



Project No. S9800-01-17  
January 27, 2015

Mr. Richard Stewart, PG  
California Department of Transportation - District 6  
Hazardous Waste Branch  
855 M Street, Suite 200  
Fresno, California 93721

Subject: SURFACE WATER SAMPLING REPORT – DECEMBER 12, 2014  
CALTRANS MODESTO SOIL STOCKPILES  
STANISLAUS COUNTY, CALIFORNIA  
CONTRACT NO. 06A1895, TASK ORDER NO. 17, EA NO. 10-0X2700

Dear Mr. Stewart:

In accordance with California Department of Transportation (Caltrans) Contract No. 06A1895, Task Order (TO) No. 17, Geocon performed surface water sampling activities at the Caltrans Modesto Soil Stockpiles (Site) located southerly of the intersection of State Route (SR) 99 and Kansas Avenue in Stanislaus County, California. The approximate site location is depicted on the attached Vicinity Map, Figure 1. The approximate site boundaries, Stockpiles 1 through 3, and surface water sampling locations are shown on the Site Plan, Figure 2.

The surface water sampling was performed on December 12, 2014, in general accordance with protocols approved by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) as established in the *Final Surface Water Sampling and Analysis Plan (SAP)*, prepared by Shaw Environmental, Inc. and dated January 2006 and our *Addendum to Surface Water Sampling and Analysis Plan*, dated February 20, 2013. The scope of services included surface water sampling, analysis of the water samples by a California-certified laboratory, and preparation of this summary report detailing the sampling activities.

## **BACKGROUND**

### **Project Description and History**

Stockpiles 1 through 3 were generated during construction of SR 99 through Modesto around 1961 when Caltrans excavated soil from property purchased from Food Machinery and Chemical Corporation (FMC) that contained an evaporation pond. The stockpiles were placed in their present location in anticipation of construction of the State Route 132 West Freeway/Expressway project.

During the 1930s, Barium Products Ltd. occupied property at 1200 Barium Road (now Graphics Drive) in Modesto just east of SR 99 between Woodland and Kansas Avenues. Barium Products Ltd. was a chemical manufacturing company processing a variety of ores and minerals including barite (barium sulfate) and celestite (strontium sulfate). Materials produced included barium and strontium compounds; these were used in greases, lubricating oil and pigment blanks. Sodium sulfide generated as a by-product of barite processing was sold as a caustic and used as a reagent in the mining industry.

In 1943, Barium Products Ltd. was purchased by Westvaco Chlorine Products Corporation which subsequently merged with FMC in 1948. From the 1950s to the 1970s, a liquid residue from the processing operations was discharged to unlined evaporation ponds along the western portion of the FMC Site. The approximate boundaries of the former evaporation/disposal ponds are shown on Figure 2.

In 1961, a 4.3-acre parcel at the southwestern corner of the FMC site was purchased by the State of California for highway right-of-way needed to construct SR 99. An aerial photograph from 1957 shows that a portion of the southernmost pond on the FMC property was within the area purchased for right-of-way.

Soil in and around the pond was excavated during construction of SR 99 and stockpiled within the current Caltrans right-of-way at the location of the future State Route 132 West Freeway/Expressway project. Three distinct stockpiles are present at the Site:

- Stockpile 1, located south of Kansas Avenue and west of North Emerald Avenue,
- Stockpile 2, located south of Kansas Avenue, between North Emerald Avenue and SR 99, and
- Stockpile 3, located south of Kansas Avenue and east of SR 99.

### **Previous Surface Water Sampling Activities**

Shaw completed a surface water sampling event at the soil stockpiles in March 2006 in general accordance with their January 2006 SAP. In total, seven surface water samples (SW01 through SW06 and SW08) were collected during a qualifying rain event (visible runoff and 72 hours of prior dry weather). Since there was no surface water migration beyond the Caltrans right-of-way, Shaw constructed shallow depressions within the right-of-way in order to collect precipitation falling on the stockpiles. The samples were analyzed for dissolved metals, polycyclic aromatic hydrocarbons (PAHs), nitrate, sulfate and sulfide.

With the sole exception of an elevated barium concentration reported for the sample collected from the northwestern side of Stockpile 3 (sample SW03), the surface water samples did not contain elevated metals concentrations. Barium was reported at a concentration of 2,000 micrograms per liter ( $\mu\text{g}/\text{l}$ ) in sample SW03. Barium in the remaining six samples ranged from 16 to 190  $\mu\text{g}/\text{l}$ . Shaw concluded that the elevated barium reported for sample SW03 was isolated and that runoff in the area was confined to Caltrans right-of-way.

We previously performed surface water sampling events at the soil stockpiles in April 2013, January 2014, twice in February 2014, and on December 2, 2014. Results from these sampling events are presented on Tables 1 through 3. We collected three samples of surface water beyond the right-of-way boundary occupied by the stockpiles (PL1 through PL3), one onsite surface water sample near Stockpile 3 (PL4), and two samples of surface water from offsite background locations (BG1 and BG2). The sample locations were approved by the DTSC and Central Valley Water Quality Control Board (CVRWQCB). During the April 2013, and January, February, and December 2, 2014, storm events, we did not observe runoff migrating away from the Caltrans right-of-way.

## SURFACE WATER SAMPLING ACTIVITIES

This section describes the field activities performed for the December 12, 2014, surface water sampling event. It was raining at the time of sample collection. The rainfall total for this event which began overnight on December 11, 2014, and ended late in the day on December 12, 2014, was approximately 3 inches.

### Field Activities

On December 12, 2014, we collected surface water samples from designated locations PL1 through PL5, BG1 and BG2. The approximate sample locations are depicted on Figure 2. Photos of the sample locations are attached.

We collected samples PL1 and PL2 from puddles of rain water located on the west and east sides of Emerald Avenue, respectively, between Stockpiles 1 and 2 (Photo 1). Puddles of rain water pool along the shoulders of Emerald Avenue.

We collected sample PL3 from ponded rain water located beyond the Caltrans right-of-way on the south side of Stockpile 2 outside a chain-link fence gate (Photo 2).

We collected sample PL4 (Photo 3) from an onsite drainage basin adjacent and south of Stockpile 3. Water flows into the basin from storm drain inlets along SR 99.

We collected sample PL5 (Photo 4) from a location within 3 feet of a gate valve within the onsite drainage basin adjacent and south of Stockpile 3. The gate valve is reportedly opened when the basin fills to capacity. The gate valve was not opened during this event.

We collected two background samples from locations north and south of Stockpiles 1 and 2. We collected sample BG1 from water flowing into a drop inlet located to the south of Stockpile 2 on Loletta Avenue (Photo 5), and sample BG2 from water flowing into a drop inlet on Emerald Avenue to the north of Stockpiles 1 and 2 (Photo 6).

We collected the samples into disposable bailers using a suction pump, and subsequently transferred them into laboratory-provided containers. We field filtered samples to be analyzed for dissolved metals by passing the sample through a 0.45-micron filter. We capped, labeled, chilled and transported the samples to Advanced Technology Laboratories, Inc. (ATL) utilizing chain-of-custody procedures. During the sampling activities, we monitored the samples for pH, electrical conductivity, temperature, turbidity, oxygen-reduction potential (ORP) and dissolved oxygen (DO). The measured field parameters are presented on Table 1.

We followed Quality Assurance/Quality Control (QA/QC) procedures during the field sampling activities including the use of disposable bailers, decontamination of the sample pump by washing in an Alconox™ solution followed by fresh and distilled water rinses, and providing chain-of-custody documentation for each water sample transferred to the laboratory.

At a separate time on December 12, 2014, CVRWQCB personnel collected a sample in the vicinity of our sample PL5 location. The CVRWQCB sample, designated "RWQCB Sample" in this report, was submitted to Excelchem Environmental Labs.

## Laboratory Analyses

We delivered seven surface water samples to ATL for the following analyses under chain-of-custody protocol:

- Dissolved metals, following the United States Environmental Protection Agency (EPA) Test Method 6020/7470A;
- Chloride, nitrate as nitrogen and sulfate by EPA Test Method 300.0;
- Sulfide by Standard Method (SM) 4500-S-D;
- Total alkalinity, bicarbonate alkalinity, carbonate alkalinity by SM 2320B;
- Total dissolved solids (TDS) by SM 2540C; and
- Total suspended solids (TSS) by SM 2540D.

Nitrate as nitrogen could not be analyzed within hold time due to a laboratory instrument failure. The reported chloride and sulfate concentrations are estimated due to the same instrument failure. Groundwater samples collected by the CVRWQCB were delivered to Excelchem Environmental Laboratories and analyzed for each of the above listed analyses except chloride, sulfide, alkalinity, TDS and TSS. Surface water analytical results for this monitoring event are summarized on Tables 2 and 3. The laboratory report and chain-of-custody documentation are in Appendix A.

## Analytical Results

### Dissolved Metals

Analytical results for dissolved metals are summarized on Table 2.

Barium, chromium, copper, vanadium, and strontium were reported for samples PL1 through PL5. Molybdenum and zinc were reported for samples PL1, PL2, PL4, and PL5. Manganese was reported for samples PL2, PL3, and PL5. Antimony was reported for samples PL1 and PL5, and nickel was reported for samples PL2 and PL5. Arsenic, cobalt and lead were each reported for sample PL2. Beryllium, cadmium, selenium, silver, thallium and mercury were not reported at concentrations equal to or greater than their respective practical quantitation limits (PQLs) for samples PL1 through PL5.

The analytical results for samples PL1 through PL5 are generally similar to the concentrations reported for background samples BG1 and BG2, with the exception of barium for samples PL4 and PL5, lead for sample PL2, and strontium for sample PL2, which are higher than those reported for background samples BG1 and BG2.

Dissolved calcium, magnesium, potassium, and sodium concentrations for samples PL1 through PL5 are similar to background concentrations reported for samples BG1 and BG2.

### **General Minerals**

To further characterize the geochemistry of the water, general minerals analyses were conducted. The analytical results for general minerals are summarized on Table 3.

Sulfide, TSS, TDS, sulfate, chloride and alkalinity concentrations for samples PL1 through PL5 are similar

to background concentrations reported for samples BG1 and BG2, with the exception of alkalinity for sample PL2, which is higher than those reported for background samples BG1 and BG2.

### **Laboratory QA/QC**

We reviewed the analytical laboratory QA/QC provided with the laboratory report. These data show that the method blank surrogate recoveries are acceptable and that concentrations of selected analytes were not reported at concentrations equal to or greater than their respective PQLs for each method blank for each analysis. Appropriate recoveries were noted for each laboratory control sample for each analysis. Several matrix spike/matrix spike duplicate (MS/MSD) analytes had recoveries or relative percent differences outside of laboratory control limits; however, the sample results were validated by the laboratory control samples.

### **CVRWQCB Sample Analytical Results**

The results of CVRWQCB samples analyzed by Excelchem are summarized on Tables 2 and 3. Excelchem's analytical data report and chain-of-custody documentation are in Appendix A. When comparing the CVRWQCB metals results to our site sample metals results, the reported concentrations for each sample are nearly the same. Sample differences are attributed to differing laboratory reporting limits. CVRWQCB personnel also reported that their sample was not field filtered. A comparison of the general chemistry analytical data for the two sample sets also shows consistent results. No notable differences in the concentrations for each reported analyte are evident.

## **SURFACE WATER MANAGEMENT**

Since the analytical results for samples PL1 through PL5 are generally similar to the concentrations reported for background samples BG1 and BG2, with the few exceptions noted above, it appears that current surface water management practices at these locations are effective.

Surface water originating from the western slope of Stockpile 2 along Emerald Avenue will continue to be managed by maintaining the stockpile's vegetative/fiber cover and straw wattles which have been placed to intercept and redirect surface water slope flow to areas within the Caltrans right-of-way.

To intercept runoff from the access ramp located on the south side of Stockpile 2 (north end of Bennett Avenue), Caltrans constructed a berm at the base of the ramp in February 2014. The berm was observed to be functioning effectively to prevent offsite migration of surface water by redirecting the flow to areas within the Caltrans right-of-way.

Caltrans plans to conduct one additional surface water sampling event during the 2014/2015 rain season. In an effort to collect additional data at location PL5, the next sampling event will be triggered by the presence of surface water at the gate valve within the onsite drainage basin adjacent and south of Stockpile 3.

We appreciate the opportunity to provide our services on this project. Please contact us if you have any questions concerning the contents of this Report or if we may be of further service.

