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August 16, 2013

VIA FEDERAL EXPRESS AND ELECTRONIC MAIL

Ms. Dyan Whyte
Assistant Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Re: *Submittal of Selenium Study Status Report – 2nd Quarter 2013 – June 27, 2013 Amended Water Code section 13267 Order, Order No. R2-2013-1005-A1, Directive 10.b.*

Dear Ms. Whyte:

Enclosed, pursuant to the Regional Water Quality Control Board, San Francisco Bay Region's, ("Regional Water Board") June 27, 2013 amended Water Code section 13267 Order, Order No. R2-2013-1005-A1, ("Order"), Lehigh Southwest Cement Company ("Lehigh") timely encloses the Second Quarter 2013 Selenium Study Status Report in accordance with Directive 10.b. of the Order and the July 11, 2013 Final Amended Selenium Study Work Plan submitted to your office (modifying the submittal date for the 2nd Qtr status report to August 16, 2013 due to the timing of the first sampling event). If you or your staff have any questions regarding the enclosed Status Report, or would like to discuss further, please do not hesitate to contact me or Greg Knapp at Lehigh, or Mike Bryan and Ben Giudice of RBI.

Very truly yours,

Nicole E. Granquist

Enclosure

Cc: Brian Thompson, Regional Water Quality Control Board, San Francisco Bay Region
Greg Knapp, Director Environmental Region West, Lehigh
Scott Rickman, Regional Counsel, Lehigh Hanson
Mike Bryan, RBI

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TECHNICAL MEMORANDUM

Date: August 16, 2013

To: San Francisco Bay Regional Water Quality Control Board

From: Ben Giudice, Ph.D., P.E.; Paul Bedore, M.S.; Michael Bryan, Ph.D.

Cc: Greg Knapp, Nicole Granquist

On Behalf of: Lehigh Southwest Cement Company

Project: Permanente Quarry and Cement Plant Selenium Impact Assessment Study

Subject: Quarter 2, 2013 Report

Introduction

This memo summarizes results from samples collected in Quarter 2, 2013, pursuant to the Permanente Quarry Cement Plant Selenium Impact Assessment Study (Study). The Study Work Plan was initially submitted on May 17, 2013, while the original 13267 Investigative Order, No. R2-2013-1005, issued in January 2013 by the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) was being negotiated by Regional Water Board staff and Lehigh, resulting in a June 27, 2013 amended 13267 Investigative Order, No. R2-2013-1005-A1 (Order). The initial Order required implementation within 45 days of submittal (i.e., by June 24, 2013) if the Assistant Executive Officer did not comment on it or as directed by the Assistant Executive Officer. Additionally, if possible, the first sampling event was to be conducted in June 2013. However, Lehigh and Robertson-Bryan, Inc. (RBI), on behalf of Lehigh, were discussing final requirements for the Study Work Plan with Regional Water Board staff through early July 2013, and an access permit from Santa Clara Valley Water District to perform the work described in the Study Work Plan could not be obtained until July 9, 2013. The final amended work plan (Final Study Work Plan) was submitted to the Regional Water Board electronically on July 11, 2013. The Final Study Work Plan states:

> "The proposed start of sampling is in June 2013, which is within the 45 day period subsequent to submittal of this work plan specified in the Order. If the permits that are required to access sampling stations on Midpeninsula Regional Open Space District and Santa Clara Valley Water District property are not obtained in time to execute the first sampling event in June 2013, the event will be rescheduled for July. In the case of a July 2013 sampling event, results from that event will still be communicated in the 2013 Q2 quarterly report; however, the reporting deadline will be extended to August 16, 2013 to accommodate the delay in obtaining and compiling the laboratory results."

Because Regional Water Board staff, Lehigh, and RBI staff were still working together to refine the work plan in early July 2013, and moreover, because the access permit from the Santa Clara Valley Water District was not issued until July 9, 2013, the first sampling event occurred on July

9, 2013. Thus, the deadline for the quarterly report is August 16, 2013, per the Final Study Work Plan, and although samples were technically collected in Quarter 3, they are being reported here as part of the Quarter 2 report. This report thus satisfies one of the quarterly reporting requirements in section 10b of the Order. Laboratory reports containing the data are included as attachments.

Summary of Sampling Events in this Quarter (Q2 2013)

Permanente and Stevens Creeks were sampled on July 9, 2013. The weather was clear, warm and sunny. The event commenced at 11:00 a.m. and was complete by 7:00 p.m. Details of the sampling event are as follows.

- The background station, Wild Violet Creek (WVC), was dry; however a pool was present in the streambed at the confluence of Wild Violet and Permanente Creeks. Flow was present at the inlet and outlet of Pond 13 and at PER070. There was no flow into Pond 14. In Rancho San Antonio Open Space at PER060 and PER080 (West Permanente Creek), flow was intermittent (i.e., portions of the streambed were dry, and portions were wet) and pools were present. Downstream of the Open Space, PER035, PER045, and STE040 were dry, while the sites closest to San Francisco Bay (PER010, STE020, and STE010) were flowing. Thus, Permanente Creek and the Quarry discharge were hydrologically disconnected from sites PER010, STE020, and STE010.
- Water samples were collected at Pond 13, Pond 14, PER070, PER060, PER080, PER010, STE020, and STE010. A field blank (FB) was taken prior to any other samples and a field duplicate (FD) was collected at Pond 13 (and analyzed for total-Se, dissolved-Se, Se-speciation, TSS).
- Sediment samples were collected at WVC, Pond 13, PER060, PER045, STE020, PER035, PER010, and STE010. A FD sediment sample was collected at Pond 13 (and analyzed for total-Se, grain size, SO_4^{2-}, and TOC).
- Flow measurements were taken at Pond 13, PER080, and PER060.
- pH and DO loggers were deployed at Pond 13. After logging for 30 days, results will be summarized and reported in the quarter 3, 2013 report.

Issues Encountered in Sampling/Analysis

Water samples at the locations closest to San Francisco Bay (PER010 and STE010) had low electrical conductivities indicative of freshwater (1008 and 1372 µs/cm, respectively). It was assumed that these sites would be brackish, based on their elevation relative to the tidal range present in South San Francisco Bay, adjacent saltwater marsh vegetation, and the lack of any known freshwater inputs upstream of these sites and downstream of the dry areas upstream. However, both sites were sampled at or near low tide. During future events, these sites will be visited at or near high tide, and their electrical conductivities measured to determine if they are brackish or saline.

Deviations from Work Plan

The following summarizes all deviations from the Final Study Work Plan submitted on July 11, 2013.

- Sediment samples at stations Pond 13 (and the FD at Pond 13), PER060, PER010, STE020 and STE010 were too fine and too moist to be analyzed for grain size by the dry sieve method (ASTM D-2216 M), as called for in the Final Study Work Plan. Grain size of these sediment samples was measured using a laser particle size analyzer (ASTM D4464 M), as was recommended by the analytical laboratory. This situation will be encountered in all future sampling events, with most samples not being able to be analyzed via the dry sieve method. Thus, starting with the September, 2013 sampling event, all samples will be analyzed using the laser particle size analyzer (ASTM D4464 M) unless otherwise noted.
- Due to laboratory error, FD, Pond 13 and WVC sediment samples were not processed according to the Final Study Work Plan.
    - Six 4 oz. sediment jars were collected for each sample point – three jars for each sample point (for a total of nine jars) were sent to Applied Speciation and three jars for each sample point (for a total of nine jars) were sent to Alpha Analytical. At each lab, the three jars for each sampling point were to be combined and homogenized to make one composite sample per sampling station. Due to an error by staff at Alpha Analytical, the three jars from all three sites were combined (all nine jars) and homogenized. Because of this, the FD, Pond 13, and WVC sediment samples sent to Alpha Analytical had to be discarded.
    - Sediment samples sent to Applied Speciation were processed correctly – the three jars from each site were homogenized to make one composite sample per sampling station. Applied Speciation sent sub-samples of the FD, Pond 13, and WVC composite samples to Alpha Analytical for grain size, TOC, and sulfate analysis.

