actually MCLs).

METALS

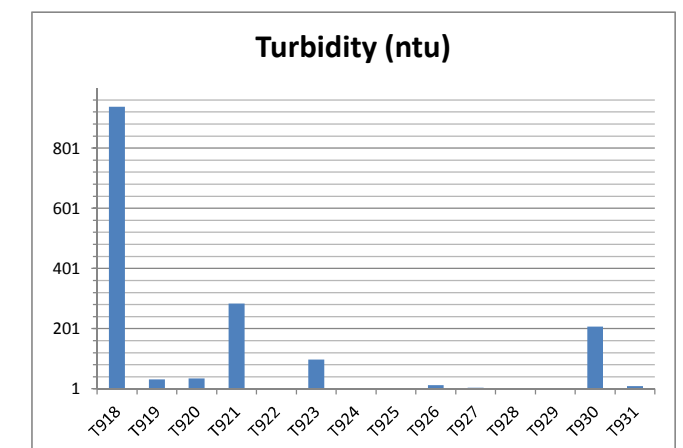
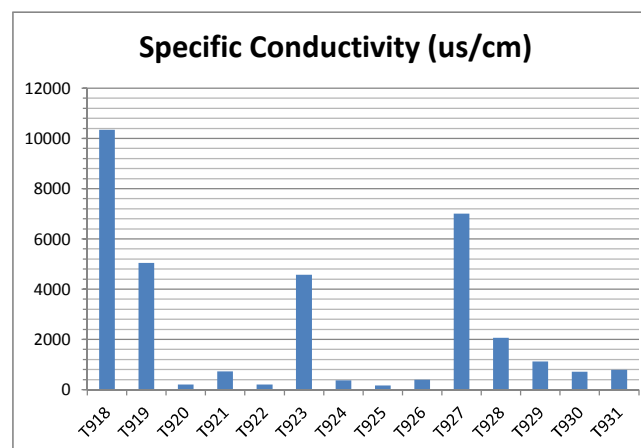
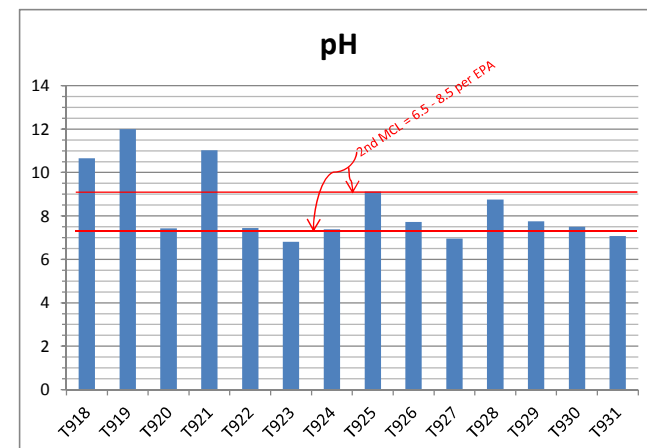
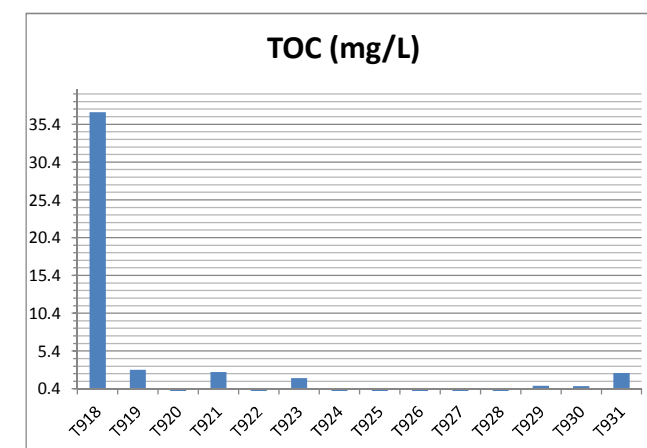
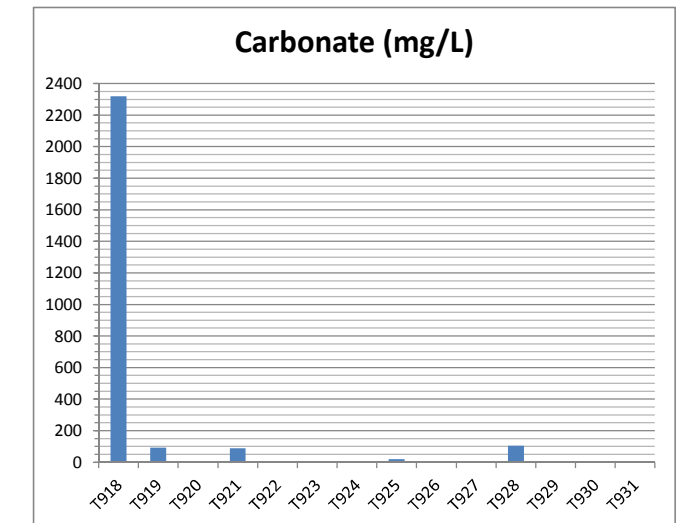
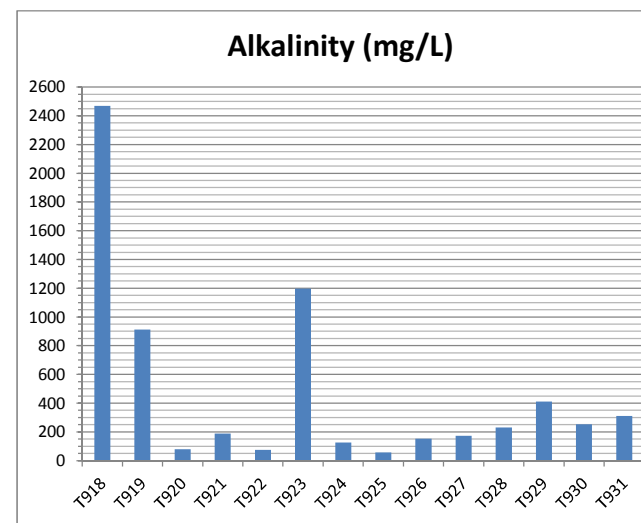
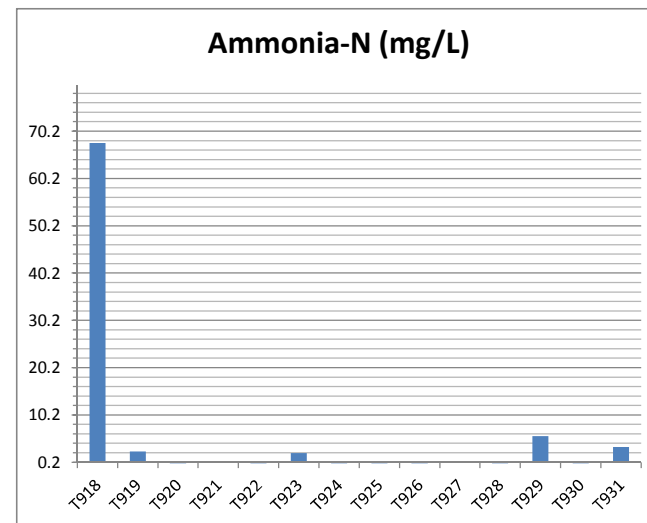
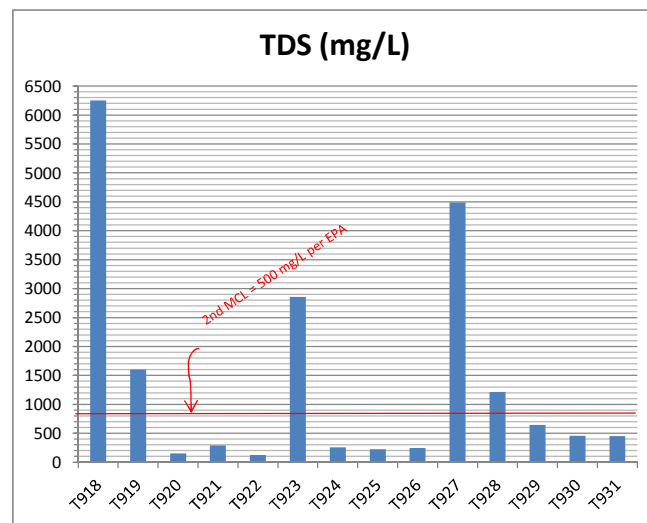
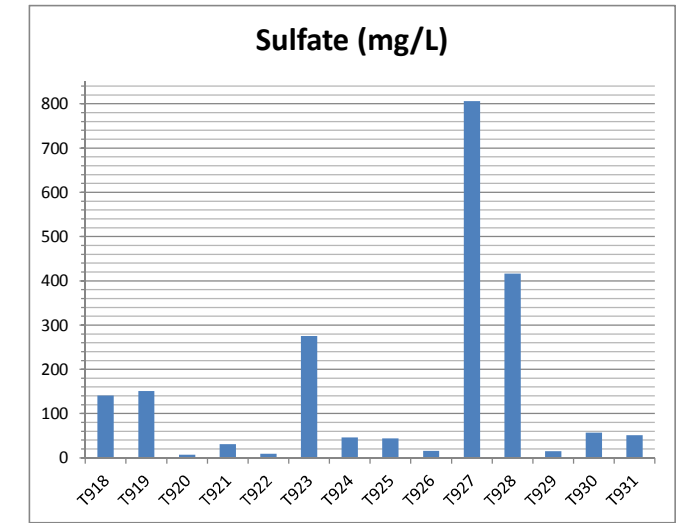
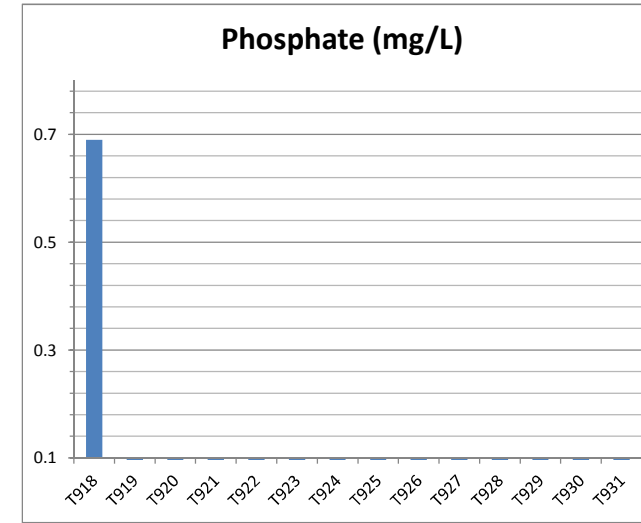
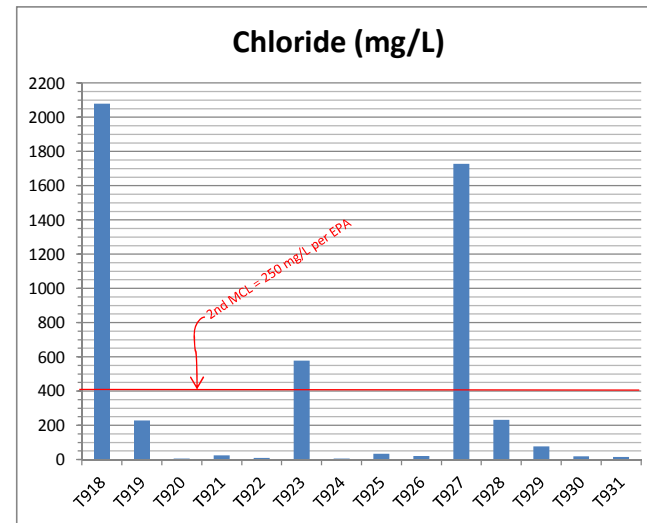
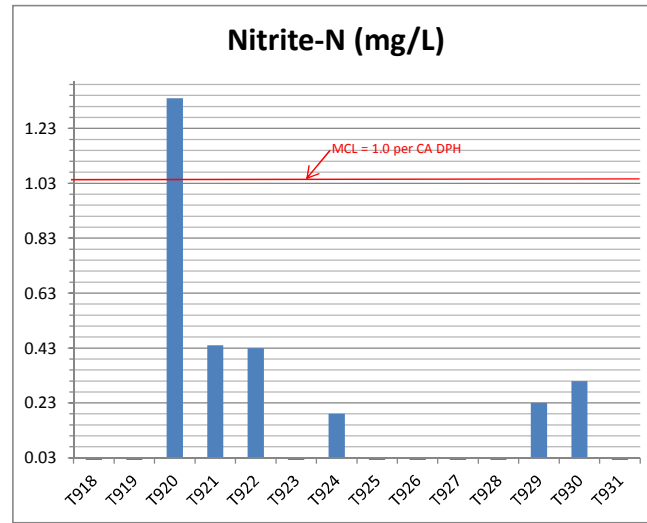


METALS

GENERAL CHEMISTRY



GENERAL CHEMISTRY



**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT
PROJECT: OWENS LAKE MONITORING WELLS
REPORT NO.: C12182

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T924 were submitted to the Environmental Laboratory on October 2, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267.

Date Completed: 10/28/2013
Work Order No.: ZAC97
Job Card No.: J95000
Copies to: S. Jorat
N. Liu
K. Han
N. Perez
FileNet

Test Performed by: Environmental Lab,
Bureau of Standards

Report By: NP Date: 10/28/2013

Checked by: JL Date: 10/29/13

APPROVED BY: Kevin Han JL 10/20/13
Kevin Han Date

Interim Laboratory Manager
Environmental Laboratory

100001

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12182
 COC 13-2479
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN11725	Well# T924	Metals	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	0.050 mg/L	
		Lithium		10/24/13	0.053 mg/L	
		Magnesium		10/24/13	2.98 mg/L	
		Manganese		10/24/13	0.165 mg/L	
		Sodium		10/24/13	47.8 mg/L	
LN11726	Well# T924	Nitrite -N	EPA 300.0	10/2/13	0.19 mg/L	Environmental Lab
		Chloride			5.39 mg/L	
		Phosphate			<0.1 mg/L	
		Sulfate			46.1 mg/L	
LN11727	Well# T924	TDS	SM 2540 C	10/4/13	257 mg/L	Environmental Lab
LN11728	Well# T924	Ammonia-N	SM 4500 NH3 G	10/16/13	<0.20 mg/L	Bureau of Standards
LN11729	Well# T924	Alkalinity	SM 2320 B	10/10/13	126 mg/L	Environmental Lab
		Carbonate			0 mg/L	
LN11730	Well# T924	TOC	SM 5310 C	10/15/13	<0.4 mg/L	Environmental Lab
LN11731	Well# T924	pH	SM 4500 H+B	10/1/13	7.39	Field Personnel
		Specific Conductivity	EPA 120.1	10/1/13	367 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/3/13	<1 ntu	Environmental Lab

Sample Location OWENS LAKE MONITORING WELL

Chem Lab use only CHEMISTRY LOG NUMBERS (Can sample duplicates use -1 or -X)	Sample Date	(24 hr) Sample Time	Sample Location and Description	Preservatives	Container No.	Type	Size	Sample Matrix	Analysis Required	Test Result	Analyst(s) Assigned
1 LN11725			WELL # 1924	HNO3	1	P	500 mL	WATER	METALS, B, Li, Mg, Mn, Na		Env Lab
2 LN11726				NONE	1	P	250 mL	WATER	NO3*, Cl, PO4*, SO4		Env Lab
3 LN11727				NONE	1	P	500 mL	WATER	TDS		Env Lab
4 LN11728				H2SO4	1	P	500 mL	WATER	NH3-N		BSL
5 LN11729				NONE	1	P	500 mL	WATER	Alkalinity, Carbonate		Env Lab
6 LN11730				H2SO4	4	G	40 mL	WATER	TOC		Env Lab
7 LN11731				NONE	1	P	500 mL	WATER	pH, Specific Conductivity, Turbidity		Env Lab
8											
9											
10											
11											
12											
13											
14											
15											
16											

* SAMPLE WITH SHORT HOLDING TIME (48 HRS). PLEASE BRING IN SAMPLE BEFORE IT EXPIRES.