Sincerely,

**GEOCON CONSULTANTS, INC.**



Rebecca L. Silva  
Project Manager



John E. Juhrend, PE, CEG  
Principal/Senior Engineer



- (1) Addressee
- (1) DTSC, Randy Adams
- (1) CVRWQCB, Steve Meeks

Attachments:      Figure 1, Vicinity Map  
                            Figure 2, Site Plan

Photographs (1 through 6)

Table 1, Summary of Surface Water Field Parameters  
Table 2, Summary of Surface Water Analytical Results – Title 22 Metals (Dissolved)  
Table 3, Summary of Surface Water Analytical Results – General Minerals

Appendix A, Laboratory Reports and Chain-of-custody Documentation



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Caltrans Modesto Soil Stockpiles

Stanislaus County,  
California

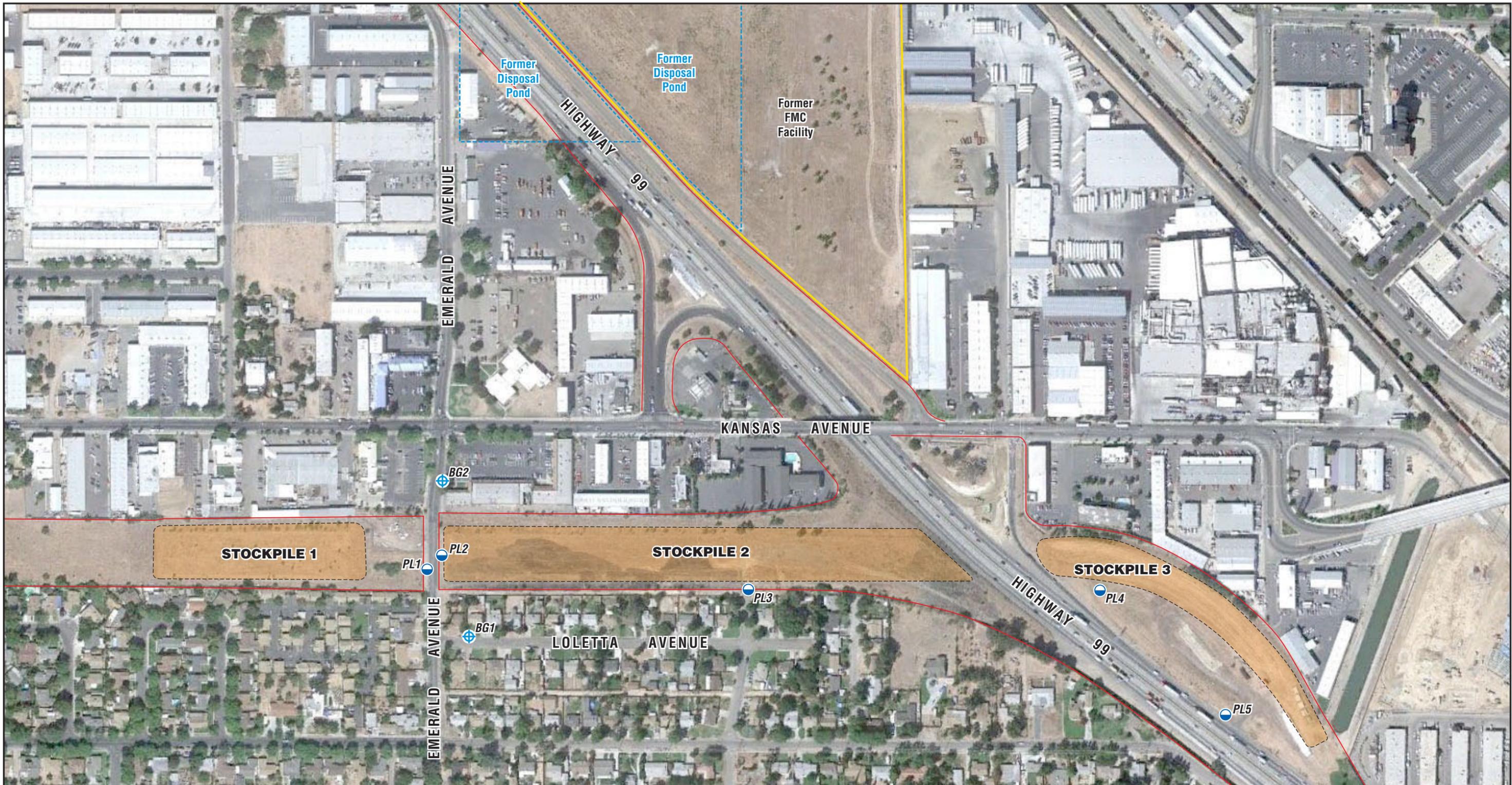
**VICINITY MAP**

GEOCON Proj. No. S9800-01-17

Task Order No. 17

January 2015

Figure 1



LEGEND:

- State Right-of-Way Boundary
- Approximate Surface Water Sample Location
- ⊕ Approximate Surface Water Sample Location (Background)



Caltrans Modesto Soil Stockpiles

Stanislaus County,  
California

**SITE PLAN**

GEOCON Proj. No. S9800-01-17

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Figure 2



Photo No. 1 Sample Locations PL1 and PL2 on west side and east side of Emerald Avenue



Photo No. 2 Sample Location PL3 south of Stockpile 2

**PHOTOS NO. 1 & 2**



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Photo No. 3 Sample location PL4 south of Stockpile 3



Photo No. 4 Sample location PL5 at gate valve south of Stockpile 3

**PHOTOS NO. 3 & 4**



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Photo No. 5 Background sample BG1 on Loletta Avenue



Photo No. 6 Background sample location BG2 on Emerald Avenue

**PHOTOS NO. 5 & 6**



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Caltrans Modesto Soil Stockpiles

GEOCON Proj. No. S9800-01-17

Stanislaus County,  
California

Task Order No. 17

January 2015

TABLE 1  
SUMMARY OF SURFACE WATER FIELD PARAMETERS  
CALTRANS MODESTO SOIL STOCKPILES  
STANISLAUS COUNTY, CALIFORNIA

SAMPLE ID	SAMPLE DATE	pH	CONDUCTIVITY	TEMPERATURE	TURBIDITY	ORP	DO	
			µmhos/cm	°C	ntu	millivolts	mg/l	
PL1	4/4/2013	8.93	88	14.9	47	3	---	
PL1	1/30/2014	5.72	152	12.3	120	86	---	
PL1	2/6/2014	5.95	227	10.6	207	147	---	
PL1	2/28/2014	5.70	121	13.7	245	192	7.70	
PL1	12/2/2014	6.71	73	13.6	311	146	7.07	
PL1	12/12/2014	7.38	71	11.2	83.1	168	7.31	
PL2	4/4/2013	9.00	54	15.1	208	28	---	
PL2	1/30/2014		-----No Sample - Dry-----					
PL2	2/6/2014	5.98	128	11.2	293	140	---	
PL2	2/28/2014	6.29	99	12.7	256	222	6.03	
PL2	12/2/2014	6.83	45	13.5	217	156	7.44	
PL2	12/12/2014	7.54	70	10.3	551	186	8.29	
PL3	4/4/2013	7.91	167	16.3	54	68	---	
PL3	1/30/2014	5.57	263	12.4	105	81	---	
PL3	2/6/2014	5.85	153	11.1	79	149	---	
PL3	2/28/2014	6.42	104	12.9	37	234	5.31	
PL3	12/2/2014	6.71	29	13.6	158	174	7.50	
PL3	12/12/2014	7.07	27	10.6	41.2	179	6.59	
PL4	4/4/2013	11.08	315	16.3	98	58	---	
PL4	1/30/2014	5.95	128	15.2	156	79	---	
PL4	2/6/2014	5.80	186	10.9	215	154	---	
PL4	2/28/2014	6.67	71	12.3	24	235	6.20	
PL4	12/2/2014	6.72	66	14.1	119	196	6.90	
PL4	12/12/2014	7.15	26	11.5	47.3	122	7.12	
PL5	12/12/2014	6.99	32	11.4	99.7	149	5.56	
BG1	4/4/2013	8.46	42	16.4	57	37	---	
BG1	1/30/2014	5.73	157	12.5	110	59	---	
BG1	2/6/2014	5.82	142	10.7	166	155	---	
BG1	2/28/2014	6.37	78	12.9	62	226	5.49	

TABLE 1  
SUMMARY OF SURFACE WATER FIELD PARAMETERS  
CALTRANS MODESTO SOIL STOCKPILES  
STANISLAUS COUNTY, CALIFORNIA

SAMPLE ID	SAMPLE DATE	pH	CONDUCTIVITY	TEMPERATURE	TURBIDITY	ORP	DO
			$\mu\text{mhos/cm}$	$^{\circ}\text{C}$	ntu	millivolts	mg/l
BG1	12/2/2014	6.55	33	13.8	121	171	6.60
BG1	12/12/2014	7.41	22	10.6	93.1	143	6.60
BG2	4/4/2013	9.88	83	18.4	102	67	---
BG2	1/30/2014	5.91	189	14.2	210	95	---
BG2	2/6/2014	5.84	167	10.9	350	159	---
BG2	2/28/2014	6.05	73	12.9	122	2.7	6.39
BG2	12/2/2014	6.72	66	14.1	119	196	6.90
BG2	12/12/2014	7.63	37	10.7	218	176	8.34

## Notes:

 $\mu\text{mhos/cm}$  = Micromhos per centimeter $^{\circ}\text{C}$  = Degree Celsius

ntu = Nephelometric turbidity unit

ORP = Oxygen-Reduction Potential

DO = Dissolved Oxygen

mg/l = Milligrams per liter

TABLE 2  
 SUMMARY OF SURFACE WATER ANALYTICAL RESULTS - TITLE 22 METALS (DISSOLVED)  
 CALTRANS MODESTO SOIL STOCKPILES  
 STANISLAUS COUNTY, CALIFORNIA

ANALYTE		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Strontium	Mercury	Calcium	Magnesium	Potassium	Sodium	
SAMPLE ID	SAMPLE DATE	Results in micrograms per liter																				Results in milligrams per liter			
PL1	4/4/2013	1.0	<1.0	12	<0.50	<0.50	0.55	<0.50	8.9	<1.0	<10	2.6	2.5	<0.50	<0.50	<0.50	2.0	<10	44	<0.20	---	---	---	---	
PL1	1/30/2014	0.98	1.2	25	<0.50	<0.50	0.97	0.75	23	<1.0	73	6.0	5.8	<0.50	<0.50	<0.50	4.9	37	100	<0.20	14	1.9	3.4	5.5	
PL1	2/6/2014	1.5	1.0	35	<0.50	<0.50	0.75	0.59	17	<1.0	<10	6.2	5.5	<0.50	<0.50	<0.50	3.4	<10	210	<0.20	28	3.3	3.6	6.6	
PL1	2/28/2014	0.53	1.1	10	<0.50	<0.50	0.70	<0.50	5.6	<1.0	<10	1.9	3.2	<0.50	<0.50	<0.50	2.8	<10	55	<0.20	8.9	0.94	1.6	2.0	
PL1	12/2/2014	<0.5	<1.0	16	<0.50	<0.50	1.1	<0.50	3.0	<1.0	32	1.2	1.5	<0.50	<0.50	<0.50	3.7	43	55	<0.20	7.3	1.2	1.7	3.5	
PL1	12/12/2014	0.82	<1.0	16	<0.50	<0.50	0.68	<0.50	2.2	<1.0	<10	0.68	<1.0	<0.50	<0.50	<0.50	1.2	96	53	<0.20	7.1	1.0	1.5	1.8	
PL2	4/4/2013	1.2	<1.0	39	<0.50	<0.50	2.5	<0.50	12	2.7	22	2.7	2.1	<0.50	<0.50	<0.50	2.7	27	38	<0.20	---	---	---	---	
PL2	1/30/2014	-----No Sample - Dry-----																							
PL2	2/6/2014	3.5	<1.0	41	<0.50	<0.50	3.0	0.88	29	1.2	78	9.5	6.2	<0.50	<0.50	<0.50	3.1	42	90	<0.20	7.7	1.6	5.6	3.1	
PL2	2/28/2014	2.5	<1.0	35	<0.50	<0.50	6.5	<0.50	15	1.1	23	3.8	4.6	<0.50	<0.50	<0.50	1.8	27	63	<0.20	6.0	1.0	2.2	1.7	
PL2	12/2/2014	0.53	<1.0	24	<0.50	<0.50	1.7	0.53	5.8	2.0	36	0.94	1.9	<0.50	<0.50	<0.50	2.6	14	41	<0.20	4.4	0.89	1.3	0.64	
PL2	12/12/2014	<0.5	1.4	50	<0.50	<0.50	1.8	0.52	6.5	3.5	27	0.97	1.8	<0.50	<0.50	<0.50	5.0	21	120	<0.20	12	2.1	1.6	1.4	
PL3	4/4/2013	0.55	1.3	110	<0.50	<0.50	1.1	0.68	19	15	46	3.0	4.4	<0.50	<0.50	<0.50	3.3	33	220	<0.20	---	---	---	---	
PL3	1/30/2014	0.70	1.9	140	<0.50	<0.50	1.6	2.2	32	2.3	190	4.1	10	<0.50	<0.50	<0.50	10	84	190	<0.20	18	3.9	17	6.4	
PL3	2/6/2014	0.51	1.2	96	<0.50	<0.50	1.1	0.93	21	<1.0	71	2.3	4.7	<0.50	<0.50	<0.50	7.4	29	150	<0.20	12	2.7	8.6	2.5	
PL3	2/28/2014	<0.50	<1.0	93	<0.50	<0.50	0.86	<0.50	8.0	<1.0	12	0.92	4.0	<0.50	<0.50	<0.50	3.8	11	77	<0.20	6.2	1.3	3.2	1.2	
PL3	12/2/2014	<0.50	<1.0	37	<0.50	<0.50	0.68	<0.50	2.0	<1.0	<10	<0.5	<1.0	<0.50	<0.50	<0.50	2.5	<10	46	<0.20	3.1	0.51	2.6	0.63	
PL3	12/12/2014	<0.50	<1.0	53	<0.50	<0.50	0.53	<0.50	2.4	<1.0	18	<0.5	<1.0	<0.50	<0.50	<0.50	1.8	<10	70	<0.20	4.3	0.91	3.1	0.34	
PL4	4/4/2013	1.2	1.3	45	<0.50	<0.50	7.8	1.2	16	<1.0	<10	3.4	4.8	<0.50	<0.50	<0.50	7.0	11	320	<0.20	---	---	---	---	
PL4	1/30/2014	1.3	1.1	25	<0.50	<0.50	2.0	1.0	16	<1.0	38	6.4	5.5	<0.50	<0.50	<0.50	5.7	53	110	<0.20	9.8	0.89	4.5	7.8	
PL4	2/6/2014	1.2	<1.0	42	<0.50	<0.50	2.4	1.5	5.9	<1.0	110	7.1	6.6	<0.50	<0.50	<0.50	5.8	26	180	<0.20	18	1.7	5.5	10	
PL4	2/28/2014	0.64	1.1	26	<0.50	<0.50	1.2	<0.50	6.2	<1.0	13	1.6	2.5	<0.50	<0.50	<0.50	2.0	26	75	<0.20	5.0	0.61	2.5	2.2	
PL4	12/2/2014	1.1	<1.0	56	<0.50	<0.50	1.5	0.52	9.4	1.1	33	2.4	2.2	<0.50	<0.50	<0.50	1.9	37	100	<0.20	6.0	0.69	2.1	2.7	