Data

The following is a basic summary of findings.

Water Samples

- Chlorophyll *a* concentrations were low or below the reporting limit at all sites.
- At sites hydraulically connected to the Permanente Facility discharge (Pond 13 – PER060), hardness ranged from 541-587 mg/L (as $CaCO_3$). Samples downstream from this (PER080, PER010, and STE020) yielded slightly lower hardness (360-440 mg/L), with the exception of STE010 (680 mg/L).
- Sulfate concentrations were highest (380-410 mg/L) at the stations with the greatest influence from the Permanente Facility discharge (Pond 13, Pond 14, and PER070). West Permanente Creek (PER080) yielded the lowest sulfate concentration (46 mg/L). Downstream of PER060, sulfate ranged from 100-160 mg/L.

- Total alkalinity increased from 140 to 200 mg/L (as $CaCO_3$) from Pond 13 downstream to PER060. Total alkalinity at PER010, STE020, STE010, and PER080 ranged from 300-380 mg/L.
- TOC decreased from Pond 13/14 toward PER060. The greatest TOC level was observed at PER010, and was 3.43 mg/L.
- TSS levels were highest at STE010 (540 mg/L), and TSS levels were below the method detection limit of 0.30 mg/L at Pond 13, Pond 14, and PER070. At the stations between PER070 and STE010, including PER080, TSS ranged from 1.3-1.9 mg/L.
- Total Se levels in water were greatest at Pond 13 (21.4 µg/L) and decreased toward San Francisco Bay. Total Se was below the reporting limit of 0.40 µg/L at PER080.
- Dissolved Se made up the greatest fraction of total Se in water.
    - Sites on Permanente Creek affected by Lehigh discharge had > 99% of total Se in the dissolved fraction.
    - Sites on Permanente Creek and Stevens Creek disconnected from Lehigh discharge had 77-87% of total Se in the dissolved fraction.
- Se(VI) was the predominant Se species. Se(IV) was detected at lower concentrations, while SeCN was not detected above the method detection limit of 0.005 µg/L.

Sediment

- Sulfate concentrations at WVC and Pond 13 were similar (150 and 140 mg/kg), while downstream of Pond 13, sediment sulfate were lower, ranging from 19-75 mg/kg. However, STE010 yielded the highest sulfate concentrations of 480 mg/kg.
- Total Se (dw basis) in sediment was highest in Pond 13, and was 9.68 mg/kg (the Field Duplicate sample of Pond 13 had 5.45 mg/kg)..

Quality Assurance/Quality Control

The following summarizes quality assurance/quality control issues.

Water samples

- Concentrations of the Se species in the field duplicate taken at Pond 13 were in good agreement with the concentrations from the Pond 13 sample (2-8% difference, varied by species).
- FD and FB met the measurement quality objectives.
- Recovery of calcium in the matrix spike (MS) on PER070 was 177%. PER070 Ca concentration was 154 mg/L, while the spike was 6 mg/L. According to SWAMP, analyte concentrations of the MS and matrix spike duplicate (MSD) should be 2x-5x higher than the native concentration of the source sample. Therefore, to meet SWAMP criteria, the calcium spike concentration should have been much greater, on the order of 150-625 mg/L, and this likely would have resulted in acceptable MS recovery.

- Calcium and magnesium analyses also yielded flagged QC samples in a second batch of samples analyzed by Alpha Analytical (PER080, PER060, PER010, STE020, and STE010). A matrix spike for magnesium (Mg) and a matrix spike duplicate for calcium (Ca) yielded recoveries outside of the laboratory quality control objectives. A second Ca and Mg matrix spike sample yielded acceptable recoveries and showed that the original flagged QC samples were a result of low spike concentrations compared to Ca and Mg concentrations in the source sample. The sample used for the MS and MSDs for this analytical batch was not from this study. The laboratory control spike and laboratory control spike duplicate were within the recovery control limits. Based on investigation of these results, no action was taken or additional flags/qualifiers placed on the data from this study.

Sediment samples

- The RPD of field duplicate compared to the Pond 13 sample was 56% for total Se and 44% for SO_4^{2-} (on a dry weight basis). This RPD does not meet the MQO of 25%.
    - SWAMP Requirements are to "Visually inspect the samples to determine if a high RPD between results could be attributed to sample heterogeneity. For duplicate results due to matrix heterogeneity, or where ambient concentrations are below the reporting limit, qualify the results and document the heterogeneity."
    - The sampler at Pond 13 noted,by visual inspection, that field duplicates at each of the three locations in Pond 13 at which samples were taken were likely of different texture than the original Pond 13 sample.
    - Size distribution shows that this was the case, and the lower selenium concentration in the field duplicate is likely due to the greater amount of gravel in that sample:
        - Pond 13: 55% silt + clay, 45% sand, 0% gravel.
        - FD: 71% silt+clay, 5% sand, 23% gravel.
    - Based on the above, starting with the September, 2013 sampling event, only one set of sediment samples will be collected at each site required and will be sent to Applied Speciation. Samples will be homogenized there, and sub-samples of the homogenates will be sent to Alpha Analytical for grain size, TOC, and sulfate analysis.
- Sulfate recoveries for the MS and MSD on the FD sample were 74.8-75.0%, below the lab's 80% lower control level. Because sulfate is not a critical parameter to the study, and results were close to control levels, no action was taken or additional flags/qualifiers placed on the data from this study.
- TOC analyses in one of the batches of sediment samples yielded a flagged matrix spike QC sample. The sample used for batch matrix spike was not from this study. The recovery of the matrix spike was 73%, outside the laboratory's lower recovery control limit of 75%. The matrix spike duplicate, laboratory control spike, and laboratory control

spike duplicate were all within the control limits. Based on investigation of these results, no action was taken or additional flags/qualifiers placed on the data from this study.

Photo Log

Figure A 1. STE010 sampling station on Stevens Creek.

Figure A 2. PER010 sampling station on Permanente Creek.

Figure A 3. PER035 sampling station on Permanente Creek.

Figure A 4. STE020 sampling station on Stevens Creek.

Figure A 5. STE040 sampling station on Stevens Creek.