Requested by: Saeed Jorjat Organization / Div: Water Operations
 Address: JFB RM 1468 Tele: 71119 Fax:
 Analyst Approved by: _____ date: _____

Priority: 2-4 Hrs 1 Day 2 Wks 4 Wks Specify

Date & Time Stamp: _____
 Chem Lab COC Form #1
 Revision: 10/2/2001

Printed Name: _____ Signature: _____
 Sampled by: Elizabeth Calderon
 Relinquished by: _____
 Received by: _____
 Time: 1:10 PM Date: 10/01
 10:30 AM Date: 10/2
 1032 Date: 10/2/03

TEMP = 44.0C

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2479

ANALYTICAL RESULT FOR METALS

TTLC (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY	DATE	DATE	DATE	SAMPLE DESCRIPTION									
LOG NO.	SAMPLED	RECEIVED	ANALYZED										
LN11725	10/1/13	10/2/13	10/23/13	OWENS LAKE MONITORING WELL T92									
METAL	LIMIT TTLC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	LN11725 mg/l						
Antimony	500	15	200.7	0.002	0.010	1	0.00610J						
Arsenic	500	5	200.7	0.005	0.025	1	0.00730J						
Barium	10000	100	200.7	0.005	0.025	1	0.0172J						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	ND						
Chromium (T)	500	5	200.7	0.005	0.025	1	0.00730J						
Cobalt	8000	80	200.7	0.001	0.005	1	ND						
Copper	2500	25	200.7	0.008	0.040	1	ND						
Lead	1000	5	200.7	0.004	0.020	1	0.00710J						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.0333						
Nickel	2000	20	200.7	0.009	0.045	1	ND						
Selenium	100	1	200.7	0.009	0.045	1	0.0274J						
Silver	500	5	200.7	0.004	0.020	1	0.00400J						
Thallium	700	7	200.7	0.004	0.020	1	ND						
Vanadium	2400	24	200.7	0.016	0.080	1	ND						
Zinc	5000	250	200.7	0.002	0.010	1	0.252						

ND - Not Detected; below method detection limit

MDL - Method Detection Limit

R.L. - Report Limit

D. F. - Dilution Factor

** - exceed TTLC limit

* - exceed 10x STLC limit

J - concentration above MDL and below RL

Analyst : KC

200001

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/08/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: STTLCW-8110 (LN12010)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg mg/L

METAL	SAMPLE RESULT	SPIKE CONC	BS	%BS	(DPP) SPIKE CONC	BSD	%BSD	RPD	BS/BSD % REC LIMIT	RPD LIMIT
Antimony	ND	2	2.07	104	2	2.07	104	0.0%	70 - 130	< 30
Arsenic	ND	2	2.09	104	2	2.08	104	0.0%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2	2.01	100	2	2.03	102	2.0%	70 - 130	< 30
Cadmium	ND	2	1.96	98.0	2	1.96	98.0	0.0%	70 - 130	< 30
Chromium (T)	ND	2	1.94	97.0	2	1.95	97.5	0.5%	70 - 130	< 30
Cobalt	ND	2	2.02	101	2	2.01	100	1.0%	70 - 130	< 30
Copper	ND	2	1.96	98.0	2	1.96	98.0	0.0%	70 - 130	< 30
Lead	ND	2	2.02	101	2	2.02	101	0.0%	70 - 130	< 30
Molybdenum	ND	2	1.98	99.0	2	1.98	99.0	0.0%	70 - 130	< 30
Nickel	ND	2	1.97	98.5	2	1.97	98.5	0.0%	70 - 130	< 30
Selenium	ND	2	2.04	102	2	2.04	102	0.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2	2.02	101	2	2.02	101	0.0%	70 - 130	< 30
Vanadium	ND	2	1.96	98.0	2	1.97	98.5	0.5%	70 - 130	< 30
Zinc	ND	2	2.05	102	2	2.02	101	1.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS I.D.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg mg/L

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.02	1	102	85 - 115
Arsenic	4.12	4	103	85 - 115
Barium	3.97	4	99.2	85 - 115
Beryllium	0.101	0.1	101	85 - 115
Cadmium	0.0990	0.1	99.0	85 - 115
Chromium (T)	0.392	0.4	98.0	85 - 115
Cobalt	1.01	1	101	85 - 115
Copper	0.491	0.5	98.2	85 - 115
Lead	1.03	1	103	85 - 115
Molybdenum	---	---	---	---
Nickel	0.994	1	99.4	85 - 115
Selenium	4.10	4	102	85 - 115
Silver	0.0970	0.1	97.0	85 - 115
Thallium	4.10	4	102	85 - 115
Vanadium	0.982	1	98.2	85 - 115
Zinc	1.01	1	101	85 - 115

Analyst: KC

Reviewed by: *JD* 10/20/13

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT
PROJECT: OWENS LAKE MONITORING WELLS
REPORT NO.: C12185

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T930 were submitted to the Environmental Laboratory on October 3, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267.

Date Completed: 10/28/2013
Work Order No.: ZAC97
Job Card No.: J95000
Copies to: S. Jorat
N. Liu
K. Han
N. Perez
FileNet

Test Performed by: Environmental Lab,
Bureau of Standards
Report By: NP Date: 10/28/2013
Checked by: JMK Date: 10/29/13
APPROVED BY: Kevin Han/JMK 10/29/13
Kevin Han Date
Interim Laboratory Manager
Environmental Laboratory

100001

DEPARTMENT OF WATER & POWER
 OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12185
 COC 13-2508
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN11808	Well# T930	Metals, B, Li, Mg, Mn, Na	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	0.088 mg/L	
		Lithium		10/24/13	0.061 mg/L	
		Magnesium		10/24/13	13.1 mg/L	
		Manganese		10/24/13	0.363 mg/L	
		Sodium		10/24/13	86.5 mg/L	
LN11809	Well# T930	Nitrite -N	EPA 300.0	10/3/13	0.31 mg/L	Environmental Lab
		Chloride			18.3 mg/L	
		Phosphate			<0.1 mg/L	
		Sulfate			57.2 mg/L	
LN11810	Well# T930	TDS	SM 2540 C	10/4/13	456 mg/L	Environmental Lab
LN11811	Well# T930	Ammonia-N	SM 4500 NH3 G	10/16/13	<0.20 mg/L	Bureau of Standards
LN11812	Well# T930	Alkalinity	SM 2320 B	10/10/13	254 mg/L	Environmental Lab
		Carbonate			0 mg/L	
LN11813	Well# T930	TOC	SM 5310 C	10/15/13	0.77 mg/L	Environmental Lab
LN11814	Well# T930	pH	SM 4500 H+B	10/2/13	7.5	Field Personnel
		Specific Conductivity	EPA 120.1	10/2/13	710 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/3/13	208 ntu	Environmental Lab

Environmental Laboratory
 1630 N. Main Street, Bldg 7
 Los Angeles, CA. 90012
 (213) 367-7248/7399
 (213) 367-7285 FAX

Department of Water and Power
 City of Los Angeles
Chain of Custody Record

COC #: 13-2508
 Report C# 12185 JO# 95600 WO#
 Reflight# 83 Shelf 9/1 Bin#
 Page 1 of 1
 2AE97

Sample Location OWENS LAKE MONITORING WELL

CHEMISTRY LOG NUMBERS (For sample duplicates use 1 or X)	Sample Date	(24 Hr) Sample Time	Sample Location and Description	Preservatives		Container		Sample Matrix	Analysis Required	Test Result	Analyst(s) Assigned
				No.	Value	No.	Type				
1 LN11808			WELL # T930	HNO3		1	P	500mL	METALS, B, Li, Mg, Mn, Na		Env Lab
2 11809	6-2	1230	Owens Lake T930	NONE		1	P	250 mL	NO3*, Cl, PO4*, SO4		Env Lab
3 11810				NONE		1	P	500 mL	TDS		Env Lab
4 11810				H2SO4		1	P	500 mL	NH3-N		BSL
5 11812				NONE		1	P	500 mL	Alkalinity, Carbonate		Env Lab
6 11813				H2SO4		4	G	40mL	TOC		Env Lab
7 11814				NONE		1	P	500 mL	pH, Specific Conductivity, Turbidity		Env Lab
8											
9			Temp: 18.5 °C								
10			Sp Cond: 71								
11			DO: 7.11								
12			pH: 7.5								
13			Salinity: 193								
14			Charge # ZAC97								
15											
16											

* SAMPLE WITH SHORT HOLDING TIME (48 HRS). PLEASE BRING IN SAMPLE BEFORE IT EXPIRES.

Requested by: Saeed Jorjat Organization / Div. Water Operations
 Address: JFB RM 1468 Tele 71119 Fax.
 Analyst Approved by _____ date _____

Priority:
 2-4 Hrs
 1 Day
 2 Wks
 4 Wks
 Specify

Printed Name	Signature	Time	Date
Saeed Jorjat	<i>Saeed Jorjat</i>	12:30	10-2-201
Saeed Jorjat	<i>Saeed Jorjat</i>	8:15 PM	10-3
B. SHANNON EA	<i>B. Shannon EA</i>	8:15	10/3/13

Date & Time Stamp
 LAMP
 Chem Lab COC Form #1
 Revision: 10/2/2001
 RECD BY: ENV. CHEM LAB
 2013 OCT 2 2 38 PM

COC13-2508
 000001

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2508

ANALYTICAL RESULT FOR METALS

TTLC (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY	DATE	DATE	DATE										
LOG NO.	SAMPLED	RECEIVED	ANALYZED	SAMPLE DESCRIPTION									
LN11808	10/2/13	10/3/13	10/23/13	WELL # T930									
	LIMIT TTLC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	LN11808 mg/l						
Antimony	500	15	200.7	0.002	0.010	1	0.00700J						
Arsenic	500	5	200.7	0.005	0.025	1	0.0399						
Barium	10000	100	200.7	0.005	0.025	1	0.0541						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	0.00140J						
Chromium (T)	500	5	200.7	0.005	0.025	1	0.0754						
Cobalt	8000	80	200.7	0.001	0.005	1	0.00350J						
Copper	2500	25	200.7	0.008	0.040	1	ND						
Lead	1000	5	200.7	0.004	0.020	1	0.0172J						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.0741						
Nickel	2000	20	200.7	0.009	0.045	1	0.0401J						
Selenium	100	1	200.7	0.009	0.045	1	ND						
Silver	500	5	200.7	0.004	0.020	1	ND						
Thallium	700	7	200.7	0.004	0.020	1	ND						
Vanadium	2400	24	200.7	0.016	0.080	1	0.0206J						
Zinc	5000	250	200.7	0.002	0.010	1	0.491						

ND - Not Detected; below method detection limit

** - exceed TTLC limit

MDL - Method Detection Limit

* - exceed 10x STLC limit

R.L. - Report Limit

J - concentration above MDL and below RL

D. F. - Dilution Factor

Analyst : KC

200001

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/08/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: STTLCW-8110 (LN12010)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg mg/L

METAL	SAMPLE RESULT	SPIKE CONC	BS	%BS	(DUP) SPIKE CONC	BSD	%BSD	RPD	BS/BSD % REC LMT	RPD LMT
Antimony	ND	2	2.07	104	2	2.07	104	0.0%	70 - 130	< 30
Arsenic	ND	2	2.09	104	2	2.08	104	0.0%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2	2.01	100	2	2.03	102	2.0%	70 - 130	< 30
Cadmium	ND	2	1.96	98.0	2	1.96	98.0	0.0%	70 - 130	< 30
Chromium (T)	ND	2	1.94	97.0	2	1.95	97.5	0.5%	70 - 130	< 30
Cobalt	ND	2	2.02	101	2	2.01	100	1.0%	70 - 130	< 30
Copper	ND	2	1.96	98.0	2	1.96	98.0	0.0%	70 - 130	< 30
Lead	ND	2	2.02	101	2	2.02	101	0.0%	70 - 130	< 30
Molybdenum	ND	2	1.98	99.0	2	1.98	99.0	0.0%	70 - 130	< 30
Nickel	ND	2	1.97	98.5	2	1.97	98.5	0.0%	70 - 130	< 30
Selenium	ND	2	2.04	102	2	2.04	102	0.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2	2.02	101	2	2.02	101	0.0%	70 - 130	< 30
Vanadium	ND	2	1.96	98.0	2	1.97	98.5	0.5%	70 - 130	< 30
Zinc	ND	2	2.05	102	2	2.02	101	1.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS I.D.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg (mg/L)

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.02	1	102	85 - 115
Arsenic	4.12	4	103	85 - 115
Barium	3.97	4	99.2	85 - 115
Beryllium	0.101	0.1	101	85 - 115
Cadmium	0.0990	0.1	99.0	85 - 115
Chromium (T)	0.392	0.4	98.0	85 - 115
Cobalt	1.01	1	101	85 - 115
Copper	0.491	0.5	98.2	85 - 115
Lead	1.03	1	103	85 - 115
Molybdenum	---	---	---	---
Nickel	0.994	1	99.4	85 - 115
Selenium	4.10	4	102	85 - 115
Silver	0.0970	0.1	97.0	85 - 115
Thallium	4.10	4	102	85 - 115
Vanadium	0.982	1	98.2	85 - 115
Zinc	1.01	1	101	85 - 115

Analyst: KC

Reviewed by:

JME 10/29/13

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT
PROJECT: OWENS LAKE MONITORING WELLS
REPORT NO.: C12186

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T918 were submitted to the Environmental Laboratory on October 3, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267.