TABLE 2  
 SUMMARY OF SURFACE WATER ANALYTICAL RESULTS - TITLE 22 METALS (DISSOLVED)  
 CALTRANS MODESTO SOIL STOCKPILES  
 STANISLAUS COUNTY, CALIFORNIA

ANALYTE		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Strontium	Mercury	Calcium	Magnesium	Potassium	Sodium	
SAMPLE ID	SAMPLE DATE	Results in micrograms per liter																				Results in milligrams per liter			
PL4	12/12/2014	<0.50	<1.0	87	<0.50	<0.50	1.0	<0.50	4.3	<1.0	<10	1.5	<1.0	<0.50	<0.50	<0.50	1.0	25	85	<0.20	4.8	0.55	1.5	1.4	
PL5	12/12/2014	0.74	<1.0	110	<0.50	<0.50	1.5	<0.50	6.3	<1.0	11	1.5	1.1	<0.50	<0.50	<0.50	1.1	22	75	<0.20	4.3	0.56	1.9	1.4	
RWQCB Sample*	12/12/2014	<10	<10	155	<5.0	<5.0	<5.0	<5.0	9.8	<5.0	---	<5.0	<5.0	<20	<5.0	<20	<5.0	30.3	81.6	<0.20	---	---	---	---	
BG1	4/4/2013	<0.50	<1.0	11	<0.50	<0.50	0.84	<0.50	5.9	<1.0	12	0.93	2.7	<0.50	<0.50	<0.50	1.9	16	20	<0.20	---	---	---	---	
BG1	1/30/2014	0.66	<1.0	44	<0.50	<0.50	1.2	0.75	15	<1.0	39	1.7	6.2	<0.50	<0.50	<0.50	4.4	28	90	<0.20	11	2.5	7.5	3.3	
BG1	2/6/2014	0.56	<1.0	31	<0.50	<0.50	0.92	<0.50	12	<1.0	15	1.2	5.0	<0.50	<0.50	<0.50	4.7	14	68	<0.20	8.1	1.8	4.4	3.2	
BG1	2/28/2014	<0.50	<1.0	22	<0.50	<0.50	0.91	<0.50	7.4	<1.0	<10	0.62	4.1	<0.50	<0.50	<0.50	2.8	13	38	<0.20	4.7	0.91	1.7	2.1	
BG1	12/2/2014	<0.50	<1.0	13	<0.50	<0.50	0.91	<0.50	5.8	<1.0	<10	0.58	<1.0	<0.50	<0.50	<0.50	1.9	<10	25	<0.20	2.7	0.55	1.9	0.98	
BG1	12/12/2014	<0.50	<1.0	13	<0.50	<0.50	0.74	<0.50	3.0	<1.0	<10	<0.50	1.1	<0.50	<0.50	<0.50	1.1	<10	20	<0.20	2.2	0.42	1.2	0.58	
BG2	4/4/2013	1.2	<1.0	20	<0.50	<0.50	4.8	<0.50	14	1.2	25	3.0	2.6	<0.50	<0.50	<0.50	<1.0	66	24	<0.20	---	---	---	---	
BG2	1/30/2014	3.5	1.1	48	<0.50	<0.50	2.3	0.95	32	<1.0	66	11	6.6	<0.50	<0.50	<0.50	1.4	110	120	<0.20	17	3.1	9.6	7.4	
BG2	2/6/2014	2.4	<1.0	35	<0.50	<0.50	1.9	0.73	22	<1.0	46	5.3	6.4	<0.50	<0.50	<0.50	2.1	110	87	<0.20	12	2.4	5.9	5.0	
BG2	2/28/2014	3.4	<1.0	33	<0.50	<0.50	12	<0.50	26	<1.0	18	8.8	6.0	<0.50	<0.50	<0.50	1.2	70	27	<0.20	3.5	0.62	2.3	2.2	
BG2	12/2/2014	2.4	<1.0	37	<0.50	<0.50	8.3	0.73	23	1.1	53	6.8	5.5	<0.50	<0.50	<0.50	2.2	85	57	<0.20	5.0	1.1	4.0	2.7	
BG2	12/12/2014	1.3	<1.0	24	<0.50	<0.50	3.0	<0.50	9.4	<1.0	20	2.1	2.0	<0.50	<0.50	<0.50	<1.0	28	37	<0.20	3.6	0.64	1.6	1.2	

Notes:

< = Less than laboratory reporting limits

--- = Not analyzed

\* = Sample submitted by Central Valley Regional Water Quality Control Board to Excelchem Environmental Labs



TABLE 3  
SUMMARY OF SURFACE WATER ANALYTICAL RESULTS - GENERAL MINERALS  
CALTRANS MODESTO SOIL STOCKPILES  
STANISLAUS COUNTY, CALIFORNIA

SAMPLE ID	SAMPLE DATE	NITROGEN, NITRATE (as N)	SULFATE	SULFIDE	TOTAL SUSPENDED SOLIDS	CHLORIDE	ALKALINITY, BICARBONATE	ALKALINITY, CARBONATE	ALKALINITY, TOTAL	TOTAL DISSOLVED SOLIDS	Results in milligrams per liter
BG1	4/4/2013	0.35	1.8	0.023	140	---	---	---	---	---	
BG1	1/30/2014	2.0	8.7	<0.020	48	4.9	40	<5.0	40	100	
BG1	2/6/2014	2.8	11	<0.020	30	3.3	29	<5.0	29	92	
BG1	2/28/2014	0.96	3.5	0.014	35	1.5	16	<5.0	16	40	
BG1	12/2/2014	0.19	1.5	<0.020	43	<0.50	12	<5.0	12	31	
BG1	12/12/2014	---	3.2	<0.010	31	1.4	9.8	<5.0	9.8	<10	
BG2	4/4/2013	0.40	2.5	<0.020	96	---	---	---	---	---	
BG2	1/30/2014	0.81	11	0.10	200	8.1	72	<5.0	72	240	
BG2	2/6/2014	0.96	10	0.064	220	7.1	52	<5.0	52	170	
BG2	2/28/2014	0.57	3.1	<0.010	160	1.8	17	<5.0	17	32	
BG2	12/2/2014	0.69	3.6	<0.050	670	2.9	32	<5.0	32	74	
BG2	12/12/2014	---	3.1	<0.010	280	1.2	19	<5.0	19	21	

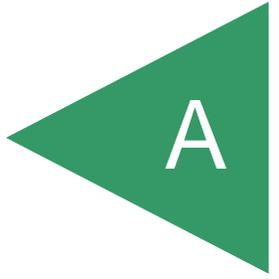
Notes: < = Less than the indicated laboratory reporting limit

--- = Not analyzed

\* = Sample submitted by Central Valley Regional Water Quality Control Board to Excelchem Environmental Labs

APPENDIX

A



December 18, 2014

Rebecca Silva  
Geocon Consultants, Inc.  
3160 Gold Valley Drive, Suite 800  
Rancho Cordova, CA 95742  
Tel: (916) 852-9118  
Fax:(916) 852-9132

ELAP No.: 1838  
CSDLAC No.: 10196  
ORELAP No.: CA300003  
TCEQ No. : T104704502

Re: ATL Work Order Number : 1403974

Client Reference : Modesto Stockpiles Stormwater, S9800-01-17

Enclosed are the results for sample(s) received on December 13, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez  
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



## Certificate of Analysis

Geocon Consultants, Inc.

3160 Gold Valley Drive, Suite 800

Rancho Cordova, CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0

Report To : Rebecca Silva

Reported : 12/18/2014

### SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PL1	1403974-01	Water	12/12/14 8:15	12/13/14 9:30
PL2	1403974-02	Water	12/12/14 8:40	12/13/14 9:30
BG2	1403974-03	Water	12/12/14 9:00	12/13/14 9:30
BG1	1403974-04	Water	12/12/14 9:25	12/13/14 9:30
PL3	1403974-05	Water	12/12/14 9:55	12/13/14 9:30
PL5	1403974-06	Water	12/12/14 10:25	12/13/14 9:30
PL4	1403974-07	Water	12/12/14 10:50	12/13/14 9:30

### CASE NARRATIVE

#### Analytical Comments for Method 300

Samples 1403974-01/07 were initially analyzed for anions (nitrate) within hold time, but due to failing QA/QC were reanalyzed beyond hold time. Additionally, the instrument's suppressor failed and had to be replaced. The results for nitrate are not reported, per client request and the results for chloride and sulfate are estimated values.



# Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova, CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0  
 Report To : Rebecca Silva  
 Reported : 12/18/2014

**Client Sample ID PL1**

**Lab ID: 1403974-01**

## Anions Scan by Ion Chromatography EPA 300.0

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	0.55	0.50	1	B4L0442	12/13/2014	12/13/14 17:51	E4
Sulfate	1.4	1.0	1	B4L0442	12/13/2014	12/13/14 17:51	E4

## Alkalinity, Speciated by SM 2320B

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO3)	27	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Carbonate (as CaCO3)	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Hydroxide (as CaCO3)	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Total (as CaCO3)	27	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	

## Total Dissolved Solids (Residue, Filterable) by SM 2540C

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	49	10	1	B4L0439	12/14/2014	12/15/14 09:00	

## Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	20	1.7	1	B4L0435	12/13/2014	12/14/14 09:30	

## Sulfide, Total by SM 4500-S=D

**Analyst: LA**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	ND	0.010	1	B4L0405	12/15/2014	12/15/14 14:44	

## Dissolved Metals by ICP-MS EPA 6020

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	0.82	0.50	1	B4L0403	12/15/2014	12/15/14 12:40	
Arsenic	ND	1.0	1	B4L0403	12/15/2014	12/15/14 12:40	
Barium	16	1.0	1	B4L0403	12/15/2014	12/15/14 12:40	



# Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0

Report To : Rebecca Silva

Reported : 12/18/2014

**Client Sample ID PL1**

**Lab ID: 1403974-01**

**Dissolved Metals by ICP-MS EPA 6020**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Beryllium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 12:40	
Cadmium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 12:40	
<b>Calcium</b>	<b>7100</b>	100	2	B4L0403	12/15/2014	12/15/14 13:46	D6
<b>Chromium</b>	<b>0.68</b>	0.50	1	B4L0403	12/15/2014	12/15/14 12:40	
Cobalt	ND	0.50	1	B4L0403	12/15/2014	12/15/14 12:40	
<b>Copper</b>	<b>2.2</b>	1.0	1	B4L0403	12/15/2014	12/15/14 12:40	
Lead	ND	1.0	1	B4L0403	12/15/2014	12/15/14 12:40	
<b>Magnesium</b>	<b>1000</b>	50	1	B4L0403	12/15/2014	12/15/14 12:40	
Manganese	ND	10	1	B4L0403	12/15/2014	12/15/14 12:40	
<b>Molybdenum</b>	<b>0.68</b>	0.50	1	B4L0403	12/15/2014	12/15/14 12:40	
Nickel	ND	1.0	1	B4L0403	12/15/2014	12/15/14 12:40	
<b>Potassium</b>	<b>1500</b>	50	1	B4L0403	12/15/2014	12/15/14 12:40	
Selenium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 12:40	
Silver	ND	0.50	1	B4L0403	12/15/2014	12/15/14 12:40	
<b>Sodium</b>	<b>1800</b>	50	1	B4L0403	12/15/2014	12/15/14 12:40	
Thallium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 12:40	
<b>Vanadium</b>	<b>1.2</b>	1.0	1	B4L0403	12/15/2014	12/15/14 12:40	
<b>Zinc</b>	<b>96</b>	10	1	B4L0403	12/15/2014	12/15/14 12:40	
<b>Strontium</b>	<b>53</b>	10	1	B4L0403	12/15/2014	12/15/14 12:40	

**Dissolved Mercury by AA (Cold Vapor) by EPA 7470A**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B4L0408	12/15/2014	12/15/14 13:46	



# Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0  
 Report To : Rebecca Silva  
 Reported : 12/18/2014

## Client Sample ID PL2

Lab ID: 1403974-02

### Anions Scan by Ion Chromatography EPA 300.0

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	1.1	0.50	1	B4L0442	12/13/2014	12/13/14 18:02	E4
Sulfate	2.2	1.0	1	B4L0442	12/13/2014	12/13/14 18:02	E4