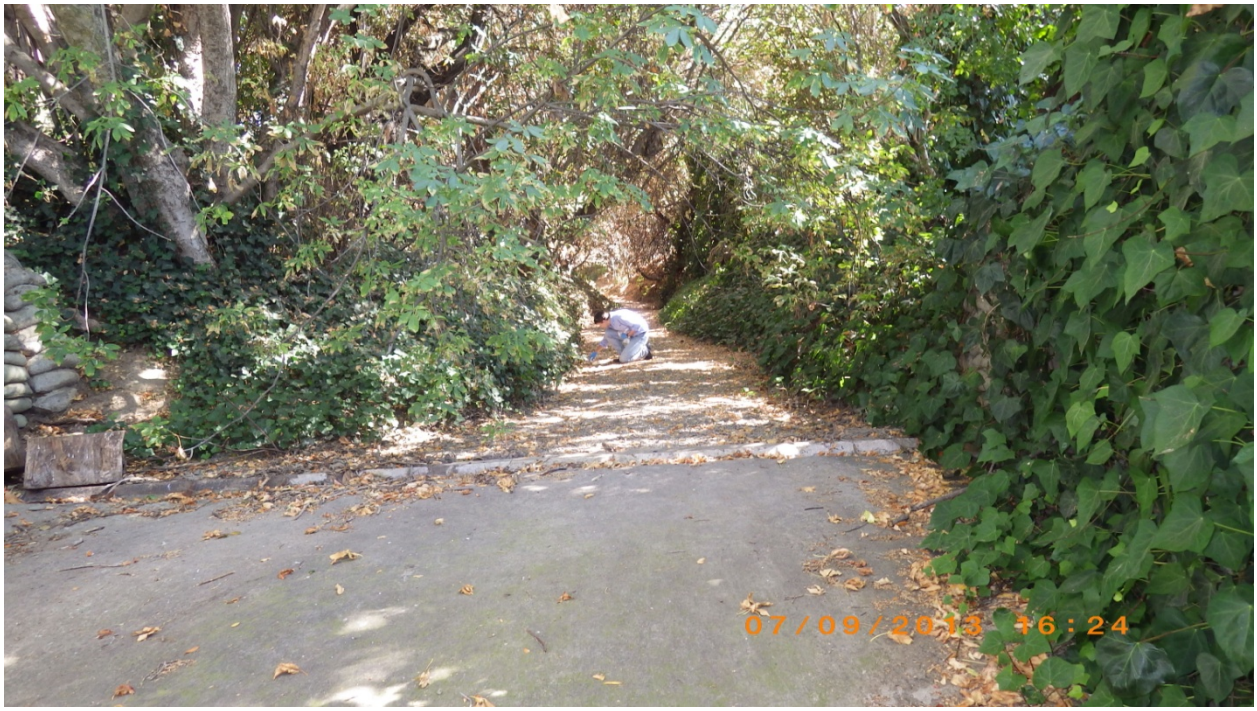

Figure A 6. PER045 sampling station on Permanente Creek.

Figure A 7. PER060 sampling station on Permanente Creek.

Figure A 8. PER070 sampling station on Permanente Creek.

Figure A 9. PER080 sampling station on Permanente Creek.

Figure A 10. Pond 14 sampling station.

Figure A 11. Pond 13 sampling station.

Figure A 12. Pond 13 inlet tributary where flow measurement was taken.

Figure A 13. WVC sampling station.

APPLIED SPECIATION
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July 30, 2013

Greg Knapp
Lehigh Hanson
(925) 244-6570

Re: Lehigh Selenium Impact Study

Mr. Knapp,

Attached is the report associated with ten (10) aqueous samples submitted for total (filtered and unfiltered) selenium and selenium speciation analyses, and for the nine (9) sediment samples submitted for total selenium analyses on July 10, 2013. The samples were received on July 11, 2013 in sealed coolers at -0.6°C and -0.4°C, respectively. Selenium speciation analysis was performed by ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Total selenium analysis was performed via inductively coupled plasma dynamic reaction cell mass spectrometry (ICP-DRC-MS). Any issues associated with the analyses are addressed in the following report.

If you have any questions, please feel free to contact me at your convenience.

Sincerely,

Ben Wozniak
Project Manager
Applied Speciation and Consulting, LLC

Applied Speciation and Consulting, LLC

Report Prepared for:

Greg Knapp
Lehigh Hanson

July 30, 2013

1. Sample Reception

Ten (10) aqueous samples for total (filtered and unfiltered) selenium and selenium speciation analyses, and nine (9) sediment samples submitted for total selenium analyses were submitted on July 10, 2013. The samples were received in acceptable condition on July 11, 2013 in sealed coolers at -0.6°C and -0.4°C, respectively, as recorded on the attached chain of custody (COC) forms.

The samples were received in a laminar flow clean hood, void of trace metals contamination and ultra-violet radiation, and designated discrete sample identifiers. Immediately upon reception each field-filtered aqueous sample for selenium speciation was stored in a secure, monitored cryofreezer (maintained at a temperature of <-70°C) until the analyses could be performed. Each field-filtered aqueous sample for dissolved selenium and each aqueous sample for total selenium were then preserved with 1% HNO_3 (v/v) to a pH < 2. All acidified aqueous samples were stored in a secure enclosed container, known to be free from trace metals contamination, until digestion and/or analysis could be performed. All submitted sediment samples were stored in a secure, monitored refrigerator (maintained at a temperature of ≤6°C) until the analyses could be performed.

2. Sample Preparation

All sample preparation is performed in laminar flow clean hoods known to be free from trace metals contamination. All applied water for dilutions and sample preservatives are monitored for contamination to account for any biases associated with the sample results.

Selenium Speciation Analysis by IC-ICP-CRC-MS (Aqueous) Each sample submitted for selenium speciation had been filtered prior to reception at Applied Speciation and Consulting. No further sample preparation was performed as any chemical alteration of a sample may shift the equilibrium of the system, resulting in changes in speciation ratios.

Total (Unfiltered and Filtered) Selenium Quantitation by ICP-DRC-MS (Aqueous) An aliquot of each acidified sample fraction for total selenium was further digested on a hotblock apparatus with aliquots of 50% HNO_3 (v/v) and 50% HCl (v/v), in accordance with the digestion procedure specified in EPA Method 200.8. Each acidified sample fraction for dissolved selenium was directly analyzed without further digestion.

Sample Homogenization (Sediments) The client submitted three 4oz. jars for each sediment sample. In accordance with the client's instructions, the three individual jars for each sample were composited and thoroughly mixed. All subsamples for the total selenium and total solids determinations were taken from these sample composites.

Total Selenium Quantitation by ICP-DRC-MS (Sediments) A known mass of each sample was weighed into a polypropylene vial. All samples were then digested with aliquots of concentrated HNO_3 and H_2O_2 in a hot block apparatus, in accordance with EPA Method 3050B.

3. Sample Analysis

All sample analysis is preceded by a minimum of a five-point calibration curve spanning the entire concentration range of interest. Calibration curves are performed at the beginning of each analytical day. All calibration curves, associated with each species of interest, are standardized by linear regression resulting in a response factor. All sample results are **instrument blank corrected** to account for any operational biases associated with the analytical platform.

Prior to sample analysis, all calibration curves are verified using second source standards which are identified as initial calibration verification standards (ICV).

Ongoing instrument performance is identified by the analysis of continuing calibration verification standards (CCV) and continuing calibration blanks (CCB) at a minimal interval of every ten analytical runs.

Selenium Speciation Analysis by IC-ICP-CRC-MS The samples submitted for selenium speciation were analyzed by ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS) on July 23 – 24, 2013. Aliquots of each sample are injected onto an anion exchange column and are mobilized by an alkaline (pH > 7) gradient. The eluting selenium species are then introduced into a radio frequency (RF) plasma where energy-transfer processes cause desolvation, atomization, and ionization. The ions are extracted from the plasma through a differentially-pumped vacuum interface and travel through a pressurized chamber (CRC) containing a specific reaction gas which preferentially reacts with interfering ions of the same target mass to charge ratios (m/z). A solid-state detector detects ions transmitted through the mass analyzer and the resulting current is processed by a data handling system.

Retention times for each eluting species are compared to known standards for species identification.