Date Completed: 10/28/2013
Work Order No.: ZAC97
Job Card No.: J95000
Copies to: S. Jorat
N. Liu
K. Han
N. Perez
FileNet

Test Performed by: Environmental Lab,
Bureau of Standards
Report By: NP Date: 10/28/2013
Checked by: JLH Date: 10/29/13
APPROVED BY: Kevin Han JLH 10/29/13
Kevin Han Date
Interim Laboratory Manager
Environmental Laboratory

100001

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12186
 COC 13-2509
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN11815	Well# T918	Metals	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	25.5 mg/L	
		Lithium		10/24/13	0.319 mg/L	
		Magnesium		10/24/13	29.1 mg/L	
		Manganese		10/24/13	0.893 mg/L	
		Sodium		10/24/13	3690 mg/L	
LN11816	Well# T918	Nitrite -N	EPA 300.0	10/3/13	<0.03 mg/L	Environmental Lab
		Chloride			2080 mg/L	
		Phosphate			0.69 mg/L	
		Sulfate			141 mg/L	
LN11817	Well# T918	TDS	SM 2540 C	10/4/13	6250 mg/L	Environmental Lab
LN11818	Well# T918	Ammonia-N	SM 4500 NH3 G	10/16/13	67.7 mg/L	Bureau of Standards
LN11819	Well# T918	Alkalinity	SM 2320 B	10/10/13	2468 mg/L	Environmental Lab
		Carbonate			2320 mg/L	
LN11820	Well# T918	TOC	SM 5310 C	10/15/13	37 mg/L	Environmental Lab
LN11821	Well# T918	pH	SM 4500 H+B	10/2/13	10.65	Field Personnel
		Specific Conductivity	EPA 120.1	10/2/13	10350 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/3/13	938 ntu	Environmental Lab

Environmental Laboratory
 1630 N. Main Street, Bldg 7
 Los Angeles, CA. 90012
 (213) 367-7248/7399
 (213) 367-7285 FAX

Department of Water and Power
 City of Los Angeles

Chain of Custody Record

COC #: 13-2509 Page 1 of 1

Report C# 1186 IC# 95600 WO# 2AC97

Refrigerator # 813 Shelf 9/1 Bin#

Initial of Field Personnel: [Signature] No. of Field Test: []

Sample Location OWENS LAKE MONITORING WELL

Chem Lab. use only CHEMISTRY LOG NUMBERS (For sample duplicates use 1 or X)	Sample Date (24 Hr) Sample Time	Sample Location and Description	Preservatives	Container No.	Type	Size	Sample Matrix	Analysis Required	Test Result	Analyst(s) Assigned
LN 11815		WELL # 1919	HNO3	1	P	500 mL	WATER	METALS, B, Li, Mg, Mn, Na		Env Lab
11816	10-2 2330	Owens Lake T 819 T 918	NONE	1	P	250 mL	WATER	NO3*, Cl, PO4*, SO4		Env Lab
11817			NONE	1	P	500 mL	WATER	TDS		Env Lab
11818			H2SO4	1	P	500 mL	WATER	NH3-N		BSL
11819			NONE	1	P	500 mL	WATER	Alkalinity, Carbonate		Env Lab
11820			H2SO4	4	G	40 mL	WATER	TOC		Env Lab
11821			NONE	1	P	500 mL	WATER	pH, Specific Conductivity, Turbidity		Env Lab
		T = 21 °C								
		Sp c 10.35								
		PH: 10.65								
		D.O.: .39								
		Charge # ZAC97								
		* SAMPLE WITH SHORT HOLDING TIME (48 HRS). PLEASE BRING IN SAMPLE BEFORE IT EXPIRES.								

Requested by: Saeed Jorati Organization / Div. Water Operations
 Address: JFB RM 1468 Tele 71119 Fax.
 Analyst Approved by: [Signature] date

Priority	Printed Name	Signature	Time	Date
2-4 Hrs	Saeed Jorati	[Signature]	2:30	10-2-2013
1 Day	Saeed Jorati	[Signature]	8:15	10-3
2 Wks	B. SATHANDEH	[Signature]	8:15	10/3/13
4 Wks				
Specify				

COC13-2509

YC IS DE HO AP RR QM RB KA

Stamp: 10 OCT - 2 PM '13
 Chem Lab COC Form #1
 Revision: 10/22/09

300001ADWP

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2509

ANALYTICAL RESULT FOR METALS

TTLC (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY LOG NO.	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	SAMPLE DESCRIPTION									
LN11815	10/2/13	10/3/13	10/23/13	WELL# T918									
	LIMIT TTLC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	LN11815 mg/l						
METAL													
Antimony	500	15	200.7	0.002	0.010	1	0.0218						
Arsenic	500	5	200.7	0.005	0.025	1	0.182						
Barium	10000	100	200.7	0.005	0.025	1	0.279						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	0.00270J						
Chromium (T)	500	5	200.7	0.005	0.025	1	0.0993						
Cobalt	8000	80	200.7	0.001	0.005	1	0.0126						
Copper	2500	25	200.7	0.008	0.040	1	0.0332J						
Lead	1000	5	200.7	0.004	0.020	1	0.0554						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.133						
Nickel	2000	20	200.7	0.009	0.045	1	0.0598						
Selenium	100	1	200.7	0.009	0.045	1	0.0304J						
Silver	500	5	200.7	0.004	0.020	1	ND						
Thallium	700	7	200.7	0.004	0.020	1	ND						
Vanadium	2400	24	200.7	0.016	0.080	1	0.429						
Zinc	5000	250	200.7	0.002	0.010	1	0.166						

ND - Not Detected; below method detection limit

** - exceed TTLC limit

MDL - Method Detection Limit

* - exceed 10x STLC limit

R.L. - Report Limit

J - concentration above MDL and below RL

D. F. - Dilution Factor

Analyst : KC

200001

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/08/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: \$TTLCW-8110 (LN12010)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg mg/L

METAL	SAMPLE RESULT	SPIKE CONC	BS	MBS	(DUP) SPIKE CONC	BSD	%BSD	RPD	BS/BSD % REC LIMIT	RPD LIMIT
Antimony	ND	2	2.07	104	2	2.07	104	0.0%	70 - 130	< 30
Arsenic	ND	2	2.09	104	2	2.08	104	0.0%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2	2.01	100	2	2.03	102	2.0%	70 - 130	< 30
Cadmium	ND	2	1.96	98.0	2	1.96	98.0	0.0%	70 - 130	< 30
Chromium (T)	ND	2	1.94	97.0	2	1.95	97.5	0.5%	70 - 130	< 30
Cobalt	ND	2	2.02	101	2	2.01	100	1.0%	70 - 130	< 30
Copper	ND	2	1.96	98.0	2	1.96	98.0	0.0%	70 - 130	< 30
Lead	ND	2	2.02	101	2	2.02	101	0.0%	70 - 130	< 30
Molybdenum	ND	2	1.98	99.0	2	1.98	99.0	0.0%	70 - 130	< 30
Nickel	ND	2	1.97	98.5	2	1.97	98.5	0.0%	70 - 130	< 30
Selenium	ND	2	2.04	102	2	2.04	102	0.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2	2.02	101	2	2.02	101	0.0%	70 - 130	< 30
Vanadium	ND	2	1.96	98.0	2	1.97	98.5	0.5%	70 - 130	< 30
Zinc	ND	2	2.05	102	2	2.02	101	1.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

200002

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS I.D.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg (mg/L)

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.02	1	102	85 - 115
Arsenic	4.12	4	103	85 - 115
Barium	3.97	4	99.2	85 - 115
Beryllium	0.101	0.1	101	85 - 115
Cadmium	0.0990	0.1	99.0	85 - 115
Chromium (T)	0.392	0.4	98.0	85 - 115
Cobalt	1.01	1	101	85 - 115
Copper	0.491	0.5	98.2	85 - 115
Lead	1.03	1	103	85 - 115
Molybdenum	---	---	---	---
Nickel	0.994	1	99.4	85 - 115
Selenium	4.10	4	102	85 - 115
Silver	0.0970	0.1	97.0	85 - 115
Thallium	4.10	4	102	85 - 115
Vanadium	0.982	1	98.2	85 - 115
Zinc	1.01	1	101	85 - 115

Analyst: KC

Reviewed by: JMK 10/29/13

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT

PROJECT: OWENS LAKE MONITORING WELLS

REPORT NO.: C12187

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T928 were submitted to the Environmental Laboratory on October 3, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267.

Date Completed: 10/28/2013

Work Order No.: ZAC97

Job Card No.: J95000

Copies to: S. Jorat

N. Liu

K. Han

N. Perez

FileNet

Test Performed by: Environmental Lab,
Bureau of Standards

Report By: NP Date: 10/28/2013

Checked by: JM Date: 10/29/13

APPROVED BY: Kevin Han JM 10/29/13
Kevin Han Date

Interim Laboratory Manager
Environmental Laboratory

100001

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12187
 COC 13-2510
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN11822	Well# T928	Metals	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	8.46 mg/L	
		Lithium		10/24/13	0.319 mg/L	
		Magnesium		10/24/13	4.08 mg/L	
		Manganese		10/24/13	0.398 mg/L	
		Sodium		10/24/13	488 mg/L	
LN11823	Well# T928	Nitrite -N	EPA 300.0	10/3/13	<0.03 mg/L	Environmental Lab
		Chloride			232 mg/L	
		Phosphate			<0.1 mg/L	
		Sulfate			416 mg/L	
LN11824	Well# T928	TDS	SM 2540 C	10/4/13	1213 mg/L	Environmental Lab
LN11825	Well# T928	Ammonia-N	SM 4500 NH3 G	10/16/13	<0.20 mg/L	Bureau of Standards
LN11826	Well# T928	Alkalinity	SM 2320 B	10/10/13	230 mg/L	Environmental Lab
		Carbonate			104 mg/L	
LN11827	Well# T928	TOC	SM 5310 C	10/15/13	<0.4 mg/L	Environmental Lab
LN11828	Well# T928	pH	SM 4500 H+B	10/2/13	8.75	Field Personnel
		Specific Conductivity	EPA 120.1	10/2/13	2070 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/3/13	2.14 ntu	Environmental Lab

Environmental Laboratory
 1630 N. Main Street, Bldg 7
 Los Angeles, CA. 90012
 (213) 367-7248/7399
 (213) 367-7285 FAX

Department of Water and Power
 City of Los Angeles
Chain of Custody Record

COC #: 13-2510

Report C# JC# 95600 WO# ZAC97
 Refrig# 813 Shelf 9/1 Bin#
 Initial of Field Personnel: No. of Field Test

Sample Location OWENS LAKE MONITORING WELL

T928

Chem Lab use only CHEMISTRY LOG NUMBERS (For sample duplicates use 1 or 2)	Sample Date	(24 Hr) Sample Time	Sample Location and Description	Preservatives	Container No. Type Size	Sample Matrix	Analysis Required	Test Result	Analyst(s) Assigned	
LN 11822	8-2	3:20 PM	WELL # T928	HNO3	1 P 500mL	WATER	METALS, B, LI, MG, MN, NA		Env Lab	
11823			Owens Lake Well T928	NONE	1 P 250 mL	WATER	NO3*, CI, PO4*, SO4		Env Lab	
11824				NONE	1 P 500 mL	WATER	TDS		Env Lab	
11825				H2SO4	1 P 500 mL	WATER	NH3-N		BSL	
11826				NONE	1 P 500 mL	WATER	Alkalinity, Carbonate		Env Lab	
11827				H2SO4	4 G 40mL	WATER	TOC		Env Lab	
11828				NONE	1 P 500 mL	WATER	pH, Specific Conductivity, Turbidity		Env Lab	
			T: 25.9 C							
			SP Con: 2.07							
			D.O.: 8.15							
			PH: 8.75							
			Change # ZAC97							
			* SAMPLE WITH SHORT HOLDING TIME (48 HRS). PLEASE BRING IN SAMPLE BEFORE IT EXPIRES.							

Requested by: Saeed Jorjat
 Address: JFB RM 1468
 Organization / Div: Water Operations
 Tele: 71119
 Fax:

Analyst Approved by: _____
 date: _____

Priority:
 2-4 Hrs
 1 Day
 2 Wks
 4 Wks
 Specify

Date & Time Stamp
 OCT -2 AM '03
 LADWP
 Chem Lab 906, Form #
 Revision 12/2001

Printed Name	Signature	Time	Date
Saeed Jorjat	<i>Saeed Jorjat</i>	3:00 PM	10-2-2013
Saeed Jorjat	<i>Saeed Jorjat</i>	8:15 AM	10-3-2013
B. SHAH ANDEH	<i>B. SHAH ANDEH</i>	0815	10/3/13

COC13-2510

300001

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2510

ANALYTICAL RESULT FOR METALS

TTLc (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY LOG NO	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	SAMPLE DESCRIPTION									
LN11822	10/2/13	10/3/13	10/23/13	WELL #T928									
METAL	LIMIT TTLc (mg/kg)	LIMIT STLc (mg/l)	METHOD	MDL	RL	D. F.	LN11822 mg/l						
Antimony	500	15	200.7	0.002	0.010	1	ND						
Arsenic	500	5	200.7	0.005	0.025	1	0.105						
Barium	10000	100	200.7	0.005	0.025	1	0.0214J						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	ND						
Chromium (T)	500	5	200.7	0.005	0.025	1	ND						
Cobalt	8000	80	200.7	0.001	0.005	1	ND						
Copper	2500	25	200.7	0.008	0.040	1	ND						
Lead	1000	5	200.7	0.004	0.020	1	0.00600J						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.0147						
Nickel	2000	20	200.7	0.009	0.045	1	ND						
Selenium	100	1	200.7	0.009	0.045	1	ND						
Silver	500	5	200.7	0.004	0.020	1	ND						
Thallium	700	7	200.7	0.004	0.020	1	0.00700J						
Vanadium	2400	24	200.7	0.016	0.080	1	ND						
Zinc	5000	250	200.7	0.002	0.010	1	0.0268						

ND - Not Detected; below method detection limit

** - exceed TTLc limit

MDL - Method Detection Limit

* - exceed 10x STLc limit

R.L. - Report Limit

J - concentration above MDL and below RL

D. F. - Dilution Factor

Analyst : KC

200001

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/23/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: STTLCW-8160 (LN11971)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg mg/L

METAL	SAMPLE RESULT	SPIKE CONC	BS	%BS	(DUP) SPIKE CONC	BSD	%BSD	RPD	BS/BSD % REC LIMIT	RPD LIMIT
Antimony	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Arsenic	ND	2.00	2.11	106	2.00	2.10	105	0.9%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Cadmium	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Chromium (T)	ND	2.00	2.01	100	2.00	1.98	99.0	1.0%	70 - 130	< 30
Cobalt	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Copper	ND	2.00	2.01	100	2.00	2.00	100	0.0%	70 - 130	< 30
Lead	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Molybdenum	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Nickel	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30
Selenium	ND	2.00	2.10	105	2.00	2.09	104	1.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2.00	2.04	102	2.00	2.03	102	0.0%	70 - 130	< 30
Vanadium	ND	2.00	2.03	102	2.00	2.04	102	0.0%	70 - 130	< 30
Zinc	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS I.D.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg (mg/L)

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.04	1.00	104	85 - 115
Arsenic	4.19	4.00	105	85 - 115
Barium	3.89	4.00	97.2	85 - 115
Beryllium	0.105	0.100	105	85 - 115
Cadmium	0.100	0.100	100	85 - 115
Chromium (T)	0.404	0.400	101	85 - 115
Cobalt	1.02	1.00	102	85 - 115
Copper	0.496	0.500	99.2	85 - 115
Lead	1.04	1.00	104	85 - 115
Molybdenum	---	---	---	---
Nickel	1.02	1.00	102	85 - 115
Selenium	4.25	4.00	106	85 - 115
Silver	0.100	0.100	100	85 - 115
Thallium	4.16	4.00	104	85 - 115
Vanadium	1.02	1.00	102	85 - 115
Zinc	1.02	1.00	102	85 - 115

Analyst: KC

Reviewed by: Joke 10/29/13

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT
PROJECT: OWENS LAKE MONITORING WELLS
REPORT NO.: C12188

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T929 were submitted to the Environmental Laboratory on October 4, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267.