### Alkalinity, Speciated by SM 2320B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO3)	170	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Carbonate (as CaCO3)	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Hydroxide (as CaCO3)	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Total (as CaCO3)	170	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	

### Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	64	14	1	B4L0439	12/14/2014	12/15/14 09:00	

### Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	260	14	1	B4L0435	12/13/2014	12/14/14 09:30	

### Sulfide, Total by SM 4500-S=D

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	ND	0.010	1	B4L0405	12/15/2014	12/15/14 14:44	

### Dissolved Metals by ICP-MS EPA 6020

Analyst: SB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.50	1	B4L0403	12/15/2014	12/15/14 12:45	
Arsenic	1.4	1.0	1	B4L0403	12/15/2014	12/15/14 12:45	
Barium	50	1.0	1	B4L0403	12/15/2014	12/15/14 12:45	



# Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0  
 Report To : Rebecca Silva  
 Reported : 12/18/2014

**Client Sample ID PL2**

**Lab ID: 1403974-02**

**Dissolved Metals by ICP-MS EPA 6020**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Beryllium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 12:45	
Cadmium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Calcium</b>	<b>12000</b>	250	5	B4L0403	12/15/2014	12/15/14 13:51	D6
<b>Chromium</b>	<b>1.8</b>	0.50	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Cobalt</b>	<b>0.52</b>	0.50	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Copper</b>	<b>6.5</b>	1.0	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Lead</b>	<b>3.5</b>	1.0	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Magnesium</b>	<b>2100</b>	50	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Manganese</b>	<b>27</b>	10	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Molybdenum</b>	<b>0.97</b>	0.50	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Nickel</b>	<b>1.8</b>	1.0	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Potassium</b>	<b>1600</b>	50	1	B4L0403	12/15/2014	12/15/14 12:45	
Selenium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 12:45	
Silver	ND	0.50	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Sodium</b>	<b>1400</b>	50	1	B4L0403	12/15/2014	12/15/14 12:45	
Thallium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Vanadium</b>	<b>5.0</b>	1.0	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Zinc</b>	<b>21</b>	10	1	B4L0403	12/15/2014	12/15/14 12:45	
<b>Strontium</b>	<b>120</b>	10	1	B4L0403	12/15/2014	12/15/14 12:45	

**Dissolved Mercury by AA (Cold Vapor) by EPA 7470A**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B4L0408	12/15/2014	12/15/14 13:57	



## Certificate of Analysis

Geocon Consultants, Inc.  
3160 Gold Valley Drive, Suite 800  
Rancho Cordova, CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0

Report To : Rebecca Silva

Reported : 12/18/2014

**Client Sample ID BG2**

**Lab ID: 1403974-03**

### Anions Scan by Ion Chromatography EPA 300.0

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	1.2	0.50	1	B4L0442	12/13/2014	12/13/14 17:05	E4
Sulfate	3.1	1.0	1	B4L0442	12/13/2014	12/13/14 17:05	E4

### Alkalinity, Speciated by SM 2320B

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	19	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Total (as CaCO <sub>3</sub> )	19	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	

### Total Dissolved Solids (Residue, Filterable) by SM 2540C

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	21	10	1	B4L0439	12/14/2014	12/15/14 09:00	

### Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	280	10	1	B4L0435	12/13/2014	12/14/14 09:30	

### Sulfide, Total by SM 4500-S=D

**Analyst: LA**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	ND	0.010	1	B4L0405	12/15/2014	12/15/14 14:44	

### Dissolved Metals by ICP-MS EPA 6020

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	1.3	0.50	1	B4L0403	12/15/2014	12/15/14 13:03	
Arsenic	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:03	
Barium	24	1.0	1	B4L0403	12/15/2014	12/15/14 13:03	



# Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0

Report To : Rebecca Silva

Reported : 12/18/2014

**Client Sample ID BG2**

**Lab ID: 1403974-03**

**Dissolved Metals by ICP-MS EPA 6020**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Beryllium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:03	
Cadmium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:03	
<b>Calcium</b>	<b>3600</b>	50	1	B4L0403	12/15/2014	12/15/14 13:03	
<b>Chromium</b>	<b>3.0</b>	0.50	1	B4L0403	12/15/2014	12/15/14 13:03	
Cobalt	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:03	
<b>Copper</b>	<b>9.4</b>	1.0	1	B4L0403	12/15/2014	12/15/14 13:03	
Lead	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:03	
<b>Magnesium</b>	<b>640</b>	50	1	B4L0403	12/15/2014	12/15/14 13:03	
<b>Manganese</b>	<b>20</b>	10	1	B4L0403	12/15/2014	12/15/14 13:03	
<b>Molybdenum</b>	<b>2.1</b>	0.50	1	B4L0403	12/15/2014	12/15/14 13:03	
<b>Nickel</b>	<b>2.0</b>	1.0	1	B4L0403	12/15/2014	12/15/14 13:03	
<b>Potassium</b>	<b>1600</b>	50	1	B4L0403	12/15/2014	12/15/14 13:03	
Selenium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:03	
Silver	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:03	
<b>Sodium</b>	<b>1200</b>	50	1	B4L0403	12/15/2014	12/15/14 13:03	
Thallium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:03	
Vanadium	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:03	
<b>Zinc</b>	<b>28</b>	10	1	B4L0403	12/15/2014	12/15/14 13:03	
<b>Strontium</b>	<b>37</b>	10	1	B4L0403	12/15/2014	12/15/14 13:03	

**Dissolved Mercury by AA (Cold Vapor) by EPA 7470A**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B4L0408	12/15/2014	12/15/14 14:00	



# Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova, CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0  
 Report To : Rebecca Silva  
 Reported : 12/18/2014

**Client Sample ID BG1**

**Lab ID: 1403974-04**

### Anions Scan by Ion Chromatography EPA 300.0

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	1.4	0.50	1	B4L0442	12/13/2014	12/13/14 17:17	E4
Sulfate	3.2	1.0	1	B4L0442	12/13/2014	12/13/14 17:17	E4

### Alkalinity, Speciated by SM 2320B

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO3)	9.8	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Carbonate (as CaCO3)	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Hydroxide (as CaCO3)	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Total (as CaCO3)	9.8	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	

### Total Dissolved Solids (Residue, Filterable) by SM 2540C

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	ND	10	1	B4L0439	12/14/2014	12/15/14 09:00	

### Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	31	3.3	1	B4L0435	12/13/2014	12/14/14 09:30	

### Sulfide, Total by SM 4500-S=D

**Analyst: LA**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	ND	0.010	1	B4L0405	12/15/2014	12/15/14 14:44	

### Dissolved Metals by ICP-MS EPA 6020

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:08	
Arsenic	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:08	
Barium	13	1.0	1	B4L0403	12/15/2014	12/15/14 13:08	



# Certificate of Analysis

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 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0

Report To : Rebecca Silva

Reported : 12/18/2014

**Client Sample ID BG1**

**Lab ID: 1403974-04**

**Dissolved Metals by ICP-MS EPA 6020**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Beryllium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:08	
Cadmium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:08	
<b>Calcium</b>	<b>2200</b>	50	1	B4L0403	12/15/2014	12/15/14 13:08	
<b>Chromium</b>	<b>0.74</b>	0.50	1	B4L0403	12/15/2014	12/15/14 13:08	
Cobalt	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:08	
<b>Copper</b>	<b>3.0</b>	1.0	1	B4L0403	12/15/2014	12/15/14 13:08	
Lead	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:08	
<b>Magnesium</b>	<b>420</b>	50	1	B4L0403	12/15/2014	12/15/14 13:08	
Manganese	ND	10	1	B4L0403	12/15/2014	12/15/14 13:08	
Molybdenum	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:08	
<b>Nickel</b>	<b>1.1</b>	1.0	1	B4L0403	12/15/2014	12/15/14 13:08	
<b>Potassium</b>	<b>1200</b>	50	1	B4L0403	12/15/2014	12/15/14 13:08	
Selenium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:08	
Silver	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:08	
<b>Sodium</b>	<b>580</b>	50	1	B4L0403	12/15/2014	12/15/14 13:08	
Thallium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:08	
<b>Vanadium</b>	<b>1.1</b>	1.0	1	B4L0403	12/15/2014	12/15/14 13:08	
Zinc	ND	10	1	B4L0403	12/15/2014	12/15/14 13:08	
<b>Strontium</b>	<b>20</b>	10	1	B4L0403	12/15/2014	12/15/14 13:08	

**Dissolved Mercury by AA (Cold Vapor) by EPA 7470A**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B4L0408	12/15/2014	12/15/14 14:02	



# Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova, CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0  
 Report To : Rebecca Silva  
 Reported : 12/18/2014

## Client Sample ID PL3

Lab ID: 1403974-05

### Anions Scan by Ion Chromatography EPA 300.0

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	0.87	0.50	1	B4L0442	12/13/2014	12/13/14 17:28	E4
Sulfate	1.5	1.0	1	B4L0442	12/13/2014	12/13/14 17:28	E4

### Alkalinity, Speciated by SM 2320B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	20	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Total (as CaCO <sub>3</sub> )	20	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	

### Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	33	10	1	B4L0439	12/14/2014	12/15/14 09:00	

### Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	29	4.0	1	B4L0435	12/13/2014	12/14/14 09:30	

### Sulfide, Total by SM 4500-S=D

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	ND	0.010	1	B4L0405	12/15/2014	12/15/14 14:44	

### Dissolved Metals by ICP-MS EPA 6020

Analyst: SB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:22	
Arsenic	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:22	
Barium	53	1.0	1	B4L0403	12/15/2014	12/15/14 13:22	



# Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0  
 Report To : Rebecca Silva  
 Reported : 12/18/2014

**Client Sample ID PL3**

**Lab ID: 1403974-05**

## Dissolved Metals by ICP-MS EPA 6020

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Beryllium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:22	
Cadmium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:22	
<b>Calcium</b>	<b>4300</b>	50	1	B4L0403	12/15/2014	12/15/14 13:22	
<b>Chromium</b>	<b>0.53</b>	0.50	1	B4L0403	12/15/2014	12/15/14 13:22	
Cobalt	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:22	
<b>Copper</b>	<b>2.4</b>	1.0	1	B4L0403	12/15/2014	12/15/14 13:22	
Lead	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:22	
<b>Magnesium</b>	<b>910</b>	50	1	B4L0403	12/15/2014	12/15/14 13:22	
<b>Manganese</b>	<b>18</b>	10	1	B4L0403	12/15/2014	12/15/14 13:22	
Molybdenum	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:22	
Nickel	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:22	
<b>Potassium</b>	<b>3100</b>	50	1	B4L0403	12/15/2014	12/15/14 13:22	
Selenium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:22	
Silver	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:22	
<b>Sodium</b>	<b>340</b>	50	1	B4L0403	12/15/2014	12/15/14 13:22	
Thallium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:22	
<b>Vanadium</b>	<b>1.8</b>	1.0	1	B4L0403	12/15/2014	12/15/14 13:22	
Zinc	ND	10	1	B4L0403	12/15/2014	12/15/14 13:22	
<b>Strontium</b>	<b>70</b>	10	1	B4L0403	12/15/2014	12/15/14 13:22	

## Dissolved Mercury by AA (Cold Vapor) by EPA 7470A

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B4L0408	12/15/2014	12/15/14 14:09	



## Certificate of Analysis

Geocon Consultants, Inc.  
3160 Gold Valley Drive, Suite 800  
Rancho Cordova, CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0

Report To : Rebecca Silva

Reported : 12/18/2014

**Client Sample ID PL5**

**Lab ID: 1403974-06**

### Anions Scan by Ion Chromatography EPA 300.0

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	ND	0.50	1	B4L0442	12/13/2014	12/13/14 17:39	E4
Sulfate	ND	1.0	1	B4L0442	12/13/2014	12/13/14 17:39	E4

### Alkalinity, Speciated by SM 2320B

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<b>Alkalinity, Bicarbonate (as CaCO<sub>3</sub>)</b>	<b>20</b>	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
<b>Alkalinity, Total (as CaCO<sub>3</sub>)</b>	<b>20</b>	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	

### Total Dissolved Solids (Residue, Filterable) by SM 2540C

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<b>Residue, Dissolved</b>	<b>22</b>	10	1	B4L0439	12/14/2014	12/15/14 09:00	

### Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<b>Residue, Suspended</b>	<b>32</b>	3.3	1	B4L0435	12/13/2014	12/14/14 09:30	

### Sulfide, Total by SM 4500-S=D

**Analyst: LA**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	ND	0.010	1	B4L0405	12/15/2014	12/15/14 14:44	

### Dissolved Metals by ICP-MS EPA 6020

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<b>Antimony</b>	<b>0.74</b>	0.50	1	B4L0403	12/15/2014	12/15/14 13:26	
Arsenic	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Barium</b>	<b>110</b>	2.0	2	B4L0403	12/15/2014	12/15/14 14:09	D6



## Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0

Report To : Rebecca Silva

Reported : 12/18/2014

**Client Sample ID PL5**

**Lab ID: 1403974-06**

**Dissolved Metals by ICP-MS EPA 6020**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Beryllium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:26	
Cadmium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Calcium</b>	<b>4300</b>	50	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Chromium</b>	<b>1.5</b>	0.50	1	B4L0403	12/15/2014	12/15/14 13:26	
Cobalt	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Copper</b>	<b>6.3</b>	1.0	1	B4L0403	12/15/2014	12/15/14 13:26	
Lead	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Magnesium</b>	<b>560</b>	50	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Manganese</b>	<b>11</b>	10	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Molybdenum</b>	<b>1.5</b>	0.50	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Nickel</b>	<b>1.1</b>	1.0	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Potassium</b>	<b>1900</b>	50	1	B4L0403	12/15/2014	12/15/14 13:26	
Selenium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:26	
Silver	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Sodium</b>	<b>1400</b>	50	1	B4L0403	12/15/2014	12/15/14 13:26	
Thallium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Vanadium</b>	<b>1.1</b>	1.0	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Zinc</b>	<b>22</b>	10	1	B4L0403	12/15/2014	12/15/14 13:26	
<b>Strontium</b>	<b>75</b>	10	1	B4L0403	12/15/2014	12/15/14 13:26	

**Dissolved Mercury by AA (Cold Vapor) by EPA 7470A**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B4L0408	12/15/2014	12/15/14 14:11	



# Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova, CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0

Report To : Rebecca Silva

Reported : 12/18/2014

**Client Sample ID PL4**

**Lab ID: 1403974-07**

**Anions Scan by Ion Chromatography EPA 300.0**

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	0.52	0.50	1	B4L0442	12/13/2014	12/13/14 19:33	E4
Sulfate	1.5	1.0	1	B4L0442	12/13/2014	12/13/14 19:33	E4

**Alkalinity, Speciated by SM 2320B**

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO3)	13	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Carbonate (as CaCO3)	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Hydroxide (as CaCO3)	ND	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	
Alkalinity, Total (as CaCO3)	13	5.0	1	B4L0447	12/15/2014	12/15/14 18:07	

**Total Dissolved Solids (Residue, Filterable) by SM 2540C**

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	24	10	1	B4L0439	12/14/2014	12/15/14 09:00	

**Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D**

**Analyst: PT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	17	2.0	1	B4L0435	12/13/2014	12/14/14 09:30	

**Sulfide, Total by SM 4500-S=D**

**Analyst: LA**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	ND	0.010	1	B4L0405	12/15/2014	12/15/14 14:44	

**Dissolved Metals by ICP-MS EPA 6020**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:31	
Arsenic	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:31	
Barium	87	1.0	1	B4L0403	12/15/2014	12/15/14 13:31	



# Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova, CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0

Report To : Rebecca Silva

Reported : 12/18/2014

**Client Sample ID PL4**

**Lab ID: 1403974-07**

**Dissolved Metals by ICP-MS EPA 6020**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Beryllium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:31	
Cadmium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:31	
<b>Calcium</b>	<b>4800</b>	100	2	B4L0403	12/15/2014	12/15/14 14:15	D6
<b>Chromium</b>	<b>1.0</b>	0.50	1	B4L0403	12/15/2014	12/15/14 13:31	
Cobalt	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:31	
<b>Copper</b>	<b>4.3</b>	1.0	1	B4L0403	12/15/2014	12/15/14 13:31	
Lead	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:31	
<b>Magnesium</b>	<b>550</b>	50	1	B4L0403	12/15/2014	12/15/14 13:31	
Manganese	ND	10	1	B4L0403	12/15/2014	12/15/14 13:31	
<b>Molybdenum</b>	<b>1.5</b>	0.50	1	B4L0403	12/15/2014	12/15/14 13:31	
Nickel	ND	1.0	1	B4L0403	12/15/2014	12/15/14 13:31	
<b>Potassium</b>	<b>1500</b>	50	1	B4L0403	12/15/2014	12/15/14 13:31	
Selenium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:31	
Silver	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:31	
<b>Sodium</b>	<b>1400</b>	50	1	B4L0403	12/15/2014	12/15/14 13:31	
Thallium	ND	0.50	1	B4L0403	12/15/2014	12/15/14 13:31	
<b>Vanadium</b>	<b>1.0</b>	1.0	1	B4L0403	12/15/2014	12/15/14 13:31	
<b>Zinc</b>	<b>25</b>	10	1	B4L0403	12/15/2014	12/15/14 13:31	
<b>Strontium</b>	<b>85</b>	10	1	B4L0403	12/15/2014	12/15/14 13:31	

**Dissolved Mercury by AA (Cold Vapor) by EPA 7470A**

**Analyst: SB**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B4L0408	12/15/2014	12/15/14 14:13	



## Certificate of Analysis

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 Reported : 12/18/2014

### QUALITY CONTROL SECTION

#### Anions Scan by Ion Chromatography EPA 300.0 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD	Limit	Notes
<b>Batch B4L0442 - No_Prep_IC1_W</b>										
<b>Blank (B4L0442-BLK1)</b>										
				Prepared: 12/13/2014 Analyzed: 12/13/2014						
Chloride	ND	0.50				NR				
Sulfate	ND	1.0				NR				
<b>LCS (B4L0442-BS1)</b>										
				Prepared: 12/13/2014 Analyzed: 12/13/2014						
Chloride	0.943000	0.50	1.00000		94.3	90 - 110				
Sulfate	1.91940	1.0	2.00000		96.0	90 - 110				
<b>LCS Dup (B4L0442-BSD1)</b>										
				Prepared: 12/13/2014 Analyzed: 12/13/2014						
Chloride	0.950800	0.50	1.00000		95.1	90 - 110	0.824		20	
Sulfate	1.93180	1.0	2.00000		96.6	90 - 110	0.644		20	



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### Alkalinity, Speciated by SM 2320B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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**Batch B4L0447 - No\_Prep\_WC1\_W**

**Blank (B4L0447-BLK1)**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	ND	5.0		NR
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	ND	5.0		NR
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	ND	5.0		NR
Alkalinity, Total (as CaCO <sub>3</sub> )	ND	5.0		NR

**LCS (B4L0447-BS1)**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Alkalinity, Carbonate (as CaCO <sub>3</sub> )	88.5800	5.0	99.9580	88.6	80 - 120
Alkalinity, Total (as CaCO <sub>3</sub> )	102.360	5.0	99.9580	102	80 - 120

**Duplicate (B4L0447-DUP1)**

**Source: 1403974-01**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Alkalinity, Carbonate (as CaCO <sub>3</sub> )	ND	5.0		ND	NR			20
Alkalinity, Total (as CaCO <sub>3</sub> )	27.5600	5.0		26.5700	NR	3.66		20

**Matrix Spike (B4L0447-MS1)**

**Source: 1403974-01**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Alkalinity, Carbonate (as CaCO <sub>3</sub> )	82.6800	5.0	99.9580	ND	82.7	80 - 120
Alkalinity, Total (as CaCO <sub>3</sub> )	127.950	5.0	99.9580	26.5700	101	80 - 120

**Matrix Spike Dup (B4L0447-MSD1)**

**Source: 1403974-01**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Alkalinity, Carbonate (as CaCO <sub>3</sub> )	80.7100	5.0	99.9580	ND	80.7	80 - 120	2.41	20
Alkalinity, Total (as CaCO <sub>3</sub> )	127.950	5.0	99.9580	26.5700	101	80 - 120	0.00	20



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Reported : 12/18/2014

### Total Dissolved Solids (Residue, Filterable) by SM 2540C - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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**Batch B4L0439 - No\_Prep\_WC1\_W**

**Blank (B4L0439-BLK1)**

Prepared: 12/14/2014 Analyzed: 12/15/2014

Residue, Dissolved

ND

10

NR

**LCS (B4L0439-BS1)**

Prepared: 12/14/2014 Analyzed: 12/15/2014

Residue, Dissolved

988.000

10

970.000

102

80 - 120

**Duplicate (B4L0439-DUP1)**

**Source: 1403974-01**

Prepared: 12/14/2014 Analyzed: 12/15/2014

Residue, Dissolved

51.0000

10

49.0000

NR

4.00

10



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### Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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**Batch B4L0435 - No\_Prep\_WC1\_W**

**Blank (B4L0435-BLK1)**

Prepared: 12/13/2014 Analyzed: 12/14/2014

Residue, Suspended

ND 1.0

NR

**LCS (B4L0435-BS1)**

Prepared: 12/13/2014 Analyzed: 12/14/2014

Residue, Suspended

87.0000 10 96.6000

90.1 80 - 120

**Duplicate (B4L0435-DUP1)**

**Source: 1403974-02**

Prepared: 12/13/2014 Analyzed: 12/14/2014

Residue, Suspended

255.714 14

260.000 NR 1.66 10





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Reported : 12/18/2014

### Dissolved Metals by ICP-MS EPA 6020 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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**Batch B4L0403 - EPA 3010A MS\_W**

**Blank (B4L0403-BLK1)**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Antimony	ND	0.50		NR
Arsenic	ND	1.0		NR
Barium	ND	1.0		NR
Beryllium	ND	0.50		NR
Cadmium	ND	0.50		NR
Calcium	ND	50		NR
Chromium	ND	0.50		NR
Cobalt	ND	0.50		NR
Copper	ND	1.0		NR
Lead	ND	1.0		NR
Magnesium	ND	50		NR
Manganese	ND	10		NR
Molybdenum	ND	0.50		NR
Nickel	ND	1.0		NR
Potassium	ND	50		NR
Selenium	ND	0.50		NR
Silver	ND	0.50		NR
Sodium	ND	50		NR
Thallium	ND	0.50		NR
Vanadium	ND	1.0		NR
Zinc	ND	10		NR
Strontium	ND	10		NR

**LCS (B4L0403-BS1)**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Antimony	10.1094	0.50	10.0000	101	85 - 115
Arsenic	9.41613	1.0	10.0000	94.2	85 - 115
Barium	9.90542	1.0	10.0000	99.1	85 - 115
Beryllium	9.70344	0.50	10.0000	97.0	85 - 115
Cadmium	10.2437	0.50	10.0000	102	85 - 115
Calcium	553.621	50	500.000	111	85 - 115
Chromium	10.3640	0.50	10.0000	104	85 - 115
Cobalt	10.2823	0.50	10.0000	103	85 - 115
Copper	10.2073	1.0	10.0000	102	85 - 115
Lead	10.3588	1.0	10.0000	104	85 - 115
Magnesium	521.016	50	500.000	104	85 - 115
Manganese	106.867	10	100.000	107	85 - 115
Molybdenum	9.76707	0.50	10.0000	97.7	85 - 115
Nickel	9.88374	1.0	10.0000	98.8	85 - 115
Potassium	489.907	50	500.000	98.0	85 - 115
Selenium	9.97644	0.50	10.0000	99.8	85 - 115
Silver	9.58148	0.50	10.0000	95.8	85 - 115
Sodium	518.526	50	500.000	104	85 - 115



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### Dissolved Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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**Batch B4L0403 - EPA 3010A MS\_W (continued)**

**LCS (B4L0403-BS1) - Continued**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Thallium	10.1825	0.50	10.0000	102	85 - 115
Vanadium	9.56766	1.0	10.0000	95.7	85 - 115
Zinc	98.6173	10	100.000	98.6	85 - 115
Strontium	104.707	10	100.000	105	85 - 115

**Duplicate (B4L0403-DUP1)**

**Source: 1403974-02**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Antimony	0.279236	0.50	0.300870	NR	7.46	20
Arsenic	1.38654	1.0	1.42869	NR	2.99	20
Barium	47.9315	1.0	50.0723	NR	4.37	20
Beryllium	ND	0.50	ND	NR		20
Cadmium	ND	0.50	ND	NR		20
Calcium	10814.3	50	11021.2	NR	1.89	20 E
Chromium	1.62206	0.50	1.77218	NR	8.85	20
Cobalt	0.510667	0.50	0.519063	NR	1.63	20
Copper	6.09749	1.0	6.45148	NR	5.64	20
Lead	3.25323	1.0	3.50193	NR	7.36	20
Magnesium	2000.99	50	2068.51	NR	3.32	20
Manganese	26.6344	10	27.1882	NR	2.06	20
Molybdenum	ND	0.50	0.969847	NR		20
Nickel	1.66872	1.0	1.76072	NR	5.37	20
Potassium	1578.83	50	1603.56	NR	1.55	20
Selenium	ND	0.50	ND	NR		20
Silver	ND	0.50	ND	NR		20
Sodium	1288.19	50	1377.44	NR	6.70	20
Thallium	ND	0.50	ND	NR		20
Vanadium	4.92111	1.0	5.03295	NR	2.25	20
Zinc	8.50707	10	20.7802	NR	83.8	20 R
Strontium	114.847	10	120.088	NR	4.46	20

**Duplicate (B4L0403-DUP2)**

**Source: 1403974-02RE1**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Antimony	0.428230	2.5	0.419520	NR	2.05	20
Arsenic	1.78070	5.0	ND	NR		20
Barium	60.2143	5.0	52.2082	NR	14.2	20
Beryllium	ND	2.5	ND	NR		20
Cadmium	ND	2.5	ND	NR		20
Calcium	14555.6	250	12274.9	NR	17.0	20 D6
Chromium	2.42779	2.5	1.51820	NR	46.1	20
Cobalt	0.630560	2.5	0.564565	NR	11.0	20
Copper	7.87438	5.0	6.70688	NR	16.0	20
Lead	4.09378	5.0	3.45146	NR	17.0	20
Magnesium	2603.18	250	2145.04	NR	19.3	20
Manganese	33.8553	50	28.9705	NR	15.6	20



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### Dissolved Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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**Batch B4L0403 - EPA 3010A MS\_W (continued)**