Total Selenium Quantitation by ICP-DRC-MS All samples for selenium quantitation were analyzed by inductively coupled plasma dynamic reaction cell mass spectrometry (ICP-DRC-MS). All aqueous samples for total and dissolved selenium were analyzed on July 25, 2013. All sediment samples were analyzed on July 22 – 23, 2013. Aliquots of each sample are

introduced into a radio frequency (RF) plasma where energy-transfer processes cause desolvation, atomization, and ionization. The ions are extracted from the plasma through a differentially-pumped vacuum interface and travel through a pressurized chamber (DRC) containing a specific reaction gas which preferentially reacts with interfering ions of the same target mass to charge ratios (m/z). A solid-state detector detects ions transmitted through the mass analyzer, on the basis of their mass-to-charge ratio (m/z), and the resulting current is processed by a data handling system.

Percent Solids Analysis (Sediments) On July 22, 2013 approximately 1-5 grams of each sample was placed into a pre-weighed pan, and the combined mass of the sample and pan was recorded. All samples were then placed into a convection oven maintained at a temperature of 60 (±5) °C. After drying for a minimum of eight (8) hours, all samples were briefly cooled and reweighed. The percent solids of each sample was calculated by dividing the weight of the dried sample by the weight of the original (field-moist) sample.

4. Analytical Issues

No significant analytical issues were encountered during the requested analyses. All quality control parameters associated with these samples were within acceptance limits.

The estimated method detection limits (eMDLs) for selenite, selenate, and selenocyanate are generated from replicate analyses of the lowest standard in the calibration curve. Not all selenium species are present in preparation blanks; therefore, eMDL calculations based on preparation blanks may be artificially biased low for individual species. The eMDLs for total and dissolved selenium have been calculated using the standard deviation of the method blanks prepared and analyzed concurrently with the submitted samples.

If you have any questions or concerns regarding this report, please feel free to contact me.

Sincerely,

Ben Wozniak
Project Manager
Applied Speciation and Consulting, LLC

Selenium Results for Lehigh Hanson
Project: Lehigh Selenium Impact Study
Contact: Greg Knapp

Date: July 30, 2013
Report Generated by: Ben Wozniak
Applied Speciation and Consulting, LLC

Sample Results

Sample ID	Date Collected	Units	Total Se	Diss. Se	Se(IV)	Se(VI)	SeCN	Additional Se Species (n)
FB	7/9/2013	µg/L	< 0.093 U	< 0.092 U	< 0.021 U	< 0.012 U	< 0.005 U	0 (0)
FD	7/9/2013	µg/L	20.9	20.8	0.815	16.7	< 0.005 U	0.066 (2)
Pond 13	7/9/2013	µg/L	21.4	21.4	0.881	16.6	< 0.005 U	0.068 (2)
Pond 14	7/9/2013	µg/L	8.50	8.64	1.49	4.40	< 0.005 U	0.153 (2)
PER 080	7/9/2013	µg/L	0.309 J	0.199 J	0.025 J	0.099 J	< 0.005 U	0 (0)
PER 070	7/9/2013	µg/L	12.9	12.8	0.915	9.59	< 0.005 U	0.033 (2)
PER 060	7/9/2013	µg/L	10.0	10.5	0.059 J	8.47	< 0.005 U	0 (0)
STE 020	7/9/2013	µg/L	2.96	2.57	0.243 J	1.86	< 0.005 U	0.018 (1)
PER 010	7/9/2013	µg/L	0.745	0.587	0.074 J	0.288 J	< 0.005 U	0.014 (1)
STE 010	7/9/2013	µg/L	2.26	1.73	0.248 J	1.01	< 0.005 U	0 (0)

All results reflect the applied dilution and are reported in µg/L

U = Sample concentration is below the estimated method detection limit (eMDL)

J = Sample concentration is between the eMDL and the reporting limit (RL)

SeCN = Selenocyanate

Additional Se Species = Sum of all additional Se species observed by IC-ICP-MS

n = number of unknown Se species observed

Selenium Results for Lehigh Hanson
Project: Lehigh Selenium Impact Study
Contact: Greg Knapp

Date: July 30, 2013
Report Generated by: Ben Wozniak
Applied Speciation and Consulting, LLC

Sample Results

Sample ID	Date Collected	Units	Total Se (WW)	Total Se (DW)	Percent Solids (%)
FD	7/9/2013	µg/g	2.97	5.45	54.6
WVC	7/9/2013	µg/g	0.229	0.258	88.8
Pond 13	7/9/2013	µg/g	5.04	9.68	52.1
PER 060	7/9/2013	µg/g	0.683	0.892	76.6
PER 045	7/9/2013	µg/g	0.496	0.505	98.2
STE 020	7/9/2013	µg/g	0.426	0.746	57.0
PER 035	7/9/2013	µg/g	1.58	1.61	97.9
PER 010	7/9/2013	µg/g	0.319	0.490	65.1
STE 010	7/9/2013	µg/g	0.204	0.577	35.4

All results reflect the applied dilution and are reported in µg/g, with the exception of Percent Solids (%)

U = Sample concentration is below the estimated method detection limit (eMDL)

J = Sample concentration is between the eMDL and the reporting limit (RL)

WW = Wet Weight (As Received) Basis

DW = Dry Weight Basis

Selenium Results for Lehigh Hanson
Project: Lehigh Selenium Impact Study
Contact: Greg Knapp

Date: July 30, 2013
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Quality Control Summary - Preparation Blank Summary

Analyte	Units	PB1	PB2	PB3	PB4	Mean	StdDev	eMDL* 10x	RL 10x	eMDL* 25x	RL 25x
Total Se	µg/L	0.045	-0.023	0.008	-0.018	0.003	0.031	0.093	0.40	-	-
Diss Se	µg/L	0.064	0.105	0.030	0.070	0.068	0.031	0.092	0.40	-	-
Se(IV)	µg/L	0.000	0.000	0.007	0.000	0.002	0.004	0.021	0.56	-	-
Se(VI)	µg/L	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.50	-	-
SeCN	µg/L	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.46	-	-
Total Se	µg/g (WW)	0.002	0.000	0.000	0.000	0.000	0.001	-	-	0.013	0.10

eMDL = Estimated Method Detection Limit; RL = Reporting Limit

*Please see narrative regarding eMDL calculations

Selenium Results for Lehigh Hanson
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Quality Control Summary - Certified Reference Materials

Analyte	Units	CRM	True Value	Result	Recovery
Total Se	µg/L	LCS	400.0	380.4	95.1
Total Se	µg/L	TMDA-70	25.9	24.05	92.8
Diss Se	µg/L	TMDA-70	25.9	24.71	95.4
Se(IV)	µg/L	LCS	4.785	4.921	102.8
Se(VI)	µg/L	LCS	4.740	4.742	100.0
SeCN	µg/L	LCS	4.460	4.515	101.2
Total Se	µg/g (WW)	LCS	0.600	0.559	93.1
Total Se	µg/g (WW)	CRM 036-50G	187.0	197.4	105.5

Selenium Results for Lehigh Hanson
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Quality Control Summary - Matrix Duplicates

Analyte	Units	Sample ID	Rep 1	Rep 2	Mean	RPD
Total Se	µg/L	STE 010	2.263	2.238	2.251	1.1
Diss Se	µg/L	FD	20.79	21.34	21.07	2.6
Se(IV)	µg/L	PER 060	0.059	0.057	0.058	3.0
Se(VI)	µg/L	PER 060	8.471	8.505	8.488	0.4
SeCN	µg/L	PER 060	< 0.005 U	< 0.005 U	NC	NC
Total Se	µg/g (WW)	STE 010	0.204	0.124	0.164	49.2*
% Solids	%	STE 010	35.40	35.42	35.41	0.1