Date Completed: 10/28/2013
Work Order No.: ZAC97
Job Card No.: J95000
Copies to: S. Jorat
N. Liu
K. Han
N. Perez
FileNet

Test Performed by: Environmental Lab,
Bureau of Standards

Report By: NP Date: 10/28/2013
Checked by: Julie Date: 10/29/13

APPROVED BY: Kevin Han / Julie 10/29/13
Kevin Han Date

Interim Laboratory Manager
Environmental Laboratory

100001

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12188
 COC 13-2526
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN11957	Well# T929	Metals	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	1.75 mg/L	
		Lithium		10/24/13	0.779 mg/L	
		Magnesium		10/24/13	48.8 mg/L	
		Manganese		10/24/13	0.129 mg/L	
		Sodium		10/24/13	106 mg/L	
LN11958	Well# T929	Nitrite -N	EPA 300.0	10/4/13	0.23 mg/L	Environmental Lab
		Chloride			77 mg/L	
		Phosphate			<0.1 mg/L	
		Sulfate			14.9 mg/L	
LN11959	Well# T929	TDS	SM 2540 C	10/7/13	646 mg/L	Environmental Lab
LN11960	Well# T929	Ammonia-N	SM 4500 NH3 G	10/16/13	5.69 mg/L	Bureau of Standards
LN11961	Well# T929	Alkalinity	SM 2320 B	10/10/13	410 mg/L	Environmental Lab
		Carbonate			0 mg/L	
LN11962	Well# T929	TOC	SM 5310 C	10/15/13	0.79 mg/L	Environmental Lab
LN11963	Well# T929	pH	SM 4500 H+B	10/3/13	7.75	Field Personnel
		Specific Conductivity	EPA 120.1	10/3/13	1120 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/4/13	2.14 ntu	Environmental Lab

Environmental Laboratory
 1630 N. Main Street, Bldg 7
 Los Angeles, CA. 90012
 (213) 367-7248/7399
 (213) 367-7285 FAX

Department of Water and Power
 City of Los Angeles

Chain of Custody Record

COC #: 13-2526

Page 1 of 1

Report C# P188 JC# J95600 WO# ZAC97

Refrig# _____ Shelf _____ Bin# _____

Initial of Field Personnel: _____ No. of Field Test: _____

Sample Location OWENS LAKE MONITORING WELL

Temp: 5.1°C
 25 10/13/13
 7:00 AM

Chem. Lab use only CHEMISTRY LOG NUMBERS (For sample duplicates use 1 or X)	Sample Date	(24 Hr) Sample Time	Sample Location and Description	Preservatives	Container		Sample Matrix	Analysis Required	Test Result	Analysis(s) Assigned
					No.	Type				
1 LN11957	10/3/13	11:00	WELL # M1114 T929	HNO3	1	P	500mL WATER	METALS, B, LI, Mg, Mn, Na		Env Lab
2 LN11958				NONE	1	P	250 mL WATER	NO3*, Cl, PO4*, SO4		Env Lab
3 LN11959				NONE	1	P	500 mL WATER	TDS		Env Lab
4 LN11960				H2SO4	1	P	500 mL WATER	NH3-N		BSL
5 LN11961				NONE	1	P	500 mL WATER	Alkalinity, Carbonate		Env Lab
6 LN11962				H2SO4	4	G	40mL WATER	TOC		Env Lab
7 LN11963				NONE	1	P	500 mL WATER	pH, Specific Conductivity, Turbidity		Env Lab
8										
9										
10										
11										
12										
13										
14										
15										
16										

* SAMPLE WITH SHORT HOLDING TIME (48 HRS). PLEASE BRING IN SAMPLE BEFORE IT EXPIRES.

Requested by: Saeed Jorjat Organization / Div: _____ Water Operations
 Address: JFB RM 1468 Tele: 71119 Fax: _____
 Analyst Approved by: _____ date _____

Date & Time Stamp: LADWP
 Priority: 2-4 Hrs
 1Day
 2 Wks
 4Wks
 Specify

Printed Name: _____ Signature: _____
 Sampled by: Kelvin Hoang
 Relinquished by: DUSTIN FISCHER
 Received by: Ron White
 Time: 11 AM Date: 10/03/13
6:50 AM 10/4/13
6:50 10/4/13

COC13-2526
 000001

ATTACHMENT #1

METALS

EPA METHOD 200.7

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/23/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: STTLCW-8160 (LN11971)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg mg/L

METAL	SAMPLE RESULT	SPIKE CONC	BS	%BS	(DUP) SPIKE CONC	BSD	%BSD	RPD	BS/SPD % REC. LIMIT	RPD LIMIT
Antimony	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Arsenic	ND	2.00	2.11	106	2.00	2.10	105	0.9%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Cadmium	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Chromium (T)	ND	2.00	2.01	100	2.00	1.98	99.0	1.0%	70 - 130	< 30
Cobalt	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Copper	ND	2.00	2.01	100	2.00	2.00	100	0.0%	70 - 130	< 30
Lead	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Molybdenum	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Nickel	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30
Selenium	ND	2.00	2.10	105	2.00	2.09	104	1.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2.00	2.04	102	2.00	2.03	102	0.0%	70 - 130	< 30
Vanadium	ND	2.00	2.03	102	2.00	2.04	102	0.0%	70 - 130	< 30
Zinc	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

200002

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS I.D.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg (mg/L)

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.04	1.00	104	85 - 115
Arsenic	4.19	4.00	105	85 - 115
Barium	3.89	4.00	97.2	85 - 115
Beryllium	0.105	0.100	105	85 - 115
Cadmium	0.100	0.100	100	85 - 115
Chromium (T)	0.404	0.400	101	85 - 115
Cobalt	1.02	1.00	102	85 - 115
Copper	0.496	0.500	99.2	85 - 115
Lead	1.04	1.00	104	85 - 115
Molybdenum	---	---	---	---
Nickel	1.02	1.00	102	85 - 115
Selenium	4.25	4.00	106	85 - 115
Silver	0.100	0.100	100	85 - 115
Thallium	4.16	4.00	104	85 - 115
Vanadium	1.02	1.00	102	85 - 115
Zinc	1.02	1.00	102	85 - 115

Analyst: KC

Reviewed by:

JLR 10/29/13

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT

PROJECT: OWENS LAKE MONITORING WELLS

REPORT NO.: C12189

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
<hr/>	
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003
<hr/>	

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T926 were submitted to the Environmental Laboratory on October 4, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267.

Date Completed: 10/28/2013
Work Order No.: ZAC97
Job Card No.: J95000
Copies to: S. Jorat
N. Liu
K. Han
N. Perez
FileNet

Test Performed by: Environmental Lab,
Bureau of Standards

Report By: NP Date: 10/28/2013
Checked by: JMC Date: 10/22/13

APPROVED BY: Kevin Han / JMC 10/22/13
Kevin Han Date
Interim Laboratory Manager
Environmental Laboratory

100001

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12189
 COC 13-2527
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN11964	Well# T926	Metals	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	0.432 mg/L	
		Lithium		10/24/13	0.030 mg/L	
		Magnesium		10/24/13	7.31 mg/L	
		Manganese		10/24/13	0.115 mg/L	
		Sodium		10/24/13	39.5 mg/L	
LN11965	Well# T926	Nitrite -N	EPA 300.0	10/4/13	<0.03 mg/L	Environmental Lab
		Chloride			20.8 mg/L	
		Phosphate			<0.1 mg/L	
		Sulfate			15.4 mg/L	
LN11966	Well# T926	TDS	SM 2540 C	10/7/13	246 mg/L	Environmental Lab
LN11967	Well# T926	Ammonia-N	SM 4500 NH3 G	10/16/13	<0.20 mg/L	Bureau of Standards
LN11968	Well# T926	Alkalinity	SM 2320 B	10/10/13	152 mg/L	Environmental Lab
		Carbonate			0 mg/L	
LN11969	Well# T926	TOC	SM 5310 C	10/15/13	<0.4 mg/L	Environmental Lab
LN11970	Well# T926	pH	SM 4500 H+B	10/3/13	7.72	Field Personnel
		Specific Conductivity	EPA 120.1	10/3/13	390 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/3/13	13.4 ntu	Environmental Lab

Environmental Laboratory
 1630 N. Main Street, Bldg 7
 Los Angeles, CA. 90012
 (213) 367-7248/7399
 (213) 367-7285 FAX

Department of Water and Power
 City of Los Angeles
Chain of Custody Record

COC #: 13-2527

Report C# 1284 JC# J95606 WO#

Refrig#: Shelf Bin#

Initial of Field Personnel:

Sample Location OWENS LAKE MONITORING WELL

No. of Field Test:

Temp: 2.7°C
 Page 1 of 1
 10/4/13
 7:35am
 ZAC97

Chem Lab. use only CHEMISTRY LOG NUMBERS (For sample duplicates use -1 or -X)	Sample Date	(24 Hr) Sample Time	Sample Location and Description	Preservatives	Container		Sample Matrix	Analysis Required	Test Result	Analyst(s) Assigned
					No.	Type				
LN11964	10/3/13	14:45	WELL # T926	HNO3	1	P	500mL WATER	METALS, B, Li, Mg, Mn, Na		Env Lab
LN11965				NONE	1	P	250 mL WATER	NO3*, Cl, PO4*, SO4		Env Lab
LN11966				NONE	1	P	500 mL WATER	TDS		Env Lab
LN11967				H2SO4	1	P	500 mL WATER	NH3-N		BSL
LN11968				NONE	1	P	500 mL WATER	Alkalinity, Carbonate		Env Lab
LN11969				H2SO4	4	G	40mL WATER	TOC		Env Lab
LN11970				NONE	1	P	500 mL WATER	pH, Specific Conductivity, Turbidity		Env Lab
8										
9										
10										
11										
12										
13										
14										
15										
16										

* SAMPLE WITH SHORT HOLDING TIME (48 HRS). PLEASE BRING IN SAMPLE BEFORE IT EXPIRES.

Date & Time Stamp: 10/4/13 5:05 AM

Requested by: Saeed Jorjat Organization / Div: Water Operations

Address: JFB RM 1468 Organization / Div: 71119

Water Operations

Analyst Approved by: date date

Priority: 2-4 Hrs, 1Day, 2 Wks, 4Wks, Specify

YC, DE, AD, RR, RM, NP, KH

Signature: [Signature]

Printed Name: DUSTIN FISCHER

Sampled by: [Signature]

Relinquished by: [Signature]

Received by: [Signature]

Time: 8:45, 6:50, 6:50

Date: 10/13, 10/4/13, 10/4/13

COC13-2527

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2527

ANALYTICAL RESULT FOR METALS

TTLC (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY LOGNO	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	SAMPLE DESCRIPTION									
LN11964	10/3/13	10/4/13	10/23/13	WELL T926									
	LIMIT TTLC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	LN11964 mg/l						
METAL													
Antimony	500	15	200.7	0.002	0.010	1	ND						
Arsenic	500	5	200.7	0.005	0.025	1	0.00950J						
Barium	10000	100	200.7	0.005	0.025	1	0.0415						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	ND						
Chromium (T)	500	5	200.7	0.005	0.025	1	0.0174J						
Cobalt	8000	80	200.7	0.001	0.005	1	ND						
Copper	2500	25	200.7	0.008	0.040	1	ND						
Lead	1000	5	200.7	0.004	0.020	1	ND						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.0220						
Nickel	2000	20	200.7	0.009	0.045	1	ND						
Selenium	100	1	200.7	0.009	0.045	1	ND						
Silver	500	5	200.7	0.004	0.020	1	0.00600J						
Thallium	700	7	200.7	0.004	0.020	1	0.00920J						
Vanadium	2400	24	200.7	0.016	0.080	1	ND						
Zinc	5000	250	200.7	0.002	0.010	1	0.105						

ND - Not Detected; below method detection limit
 MDL - Method Detection Limit
 R.L. - Report Limit
 D. F. - Dilution Factor

** - exceed TTLC limit
 * - exceed 10x STLC limit
 J - concentration above MDL and below RL

Analyst : KC

200001

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/23/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: STTLCW-8160 (LN11971)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg mg/L

METAL	SAMPLE RESULT	SPIKE CONC	BS	%BS	(DUP) SPIKE CONC	BSD	%BSD	RPD	BS/BSD % REC LIMIT	RPD LIMIT
Antimony	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Arsenic	ND	2.00	2.11	106	2.00	2.10	105	0.9%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Cadmium	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Chromium (T)	ND	2.00	2.01	100	2.00	1.98	99.0	1.0%	70 - 130	< 30
Cobalt	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Copper	ND	2.00	2.01	100	2.00	2.00	100	0.0%	70 - 130	< 30
Lead	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Molybdenum	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Nickel	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30
Selenium	ND	2.00	2.10	105	2.00	2.09	104	1.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2.00	2.04	102	2.00	2.03	102	0.0%	70 - 130	< 30
Vanadium	ND	2.00	2.03	102	2.00	2.04	102	0.0%	70 - 130	< 30
Zinc	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS ID.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg (mg/L)

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.04	1.00	104	85 - 115
Arsenic	4.19	4.00	105	85 - 115
Barium	3.89	4.00	97.2	85 - 115
Beryllium	0.105	0.100	105	85 - 115
Cadmium	0.100	0.100	100	85 - 115
Chromium (T)	0.404	0.400	101	85 - 115
Cobalt	1.02	1.00	102	85 - 115
Copper	0.496	0.500	99.2	85 - 115
Lead	1.04	1.00	104	85 - 115
Molybdenum	---	---	---	---
Nickel	1.02	1.00	102	85 - 115
Selenium	4.25	4.00	106	85 - 115
Silver	0.100	0.100	100	85 - 115
Thallium	4.16	4.00	104	85 - 115
Vanadium	1.02	1.00	102	85 - 115
Zinc	1.02	1.00	102	85 - 115

Analyst: KC

Reviewed by:

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT
PROJECT: OWENS LAKE MONITORING WELLS
REPORT NO.: C12190

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200005

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12190
 COC 13-2528
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN11971	Well# T919	Metals	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	3.93 mg/L	
		Lithium		10/24/13	0.124 mg/L	
		Magnesium		10/24/13	0.365 mg/L	
		Manganese		10/24/13	0.028 mg/L	
		Sodium		10/24/13	585 mg/L	
LN11972	Well# T919	Nitrite -N	EPA 300.0	10/4/13	<0.03 mg/L	Environmental Lab
		Chloride			228 mg/L	
		Phosphate			<0.1 mg/L	
		Sulfate			151 mg/L	
LN11973	Well# T919	TDS	SM 2540 C	10/7/13	1603 mg/L	Environmental Lab
LN11974	Well# T919	Ammonia-N	SM 4500 NH3 G	10/16/13	2.45 mg/L	Bureau of Standards
LN11975	Well# T919	Alkalinity	SM 2320 B	10/10/13	912 mg/L	Environmental Lab
		Carbonate			92 mg/L	
LN11976	Well# T919	TOC	SM 5310 C	10/15/13	2.9 mg/L	Environmental Lab
LN11977	Well# T919	pH	SM 4500 H+B	10/3/13	12.0	Field Personnel
		Specific Conductivity	EPA 120.1	10/3/13	5050 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/3/13	32.2 ntu	Environmental Lab

Environmental Laboratory
 1630 N. Main Street, Bldg 7
 Los Angeles, CA. 90012
 (213) 367-7248/7399
 (213) 367-7285 FAX

Department of Water and Power
 City of Los Angeles
Chain of Custody Record

COC #: 13-2528

Report Ch: 12190 JC# 595600 WO#

Refrig#: Shelf Bin#

Initial of Field Personnel: No. of Field Test:

Temp: 3.1°C
 10/13 7:45 AM
 Page 1 of 1
 ZAC97

Sample Location OWENS LAKE MONITORING WELL

CHEMISTRY LOG NUMBERS (For sample duplicates use 1 of X)	Sample Date	(24 Hr) Sample Time	Sample Location and Description	Preservatives	Container		Sample Matrix	Analysis Required	Test Result	Analyst(s) Assigned
					No.	Type				
1 LN11971	10/3	13:15	WELL # 7919	HNO3	1	P	500 mL	METALS, B, LI, Mg, Mn, Na		Env Lab
2 LN11972				NONE	1	P	250 mL	NO3*, Cl, PO4*, SO4		Env Lab
3 LN11973				NONE	1	P	500 mL	TDS		Env Lab
4 LN11974				H2SO4	1	P	500 mL	NH3-N		BSL
5 LN11975				NONE	1	P	500 mL	Alkalinity, Carbonate		Env Lab
6 LN11976				H2SO4	4	G	40 mL	TOC		Env Lab
7 LN11977				NONE	1	P	500 mL	pH, Specific Conductivity, Turbidity		Env Lab
8										
9										
10										
11										
12										
13										
14										
15										
16										

* SAMPLE WITH SHORT HOLDING TIME (48 HRS). PLEASE BRING IN SAMPLE BEFORE IT EXPIRES.