**Duplicate (B4L0403-DUP2) - Continued**

**Source: 1403974-02RE1**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Molybdenum	1.18860	2.5		1.13018	NR		5.04	20	
Nickel	2.21052	5.0		1.80434	NR		20.2	20	
Potassium	2081.51	250		1666.77	NR		22.1	20	
Selenium	ND	2.5		ND	NR			20	
Silver	ND	2.5		ND	NR			20	
Sodium	1683.43	250		1468.00	NR		13.7	20	
Thallium	ND	2.5		ND	NR			20	
Vanadium	6.76882	5.0		5.10544	NR		28.0	20	
Zinc	ND	50		ND	NR			20	
Strontium	142.691	50		122.359	NR		15.3	20	

**Matrix Spike (B4L0403-MS1)**

**Source: 1403974-02**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Antimony	9.96186	0.50	10.0000	0.300870	96.6	75 - 125			
Arsenic	10.4209	1.0	10.0000	1.42869	89.9	75 - 125			
Barium	56.7921	1.0	10.0000	50.0723	67.2	75 - 125			M1
Beryllium	8.98088	0.50	10.0000	ND	89.8	75 - 125			
Cadmium	9.43800	0.50	10.0000	ND	94.4	75 - 125			
Calcium	10993.8	50	500.000	11021.2	-5.48	75 - 125			E
Chromium	10.5601	0.50	10.0000	1.77218	87.9	75 - 125			
Cobalt	9.64267	0.50	10.0000	0.519063	91.2	75 - 125			
Copper	14.9059	1.0	10.0000	6.45148	84.5	75 - 125			
Lead	13.0603	1.0	10.0000	3.50193	95.6	75 - 125			
Magnesium	2432.05	50	500.000	2068.51	72.7	75 - 125			M1
Manganese	122.752	10	100.000	27.1882	95.6	75 - 125			
Molybdenum	10.5236	0.50	10.0000	0.969847	95.5	75 - 125			
Nickel	10.5570	1.0	10.0000	1.76072	88.0	75 - 125			
Potassium	2023.24	50	500.000	1603.56	83.9	75 - 125			
Selenium	9.59547	0.50	10.0000	ND	96.0	75 - 125			
Silver	8.92901	0.50	10.0000	ND	89.3	75 - 125			
Sodium	1747.27	50	500.000	1377.44	74.0	75 - 125			M1
Thallium	9.94816	0.50	10.0000	ND	99.5	75 - 125			
Vanadium	13.8481	1.0	10.0000	5.03295	88.2	75 - 125			
Zinc	100.137	10	100.000	20.7802	79.4	75 - 125			
Strontium	204.675	10	100.000	120.088	84.6	75 - 125			

**Matrix Spike (B4L0403-MS2)**

**Source: 1403974-02RE1**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Antimony	9.77298	2.5	10.0000	0.419520	93.5	75 - 125			
Arsenic	10.3735	5.0	10.0000	ND	104	75 - 125			
Barium	58.0063	5.0	10.0000	52.2082	58.0	75 - 125			
Beryllium	9.02721	2.5	10.0000	ND	90.3	75 - 125			
Cadmium	9.40286	2.5	10.0000	ND	94.0	75 - 125			
Calcium	11892.4	250	500.000	12274.9	-76.5	75 - 125			D6, M1



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Reported : 12/18/2014

### Dissolved Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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**Batch B4L0403 - EPA 3010A MS\_W (continued)**

**Matrix Spike (B4L0403-MS2) - Continued**

Source: 1403974-02RE1

Prepared: 12/15/2014 Analyzed: 12/15/2014

Chromium	10.9046	2.5	10.0000	1.51820	93.9	75 - 125			
Cobalt	10.0700	2.5	10.0000	0.564565	95.1	75 - 125			
Copper	15.7701	5.0	10.0000	6.70688	90.6	75 - 125			
Lead	13.3971	5.0	10.0000	3.45146	99.5	75 - 125			
Magnesium	2600.09	250	500.000	2145.04	91.0	75 - 125			
Manganese	132.234	50	100.000	28.9705	103	75 - 125			
Molybdenum	10.8226	2.5	10.0000	1.13018	96.9	75 - 125			
Nickel	11.2823	5.0	10.0000	1.80434	94.8	75 - 125			
Potassium	2095.88	250	500.000	1666.77	85.8	75 - 125			
Selenium	8.85750	2.5	10.0000	ND	88.6	75 - 125			
Silver	9.29866	2.5	10.0000	ND	93.0	75 - 125			
Sodium	1824.50	250	500.000	1468.00	71.3	75 - 125			
Thallium	10.0490	2.5	10.0000	ND	100	75 - 125			
Vanadium	14.8930	5.0	10.0000	5.10544	97.9	75 - 125			
Zinc	97.5229	50	100.000	ND	97.5	75 - 125			
Strontium	218.851	50	100.000	122.359	96.5	75 - 125			

**Matrix Spike Dup (B4L0403-MSD1)**

Source: 1403974-02

Prepared: 12/15/2014 Analyzed: 12/15/2014

Antimony	10.2432	0.50	10.0000	0.300870	99.4	75 - 125	2.78	20	
Arsenic	10.7127	1.0	10.0000	1.42869	92.8	75 - 125	2.76	20	
Barium	57.1215	1.0	10.0000	50.0723	70.5	75 - 125	0.578	20	M1
Beryllium	9.08583	0.50	10.0000	ND	90.9	75 - 125	1.16	20	
Cadmium	9.84834	0.50	10.0000	ND	98.5	75 - 125	4.26	20	
Calcium	11091.3	50	500.000	11021.2	14.0	75 - 125	0.883	20	E
Chromium	10.8381	0.50	10.0000	1.77218	90.7	75 - 125	2.60	20	
Cobalt	9.71507	0.50	10.0000	0.519063	92.0	75 - 125	0.748	20	
Copper	15.1889	1.0	10.0000	6.45148	87.4	75 - 125	1.88	20	
Lead	13.3221	1.0	10.0000	3.50193	98.2	75 - 125	1.98	20	
Magnesium	2441.48	50	500.000	2068.51	74.6	75 - 125	0.387	20	M1
Manganese	127.205	10	100.000	27.1882	100	75 - 125	3.56	20	
Molybdenum	10.6356	0.50	10.0000	0.969847	96.7	75 - 125	1.06	20	
Nickel	10.6986	1.0	10.0000	1.76072	89.4	75 - 125	1.33	20	
Potassium	2030.84	50	500.000	1603.56	85.5	75 - 125	0.375	20	
Selenium	9.36201	0.50	10.0000	ND	93.6	75 - 125	2.46	20	
Silver	9.14147	0.50	10.0000	ND	91.4	75 - 125	2.35	20	
Sodium	1749.70	50	500.000	1377.44	74.5	75 - 125	0.139	20	M1
Thallium	9.93252	0.50	10.0000	ND	99.3	75 - 125	0.157	20	
Vanadium	13.6786	1.0	10.0000	5.03295	86.5	75 - 125	1.23	20	
Zinc	100.051	10	100.000	20.7802	79.3	75 - 125	0.0859	20	
Strontium	207.577	10	100.000	120.088	87.5	75 - 125	1.41	20	

**Matrix Spike Dup (B4L0403-MSD2)**

Source: 1403974-02RE1

Prepared: 12/15/2014 Analyzed: 12/15/2014



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 Report To : Rebecca Silva  
 Reported : 12/18/2014

### Dissolved Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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**Batch B4L0403 - EPA 3010A MS\_W (continued)**

**Matrix Spike Dup (B4L0403-MSD2) - Continued**

**Source: 1403974-02RE1**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Antimony	9.88366	2.5	10.0000	0.419520	94.6	75 - 125	1.13	20	
Arsenic	10.3416	5.0	10.0000	ND	103	75 - 125	0.308	20	
Barium	57.3347	5.0	10.0000	52.2082	51.3	75 - 125	1.16	20	
Beryllium	9.27806	2.5	10.0000	ND	92.8	75 - 125	2.74	20	
Cadmium	9.51409	2.5	10.0000	ND	95.1	75 - 125	1.18	20	
Calcium	11826.2	250	500.000	12274.9	-89.7	75 - 125	0.558	20	D6, M1
Chromium	10.8934	2.5	10.0000	1.51820	93.8	75 - 125	0.103	20	
Cobalt	10.4886	2.5	10.0000	0.564565	99.2	75 - 125	4.07	20	
Copper	15.6050	5.0	10.0000	6.70688	89.0	75 - 125	1.05	20	
Lead	13.5461	5.0	10.0000	3.45146	101	75 - 125	1.11	20	
Magnesium	2540.13	250	500.000	2145.04	79.0	75 - 125	2.33	20	
Manganese	128.372	50	100.000	28.9705	99.4	75 - 125	2.96	20	
Molybdenum	10.4482	2.5	10.0000	1.13018	93.2	75 - 125	3.52	20	
Nickel	11.3277	5.0	10.0000	1.80434	95.2	75 - 125	0.401	20	
Potassium	2061.16	250	500.000	1666.77	78.9	75 - 125	1.67	20	
Selenium	9.33166	2.5	10.0000	ND	93.3	75 - 125	5.21	20	
Silver	9.37862	2.5	10.0000	ND	93.8	75 - 125	0.856	20	
Sodium	1829.27	250	500.000	1468.00	72.3	75 - 125	0.261	20	
Thallium	10.1206	2.5	10.0000	ND	101	75 - 125	0.710	20	
Vanadium	14.8303	5.0	10.0000	5.10544	97.2	75 - 125	0.422	20	
Zinc	98.8643	50	100.000	ND	98.9	75 - 125	1.37	20	
Strontium	218.291	50	100.000	122.359	95.9	75 - 125	0.256	20	



# Certificate of Analysis

Geocon Consultants, Inc.

3160 Gold Valley Drive, Suite 800

Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0

Report To : Rebecca Silva

Reported : 12/18/2014

## Dissolved Mercury by AA (Cold Vapor) by EPA 7470A - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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### Batch B4L0408 - EPA 245.1/7470\_W

Blank (B4L0408-BLK1)

Prepared: 12/15/2014 Analyzed: 12/15/2014

Mercury	ND	0.20			NR				
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# Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0  
 Report To : Rebecca Silva  
 Reported : 12/18/2014

## Dissolved Mercury by AA (Cold Vapor) by EPA 7470A - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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### Batch B4L0408 - EPA 245.1/7470\_W (continued)

LCS (B4L0408-BS1)

Prepared: 12/15/2014 Analyzed: 12/15/2014

Mercury	10.5711	0.20	10.0000		106	80 - 120			
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### Certificate of Analysis

Geocon Consultants, Inc.  
3160 Gold Valley Drive, Suite 800  
Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0  
Report To : Rebecca Silva  
Reported : 12/18/2014

#### Dissolved Mercury by AA (Cold Vapor) by EPA 7470A - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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#### Batch B4L0408 - EPA 245.1/7470\_W (continued)

Duplicate (B4L0408-DUP1)

Source: 1403974-01

Prepared: 12/15/2014 Analyzed: 12/15/2014

Mercury	ND	0.20		ND	NR			20	
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## Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0  
 Report To : Rebecca Silva  
 Reported : 12/18/2014

### Dissolved Mercury by AA (Cold Vapor) by EPA 7470A - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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**Batch B4L0408 - EPA 245.1/7470\_W (continued)**

**Matrix Spike (B4L0408-MS1)**

**Source: 1403974-01**

Prepared: 12/15/2014 Analyzed: 12/15/2014

Mercury	10.5645	0.20	10.0000	ND	106	70 - 130			
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### Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0  
 Report To : Rebecca Silva  
 Reported : 12/18/2014

#### Dissolved Mercury by AA (Cold Vapor) by EPA 7470A - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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#### Batch B4L0408 - EPA 245.1/7470\_W (continued)

#### Matrix Spike Dup (B4L0408-MSD1)

Source: 1403974-01

Prepared: 12/15/2014 Analyzed: 12/15/2014

Mercury	10.5648	0.20	10.0000	ND	106	70 - 130	0.00303	20	
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# Certificate of Analysis

Geocon Consultants, Inc.  
 3160 Gold Valley Drive, Suite 800  
 Rancho Cordova , CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0  
 Report To : Rebecca Silva  
 Reported : 12/18/2014

## Dissolved Mercury by AA (Cold Vapor) by EPA 7470A - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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### Batch B4L0408 - EPA 245.1/7470\_W (continued)

Post Spike (B4L0408-PS1)

Source: 1403974-01

Prepared: 12/15/2014 Analyzed: 12/15/2014

Mercury	5.35624		5.00000	-0.015880	107	85 - 115			
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## Certificate of Analysis

Geocon Consultants, Inc.

3160 Gold Valley Drive, Suite 800

Rancho Cordova, CA 95742

Project Number : Modesto Stockpiles Stormwater, S9800-0

Report To : Rebecca Silva

Reported : 12/18/2014

### Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
E4	Result value is estimated.
E	Result value above quantitation range.
D6	Sample required dilution due to high concentration of target analyte.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

#### Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



**EXCELCHEM**  
**Environmental Labs**

1135 W Sunset Boulevard  
Suite A  
Rocklin, CA 95765  
Phone# 916-543-4445  
Fax# 916-543-4449



ELAP Certificate No. : 2119

22 December 2014

Steve Meeks

RWQC Central Valley

11020 Sun Center Dr. #200

Rancho Cordova, CA 95670

RE: Modesto Soil Piles

Work order number:1412106

Enclosed are the results of analyses for samples received by the laboratory on 12/15/14 13:23. All Quality Control results are within acceptable limits except where noted as a case narrative. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

A handwritten signature in black ink, appearing to read "John Somers".