* The absolute difference between the native sample and MD is less than the RL
NC = Not calculated due to one or more concentrations below the eMDL

Quality Control Summary - Matrix Spike/ Matrix Spike Duplicate

Analyte	Units	Sample ID	Spike Conc	MS Result	Recovery	Spike Conc	MSD Result	Recovery	RPD
Total Se	µg/L	STE 010	400.0	407.4	101.3	400.0	405.2	100.7	0.5
Diss Se	µg/L	FD	100.0	117.1	96.1	100.0	119.4	98.3	1.9
Se(IV)	µg/L	PER 060	55.60	50.78	91.2	55.60	50.80	91.3	0.0
Se(VI)	µg/L	PER 060	50.45	54.63	91.5	50.45	54.64	91.5	0.0
SeCN	µg/L	PER 060	45.75	40.47	88.5	45.75	40.64	88.8	0.4
Total Se	µg/g (WW)	STE 010	43.22	41.40	95.4	44.17	45.39	102.4	7.0

~~cooler # 1~~ JMF 7/11/13

APPLIED SPECIATION AND CONSULTING, LLC

pg 1 of 4

18804 Northcreek Parkway
Bothell, WA 98011

Phone (425) 483-3300
Fax (425) 483-9818

Company Name: Robertson-Bryan, Inc.
Contact Person: Ben Giudice
Address: 9888 Kent St. Elk Grove, CA 95624

Phone Number: 916-405-8943
Fax Number: 916-714-1804
Email Address: ben@robertson-bryan.com
Project Name: Lehigh Selenium Impact Study
Project Number:
PO Number:

ASC Project Manager: Ben Wozniak

By submitting of samples the client agrees to all terms and conditions set forth in the quotation provided by the ASC project manager. If you are not familiar with the term and conditions associated with your project, please contact your ASC representative as soon as possible (425) 483-3300.

Requested Turn Around Time: Normal
Method of Sample Delivery: Fed Ex
Currier Tracking Number:
Confirmation of Sample Reception: ☑ Yes ☐ No

Sample ID	Bottle ID	Date and Time	Matrix*	Volume	Preservative	Initials	Requested Analytes and Methods	Comments
FD	1 of 3	7/9/13 11:00	SD	4oz.	None	PB	Total Se	Total Se to be measured on homogenized sediment. Lab is to combine and homogenize all 3 bottles per sample
FD	2 of 3	↓	↓	↓	↓	↓	↓	
FD	3 of 3	↓	↓	↓	↓	↓	↓	
WVC	1 of 3	7/9/13 11:45	↓	↓	↓	↓	↓	
WVC	2 of 3	↓	↓	↓	↓	↓	↓	
WVC	3 of 3	↓	↓	↓	↓	↓	↓	
Pond 13	1 of 3	7/9/13 11:00	↓	↓	↓	↓	↓	
Pond 13	2 of 3	↓	↓	↓	↓	↓	↓	
Pond 13	3 of 3	↓	↓	↓	↓	↓	↓	
PER 060	1 of 3	7/9/13 15:20	↓	↓	↓	↓	↓	
* PER 060	2 of 3	↓	↓	↓	↓	↓	↓	
PER 060	3 of 3	↓	↓	↓	↓	↓	↓	
* PER 045	1 of 3	7/9/13 16:20	↓	↓	↓	↓	↓	
* PER 045	2 of 3	↓	↓	↓	↓	↓	↓	
* PER 045	3 of 3	↓	↓	↓	↓	↓	↓	
* STE 020	1 of 3	7/9/13 18:10	↓	↓	↓	↓	↓	
* STE 020	2 of 3	7/9/13 18:40	↓	↓	↓	↓	↓	

Relinquished by: (sign) Paul Bedore (print) PAUL BEDORE Date/Time: 7/10/13 12:00
Received by: (sign) (print) Jacki Ford Date/Time: 7/11/13 900

Comments: cooler # 1 : -0.6°C
cooler # 2 : -0.4°C
Temp:

Relinquished by: (sign) (print) Date/Time:
Received by: (sign) (print) Date/Time:

Comments:
Temp:

Please account for each sample bottle as a seperate line item for verification purposes.

*Matrix: Air, Freshwater (FW), seawater (SW), groundwater (GW), wastewater (WW), soil (SL), sediment (SD), tissue (TS), product (P), other (O)

Rev 1.1 (April 2005)

* Samples from cooler #1, unmarked samples in cooler # 2

APPLIED SPECIATION AND CONSULTING, LLC

Pg 2 of 4

18804 Northcreek Parkway
Bothell, WA 98011

Phone (425) 483-3300
Fax (425) 483-9818

Company Name: Robertson-Bryan, Inc.
Contact Person: Ben Giudice, Paul Bedore
Address: 9888 Kent St., ELK GROVE, CA 95624

Phone Number: 916-405-~~8918~~ 8943
Fax Number: 916-714-1804
Email Address: ben@robertson-bryan.com, paul@robertson-bryan.com
Project Name: Lehigh Selenium Impact Study
Project Number:
PO Number:

ASC Project Manager: Ben Wozniak

By submitting of samples the client agrees to all terms and conditions set forth in the quotation provided by the ASC project manager. If you are not familiar with the term and conditions associated with your project, please contact your ASC representative as soon as possible (425) 483-3300.

Requested Turn Around Time: Normal
Method of Sample Delivery: FedEx
Currier Tracking Number:
Confirmation of Sample Reception: ☒ Yes ☐ No

Sample ID	Bottle ID	Date and Time	Matrix*	Volume	Preservative	Initials	Requested Analytes and Methods	Comments
* STE020	3 of 3	7/9/13 18:10	SD	4 oz.	None	PB	Total Se	Lab is to combine and homogenize all 3 bottles per sample.
PER035	1 of 3	7/9/13 16:46	↓	↓	↓	↓	↓	
PER035	2 of 3	↓	↓	↓	↓	↓	↓	
PER035	3 of 3	↓	↓	↓	↓	↓	↓	
* PER010	1 of 3	7/9/13 17:20	↓	↓	↓	↓	↓	
PER010	2 of 3	↓	↓	↓	↓	↓	↓	
PER010	3 of 3	↓	↓	↓	↓	↓	↓	
* STE010	1 of 3	7/9/13 18:51	↓	↓	↓	↓	↓	
* STE010	2 of 3	↓	↓	↓	↓	↓	↓	
* STE010	3 of 3	↓	↓	↓	↓	↓	↓	

Relinquished by: (sign) Paul Bedore (print) PAUL BEDORE Date/Time: 7/10/13 12:00
Received by: (sign) [signature] (print) Jacki Ford Date/Time: 7/11/13 900

Comments: Cooler #1: -0.6°C
Cooler #2: -0.4°C
Temp:

Relinquished by: (sign)_____ (print)_____ Date/Time:_____
Received by: (sign)_____ (print)_____ Date/Time:_____

Comments:
Temp:

Please account for each sample bottle as a seperate line item for verification purposes.

*Matrix: Air, Freshwater (FW), seawater (SW), groundwater (GW), wastewater (WW), soil (SL), sediment (SD), tissue (TS), product (P), other (O)

Rev 1.1 (April 2005)

* samples from cooler #1, unmarked samples from cooler #2

APPLIED SPECIATION AND CONSULTING, LLC

18804 Northcreek Parkway
Bothell, WA 98011

Phone (425) 483-3300
Fax (425) 483-9818

pg 3 of 4

Company Name: Robertson-Bryan, Inc.
Contact Person: Ben Giudice
Address: 9888 Kent St., Elk Grove, CA 95624

Phone Number: 916 ~~405~~ 405-8943
Fax Number: 916-714-1804
Email Address: ben@robertson-bryan.com
Project Name: Lehigh Selenium Impact Study
Project Number:
PO Number:

ASC Project Manager: Ben Wozniak

By submitting of samples the client agrees to all terms and conditions set forth in the quotation provided by the ASC project manager. If you are not familiar with the term and conditions associated with your project, please contact your ASC representative as soon as possible (425) 483-3300.