Date & Time Stamp: LADWP
 Requested by: Saeed Jorati
 Address: JFB RM 1468
 Organization / Div: Water Operations
 Tele: 71119
 Fax: _____
 Analyst Approved by: _____ date: _____

Priority:
 2-4 Hrs
 1 Day
 2 Wks
 4 Wks
 Specify

Printed Name	Signature	Time	Date
Sampled by: Kelvin Hoang	<i>Kevin Hoang</i>	1:15 PM	10/3/13
Relinquished by: JUSTIN FISCHER	<i>Justin Fischer</i>	6:55	10/4
Received by: Ron White	<i>Ron White</i>	6:55	10/4/13

YC
 BE
 AD
 RR
 GM
 NP
 KH

Chem Lab COC Form #1
 Revision: 10/2/2001

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2528

ANALYTICAL RESULT FOR METALS

TTLC (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY LOG NO	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	SAMPLE DESCRIPTION									
LN11971	10/3/13	10/4/13	10/23/13	WELL T919									
	LIMIT TTLC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	LN11971 mg/l						
Antimony	500	15	200.7	0.002	0.010	1	ND						
Arsenic	500	5	200.7	0.005	0.025	1	0.0883						
Barium	10000	100	200.7	0.005	0.025	1	0.0579						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	ND						
Chromium (T)	500	5	200.7	0.005	0.025	1	0.00720J						
Cobalt	8000	80	200.7	0.001	0.005	1	ND						
Copper	2500	25	200.7	0.008	0.040	1	ND						
Lead	1000	5	200.7	0.004	0.020	1	0.00900J						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.0349						
Nickel	2000	20	200.7	0.009	0.045	1	0.0149J						
Selenium	100	1	200.7	0.009	0.045	1	0.0210J						
Silver	500	5	200.7	0.004	0.020	1	ND						
Thallium	700	7	200.7	0.004	0.020	1	0.00480J						
Vanadium	2400	24	200.7	0.016	0.080	1	ND						
Zinc	5000	250	200.7	0.002	0.010	1	0.0535						

ND - Not Detected; below method detection limit

** - exceed TTLC limit

MDL - Method Detection Limit

* - exceed 10x STLC limit

R.L. - Report Limit

J - concentration above MDL and below RL

D. F. - Dilution Factor

Analyst : KC

200001

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2528

ANALYTICAL RESULT FOR METALS TTLC (Total Threshold Limit Concentration) EPA Method 200.7 Sample Matrix: WATER

LABORATORY LOG NO.	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	SAMPLE DESCRIPTION									
LN11971 Dup	10/03/13	10/4/13	10/23/13	WELL T919									
METAL	LIMIT TTLC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	Dup LN11971 mg/l						
Antimony	500	15	200.7	0.002	0.010	1	ND						
Arsenic	500	5	200.7	0.005	0.025	1	0.0814						
Barium	10000	100	200.7	0.005	0.025	1	0.0497						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	ND						
Chromium (T)	2500	5	200.7	0.005	0.025	1	0.0106J						
Cobalt	8000	80	200.7	0.001	0.005	1	ND						
Copper	2500	25	200.7	0.008	0.040	1	0.0128J						
Lead	1000	5	200.7	0.004	0.020	1	0.00640J						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.0353						
Nickel	2000	20	200.7	0.009	0.045	1	0.0213J						
Selenium	100	1	200.7	0.009	0.045	1	0.0150J						
Silver	500	5	200.7	0.004	0.020	1	0.00810J						
Thallium	700	7	200.7	0.004	0.020	1	ND						
Vanadium	2400	24	200.7	0.016	0.080	1	ND						
Zinc	5000	250	200.7	0.002	0.010	1	0.0349						

ND - Not Detected; below method detection limit

MDL - Method Detection Limit

R.L. - Report Limit

D. F. - Dilution Factor

** - exceed TTLC limit

* - exceed 10x STLC limit

J - concentration above MDL and below RL

Analyst: KC

200002

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/23/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: STTLCW-8160 (LN11971)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg mg/L

METAL	SAMPLE RESULT	SPIKE CONC	BS	%BS	(DUP) SPIKE CONC	BSD	%BSD	RPD	BS/BSD % REC LIMIT	RPD LIMIT
Antimony	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Arsenic	ND	2.00	2.11	106	2.00	2.10	105	0.9%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Cadmium	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Chromium (T)	ND	2.00	2.01	100	2.00	1.98	99.0	1.0%	70 - 130	< 30
Cobalt	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Copper	ND	2.00	2.01	100	2.00	2.00	100	0.0%	70 - 130	< 30
Lead	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Molybdenum	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Nickel	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30
Selenium	ND	2.00	2.10	105	2.00	2.09	104	1.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2.00	2.04	102	2.00	2.03	102	0.0%	70 - 130	< 30
Vanadium	ND	2.00	2.03	102	2.00	2.04	102	0.0%	70 - 130	< 30
Zinc	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

QA/QC Report

II. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

DATE ANALYZED: 10/23/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: STTLCW-8160 (LN11971)

LAB SAMPLE I.D.: LN11971

UNIT: (Circle One) mg/kg

mg/L

METAL	SAMPLE RESULT	SPIKE CONC	MS	%MS	(DUP) SPIKE CONC	MSD	%MSD	RPD	MS/MSD % REC LIMIT	RPD LIMIT
Antimony	ND	2.00	9.60	96	2.00	9.47	94.8	1.3%	70 - 130	< 30
Arsenic	0.0883	2.00	10.1	100	2.00	9.99	99	1.0%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2.00	10.3	103	2.00	10.2	102	1.0%	70 - 130	< 30
Cadmium	ND	2.00	9.20	92	2.00	9.09	90.8	1.3%	70 - 130	< 30
Chromium (T)	0.00720	2.00	9.55	95.4	2.00	9.56	95.6	0.2%	70 - 130	< 30
Cobalt	ND	2.00	9.34	93.4	2.00	9.22	92.2	1.3%	70 - 130	< 30
Copper	ND	2.00	9.73	97.2	2.00	9.55	95.6	1.7%	70 - 130	< 30
Lead	0.00900	2.00	9.12	91.2	2.00	9.02	90.2	1.1%	70 - 130	< 30
Molybdenum	0.0349	2.00	9.50	94.6	2.00	9.42	93.8	0.8%	70 - 130	< 30
Nickel	0.0149	2.00	9.75	97.4	2.00	9.62	96	1.4%	70 - 130	< 30
Selenium	0.0210	2.00	9.24	92.2	2.00	9.15	91.2	1.1%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	0.00480	2.00	8.65	86.4	2.00	8.56	85.6	0.9%	70 - 130	< 30
Vanadium	ND	2.00	10.2	102	2.00	10.1	101	1.0%	70 - 130	< 30
Zinc	0.0535	2.00	9.45	94	2.00	9.32	92.6	1.5%	70 - 130	< 30

MS = Matrix Spike MSD = Matrix Spike Duplicate
 %MS = Percent Recovery of Matrix Spike

RPD = Relative Percent Difference
 %MSD = Percent Recovery of Matrix Spike Duplicate

Analyst: KC

200004

III. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS ID.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg **mg/L**

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.04	1.00	104	85 - 115
Arsenic	4.19	4.00	105	85 - 115
Barium	3.89	4.00	97.2	85 - 115
Beryllium	0.105	0.100	105	85 - 115
Cadmium	0.100	0.100	100	85 - 115
Chromium (T)	0.404	0.400	101	85 - 115
Cobalt	1.02	1.00	102	85 - 115
Copper	0.496	0.500	99.2	85 - 115
Lead	1.04	1.00	104	85 - 115
Molybdenum	---	---	---	---
Nickel	1.02	1.00	102	85 - 115
Selenium	4.25	4.00	106	85 - 115
Silver	0.100	0.100	100	85 - 115
Thallium	4.16	4.00	104	85 - 115
Vanadium	1.02	1.00	102	85 - 115
Zinc	1.02	1.00	102	85 - 115

Analyst: KC

Reviewed by: *JL* 10/29/17

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT
PROJECT: OWENS LAKE MONITORING WELLS
REPORT NO.: C12191

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T931 were submitted to the Environmental Laboratory on October 4, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267.

Date Completed: 10/28/2013
Work Order No.: ZAC97
Job Card No.: J95000
Copies to: S. Jorat
N. Liu
K. Han
N. Perez
FileNet

Test Performed by: Environmental Lab,
Bureau of Standards
Report By: NP Date: 10/28/2013
Checked by: JNH Date: 10/29/13
APPROVED BY: Kevin Han/JNH 10/29/13
Kevin Han Date
Interim Laboratory Manager
Environmental Laboratory

100001

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12191
 COC 13-2529
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN11978	Well# T931	Metals	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	0.309 mg/L	
		Lithium		10/24/13	0.060 mg/L	
		Magnesium		10/24/13	18.1 mg/L	
		Manganese		10/24/13	0.586 mg/L	
		Sodium		10/24/13	75.7 mg/L	
LN11979	Well# T931	Nitrite -N	EPA 300.0	10/4/13	<0.03 mg/L	Environmental Lab
		Chloride			16.0 mg/L	
		Phosphate			<0.1 mg/L	
		Sulfate			51.5 mg/L	
LN11980	Well# T931	TDS	SM 2540 C	10/7/13	453 mg/L	Environmental Lab
LN11981	Well# T931	Ammonia-N	SM 4500 NH3 G	10/16/13	3.44 mg/L	Bureau of Standards
LN11982	Well# T931	Alkalinity	SM 2320 B	10/10/13	310 mg/L	Environmental Lab
		Carbonate			0 mg/L	
LN11983	Well# T931	TOC	SM 5310 C	10/15/13	2.5 mg/L	Environmental Lab
LN11984	Well# T931	pH	SM 4500 H+B	10/3/13	7.08	Field Personnel
		Specific Conductivity	EPA 120.1	10/3/13	790 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/3/13	9.52 ntn	Environmental Lab

Environmental Laboratory
 1630 N. Main Street, Bldg 7
 Los Angeles, CA. 90012
 (213) 367-7248/7399
 (213) 367-7285 FAX

Department of Water and Power
 City of Los Angeles
Chain of Custody Record

COC #: 13-2529

Report Ch# 12-111 JC# 095600 WO# ZAC97

Refrig# _____ Shelf _____ Bin# _____
 Initial of Field Personnel: ACC No. of Field Test _____

Sample Location OWENS LAKE MONITORING WELL MW-2, 7931

CHEMISTRY LOG NUMBERS (For sample duplicates use .1 or .X)	Sample Date	(24 Hr) Sample Time	Sample Location and Description	Preservatives	Container		Sample Matrix	Analysis Required	Test Result	Analyst(s) Assigned
					No.	Type				
1 LN11978	10/3	9:25	WELL # 7931	HNO3	1	P	500mL WATER	METALS, B, Li, Mg, Mn, Na		Env Lab
2 LN11979				NONE	1	P	250 mL WATER	NO3*, Cl, PO4*, SO4		Env Lab
3 LN11980				NONE	1	P	500 mL WATER	TDS		Env Lab
4 LN11981				H2SO4	1	P	500 mL WATER	NH3-N		BSL
5 LN11982				NONE	1	P	500 mL WATER	Alkalinity, Carbonate		Env Lab
6 LN11983				H2SO4	4	G	40mL WATER	TOC		Env Lab
7 LN11984				NONE	1	P	500 mL WATER	pH, Specific Conductivity, Turbidity		Env Lab
8										
9										
10										
11										
12										
13										
14										
15										
16										

* SAMPLE WITH SHORT HOLDING TIME (48 HRS). PLEASE BRING IN SAMPLE BEFORE IT EXPIRES.

Requested by: Saeed Jorjat Organization / Div. Water Operations
 Address: JFB RM 1468 Tele 71119 Fax _____

Analyst Approved by _____ date _____

Priority:
 2-4 Hrs
 1 Day
 2 Wks
 4 Wks
 Specify _____

NEED BY: ENV. CHM. DIV. 10/3 AM 7:30
 LADWP
 Chem Lab COC Form #1
 Revision: 10/2/01

Printed Name: James C. Campbell
Signature: [Signature]
 Sampled by: James C. Campbell
 Relinquished by: [Signature]
 Received by: Ron White

Time: 9:25AM 10/3/13
 6:55 10/4
 6:55 10/4/13

COC13-2529 00001

Temp: 29.0
 10/4/13
 7:52 AM

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2529

ANALYTICAL RESULT FOR METALS

TTLC (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY LOG NO.	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	SAMPLE DESCRIPTION									
LN11978	10/3/13	10/4/13	10/23/13	WELL T931									
METAL	LIMIT TTLC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	LN11978 mg/l						
Antimony	500	15	200.7	0.002	0.010	1	0.00770J						
Arsenic	500	5	200.7	0.005	0.025	1	ND						
Barium	10000	100	200.7	0.005	0.025	1	0.0808						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	ND						
Chromium (T)	500	5	200.7	0.005	0.025	1	ND						
Cobalt	8000	80	200.7	0.001	0.005	1	ND						
Copper	2500	25	200.7	0.008	0.040	1	ND						
Lead	1000	5	200.7	0.004	0.020	1	0.0115J						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.00810						
Nickel	2000	20	200.7	0.009	0.045	1	ND						
Selenium	100	1	200.7	0.009	0.045	1	ND						
Silver	500	5	200.7	0.004	0.020	1	ND						
Thallium	700	7	200.7	0.004	0.020	1	0.00660J						
Vanadium	2400	24	200.7	0.016	0.080	1	ND						
Zinc	5000	250	200.7	0.002	0.010	1	0.108						

ND - Not Detected; below method detection limit

MDL - Method Detection Limit

R.L. - Report Limit

D. F. - Dilution Factor

** - exceed TTLC limit

* - exceed 10x STLC limit

J - concentration above MDL and below RL

Analyst : KC

200001

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/23/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: \$TTLCW-8160 (LN11971)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg mg/L

METAL	SAMPLE RESULT	SPRKE CONC	BS	%BS	(DUP) SPIKE CONC	BSD	%BSD	RPD	BS/BSD % REC LIMIT	RPD LIMIT
Antimony	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Arsenic	ND	2.00	2.11	106	2.00	2.10	105	0.9%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Cadmium	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Chromium (T)	ND	2.00	2.01	100	2.00	1.98	99.0	1.0%	70 - 130	< 30
Cobalt	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Copper	ND	2.00	2.01	100	2.00	2.00	100	0.0%	70 - 130	< 30
Lead	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Molybdenum	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Nickel	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30
Selenium	ND	2.00	2.10	105	2.00	2.09	104	1.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2.00	2.04	102	2.00	2.03	102	0.0%	70 - 130	< 30
Vanadium	ND	2.00	2.03	102	2.00	2.04	102	0.0%	70 - 130	< 30
Zinc	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

200002

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS I.D.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg

mg/L

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.04	1.00	104	85 - 115
Arsenic	4.19	4.00	105	85 - 115
Barium	3.89	4.00	97.2	85 - 115
Beryllium	0.105	0.100	105	85 - 115
Cadmium	0.100	0.100	100	85 - 115
Chromium (T)	0.404	0.400	101	85 - 115
Cobalt	1.02	1.00	102	85 - 115
Copper	0.496	0.500	99.2	85 - 115
Lead	1.04	1.00	104	85 - 115
Molybdenum	---	---	---	---
Nickel	1.02	1.00	102	85 - 115
Selenium	4.25	4.00	106	85 - 115
Silver	0.100	0.100	100	85 - 115
Thallium	4.16	4.00	104	85 - 115
Vanadium	1.02	1.00	102	85 - 115
Zinc	1.02	1.00	102	85 - 115

Analyst: KC

Reviewed by:

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT
PROJECT: OWENS LAKE MONITORING WELLS
REPORT NO.: C12192

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T920 were submitted to the Environmental Laboratory on October 4, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267.