John Somers, Lab Director

### Excelchem Environmental Labs

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
12/22/14 17:08

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SR132-Water	1412106-01	Water	12/12/14 12:20	12/15/14 13:23

Excelchem Environmental Lab.

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Laboratory Representative

## Excelchem Environmental Labs

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
12/22/14 17:08

### SR132-Water 1412106-01 (Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
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#### Ion Chromatography

Nitrate as Nitrogen	0.39	0.11	mg/L	AXL0184	12/16/14	12/16/14	EPA 300.0	O-13
Sulfate as SO4	2.0	0.5	"	"	"	"	"	

#### Total Recoverable Metals

Antimony	ND	10.0	ug/l	AXL0195	12/18/14	12/19/14	EPA 6010B	
Arsenic	ND	10.0	"	"	"	"	"	
<b>Barium</b>	<b>155</b>	5.0	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	
Cadmium	ND	5.0	"	"	"	"	"	
Chromium	ND	5.0	"	"	"	"	"	
Cobalt	ND	5.0	"	"	"	"	"	
<b>Copper</b>	<b>9.8</b>	5.0	"	"	"	"	"	
Lead	ND	5.0	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	
Nickel	ND	5.0	"	"	"	"	"	
Selenium	ND	20.0	"	"	"	"	"	
Silver	ND	5.0	"	"	"	"	"	
Thallium	ND	20.0	"	"	"	"	"	
Vanadium	ND	5.0	"	"	"	"	"	
<b>Zinc</b>	<b>30.3</b>	10.0	"	"	"	"	"	
Mercury	ND	0.200	"	AXL0201	12/19/14	12/19/14	EPA 7470A	

Excelchem Environmental Lab.

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Laboratory Representative

## Excelchem Environmental Labs

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
12/22/14 17:08

### Ion Chromatography - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch AXL0184 - EPA 300.0

##### Blank (AXL0184-BLK1)

Prepared & Analyzed: 12/16/14

Nitrate as Nitrogen	ND	0.11	mg/L
Sulfate as SO4	ND	0.5	"

##### LCS (AXL0184-BS1)

Prepared & Analyzed: 12/16/14

Nitrate as Nitrogen	2.21	0.11	mg/L	2.26	97.7	90-110
Sulfate as SO4	9.8	0.5	"	10.0	98.5	80-120

##### LCS Dup (AXL0184-BSD1)

Prepared & Analyzed: 12/16/14

Nitrate as Nitrogen	2.23	0.11	mg/L	2.26	98.7	90-110	0.976	20
Sulfate as SO4	10.0	0.5	"	10.0	99.7	80-120	1.26	20

##### Duplicate (AXL0184-DUP1)

Source: 1412106-01

Prepared & Analyzed: 12/17/14

Nitrate as Nitrogen	0.38	0.11	mg/L	0.39			3.54	20
Sulfate as SO4	2.1	0.5	"	2.0			6.56	20

##### Matrix Spike (AXL0184-MS1)

Source: 1412106-01

Prepared & Analyzed: 12/17/14

Nitrate as Nitrogen	2.54	0.11	mg/L	2.26	0.39	95.0	75-125
Sulfate as SO4	11.6	0.5	"	10.0	2.0	95.5	75-125

##### Matrix Spike Dup (AXL0184-MSD1)

Source: 1412106-01

Prepared & Analyzed: 12/17/14

Nitrate as Nitrogen	2.52	0.11	mg/L	2.26	0.39	94.3	75-125	0.616	20
Sulfate as SO4	11.5	0.5	"	10.0	2.0	95.3	75-125	0.243	20

Excelchem Environmental Lab.

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Laboratory Representative

## Excelchem Environmental Labs

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
12/22/14 17:08

### Total Recoverable Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch AXL0195 - EPA 6010B

##### Blank (AXL0195-BLK1)

Prepared: 12/18/14 Analyzed: 12/19/14

Antimony	ND	10.0	ug/l							
Arsenic	ND	10.0	"							
Barium	ND	5.0	"							
Beryllium	ND	5.0	"							
Cadmium	ND	5.0	"							
Chromium	ND	5.0	"							
Cobalt	ND	5.0	"							
Copper	ND	5.0	"							
Lead	ND	5.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	5.0	"							
Selenium	ND	20.0	"							
Silver	ND	5.0	"							
Thallium	ND	20.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	10.0	"							

##### LCS (AXL0195-BS1)

Prepared: 12/18/14 Analyzed: 12/19/14

Antimony	998	10.0	ug/l	1000		99.8	80-120			
Arsenic	1020	10.0	"	1000		102	80-120			
Barium	1040	5.0	"	1000		104	80-120			
Beryllium	1020	5.0	"	1000		102	80-120			
Cadmium	987	5.0	"	1000		98.7	80-120			
Chromium	1040	5.0	"	1000		104	80-120			
Cobalt	1000	5.0	"	1000		100	80-120			
Copper	964	5.0	"	1000		96.4	80-120			
Lead	1020	5.0	"	1000		102	80-120			
Molybdenum	1050	5.0	"	1000		105	80-120			
Nickel	1040	5.0	"	1000		104	80-120			
Selenium	911	20.0	"	1000		91.1	80-120			
Silver	946	5.0	"	1000		94.6	80-120			
Thallium	1020	20.0	"	1000		102	80-120			
Vanadium	960	5.0	"	1000		96.0	80-120			
Zinc	992	10.0	"	1000		99.2	80-120			

Excelchem Environmental Lab.

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Laboratory Representative

### Excelchem Environmental Labs

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
12/22/14 17:08

### Total Recoverable Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch AXL0195 - EPA 6010B

##### LCS Dup (AXL0195-BSD1)

Prepared: 12/18/14 Analyzed: 12/19/14

Antimony	992	10.0	ug/l	1000		99.2	80-120	0.593	25	
Arsenic	1020	10.0	"	1000		102	80-120	0.294	25	
Barium	1060	5.0	"	1000		106	80-120	0.952	25	
Beryllium	1020	5.0	"	1000		102	80-120	0.0977	25	
Cadmium	985	5.0	"	1000		98.5	80-120	0.193	25	
Chromium	1040	5.0	"	1000		104	80-120	0.00	25	
Cobalt	997	5.0	"	1000		99.7	80-120	0.240	25	
Copper	962	5.0	"	1000		96.2	80-120	0.228	25	
Lead	1020	5.0	"	1000		102	80-120	0.195	25	
Molybdenum	1050	5.0	"	1000		105	80-120	0.00	25	
Nickel	1040	5.0	"	1000		104	80-120	0.00	25	
Selenium	905	20.0	"	1000		90.5	80-120	0.650	25	
Silver	951	5.0	"	1000		95.1	80-120	0.527	25	
Thallium	1030	20.0	"	1000		103	80-120	0.391	25	
Vanadium	961	5.0	"	1000		96.1	80-120	0.0520	25	
Zinc	993	10.0	"	1000		99.3	80-120	0.0705	25	

##### Matrix Spike (AXL0195-MS1)

Source: 1412096-01

Prepared: 12/18/14 Analyzed: 12/19/14

Antimony	995	20.0	ug/l	1000	1.50	99.3	75-125			
Arsenic	1050	20.0	"	1000	6.20	104	75-125			
Barium	1170	10.0	"	1000	95.7	107	75-125			
Beryllium	1050	10.0	"	1000	0.100	105	75-125			
Cadmium	1000	10.0	"	1000	0.600	100	75-125			
Chromium	1060	10.0	"	1000	10.3	105	75-125			
Cobalt	1000	10.0	"	1000	3.90	99.6	75-125			
Copper	973	10.0	"	1000	22.0	95.1	75-125			
Lead	1040	10.0	"	1000	11.2	103	75-125			
Molybdenum	1060	10.0	"	1000	6.60	105	75-125			
Nickel	1060	10.0	"	1000	11.4	105	75-125			
Selenium	924	40.0	"	1000	1.60	92.2	75-125			
Silver	955	10.0	"	1000	0.800	95.4	75-125			
Thallium	1030	40.0	"	1000	ND	103	75-125			
Vanadium	964	10.0	"	1000	13.5	95.0	75-125			
Zinc	1210	20.0	"	1000	209	100	75-125			

Excelchem Environmental Lab.

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Laboratory Representative

### Excelchem Environmental Labs

RWQC Central Valley 11020 Sun Center Dr. #200 Rancho Cordova, CA 95670	Project: Modesto Soil Piles Project Number: [none] Project Manager: Steve Meeks	Date Reported: 12/22/14 17:08
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#### Total Recoverable Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch AXL0195 - EPA 6010B

Matrix Spike Dup (AXL0195-MSD1)	Source: 1412096-01			Prepared: 12/18/14 Analyzed: 12/19/14						
Antimony	989	20.0	ug/l	1000	1.50	98.8	75-125	0.565	25	
Arsenic	1050	20.0	"	1000	6.20	105	75-125	0.476	25	
Barium	1170	10.0	"	1000	95.7	108	75-125	0.512	25	
Beryllium	1060	10.0	"	1000	0.100	106	75-125	0.663	25	
Cadmium	1010	10.0	"	1000	0.600	101	75-125	0.199	25	
Chromium	1060	10.0	"	1000	10.3	105	75-125	0.189	25	
Cobalt	998	10.0	"	1000	3.90	99.4	75-125	0.160	25	
Copper	972	10.0	"	1000	22.0	95.0	75-125	0.113	25	
Lead	1040	10.0	"	1000	11.2	103	75-125	0.384	25	
Molybdenum	1060	10.0	"	1000	6.60	105	75-125	0.00	25	
Nickel	1070	10.0	"	1000	11.4	106	75-125	0.468	25	
Selenium	925	40.0	"	1000	1.60	92.4	75-125	0.173	25	
Silver	962	10.0	"	1000	0.800	96.1	75-125	0.720	25	
Thallium	1040	40.0	"	1000	ND	104	75-125	0.483	25	
Vanadium	966	10.0	"	1000	13.5	95.3	75-125	0.259	25	
Zinc	1230	20.0	"	1000	209	102	75-125	1.23	25	

#### Batch AXL0201 - EPA 7470A

Blank (AXL0201-BLK1)	Prepared & Analyzed: 12/19/14									
Mercury	ND	0.200	ug/l							
LCS (AXL0201-BS1)	Prepared & Analyzed: 12/19/14									
Mercury	6.69	0.200	ug/l	6.67	100	80-120				
LCS Dup (AXL0201-BSD1)	Prepared & Analyzed: 12/19/14									
Mercury	5.87	0.200	ug/l	6.67	88.0	80-120	13.2	20		

Excelchem Environmental Lab.



Laboratory Representative

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### Excelchem Environmental Labs

RWQC Central Valley 11020 Sun Center Dr. #200 Rancho Cordova, CA 95670	Project: Modesto Soil Piles Project Number: [none] Project Manager: Steve Meeks	Date Reported: 12/22/14 17:08
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#### Total Recoverable Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch AXL0201 - EPA 7470A**

<b>Matrix Spike (AXL0201-MS1)</b>		<b>Source: 1412103-01</b>			<b>Prepared &amp; Analyzed: 12/19/14</b>					
Mercury	5.97	0.200	ug/l	6.67	ND	89.6	75-125			
<b>Matrix Spike Dup (AXL0201-MSD1)</b>		<b>Source: 1412103-01</b>			<b>Prepared &amp; Analyzed: 12/19/14</b>					
Mercury	6.09	0.200	ug/l	6.67	ND	91.4	75-125	1.99	20	

Excelchem Environmental Lab.



Laboratory Representative

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### Excelchem Environmental Labs

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
12/22/14 17:08

#### Notes and Definitions

- O-13 This analysis was requested outside of the EPA recommended hold time. It was performed as soon as possible.
- ND Analyte not detected at reporting limit.
- NR Not reported

Excelchem Environmental Lab.