Requested Turn Around Time: Normal
Method of Sample Delivery: Fed Ex
Currier Tracking Number:
Confirmation of Sample Reception: ☒ Yes ☐ No

Sample ID	Bottle ID	Date and Time	Matrix*	Volume mL	Preservative	Initials	Requested Analytes and Methods	Comments
FB		7/9/13 1100	FW	125	None	PB	Total Se	
FB		↓	FW	15			Dissolved Se	Field Filtered (FF)
FB		↓	FW	15			Se speciation	FF
FD		7/9/13 1100	FW	125			Total Se	
FD		↓	FW	15			Dissolved Se	FF
FD		↓	FW	15			Se Speciation	FF
Pond 13		7/9/13 1100	FW	125			Total Se	
Pond 13		↓	FW	15			Dissolved Se	FF
Pond 13		↓	FW	15			Se Speciation	FF
Pond 14		7/9/13 13:40	FW	125			Total Se	
Pond 14		↓	FW	15			Dissolved Se	FF
Pond 14		↓	FW	15			Se Speciation	FF
PER 080		7/9/13 1450	FW	125 **			Total Se	
PER 080		↓	FW	15			Dissolved Se	FF
PER 080		↓	FW	15 **			Se Speciation	FF
PER 070		7/9/13 14:10	FW	125			Total Se	
PER 070		7/9/13 14:10	FW	15	↓	↓	Dissolved Se	FF

Relinquished by: (sign) Paul Bedore (print) PAUL BEDORE Date/Time: 7/10/13 12:00
Received by: (sign) (print) Jacki Ford Date/Time: 7/11/13 900

Comments: cooler #1: -0.6°C
cooler #2: -0.4°C
Temp:

Relinquished by: (sign)_____ (print)_____ Date/Time:_____
Received by: (sign)_____ (print)_____ Date/Time:_____

Comments:
Temp:

Please account for each sample bottle as a seperate line item for verification purposes.

*Matrix: Air, Freshwater (FW), seawater (SW), groundwater (GW), wastewater (WW), soil (SL), sediment (SD), tissue (TS), product (P), other (O)

samples from cooler #1, unmarked samples in cooler #2

** client labels were swapped- 125mL bottle labelled Se spec (15mL bottle) JPM 7/11/13

APPLIED SPECIATION AND CONSULTING, LLC

18804 Northcreek Parkway
Bothell, WA 98011

Phone (425) 483-3300
Fax (425) 483-9818

Company Name: Robertson-Bryan, Inc.
Contact Person: Ben Giudice
Address: 9888 Kent St., Elk Grove, CA 95624

Phone Number: 916-405-8943
Fax Number: 916-714-1804
Email Address: ben@robertson-bryan.com
Project Name: Lehigh Selenium Impact Study
Project Number:
PO Number:

ASC Project Manager: Ben Woźniak

By submitting of samples the client agrees to all terms and conditions set forth in the quotation provided by the ASC project manager. If you are not familiar with the term and conditions associated with your project, please contact your ASC representative as soon as possible (425) 483-3300.

Requested Turn Around Time: Normal
Method of Sample Delivery: Fed Ex
Currier Tracking Number:
Confirmation of Sample Reception: ☑ Yes ☐ No

Sample ID	Bottle ID	Date and Time	Matrix*	Volume	Preservative	Initials	Requested Analytes and Methods	Comments
PER 070		7/9/13 1410	FW	15	None	PB	Se Speciation	Fidd Filtered (FF)
PER 060		7/9/13 1520	↓	125	↓		Total Se	
PER 060		↓	↓	15			Dissolved Se	FF
PER 060				15			Se speciation	FF
*STE 020		7/9/13 1810	FW	125			Total Se	
*STE 020				15			Dissdved Se	FF
*STE 020				15			Se Speciation	FF
*PER 010		7/9/13 1720		125			Total Se	
*PER 010		↓		15			Dissdved Se	FF
PER 010				15			Se Speciation	FF
*STE 010		7/9/13 1851		125			Total Se	
*STE 010		↓		15			Dissdved Se	FF
*STE 010			↓	15	↓		Se Speciation	FF

Relinquished by: (sign) Paul Bedore (print) PAUL BEDORE Date/Time: 7/10/13 12:00
Received by: (sign) (print) Jacki Ford Date/Time: 7/11/13 900

Comments: cooler #1 : -0.6°C
cooler #2 : -0.4°C
Temp:

Relinquished by: (sign) (print) Date/Time:
Received by: (sign) (print) Date/Time:

Comments:
Temp:

Please account for each sample bottle as a seperate line item for verification purposes.

*Matrix: Air, Freshwater (FW), seawater (SW), groundwater (GW), wastewater (WW), soil (SL), sediment (SD), tissue (TS), product (P), other (O)

Rev 1.1 (April 2005)

*samples from cooler #1, unmarked samples from cooler #2

Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com
Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

ELAP Certificate Numbers 1551 and 2728

26 July 2013

Lehigh Southwest Cement Company
Attn: Chow Yip
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
RE: Permanente Creek Selenium Impact Study
Work Order: 13G0438

Enclosed are the results of analyses for samples received by the laboratory on 07/09/13 22:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette Poplin

Jeanette L. Poplin For Robbie C. Phillips
Project Manager

Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com
Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/26/13 13:23
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0438	07/09/2013 22:00	SEL HANSONCUP	4500536207

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pond 13	13G0438-01	Water	07/09/13 11:00	07/09/13 22:00
Pond 13	13G0438-02	Other (W)	07/09/13 11:00	07/09/13 22:00
Field Blank	13G0438-03	Water	07/09/13 11:00	07/09/13 22:00
Field Duplicate	13G0438-04	Water	07/09/13 11:00	07/09/13 22:00
Field Duplicate	13G0438-05	Other (W)	07/09/13 11:00	07/09/13 22:00
Pond 14	13G0438-06	Water	07/09/13 13:40	07/09/13 22:00
Per 070	13G0438-07	Water	07/09/13 14:10	07/09/13 22:00
WVC	13G0438-08	Other (W)	07/09/13 11:45	07/09/13 22:00

Bruce Gove
Laboratory Director

7/26/2013

Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com
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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/26/13 13:23
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0438	07/09/2013 22:00	SEL HANSONCUP	4500536207