Date Completed: 10/28/2013

Work Order No.: ZAC97

Job Card No.: J95000

Copies to: S. Jorat

N. Liu

K. Han

N. Perez

FileNet

Test Performed by: Environmental Lab,
Bureau of Standards

Report By: NP Date: 10/28/2013

Checked by: JLH Date: 10/29/13

APPROVED BY: Kevin Han / JLH 10/29/13

Kevin Han

Date

Interim Laboratory Manager
Environmental Laboratory

100001

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12192
 COC 13-2530
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN11985	Well# T920	Metals	EPA 200.7		Attachment #1	Environmental Lab
		Boron		10/24/13	<0.009 mg/L	
		Lithium		10/24/13	0.025 mg/L	
		Magnesium		10/24/13	3.93 mg/L	
		Manganese		10/24/13	0.378 mg/L	
		Sodium		10/24/13	14.7 mg/L	
LN11986	Well# T920	Nitrite -N	EPA 300.0	10/4/13	1.34 mg/L	Environmental Lab
		Chloride			5.07 mg/L	
		Phosphate			<0.1 mg/L	
		Sulfate			6.86 mg/L	
LN11987	Well# T920	TDS	SM 2540 C	10/7/13	154 mg/L	Environmental Lab
LN11988	Well# T920	Ammonia-N	SM 4500 NH3 G	10/16/13	<0.20 mg/L	Bureau of Standards
LN11989	Well# T920	Alkalinity	SM 2320 B	10/10/13	80 mg/L	Environmental Lab
		Carbonate			0 mg/L	
LN11990	Well# T920	TOC	SM 5310 C	10/15/13	<0.4 mg/L	Environmental Lab
LN11991	Well# T920	pH	SM 4500 H+B	10/3/13	7.43	Field Personnel
		Specific Conductivity	EPA 120.1	10/3/13	204 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/3/13	35.7 ntu	Environmental Lab

Environmental Laboratory
 1630 N. Main Street, Bldg 7
 Los Angeles, CA. 90012
 (213) 367-7248/7399
 (213) 367-7285 FAX

Department of Water and Power
 City of Los Angeles

Chain of Custody Record

COC #: 13-2530

Report C# 12102

JC# 95560 WO#

Bin#

Temp: 41°C

10/13
8:03 am

Sample Location OWENS LAKE MONITORING WELL MW-5, T920

CHEMISTRY LOG NUMBERS (For sample duplicates use 1 or X)	Sample Date	(24 Hr) Sample Time	Sample Location and Description		Preservatives	Container		Sample Matrix	Analysis Required	Test Result	Analyst(s) Assigned
			Well #	Description		No.	Type				
1 LN11985	10/3	16:00	WELL # T920		HNO3	1	P	500 mL	METALS, B, Li, Mg, Mn, Na		Env Lab
2 LN11986					NONE	1	P	250 mL	NO3*, Cl, PO4*, SO4		Env Lab
3 LN11987					NONE	1	P	500 mL	TDS		Env Lab
4 LN11988					H2SO4	1	P	500 mL	NH3-N		BSL
5 LN11989					NONE	1	P	500 mL	Alkalinity, Carbonate		Env Lab
6 LN11990					H2SO4	4	G	40 mL	TOC		Env Lab
7 LN11991					NONE	1	P	500 mL	pH, Specific Conductivity, Turbidity		Env Lab
8											
9											
10											
11											
12											
13											
14											
15											
16											

* SAMPLE WITH SHORT HOLDING TIME (48 HRS). PLEASE BRING IN SAMPLE BEFORE IT EXPIRES.

Requested by: Saeed Jorant
 Address: JFB RM 1468
 Organization / Div: Water Operations
 Tele: 71119
 Fax:
 Analyst Approved by: _____ date: _____

Priority:
 2-4 Hrs
 1 Day
 2 Wks
 4 Wks
 Specify

Printed Name: _____
 Sampled by: *Dustin Fischer*
 Relinquished by: *Dustin Fischer*
 Received by: *Ron White*
 Signat: _____
 Time: 16:00
 Date: 10/3/13
 Time: 6:59
 Date: 10/4
 Time: 6:59
 Date: 10/4/13

Date & Time Stamp: 2013 OCT -3 AM 10:02
 LADWP
 REC'D BY: ENV-CHEM LAB
 Chem Lab COC Form #1
 Revision: 10/2/2001

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2530

ANALYTICAL RESULT FOR METALS

TTLC (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY LOG NO.	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	SAMPLE DESCRIPTION									
LN11985	10/3/13	10/4/13	10/23/13	WELL MW-5 T920									
METAL	LIMIT TTLC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	LN11985 mg/l						
Antimony	500	15	200.7	0.002	0.010	1	ND						
Arsenic	500	5	200.7	0.005	0.025	1	ND						
Barium	10000	100	200.7	0.005	0.025	1	0.0503						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	ND						
Chromium (T)	500	5	200.7	0.005	0.025	1	0.0269						
Cobalt	8000	80	200.7	0.001	0.005	1	ND						
Copper	2500	25	200.7	0.008	0.040	1	ND						
Lead	1000	5	200.7	0.004	0.020	1	0.0113J						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.0199						
Nickel	2000	20	200.7	0.009	0.045	1	ND						
Selenium	100	1	200.7	0.009	0.045	1	0.0126J						
Silver	500	5	200.7	0.004	0.020	1	ND						
Thallium	700	7	200.7	0.004	0.020	1	ND						
Vanadium	2400	24	200.7	0.016	0.080	1	ND						
Zinc	5000	250	200.7	0.002	0.010	1	0.114						

ND - Not Detected; below method detection limit

MDL - Method Detection Limit

R.L. - Report Limit

D. F. - Dilution Factor

** - exceed TTLC limit

* - exceed 10x STLC limit

J - concentration above MDL and below RL

Analyst : KC

200001

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/23/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: \$TTLCW-8160 (LN11971)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg mg/L

METAL	SAMPLE RESULT	SPIKE CONC	BS	%BS	(DUP) SPIKE CONC	BSD	%BSD	RPD	BS/BSD % REC LIMIT	RPD LIMIT
Antimony	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Arsenic	ND	2.00	2.11	106	2.00	2.10	105	0.9%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Cadmium	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Chromium (T)	ND	2.00	2.01	100	2.00	1.98	99.0	1.0%	70 - 130	< 30
Cobalt	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Copper	ND	2.00	2.01	100	2.00	2.00	100	0.0%	70 - 130	< 30
Lead	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Molybdenum	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Nickel	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30
Selenium	ND	2.00	2.10	105	2.00	2.09	104	1.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2.00	2.04	102	2.00	2.03	102	0.0%	70 - 130	< 30
Vanadium	ND	2.00	2.03	102	2.00	2.04	102	0.0%	70 - 130	< 30
Zinc	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS I.D.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg **mg/L**

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.04	1.00	104	85 - 115
Arsenic	4.19	4.00	105	85 - 115
Barium	3.89	4.00	97.2	85 - 115
Beryllium	0.105	0.100	105	85 - 115
Cadmium	0.100	0.100	100	85 - 115
Chromium (T)	0.404	0.400	101	85 - 115
Cobalt	1.02	1.00	102	85 - 115
Copper	0.496	0.500	99.2	85 - 115
Lead	1.04	1.00	104	85 - 115
Molybdenum	---	---	---	---
Nickel	1.02	1.00	102	85 - 115
Selenium	4.25	4.00	106	85 - 115
Silver	0.100	0.100	100	85 - 115
Thallium	4.16	4.00	104	85 - 115
Vanadium	1.02	1.00	102	85 - 115
Zinc	1.02	1.00	102	85 - 115

Analyst: KC

Reviewed by: *JNR* 10/20/13

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT

PROJECT: OWENS LAKE MONITORING WELLS

REPORT NO.: C12194

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T923 were submitted to the Environmental Laboratory on October 4, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267.

Date Completed: 10/28/2013
Work Order No.: ZAC97
Job Card No.: J9500
Copies to: S. Jorat
N. Liu
K. Han
N. Perez
FileNet

Test Performed by: Environmental Lab,
Bureau of Standards

Report By: NP Date: 10/28/2013
Checked by: JMC Date: 10/29/13

APPROVED BY: Kevin Han / JMC 10/29/13
Kevin Han Date
Interim Laboratory Manager
Environmental Laboratory

100001

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12194
 COC 13-2537
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN12013	Well# T923	Metals	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	21.0 mg/L	
		Lithium		10/24/13	0.849 mg/L	
		Magnesium		10/24/13	34.0 mg/L	
		Manganese		10/24/13	0.874 mg/L	
		Sodium		10/24/13	957 mg/L	
LN12014	Well# T923	Nitrite -N	EPA 300.0	10/4/13	<0.03 mg/L	Environmental Lab
		Chloride			577 mg/L	
		Phosphate			<0.1 mg/L	
		Sulfate			275 mg/L	
LN12015	Well# T923	TDS	SM 2540 C	10/7/13	2858 mg/L	Environmental Lab
LN12016	Well# T923	Ammonia-N	SM 4500 NH3 G	10/16/13	2.13 mg/L	Bureau of Standards
LN12017	Well# T923	Alkalinity	SM 2320 B	10/10/13	1198 mg/L	Environmental Lab
		Carbonate			0 mg/L	
LN12018	Well# T923	TOC	SM 5310 C	10/15/13	1.8 mg/L	Environmental Lab
LN12019	Well# T923	pH	SM 4500 H+B	10/4/13	6.81	Field Personnel
		Specific Conductivity	EPA 120.1	10/4/13	4570 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/4/13	98.3 ntu	Environmental Lab

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2537

ANALYTICAL RESULT FOR METALS

TTLC (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY	DATE	DATE	DATE	SAMPLE DESCRIPTION									
LOG NO.	SAMPLED	RECEIVED	ANALYZED										
LN12013	10/4/13	10/4/13	10/23/13	WELL# T923									
METAL	LIMIT TTLC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	LN12013 mg/l						
Antimony	500	15	200.7	0.002	0.010	1	ND						
Arsenic	500	5	200.7	0.005	0.025	1	0.0351						
Barium	10000	100	200.7	0.005	0.025	1	0.170						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	ND						
Chromium (T)	500	5	200.7	0.005	0.025	1	0.00770J						
Cobalt	8000	80	200.7	0.001	0.005	1	ND						
Copper	2500	25	200.7	0.008	0.040	1	ND						
Lead	1000	5	200.7	0.004	0.020	1	0.00780J						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.0760						
Nickel	2000	20	200.7	0.009	0.045	1	0.0178J						
Selenium	100	1	200.7	0.009	0.045	1	0.0197J						
Silver	500	5	200.7	0.004	0.020	1	ND						
Thallium	700	7	200.7	0.004	0.020	1	ND						
Vanadium	2400	24	200.7	0.016	0.080	1	ND						
Zinc	5000	250	200.7	0.002	0.010	1	0.313						

ND - Not Detected; below method detection limit

** - exceed TTLC limit

MDL - Method Detection Limit

* - exceed 10x STLC limit

R.L. - Report Limit

J - concentration above MDL and below RL

D. F. - Dilution Factor

Analyst : KC

200001

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/23/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: \$TTLCW-8160 (LN11971)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg **mg/L**

METAL	SAMPLE RESULT	SPIKE CONC	BS	%BS	(DUP) SPIKE CONC	BSD	%BSD	RPD	BS/BSD % REC LIMIT	RPD LIMIT
Antimony	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Arsenic	ND	2.00	2.11	106	2.00	2.10	105	0.9%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Cadmium	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Chromium (T)	ND	2.00	2.01	100	2.00	1.98	99.0	1.0%	70 - 130	< 30
Cobalt	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Copper	ND	2.00	2.01	100	2.00	2.00	100	0.0%	70 - 130	< 30
Lead	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Molybdenum	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Nickel	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30
Selenium	ND	2.00	2.10	105	2.00	2.09	104	1.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2.00	2.04	102	2.00	2.03	102	0.0%	70 - 130	< 30
Vanadium	ND	2.00	2.03	102	2.00	2.04	102	0.0%	70 - 130	< 30
Zinc	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS I.D.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg **mg/L**

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.04	1.00	104	85 - 115
Arsenic	4.19	4.00	105	85 - 115
Barium	3.89	4.00	97.2	85 - 115
Beryllium	0.105	0.100	105	85 - 115
Cadmium	0.100	0.100	100	85 - 115
Chromium (T)	0.404	0.400	101	85 - 115
Cobalt	1.02	1.00	102	85 - 115
Copper	0.496	0.500	99.2	85 - 115
Lead	1.04	1.00	104	85 - 115
Molybdenum	---	---	---	---
Nickel	1.02	1.00	102	85 - 115
Selenium	4.25	4.00	106	85 - 115
Silver	0.100	0.100	100	85 - 115
Thallium	4.16	4.00	104	85 - 115
Vanadium	1.02	1.00	102	85 - 115
Zinc	1.02	1.00	102	85 - 115

Analyst: KC

Reviewed by:  10/23/13

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT
PROJECT: OWENS LAKE MONITORING WELLS
REPORT NO.: C12195

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T925 were submitted to the Environmental Laboratory on October 4, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267.

Date Completed: 10/28/2013
Work Order No.: ZAC97
Job Card No.: J95000
Copies to: S. Jorat
N. Liu
K. Han
N. Perez
FileNet

Test Performed by: Environmental Lab,
Bureau of Standards

Report By: NP Date: 10/28/2013
Checked by: JML Date: 10/29/13

APPROVED BY: Kevin Han / JML 10/29/13
Kevin Han Date

Interim Laboratory Manager
Environmental Laboratory

100001

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12195
 COC 13-2538
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN12027	Well# T925	Metals	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	0.055 mg/L	
		Lithium		10/24/13	0.149 mg/L	
		Magnesium		10/24/13	10.2 mg/L	
		Manganese		10/24/13	0.937 mg/L	
		Sodium		10/24/13	17.0 mg/L	
LN12028	Well# T925	Nitrite --N	EPA 300.0	10/4/13	0.02 mg/L	Environmental Lab
		Chloride			34.3 mg/L	
		Phosphate			<0.01 mg/L	
		Sulfate			43.8 mg/L	
LN12029	Well# T925	TDS	SM 2540 C	10/7/13	227 mg/L	Environmental Lab
LN12030	Well# T925	Ammonia-N	SM 4500 NH3 G	10/16/13	<0.20 mg/L	Bureau of Standards
LN12031	Well# T925	Alkalinity	SM 2320 B	10/10/13	58 mg/L	Environmental Lab
		Carbonate			20 mg/L	
LN12032	Well# T925	TOC	SM 5310 C	10/15/13	<0.4 mg/L	Environmental Lab
LN12033	Well# T925	pH	SM 4500 H+B	10/4/13	9.12	Field Personnel
		Specific Conductivity	EPA 120.1	10/4/13	170 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/4/13	<1.0 ntu	Environmental Lab

100002

Environmental Laboratory
 1630 N. Main Street, Bldg 7
 Los Angeles, CA. 90012
 (213) 367-7248/7399
 (213) 367-7285 FAX

Department of Water and Power
 City of Los Angeles
Chain of Custody Record

COC #: 13-2538

Page 1 of 1

Report C# 12915 JC# WO#
 Refrig# 8/11 Shelf 9/2 Bin#
 Initial of Field Personnel: _____
 No. of Field Test: _____

ZAC97

Temp 7.10C
 Ao 10-4-13

Sample Location OWENS LAKE MONITORING WELL

CHEMISTRY LOG NUMBERS (For sample duplicates use -1 or -2)	Sample Date	(24 Hr) Sample Time	Sample Location and Description	Preservatives	Container		Sample Matrix	Analysis Required	Test Result	Analyst(s) Assigned
					No.	Type				
1 LN12027	10/4	9:30	WELL # 7925	HNO3	1	P	500mL	METALS, B, Li, Mg, Mn, Na		Env Lab
2 12028				NONE	1	P	250 mL	NO3*, Cl, PO4*, SO4		Env Lab
3 12029				NONE	1	P	500 mL	TDS		Env Lab
4 12030				H2SO4	1	P	500 mL	NH3-N		BSL
5 12031				NONE	1	P	500 mL	Alkalinity, Carbonate		Env Lab
6 12032				H2SO4	4	G	40mL	TOC		Env Lab
7 12033				NONE	1	P	500 mL	pH, Specific Conductivity, Turbidity		Env Lab
8										
9										
10										
11										
12										
13										
14										
15										
16										

* SAMPLE WITH SHORT HOLDING TIME (48 HRS). PLEASE BRING IN SAMPLE BEFORE IT EXPIRES.