Laboratory Representative

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## Excelchem Environmental Labs

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
12/22/14 17:08

<p><b>Excelchem Environmental Labs</b> 1135 W. Sunset Blvd., Suite A Rocklin, CA 95765 Ph: 916-543-4445 Fax: 916-543-4449</p> <p><b>CHAIN OF CUSTODY</b></p> <p>Project Manager: <b>Steve Meeks</b> Email Address for Reporting: <b>SMeeks@waterboards.ca.gov</b> Email Address for Reporting: <b>SMeeks@waterboards.ca.gov</b></p> <p>Company Address: <b>11020 Sun Center Dr. Sr. 200 Rancho Cordova CA 95670</b></p> <p>Billing Address:</p>	<p><b>REPORTING REQUIREMENTS BELOW:</b></p> <p>PDF / Standard Format Geotracker / EDF / Provide Global ID EDD / Equis / Data Table MDL Format Data to be reported to States Database? Yes <input type="checkbox"/> No <input type="checkbox"/> EDT / CDPH - Provide Source Codes / PWS ID:</p>	<p><b>ANALYSIS REQUEST</b></p> <p>Metals S/C Total TIC/TOC/CANIN (Good) 3000 X Sulfate Nitrate (ERA) 9056.3</p>	<p>LAB USE:</p> <p>WO# 1412106 BIN 519</p>																																																										
<p>Project Name: <b>Modesto Soil Piles</b> Project Location: <b>Hwy 99 / Modesto</b> Sampler Name: <b>Marcus L. Pierce</b> Sampler Signature: <b>Marcus L. Pierce</b></p>	<p>Phone #: <b>916 464-4678</b> Cell #: <b>916 464-4678</b> Fax #: <b>916 464-4678</b> P.O.# / Project Name: <b>SR-132 Modesto Soil Piles</b> Project Location: <b>Hwy 99 / Modesto</b></p>	<p>Preserved? (Mark yes and go # both available)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Yes</th> <th>No</th> <th>Summa</th> <th>#</th> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>1 Liter Amber</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>500ml Amber</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>250ml Amber</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>40ml Voa - Amber</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>40ml Voa - Clear</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>1 Liter Amber</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>1 Gallon plastic</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>1000ml plastic</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>500ml plastic</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>250ml plastic</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Collorm Tube</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Tedar / Summa</td> </tr> </table>	Yes	No	Summa	#	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 Liter Amber	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	500ml Amber	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	250ml Amber	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	40ml Voa - Amber	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	40ml Voa - Clear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 Liter Amber	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 Gallon plastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1000ml plastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	500ml plastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	250ml plastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Collorm Tube	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tedar / Summa	<p>Matrix (See Matrix Table)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Source</th> <th>DATE</th> <th>TIME</th> </tr> <tr> <td>SAMPLE ID: <b>SR132-Water</b></td> <td><b>12/12/14</b></td> <td><b>12:20</b></td> </tr> </table>	Source	DATE	TIME	SAMPLE ID: <b>SR132-Water</b>	<b>12/12/14</b>	<b>12:20</b>
Yes	No	Summa	#																																																										
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 Liter Amber																																																										
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SAMPLE ID: <b>SR132-Water</b>	<b>12/12/14</b>	<b>12:20</b>																																																											
<p>Matrix Table: S = Soil / Sludge / Solid (circle one) A = Air DW = Drinking Water MW = Monitoring Wells GW = Groundwater SW = TW = Treated Water SURFACE WATER WW = Waste Water</p>		<p>DATE TIME Received by: <b>12/15/14 0900</b> <i>[Signature]</i> DATE TIME Received by Laboratory: <b>12/15/14 1:44</b> <i>[Signature]</i></p>																																																											
<p>Relinquished by: <b>Marcus L. Pierce</b></p>		<p>Relinquished by: <b>[Signature]</b></p>																																																											
<p>Remarks:</p>		<p><b>12/15/14 1240</b> <b>BAMT w/ (13:13)</b></p>																																																											

Excelchem Environmental Lab.

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Laboratory Representative

### Excelchem Environmental Labs

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
12/22/14 17:08

## Sample Integrity

## WORK ORDER 1412106

Date Received: 12/15/14

### Section 1 – Sample Arrival Info.

Sample Transport: ONTRAC UPS USPS Walk-In EXCELCHEM Courier Fed-Ex Other: \_\_\_\_\_

Transported In: Ice Chest Box Hand

Describe type of packing materials: Bubble Wrap Foam Packing Peanuts Paper Other: \_\_\_\_\_

Has chilling process begun?  Yes  No Samples Received: Chilled to Touch / Ambient / On Ice

Temperature of Samples (°C): 3 Ice Chest Temperature(s) (°C): 2

### Section 2 – Bottle/Analysis Info.

	Yes	No	N/A	Comments
Did all bottles arrive unbroken and intact?	<input checked="" type="checkbox"/>			
Did all bottle labels agree with COC?	<input checked="" type="checkbox"/>			
Were correct containers used for the tests requested?	<input checked="" type="checkbox"/>			
Were correct preservations used for the tests requested?	<input checked="" type="checkbox"/>			No preservative for metals; analysis, will preserve in lab.
Was a sufficient amount of sample sent for tests indicated?	<input checked="" type="checkbox"/>			
Were bubbles present in VOA Vials?: (Volatile Methods Only)			<input checked="" type="checkbox"/>	

### Section 3 – Summa/Flow regulator Info.

Used Summa#:	N/A	
Unused Summa#:		
Cleaning Summa#:		
Regulator#:		
Was there any visual damage to summa canisters or flow regulators? Explain.		

### Section 4 – COC Info.

	Completed		Info From Container	Completed		Comments
	Yes	No		Yes	No	
Was COC Received	<input checked="" type="checkbox"/>					
Date Sampled	<input checked="" type="checkbox"/>					
Time Sampled	<input checked="" type="checkbox"/>					Nitrate expired.
Sample ID	<input checked="" type="checkbox"/>					Nitrate
Rush TAT		<input checked="" type="checkbox"/>				
Analysis Requested				<input checked="" type="checkbox"/>		
Samples arrived within holding time					<input checked="" type="checkbox"/>	
Any hold times less than 72 hrs				<input checked="" type="checkbox"/>		
Client Name				<input checked="" type="checkbox"/>		
Address/Telephone #				<input checked="" type="checkbox"/>		

### Section 5 – Comments / Discrepancies

Was Client notified of discrepancies:  Yes  No  N/A Notified by: \_\_\_\_\_

Explanations / Comments:

\_\_\_\_\_

\_\_\_\_\_

Samples Labeled by: BV  
Bin #: S19  
COC Scanned/Attached by: BV  
Sample labels reviewed by: CK

Filled	<u>Barrett Use</u>	Date:	<u>12/15/14</u>
Out by:		Time:	<u>14:47</u>



## Excelchem Environmental Labs

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
12/22/14 17:08

Page 1 of 1

### Front Desk

---

**From:** Meeks, Steven@Waterboards [Steven.Meeks@waterboards.ca.gov]  
**Sent:** Monday, December 15, 2014 5:05 PM  
**To:** Front Desk  
**Subject:** RE: Project SR-132 Modesto Soil Piles

Go ahead and run it any way.  
Thanks,  
Steve

---

**From:** Front Desk [mailto:FrontDesk@excelchem.net]  
**Sent:** Monday, December 15, 2014 4:15 PM  
**To:** Meeks, Steven@Waterboards  
**Subject:** Project SR-132 Modesto Soil Piles

Hi Steve,

I wanted to double check with you in regards to Sample SR132-Water. The sample has already expired for Nitrate analysis, would you still like us to proceed? I have attached a copy of the COC for your reference.

If you have any questions or concerns, please send an e-mail.

Thank you,

Barrett Vue  
Excelchem Environmental Labs  
1135 W. Sunset Blvd. Suite A  
Rocklin, CA 95765  
(916) 543-4445 Phone  
(916) 543-4449 Fax

12/15/2014

Excelchem Environmental Lab.



Laboratory Representative

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Page 3 of 3

**EXCELCHEM**  
**Environmental Labs**

1135 W Sunset Boulevard  
Suite A  
Rocklin, CA 95765  
Phone# 916-543-4445  
Fax# 916-543-4449



ELAP Certificate No. : 2119

08 January 2015

Steve Meeks

RWQC Central Valley

11020 Sun Center Dr. #200

Rancho Cordova, CA 95670

RE: Modesto Soil Piles

Work order number:1412164

Enclosed are the results of analyses for samples received by the laboratory on 12/29/14 17:00. All Quality Control results are within acceptable limits except where noted as a case narrative. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

A handwritten signature in black ink, appearing to read "John Somers", is placed on a light-colored rectangular background.

John Somers, Lab Director

### Excelchem Environmental Labs

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
01/08/15 11:08

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SR132-Water	1412164-01	Water	12/12/14 12:20	12/29/14 17:00

Excelchem Environmental Lab.

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Laboratory Representative

### Excelchem Environmental Labs

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
01/08/15 11:08

#### SR132-Water 1412164-01 (Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
---------	--------	-----------------	-------	-------	---------------	---------------	--------	-------

#### Total Recoverable Metals

Strontium	81.6	50.0	ug/l	AYA0024	01/07/15	01/07/15	EPA 6010B	
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Excelchem Environmental Lab.

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Laboratory Representative

### Excelchem Environmental Labs

RWQC Central Valley 11020 Sun Center Dr. #200 Rancho Cordova, CA 95670	Project: Modesto Soil Piles Project Number: [none] Project Manager: Steve Meeks	Date Reported: 01/08/15 11:08
--	---	----------------------------------

#### Total Recoverable Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch AYA0024 - EPA 6010B**

<b>Blank (AYA0024-BLK1)</b>				Prepared & Analyzed: 01/07/15						
Strontium	ND	50.0	ug/l							
<b>LCS (AYA0024-BS1)</b>				Prepared & Analyzed: 01/07/15						
Strontium	1020	50.0	ug/l	1000	102	80-120				
<b>LCS Dup (AYA0024-BSD1)</b>				Prepared & Analyzed: 01/07/15						
Strontium	1020	50.0	ug/l	1000	102	80-120	0.197	25		
<b>Matrix Spike (AYA0024-MS1)</b>		<b>Source: 1412164-01</b>		Prepared & Analyzed: 01/07/15						
Strontium	1100	50.0	ug/l	1000	81.6	102	75-125			
<b>Matrix Spike Dup (AYA0024-MSD1)</b>		<b>Source: 1412164-01</b>		Prepared & Analyzed: 01/07/15						
Strontium	1100	50.0	ug/l	1000	81.6	102	75-125	0.0909	25	

Excelchem Environmental Lab.



Laboratory Representative

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**Excelchem Environmental Labs**

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
01/08/15 11:08

**Notes and Definitions**

ND Analyte not detected at reporting limit.  
NR Not reported

---

Excelchem Environmental Lab.



Laboratory Representative

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**Excelchem Environmental Labs**

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
01/08/15 11:08

**Sample Integrity**

**WORK ORDER 1412164**

Date Received: 12/29/14

**Section 1 – Sample Arrival Info.**

Sample Transport: ONTRAC UPS USPS Walk-In EXCELCHEM Courier Fed-Ex Other: \_\_\_\_\_

Transported In: Ice Chest Box Hand

Describe type of packing materials: Bubble Wrap Foam Packing Peanuts Paper Other: \_\_\_\_\_

Has chilling process begun?  N Samples Received: Chilled to Touch / Ambient / On Ice

Temperature of Samples (°C): 3 Ice Chest Temperature(s) (°C): 2

**Section 2 – Bottle/Analysis Info.**

	Yes	No	N/A	Comments
Did all bottles arrive unbroken and intact?	<input checked="" type="checkbox"/>			
Did all bottle labels agree with COC?	<input checked="" type="checkbox"/>			
Were correct containers used for the tests requested?	<input checked="" type="checkbox"/>			
Were correct preservations used for the tests requested?	<input checked="" type="checkbox"/>			
Was a sufficient amount of sample sent for tests indicated?	<input checked="" type="checkbox"/>			
Were bubbles present in VOA Vials?: (Volatile Methods Only)			<input checked="" type="checkbox"/>	

**Section 3 – Summa/Flow regulator Info.**

Used Summa#:	
Unused Summa#:	<b>N/A</b>
Cleaning Summa#:	
Regulator#:	
Was there any visual damage to summa canisters or flow regulators? Explain.	

**Section 4 – COC Info.**

	Completed		Info From Container	Completed		Comments
	Yes	No		Yes	No	
Was COC Received	<input checked="" type="checkbox"/>					
Date Sampled	<input checked="" type="checkbox"/>					
Time Sampled	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	
Sample ID	<input checked="" type="checkbox"/>					
Rush TAT		<input checked="" type="checkbox"/>				
Analysis Requested				<input checked="" type="checkbox"/>		
Samples arrived within holding time				<input checked="" type="checkbox"/>		
Any hold times less than 72 hrs					<input checked="" type="checkbox"/>	
Client Name				<input checked="" type="checkbox"/>		
Address/Telephone #				<input checked="" type="checkbox"/>		

**Section 5 – Comments / Discrepancies**

Was Client notified of discrepancies: Yes No <u>N/A</u> Notified by: _____
Explanations / Comments: _____
_____
_____

Samples Labeled by: BV  
Bin #s: S19  
COC Scanned/Attached by: BV  
Sample labels reviewed by: \_\_\_\_\_

Filled	<u>Barrett Use</u>	Date:	<u>12/29/14</u>
Out by:		Time:	<u>16:00</u>



**Excelchem Environmental Labs**

RWQC Central Valley  
11020 Sun Center Dr. #200  
Rancho Cordova, CA 95670

Project: Modesto Soil Piles  
Project Number: [none]  
Project Manager: Steve Meeks

Date Reported:  
01/08/15 11:08

Page 1 of 1

**Front Desk**

**From:** Meeks, Steven@Waterboards [Steven.Meeks@waterboards.ca.gov]  
**Sent:** Monday, December 29, 2014 10:10 AM  
**To:** Front Desk  
**Subject:** RE: Final Report for W/O 1412106

Is there any way to check for strontium?

**From:** Front Desk [mailto:FrontDesk@excelchem.net]  
**Sent:** Monday, December 22, 2014 5:11 PM  
**To:** Meeks, Steven@Waterboards  
**Subject:** Final Report for W/O 1412106

Final Report for W/O 1412106

If you have any questions or concerns, please send an e-mail.

Thank you,

Excelchem Environmental Labs  
1135 W. Sunset Blvd. Suite A  
Rocklin, CA 95765  
(916) 543-4445 Phone  
(916) 543-4449 Fax

12/29/2014

Excelchem Environmental Lab.



Laboratory Representative

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Page 3 of 3