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
Pond 13 (13G0438-01)			**Sample Type: Water**			**Sampled: 07/09/13 11:00**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AG31645	07/16/13 09:32	07/17/13 22:24	1	**150 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**41 "**	**1.0**	
Conventional Chemistry Parameters by APHA/EPA Methods								
Chlorophyll-a	SM10200H	AG31043	07/10/13 12:15	07/16/13 16:15	1	ND mg/l	0.010	
Total Suspended Solids	SM2540D	AG31119	07/11/13 08:07	07/12/13 08:55	"	ND "	1.0	
Bicarbonate Alkalinity as CaCO3	SM2320B	AG31225	07/16/13 11:51	07/16/13 17:00	"	**140 "**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Alkalinity as CaCO3	"	"	"	"	"	**140 "**	**5.0**	
Hardness, Total	SM2340B	AG31645	07/16/13 09:32	07/17/13 22:24	"	**541 "**	**5**	
Total Organic Carbon	SM5310C	AG31648	07/16/13 09:43	07/16/13 21:38	"	**1.29 "**	**0.300**	
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG31302	07/13/13 10:15	07/13/13 23:20	25	**380 mg/l**	**12**	
Pond 13 (13G0438-02)			**Sample Type: Other (W)**			**Sampled: 07/09/13 11:00**		
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG32270	07/22/13 14:36	07/23/13 06:50	1	**140 mg/kg**	**5.0**	
Field Blank (13G0438-03)			**Sample Type: Water**			**Sampled: 07/09/13 11:00**		
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Suspended Solids	SM2540D	AG31119	07/11/13 08:07	07/12/13 08:55	1	ND mg/l	1.0	
Field Duplicate (13G0438-04)			**Sample Type: Water**			**Sampled: 07/09/13 11:00**		
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Suspended Solids	SM2540D	AG31119	07/11/13 08:07	07/12/13 08:55	1	ND mg/l	1.0	
Field Duplicate (13G0438-05)			**Sample Type: Other (W)**			**Sampled: 07/09/13 11:00**		
Anions by EPA Method 300.0								

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.

Bruce Gove
Laboratory Director

7/26/2013

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e-mail: clientservices@alpha-labs.com
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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/26/13 13:23
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0438	07/09/2013 22:00	SEL HANSONCUP	4500536207

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
Field Duplicate (13G0438-05)			**Sample Type: Other (W)**			**Sampled: 07/09/13 11:00**		
Anions by EPA Method 300.0 (cont'd)								
Sulfate as SO4	EPA 300.0	AG32561	07/25/13 16:52	07/25/13 21:51	1	**220 mg/kg**	**5.0**	
Pond 14 (13G0438-06)			**Sample Type: Water**			**Sampled: 07/09/13 13:40**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AG31645	07/16/13 09:32	07/17/13 22:29	1	**140 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**48 "**	**1.0**	
Conventional Chemistry Parameters by APHA/EPA Methods								
Chlorophyll-a	SM10200H	AG31043	07/10/13 12:15	07/16/13 16:15	1	ND mg/l	0.010	
Total Suspended Solids	SM2540D	AG31119	07/11/13 08:07	07/12/13 08:55	"	ND "	1.0	
Bicarbonate Alkalinity as CaCO3	SM2320B	AG31225	07/16/13 11:51	07/16/13 17:00	"	**160 "**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Alkalinity as CaCO3	"	"	"	"	"	**160 "**	**5.0**	
Hardness, Total	SM2340B	AG31645	07/16/13 09:32	07/17/13 22:29	"	**548 "**	**5**	
Total Organic Carbon	SM5310C	AG31648	07/16/13 09:43	07/16/13 21:52	"	**2.64 "**	**0.300**	
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG31302	07/13/13 10:15	07/13/13 23:35	25	**410 mg/l**	**12**	
Per 070 (13G0438-07)			**Sample Type: Water**			**Sampled: 07/09/13 14:10**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AG31645	07/16/13 09:32	07/17/13 21:30	1	**150 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**46 "**	**1.0**	

Bruce Gove
Laboratory Director

7/26/2013

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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/26/13 13:23
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0438	07/09/2013 22:00	SEL HANSONCUP	4500536207

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
Per 070 (13G0438-07)			**Sample Type: Water**			**Sampled: 07/09/13 14:10**		
Conventional Chemistry Parameters by APHA/EPA Methods								
Chlorophyll-a	SM10200H	AG31043	07/10/13 12:15	07/16/13 16:15	1	ND mg/l	0.010	
Total Suspended Solids	SM2540D	AG31119	07/11/13 08:07	07/12/13 08:55	"	ND "	1.0	
Bicarbonate Alkalinity as CaCO3	SM2320B	AG31225	07/16/13 11:51	07/16/13 17:00	"	**180 "**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Alkalinity as CaCO3	"	"	"	"	"	**180 "**	**5.0**	
Hardness, Total	SM2340B	AG31645	07/16/13 09:32	07/17/13 21:30	"	**573 "**	**5**	
Total Organic Carbon	SM5310C	AG31648	07/16/13 09:43	07/16/13 22:05	"	**1.28 "**	**0.300**	
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG31302	07/13/13 10:15	07/13/13 23:50	25	**410 mg/l**	**12**	
WVC (13G0438-08)			**Sample Type: Other (W)**			**Sampled: 07/09/13 11:45**		
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG32270	07/22/13 14:36	07/23/13 07:20	1	**150 mg/kg**	**5.0**	

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.

Bruce Gove
Laboratory Director

7/26/2013

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e-mail: clientservices@alpha-labs.com
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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/26/13 13:23
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0438	07/09/2013 22:00	SEL HANSONCUP	4500536207

Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AG31645 - Metals Digest										
Blank (AG31645-BLK1)				Prepared: 07/16/13 Analyzed: 07/17/13						
Calcium	ND	1.0	mg/l							
Magnesium	ND	1.0	"							
LCS (AG31645-BS1)				Prepared: 07/16/13 Analyzed: 07/17/13						
Calcium	5.76	1.0	mg/l	6.00		96.0	85-115			
Magnesium	8.37	1.0	"	8.00		105	85-115			
Duplicate (AG31645-DUP1)	**Source: 13G0630-01**			Prepared: 07/16/13 Analyzed: 07/17/13						
Calcium	10.4	1.0	mg/l		10.5			1.20	20	
Magnesium	6.47	1.0	"		6.56			1.37	20	
Matrix Spike (AG31645-MS1)	**Source: 13G0630-01**			Prepared: 07/16/13 Analyzed: 07/17/13						
Calcium	15.4	1.0	mg/l	6.00	10.5	82.5	70-130			
Magnesium	13.3	1.0	"	8.00	6.56	84.6	70-130			
Matrix Spike (AG31645-MS2)	**Source: 13G0438-07**			Prepared: 07/16/13 Analyzed: 07/17/13						
Calcium	165	1.0	mg/l	6.00	154	177	70-130			QM-4X
Magnesium	55.3	1.0	"	8.00	45.5	122	70-130			
Matrix Spike Dup (AG31645-MSD1)	**Source: 13G0630-01**			Prepared: 07/16/13 Analyzed: 07/17/13						
Calcium	16.4	1.0	mg/l	6.00	10.5	98.7	70-130	6.12	20	
Magnesium	13.4	1.0	"	8.00	6.56	85.8	70-130	0.746	20	

Bruce Gove
Laboratory Director

7/26/2013

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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/26/13 13:23
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0438	07/09/2013 22:00	SEL HANSONCUP	4500536207