Requested by: Saeed Jorat Organization / Div. Water Operations
 Address: JFB RM 1468 Tele 71119 Fax.
 Analyst Approved by: _____ date _____

Priority: 2-4 Hrs 2-1 Day 2-3 Wks 4-6 Wks Specify

Date & Time Stamp: LADWP 2013 OCT - 3:09 PM '13
 Chem Lab COC Form #1
 Revision: 10/2/2001

COC13- 2538

Printed Name	Signature	Time	Date
Keleim Heang	<i>Keleim Heang</i>	9:50 AM	10/4/13
Relinquished by: DUSTIN FISCHER	<i>Dustin Fischer</i>	10:19	10-4
Received by: A. Ogimabi	<i>A. Ogimabi</i>	1819	10-4-13

100003

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2538

ANALYTICAL RESULT FOR METALS

TTLIC (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY LOG NO.	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	SAMPLE DESCRIPTION									
LN12027	10/4/13	10/4/13	10/23/13	WELL# T925									
	LIMIT TTLIC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	LN12027 mg/l						
Antimony	500	15	200.7	0.002	0.010	1	ND						
Arsenic	500	5	200.7	0.005	0.025	1	0.0277						
Barium	10000	100	200.7	0.005	0.025	1	0.00760J						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	ND						
Chromium (T)	500	5	200.7	0.005	0.025	1	0.00780J						
Cobalt	8000	80	200.7	0.001	0.005	1	ND						
Copper	2500	25	200.7	0.008	0.040	1	ND						
Lead	1000	5	200.7	0.004	0.020	1	ND						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.00450J						
Nickel	2000	20	200.7	0.009	0.045	1	ND						
Selenium	100	1	200.7	0.009	0.045	1	ND						
Silver	500	5	200.7	0.004	0.020	1	ND						
Thallium	700	7	200.7	0.004	0.020	1	ND						
Vanadium	2400	24	200.7	0.016	0.080	1	ND						
Zinc	5000	250	200.7	0.002	0.010	1	0.501						

ND - Not Detected; below method detection limit

MDL - Method Detection Limit

R.L. - Report Limit

D. F. - Dilution Factor

** - exceed TTLIC limit

* - exceed 10x STLC limit

J - concentration above MDL and below RL

Analyst : KC

200001

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/23/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: STTLCW-8160 (LN11971)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg **mg/L**

METAL	SAMPLE RESULT	SPIKE CONC	BS	%BS	(DUP) SPIKE CONC	BSD	%BSD	RPD	BS/BSD %REC LIMIT	RPD LIMIT
Antimony	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Arsenic	ND	2.00	2.11	106	2.00	2.10	105	0.9%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Cadmium	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Chromium (T)	ND	2.00	2.01	100	2.00	1.98	99.0	1.0%	70 - 130	< 30
Cobalt	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Copper	ND	2.00	2.01	100	2.00	2.00	100	0.0%	70 - 130	< 30
Lead	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Molybdenum	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Nickel	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30
Selenium	ND	2.00	2.10	105	2.00	2.09	104	1.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2.00	2.04	102	2.00	2.03	102	0.0%	70 - 130	< 30
Vanadium	ND	2.00	2.03	102	2.00	2.04	102	0.0%	70 - 130	< 30
Zinc	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS I.D.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg

mg/L

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.04	1.00	104	85 - 115
Arsenic	4.19	4.00	105	85 - 115
Barium	3.89	4.00	97.2	85 - 115
Beryllium	0.105	0.100	105	85 - 115
Cadmium	0.100	0.100	100	85 - 115
Chromium (T)	0.404	0.400	101	85 - 115
Cobalt	1.02	1.00	102	85 - 115
Copper	0.496	0.500	99.2	85 - 115
Lead	1.04	1.00	104	85 - 115
Molybdenum	---	---	---	---
Nickel	1.02	1.00	102	85 - 115
Selenium	4.25	4.00	106	85 - 115
Silver	0.100	0.100	100	85 - 115
Thallium	4.16	4.00	104	85 - 115
Vanadium	1.02	1.00	102	85 - 115
Zinc	1.02	1.00	102	85 - 115

Analyst: KC

Reviewed by:

200003

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT

PROJECT: OWENS LAKE MONITORING WELLS

REPORT NO.: C12193

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T922 were submitted to the Environmental Laboratory on October 4, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267.

Date Completed: 10/28/2013

Work Order No.: ZAC97

Job Card No.: J95000

Copies to: S. Jorat

N. Liu

K. Han

N. Perez

FileNet

Test Performed by: Environmental Lab,
Bureau of Standards

Report By: NP Date: 10/28/2013

Checked by: JHK Date: 10/22/13

APPROVED BY: Kevin Han / JHK 10/28/13
Date

Interim Laboratory Manager
Environmental Laboratory

100001

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12193
 COC 13-2536
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN12020	Well# T922	Metals	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	<0.009 mg/L	
		Lithium		10/24/13	0.043 mg/L	
		Magnesium		10/24/13	6.44 mg/L	
		Manganese		10/24/13	0.146 mg/L	
		Sodium		10/24/13	9.09 mg/L	
LN12021	Well# T922	Nitrite -N	EPA 300.0	10/4/13	0.43 mg/L	Environmental Lab
		Chloride			8.84 mg/L	
		Phosphate			<0.01 mg/L	
		Sulfate			9.12 mg/L	
LN12022	Well# T922	TDS	SM 2540 C	10/7/13	125 mg/L	Environmental Lab
LN12023	Well# T922	Ammonia-N	SM 4500 NH3 G	10/16/13	<0.20 mg/L	Bureau of Standards
LN12024	Well# T922	Alkalinity	SM 2320 B	10/10/13	74 mg/L	Environmental Lab
		Carbonate			0 mg/L	
LN12025	Well# T922	TOC	SM 5310 C	10/15/13	<0.4 mg/L	Environmental Lab
LN12026	Well# T922	pH	SM 4500 H+B	10/4/13	7.44	Field Personnel
		Specific Conductivity	EPA 120.1	10/4/13	202 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/4/13	3.74 ntu	Environmental Lab

100002

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2536

ANALYTICAL RESULT FOR METALS

TTLC (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY	DATE	DATE	DATE	SAMPLE DESCRIPTION									
LOG NO.	SAMPLED	RECEIVED	ANALYZED										
LN12020	10/4/13	10/4/13	10/23/13	WELL# T922									
	LIMIT TTLC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	LN12020 mg/l						
Antimony	500	15	200.7	0.002	0.010	1	0.00580J						
Arsenic	500	5	200.7	0.005	0.025	1	ND						
Barium	10000	100	200.7	0.005	0.025	1	0.0149J						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	ND						
Chromium (T)	500	5	200.7	0.005	0.025	1	0.0145J						
Cobalt	8000	80	200.7	0.001	0.005	1	ND						
Copper	2500	25	200.7	0.008	0.040	1	ND						
Lead	1000	5	200.7	0.004	0.020	1	ND						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.0189						
Nickel	2000	20	200.7	0.009	0.045	1	ND						
Selenium	100	1	200.7	0.009	0.045	1	ND						
Silver	500	5	200.7	0.004	0.020	1	ND						
Thallium	700	7	200.7	0.004	0.020	1	0.00610J						
Vanadium	2400	24	200.7	0.016	0.080	1	ND						
Zinc	5000	250	200.7	0.002	0.010	1	0.205						

ND - Not Detected; below method detection limit

** - exceed TTLC limit

MDL - Method Detection Limit

* - exceed 10x STLC limit

R.L. - Report Limit

J - concentration above MDL and below RL

D. F. - Dilution Factor

Analyst : KC

200001

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/23/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: STTLCW-8160 (LN11971)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg mg/L

METAL	SAMPLE RESULT	SPIKE CONC	BS	%BS	(DUP) SPIKE CONC	BSD	%BSD	RPD	BS/BSD % REC LIMIT	RPD LIMIT
Antimony	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Arsenic	ND	2.00	2.11	106	2.00	2.10	105	0.9%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2.00	2.10	105	2.00	2.10	105	0.0%	70 - 130	< 30
Cadmium	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Chromium (T)	ND	2.00	2.01	100	2.00	1.98	99.0	1.0%	70 - 130	< 30
Cobalt	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Copper	ND	2.00	2.01	100	2.00	2.00	100	0.0%	70 - 130	< 30
Lead	ND	2.00	2.03	102	2.00	2.02	101	1.0%	70 - 130	< 30
Molybdenum	ND	2.00	1.98	99.0	2.00	1.97	98.5	0.5%	70 - 130	< 30
Nickel	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30
Selenium	ND	2.00	2.10	105	2.00	2.09	104	1.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2.00	2.04	102	2.00	2.03	102	0.0%	70 - 130	< 30
Vanadium	ND	2.00	2.03	102	2.00	2.04	102	0.0%	70 - 130	< 30
Zinc	ND	2.00	2.03	102	2.00	2.03	102	0.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS I.D.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg mg/L

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.04	1.00	104	85 - 115
Arsenic	4.19	4.00	105	85 - 115
Barium	3.89	4.00	97.2	85 - 115
Beryllium	0.105	0.100	105	85 - 115
Cadmium	0.100	0.100	100	85 - 115
Chromium (T)	0.404	0.400	101	85 - 115
Cobalt	1.02	1.00	102	85 - 115
Copper	0.496	0.500	99.2	85 - 115
Lead	1.04	1.00	104	85 - 115
Molybdenum	---	---	---	---
Nickel	1.02	1.00	102	85 - 115
Selenium	4.25	4.00	106	85 - 115
Silver	0.100	0.100	100	85 - 115
Thallium	4.16	4.00	104	85 - 115
Vanadium	1.02	1.00	102	85 - 115
Zinc	1.02	1.00	102	85 - 115

Analyst: KC

Reviewed by:

JMC 10/29/13

200003

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT
PROJECT: OWENS LAKE MONITORING WELLS
REPORT NO.: C12183

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T921 were submitted to the Environmental Laboratory on October 2, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267.

Date Completed: 10/28/2013
Work Order No.: ZAC97
Job Card No.: J95000
Copies to: S. Jorat
N. Liu
K. Han
N. Perez
FileNet

Test Performed by: Environmental Lab,
Bureau of Standards
Report By: NP Date: 10/28/2013
Checked by: JMC Date: 10/29/13
APPROVED BY: Kevin Han 10/30/13
Kevin Han Date
Interim Laboratory Manager
Environmental Laboratory

100001

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12183
 COC 13-2480
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN11732	Well# T921	Metals	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	0.105 mg/L	
		Lithium		10/24/13	0.057 mg/L	
		Magnesium		10/24/13	6.80 mg/L	
		Manganese		10/24/13	0.484 mg/L	
		Sodium		10/24/13	63.1 mg/L	
LN11733	Well# T921	Nitrite -N	EPA 300.0	10/2/13	0.44 mg/L	Environmental Lab
		Chloride			25.1 mg/L	
		Phosphate			<0.1 mg/L	
		Sulfate			30.6 mg/L	
LN11734	Well# T921	TDS	SM 2540 C	10/4/13	290 mg/L	Environmental Lab
LN11735	Well# T921	Ammonia-N	SM 4500 NH3 G	10/16/13	0.42 mg/L	Bureau of Standards
LN11736	Well# T921	Alkalinity	SM 2320 B	10/10/13	188 mg/L	Environmental Lab
		Carbonate			88 mg/L	
LN11737	Well# T921	TOC	SM 5310 C	10/15/13	2.6 mg/L	Environmental Lab
LN11738	Well# T921	pH	SM 4500 H+B	10/1/13	11.03	Field Personnel
		Specific Conductivity	EPA 120.1	10/1/13	732 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/3/13	284 ntu	Environmental Lab

Environmental Laboratory
 1630 N. Main Street, Bldg 7
 Los Angeles, CA. 90012
 (213) 367-7248/7399
 (213) 367-7285 FAX

Department of Water and Power
 City of Los Angeles
Chain of Custody Record

COC #: 13-2480

Page 1 of 1

Report C# 12183 JC# WO#
 Refrig# 8 Shelf 9 Bin#
 Initial of Field Personnel: No. of Field Test: 95 10/2/13

Sample Location OWENS LAKE MONITORING WELL

Chem Lab use only CHEM STRY LOG NUMBERS (For sample duplicates use -1 or -2)	Sample Date (For sample duplicates use -1 or -2)	(24 Hr) Sample Time	Sample Location and Description		Preservatives	Container		Sample Matrix	Analysis Required	Test Result	Analyst(s) Assigned
			No.	Type		Size					
1 LN11732			WELL # T92		HNO3	1	P	500mL	METALS, B, Li, Mg, Mn, Na		Env Lab
2 LN11733					NONE	1	P	250 mL	NO3*, Cl, PO4*, SO4		Env Lab
3 LN11734					NONE	1	P	500 mL	TDS		Env Lab
4 LN11735					H2SO4	1	P	500 mL	NH3-N		BSL
5 LN11736					NONE	1	P	500 mL	Alkalinity, Carbonate		Env Lab
6 LN11737					H2SO4	4	G	40mL	TOC		Env Lab
7 LN11738					NONE	1	P	500 mL	pH, Specific Conductivity, Turbidity		Env Lab
8											
9											
10											
11											
12											
13											
14											
15											
16											

* SAMPLE WITH SHORT HOLDING TIME (48 HRS). PLEASE BRING IN SAMPLE BEFORE IT EXPIRES.

Requested by: Saeed Jorjat Organization / Div. Water Operations
 Address: JFB RM 1468 Tele 71119 Fax.
 Analyst Approved by: date date

Priority:
 2-4 Hrs
 1 Day
 2 Wks
 4 Wks
 Specify

Printed Name: DUSTIN FISCHER
 Sampled by: [Signature] 10/1/13
 Relinquished by: DUSTIN FISCHER
 Received by: B. SHANANDEA 10/2/13

Temp = 4.4 °C

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2480

ANALYTICAL RESULT FOR METALS

TTLC (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY LOG NO.	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	SAMPLE DESCRIPTION																		
LN11732	10/1/13	10/2/13	10/23/13	OWENS LAKE MONITORING WELL T92																		
METAL	LIMIT TTLC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	LN11732 mg/l															
Antimony	500	15	200.7	0.002	0.010	1	ND															
Arsenic	500	5	200.7	0.005	0.025	1	0.0238J															
Barium	10000	100	200.7	0.005	0.025	1	0.111															
Beryllium	75	0.75	200.7	0.001	0.005	1	ND															
Cadmium	100	1	200.7	0.001	0.005	1	0.00180J															
Chromium (T)	500	5	200.7	0.005	0.025	1	0.0867															
Cobalt	8000	80	200.7	0.001	0.005	1	0.00770															
Copper	2500	25	200.7	0.008	0.040	1	0.0182J															
Lead	1000	5	200.7	0.004	0.020	1	0.0233															
Molybdenum	3500	350	200.7	0.001	0.005	1	0.0496															
Nickel	2000	20	200.7	0.009	0.045	1	0.0428J															
Selenium	100	1	200.7	0.009	0.045	1	0.0145J															
Silver	500	5	200.7	0.004	0.020	1	ND															
Thallium	700	7	200.7	0.004	0.020	1	0.00420J															
Vanadium	2400	24	200.7	0.016	0.080	1	0.0811															
Zinc	5000	250	200.7	0.002	0.010	1	0.468															

ND - Not Detected; below method detection limit
 MDL - Method Detection Limit
 R.L. - Report Limit
 D. F. - Dilution Factor

** - exceed TTLC limit
 * - exceed 10x STLC limit
 J - concentration above MDL and below RL

Analyst : KC

200001

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/08/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: \$TTLCW-8110 (LN12010)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg mg/L

METAL	SAMPLE RESULT	SPIKE CONC	BS	%BS	(DUP) SPIKE CONC	BSD	%BSD	RPD	BS/BSD % REC LIMIT	RPD LIMIT
Antimony	ND	2	2.07	104	2	2.07	104	0.0%	70 - 130	< 30
Arsenic	ND	2	2.09	104	2	2.08	104	0.0%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2	2.01	100	2	2.03	102	2.0%	70 - 130	< 30
Cadmium	ND	2	1.96	98.0	2	1.96	98.0	0.0%	70 - 130	< 30
Chromium (T)	ND	2	1.94	97.0	2	1.95	97.5	0.5%	70 - 130	< 30
Cobalt	ND	2	2.02	101	2	2.01	100	1.0%	70 - 130	< 30
Copper	ND	2	1.96	98.0	2	1.96	98.0	0.0%	70 - 130	< 30
Lead	ND	2	2.02	101	2	2.02	101	0.0%	70 - 130	< 30
Molybdenum	ND	2	1.98	99.0	2	1.98	99.0	0.0%	70 - 130	< 30
Nickel	ND	2	1.97	98.5	2	1.97	98.5	0.0%	70 - 130	< 30
Selenium	ND	2	2.04	102	2	2.04	102	0.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2	2.02	101	2	2.02	101	0.0%	70 - 130	< 30
Vanadium	ND	2	1.96	98.0	2	1.97	98.5	0.5%	70 - 130	< 30
Zinc	ND	2	2.05	102	2	2.02	101	1.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS I.D.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg

mg/L

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.02	1	102	85 - 115
Arsenic	4.12	4	103	85 - 115
Barium	3.97	4	99.2	85 - 115
Beryllium	0.101	0.1	101	85 - 115
Cadmium	0.0990	0.1	99.0	85 - 115
Chromium (T)	0.392	0.4	98.0	85 - 115
Cobalt	1.01	1	101	85 - 115
Copper	0.491	0.5	98.2	85 - 115
Lead	1.03	1	103	85 - 115
Molybdenum	---	---	---	---
Nickel	0.994	1	99.4	85 - 115
Selenium	4.10	4	102	85 - 115
Silver	0.0970	0.1	97.0	85 - 115
Thallium	4.10	4	102	85 - 115
Vanadium	0.982	1	98.2	85 - 115
Zinc	1.01	1	101	85 - 115

Analyst: KC

Reviewed by:

JAC 10/29/13

**DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
Power System
Integrated Support Services**

ENVIRONMENTAL LABORATORY DATA REPORT

CLIENT: SAEED JORAT

PROJECT: OWENS LAKE MONITORING WELLS

REPORT NO.: C12184

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
COVER LETTER, COC, ANALYTE, SUMMARY TABLE	100001-100003
ATTACHMENT 1 METALS EPA METHOD 200.7	200001-200003

ENVIRONMENTAL LABORATORY DATA REPORT

Owens Lake Monitoring Wells
Water Samples

Water samples from Owens Lake Monitoring Well T927 were submitted to the Environmental Laboratory on October 3, 2013 for the determination of their Metals, Nitrate-N, Chloride, Phosphate, Sulfate, Total Dissolved Solids (TDS), Ammonia-Nitrogen, Alkalinity, Carbonate, Total Organic Carbon (TOC), pH, Specific Conductivity, and Turbidity. See table on following page for sample information.

All quality assurance data indicate that the results for these samples are of acceptable quality.

If you have any questions, or if further information is required, please contact Ms. Nina Perez at (213) 367-7481 or Mr. Kevin Han at (213) 367-7267

Date Completed: 10/28/2013
Work Order No.: ZAC97
Job Card No.: J95000
Copies to: S. Jorat
N. Liu
K. Han
N. Perez
FileNet

Test Performed by: Environmental Lab,
Bureau of Standards

Report By: NP Date: 10/28/2013

Checked by: JL Date: 10/28/13

APPROVED BY: Kevin Han 10/30/13
Kevin Han Date

Interim Laboratory Manager
Environmental Laboratory

DEPARTMENT OF WATER & POWER
OF THE CITY OF LOS ANGELES
 Power System
 Integrated Support Services

Report No. C12184
 COC 13-2507
 Page 2 of 2 w/ attachments

Sample ID	Sample Description	Analysis Requested	Method	Analysis Date	Results	Analyzed by
LN11801	Well# T927	Metals	EPA 200.7	10/23/13	Attachment #1	Environmental Lab
		Boron		10/24/13	22.8 mg/L	
		Lithium		10/24/13	0.752 mg/L	
		Magnesium		10/24/13	27.1 mg/L	
		Manganese		10/24/13	0.151 mg/L	
		Sodium		10/24/13	1790 mg/L	
LN11802	Well# T927	Nitrite -N	EPA 300.0	10/3/13	<0.03 mg/L	Environmental Lab
		Chloride			1727 mg/L	
		Phosphate			<0.1 mg/L	
		Sulfate			806 mg/L	
LN11803	Well# T927	TDS	SM 2540 C	10/4/13	4490 mg/L	Environmental Lab
LN11804	Well# T927	Ammonia-N	SM 4500 NH3 G	10/16/13	0.30 mg/L	Bureau of Standards
LN11805	Well# T927	Alkalinity	SM 2320 B	10/10/13	172 mg/L	Environmental Lab
		Carbonate			0 mg/L	
LN11806	Well# T927	TOC	SM 5310 C	10/15/13	<0.4 mg/L	Environmental Lab
LN11807	Well# T927	pH	SM 4500 H+B	10/2/13	6.95	Field Personnel
		Specific Conductivity	EPA 120.1	10/2/13	7010 us/cm	Field Personnel
		Turbidity	EPA 180.1	10/3/13	4.42 ntu	Environmental Lab

Environmental Laboratory
 1630 N. Main Street, Bldg 7
 Los Angeles, CA, 90012
 (213) 367-7248/7399
 (213) 367-7285 FAX

Department of Water and Power
 City of Los Angeles
Chain of Custody Record

COC #: 13-2507
 Report C# 12184 IC# 95600 WO#
 Refrig# 813 Shelf 9/1 Bin#
 Page 1 of 1
 2AE97

Sample Location OWENS LAKE MONITORING WELL T 9 2 7

Initial of Field Personnel: af No. of Field Test:

Chem Lab use only CHEMISTRY LOG NUMBERS (for sample duplicates use .1 or .X)	Sample Date (24 Hr Sample Time)	Sample Location and Description	Preservatives	Container		Sample Matrix	Analysis Required	Test Result	Analyst(s) Assigned
				No.	Type				
1. LU 11801	10-2-2009 9:45 am	WELL # T 9 2 7	HNO3	1	P	500 mL WATER	METALS, B, LI, MG, MN, NA		Env Lab
2. 11802			NONE	1	P	250 mL WATER	NO3*, CI, PO4*, SO4		Env Lab
3. 11803			NONE	1	P	500 mL WATER	TDS		Env Lab
4. 11804			H2SO4	1	P	500 mL WATER	NH3-N		BSL
5. 11805			NONE	1	P	500 mL WATER	Alkalinity, Carbonate		Env Lab
6. 11806			H2SO4	4	G	40 mL WATER	TOC		Env Lab
7. 11807			NONE	1	P	500 mL WATER	pH, Specific Conductivity, Turbidity		Env Lab
8.									
9.									
10.		Field measurement							
11.		T = 26.45 °C							
12.		PH = 6.95							
13.		Sp. Cond. = 7.01 ms/cm							
14.									
15.									
16.									

* SAMPLE WITH SHORT HOLDING TIME (48 HRS). PLEASE BRING IN SAMPLE BEFORE IT EXPIRES.

Date & Time Stamp: 10/2/2009 8:15 AM

Requested by: Saeed Jorjat Organization / Div: Water Operations JFB RM 1468

Address: JFB RM 1468 Tele: 71119 Fax:

Analyst Approved by: date:

Priority	Printed Name	Signature	Time	Date
24 Hrs	Saeed Jorjat	<i>Saeed Jorjat</i>	9:45 a.m.	10/2/2009
1 Day				
2 Wks				
4 Wks				
Specify				
	Relinquished by: Saeed Jorjat	<i>Saeed Jorjat</i>	8:15 a.m.	10-3
	Received by: B. SHAHANDEH	<i>B. SHAHANDEH</i>	8:15	10/3/09

YC
 JS
 BE
 HO
 NP
 RR
 QM
 RG WH LK

300601
 CHAIN OF CUSTODY FORM #1
 Revision: 10/22/2001

COC13-2507

ATTACHMENT #1

METALS

EPA METHOD 200.7

ENVIRONMENTAL LABORATORY DATA REPORT

COC 13-2507

ANALYTICAL RESULT FOR METALS

TTLC (Total Threshold Limit Concentration)

EPA Method 200.7

Sample Matrix: WATER

PROJECT: OWENS LAKE MW

LABORATORY LOG NO.	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	SAMPLE DESCRIPTION									
LN11801	10/3/13	10/3/13	10/23/13	WELL# T927									
METAL	LIMIT TTLC (mg/kg)	LIMIT STLC (mg/l)	METHOD	MDL	RL	D. F.	LN11801 mg/l						
Antimony	500	15	200.7	0.002	0.010	1	ND						
Arsenic	500	5	200.7	0.005	0.025	1	0.0426						
Barium	10000	100	200.7	0.005	0.025	1	ND						
Beryllium	75	0.75	200.7	0.001	0.005	1	ND						
Cadmium	100	1	200.7	0.001	0.005	1	ND						
Chromium (T)	500	5	200.7	0.005	0.025	1	0.00610J						
Cobalt	8000	80	200.7	0.001	0.005	1	ND						
Copper	2500	25	200.7	0.008	0.040	1	ND						
Lead	1000	5	200.7	0.004	0.020	1	0.00690J						
Molybdenum	3500	350	200.7	0.001	0.005	1	0.0684						
Nickel	2000	20	200.7	0.009	0.045	1	0.0374J						
Selenium	100	1	200.7	0.009	0.045	1	ND						
Silver	500	5	200.7	0.004	0.020	1	0.00620J						
Thallium	700	7	200.7	0.004	0.020	1	ND						
Vanadium	2400	24	200.7	0.016	0.080	1	ND						
Zinc	5000	250	200.7	0.002	0.010	1	0.116						

ND - Not Detected; below method detection limit

** - exceed TTLC limit

MDL - Method Detection Limit

* - exceed 10x STLC limit

R.L. - Report Limit

J - concentration above MDL and below RL

D. F. - Dilution Factor

Analyst : KC

200001

QA/QC Report

I. Blank Spike (BS) / Blank Spike Duplicate (BSD)

DATE ANALYZED: 10/08/13

ANALYTICAL METHOD USEPA 200.7

BATCH #: STTLCW-8110 (LN12010)

LAB SAMPLE I.D.: BLANK

UNIT: (Circle One) mg/kg mg/L

METAL	SAMPLE RESULT	SPIKE CONC	BS	%BS	DUP. SPIKE CONC	BSD	%BSD	RPD	BS/BSD % REC LIMIT	RPD LIMIT
Antimony	ND	2	2.07	104	2	2.07	104	0.0%	70 - 130	< 30
Arsenic	ND	2	2.09	104	2	2.08	104	0.0%	70 - 130	< 30
Barium	---	---	---	---	---	---	---	---	---	---
Beryllium	ND	2	2.01	100	2	2.03	102	2.0%	70 - 130	< 30
Cadmium	ND	2	1.96	98.0	2	1.96	98.0	0.0%	70 - 130	< 30
Chromium (T)	ND	2	1.94	97.0	2	1.95	97.5	0.5%	70 - 130	< 30
Cobalt	ND	2	2.02	101	2	2.01	100	1.0%	70 - 130	< 30
Copper	ND	2	1.96	98.0	2	1.96	98.0	0.0%	70 - 130	< 30
Lead	ND	2	2.02	101	2	2.02	101	0.0%	70 - 130	< 30
Molybdenum	ND	2	1.98	99.0	2	1.98	99.0	0.0%	70 - 130	< 30
Nickel	ND	2	1.97	98.5	2	1.97	98.5	0.0%	70 - 130	< 30
Selenium	ND	2	2.04	102	2	2.04	102	0.0%	70 - 130	< 30
Silver	---	---	---	---	---	---	---	---	---	---
Thallium	ND	2	2.02	101	2	2.02	101	0.0%	70 - 130	< 30
Vanadium	ND	2	1.96	98.0	2	1.97	98.5	0.5%	70 - 130	< 30
Zinc	ND	2	2.05	102	2	2.02	101	1.0%	70 - 130	< 30

BS = Blank Spike BSD = Blank Spike Duplicate
 %BS = Percent Recovery of Blank Spike

RPD = Relative Percent Difference
 %BSD = Percent Recovery of Blank Spike Duplicate

Analyst: KC

II. Calibration and Laboratory Quality Control Check Sample (LCS)

DATE ANALYZED: 10/23/13

ANALYTICAL USEPA 200.7

SUPPLY SOURCE: Environmental Express

LAB LCS ID.: Q8789

LOT NUMBER: 1314823

UNIT: (Circle One) mg/kg (mg/L)

METAL	LCS RESULTS mg/L	TRUE VALUE mg/L	% Recovery	Acceptable Range % Recovery
Antimony	1.02	1	102	85 - 115
Arsenic	4.12	4	103	85 - 115
Barium	3.97	4	99.2	85 - 115
Beryllium	0.101	0.1	101	85 - 115
Cadmium	0.0990	0.1	99.0	85 - 115
Chromium (T)	0.392	0.4	98.0	85 - 115
Cobalt	1.01	1	101	85 - 115
Copper	0.491	0.5	98.2	85 - 115
Lead	1.03	1	103	85 - 115
Molybdenum	---	---	---	---
Nickel	0.994	1	99.4	85 - 115
Selenium	4.10	4	102	85 - 115
Silver	0.0970	0.1	97.0	85 - 115
Thallium	4.10	4	102	85 - 115
Vanadium	0.982	1	98.2	85 - 115
Zinc	1.01	1	101	85 - 115

Analyst: KC

Reviewed by:

JMK 10/29/13