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AG31043 - General Preparation										
Blank (AG31043-BLK1)				Prepared: 07/10/13 Analyzed: 07/16/13						
Chlorophyll-a	ND	0.010	mg/l							
Duplicate (AG31043-DUP1)		**Source: 13G0427-01**		Prepared: 07/10/13 Analyzed: 07/16/13						
Chlorophyll-a	0.00318	0.010	mg/l		ND				50	
Duplicate (AG31043-DUP2)		**Source: 13G0588-01**		Prepared: 07/11/13 Analyzed: 07/16/13						
Chlorophyll-a	0.000265	0.010	mg/l		ND				50	
Batch AG31119 - General Preparation										
Blank (AG31119-BLK1)				Prepared: 07/11/13 Analyzed: 07/12/13						
Total Suspended Solids	ND	1.0	mg/l							
Duplicate (AG31119-DUP1)		**Source: 13G0443-01**		Prepared: 07/11/13 Analyzed: 07/12/13						
Total Suspended Solids	1190	1.0	mg/l		1210			1.86	30	
Duplicate (AG31119-DUP2)		**Source: 13G0461-01**		Prepared: 07/11/13 Analyzed: 07/12/13						
Total Suspended Solids	184	1.0	mg/l		179			2.92	30	
Batch AG31225 - General Preparation										
Duplicate (AG31225-DUP1)		**Source: 13G0430-02**		Prepared & Analyzed: 07/16/13						
Carbonate Alkalinity as CaCO3	ND	5.0	mg/l		ND				20	
Hydroxide Alkalinity as CaCO3	ND	5.0	"		ND				20	
Total Alkalinity as CaCO3	88.0	5.0	"		88.0			0.00	20	
Bicarbonate Alkalinity as CaCO3	88.0	5.0	"		88.0			0.00	20	

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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/26/13 13:23
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0438	07/09/2013 22:00	SEL HANSONCUP	4500536207

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AG31645 - Metals Digest										
Blank (AG31645-BLK1)				Prepared: 07/16/13 Analyzed: 07/17/13						
Hardness, Total	ND	5	mg/l							
Duplicate (AG31645-DUP1)	**Source: 13G0630-01**			Prepared: 07/16/13 Analyzed: 07/17/13						
Hardness, Total	53	5	mg/l		53			1.28	20	
Batch AG31648 - General Prep										
Blank (AG31648-BLK1)				Prepared & Analyzed: 07/16/13						
Total Organic Carbon	ND	0.300	mg/l							
LCS (AG31648-BS1)				Prepared & Analyzed: 07/16/13						
Total Organic Carbon	10.2	0.300	mg/l	10.0		102	85-115			
LCS Dup (AG31648-BSD1)				Prepared & Analyzed: 07/16/13						
Total Organic Carbon	10.4	0.300	mg/l	10.0		104	85-115	1.83	20	
Duplicate (AG31648-DUP1)	**Source: 13G0375-01**			Prepared & Analyzed: 07/16/13						
Total Organic Carbon	2.36	0.300	mg/l		2.38			0.776	20	
Matrix Spike (AG31648-MS1)	**Source: 13G0375-02**			Prepared & Analyzed: 07/16/13						
Total Organic Carbon	22.0	0.600	mg/l	20.0	1.80	101	70-130			
Matrix Spike Dup (AG31648-MSD1)	**Source: 13G0375-02**			Prepared & Analyzed: 07/16/13						
Total Organic Carbon	22.1	0.600	mg/l	20.0	1.80	102	70-130	0.620	20	

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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
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Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/26/13 13:23
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0438	07/09/2013 22:00	SEL HANSONCUP	4500536207

Anions by EPA Method 300.0 - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AG31302 - General Preparation										
Blank (AG31302-BLK1)				Prepared & Analyzed: 07/13/13						
Sulfate as SO4	ND	0.50	mg/l							
LCS (AG31302-BS1)				Prepared & Analyzed: 07/13/13						
Sulfate as SO4	19.9	0.50	mg/l	20.0		99.4	90-110			
Duplicate (AG31302-DUP1)	**Source: 13G0545-01**			Prepared & Analyzed: 07/13/13						
Sulfate as SO4	37.8	2.5	mg/l		37.8			0.0794	20	
Matrix Spike (AG31302-MS1)	**Source: 13G0545-01**			Prepared & Analyzed: 07/13/13						
Sulfate as SO4	60.2	2.5	mg/l	22.2	37.8	101	80-120			
Matrix Spike (AG31302-MS2)	**Source: 13G0601-01**			Prepared & Analyzed: 07/13/13						
Sulfate as SO4	30.6	2.5	mg/l	22.2	9.82	93.7	80-120			
Matrix Spike Dup (AG31302-MSD1)	**Source: 13G0545-01**			Prepared & Analyzed: 07/13/13						
Sulfate as SO4	60.2	2.5	mg/l	22.2	37.8	101	80-120	0.00923	20	
Batch AG32270 - General Preparation										
Blank (AG32270-BLK1)				Prepared: 07/22/13 Analyzed: 07/23/13						
Sulfate as SO4	ND	5.0	mg/kg							
LCS (AG32270-BS1)				Prepared: 07/22/13 Analyzed: 07/23/13						
Sulfate as SO4	200	5.0	mg/kg	200		100	90-110			
Duplicate (AG32270-DUP1)	**Source: 13G0588-03**			Prepared: 07/22/13 Analyzed: 07/23/13						
Sulfate as SO4	75.0	5.0	mg/kg		74.9			0.107	20	

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.

Bruce Gove
Laboratory Director

7/26/2013

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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/26/13 13:23
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0438	07/09/2013 22:00	SEL HANSONCUP	4500536207

Anions by EPA Method 300.0 - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AG32270 - General Preparation										
Matrix Spike (AG32270-MS1)	**Source: 13G0588-03**			Prepared: 07/22/13 Analyzed: 07/23/13						
Sulfate as SO4	258	25	mg/kg	200	74.9	91.5	80-120			
Matrix Spike Dup (AG32270-MSD1)	**Source: 13G0588-03**			Prepared: 07/22/13 Analyzed: 07/23/13						
Sulfate as SO4	257	25	mg/kg	200	74.9	90.9	80-120	0.486	20	
Batch AG32561 - General Preparation										
Blank (AG32561-BLK1)				Prepared & Analyzed: 07/25/13						
Sulfate as SO4	ND	5.0	mg/kg							
LCS (AG32561-BS1)				Prepared & Analyzed: 07/25/13						
Sulfate as SO4	194	5.0	mg/kg	200		96.8	90-110			
Duplicate (AG32561-DUP1)	**Source: 13G0438-05**			Prepared & Analyzed: 07/25/13						
Sulfate as SO4	225	5.0	mg/kg		223			0.807	20	
Matrix Spike (AG32561-MS1)	**Source: 13G0438-05**			Prepared & Analyzed: 07/25/13						
Sulfate as SO4	373	25	mg/kg	200	223	74.8	80-120			QM-05
Matrix Spike Dup (AG32561-MSD1)	**Source: 13G0438-05**			Prepared & Analyzed: 07/25/13						
Sulfate as SO4	374	25	mg/kg	200	223	75.0	80-120	0.107	20	QM-05

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7/26/2013

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CHEMICAL EXAMINATION REPORT

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Attn: Chow Yip

Report Date: 07/26/13 13:23
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0438	07/09/2013 22:00	SEL HANSONCUP	4500536207

Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
PQL	Practical Quantitation Limit

Bruce Gove
Laboratory Director

7/26/2013

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 13-07-1250

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Alpha Analytical Laboratories, Inc.

Client Project Name: 13G0438

Attention: Robbie C. Phillips
208 Mason St.
Ukiah, CA 95482-4407

Approved for release on 07/25/2013 by:
Stephen Nowak
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

Contents

Client Project Name: 13G0438
Work Order Number: 13-07-1250

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 07/19/13. They were assigned to Work Order 13-07-1250.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Return to Contents

Calscience Environmental Laboratories, Inc.

Sample Summary

Client:	Alpha Analytical Laboratories, Inc. 208 Mason St. Ukiah, CA 95482-4407	Work Order: Project Name: PO Number: Date Received:	13-07-1250 13G0438 07/19/13
Attn:	Robbie C. Phillips		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
13G0438-02 Pond 13	13-07-1250-1	07/09/13 11:00	1	Soil
13G0438-05 Field Duplicate	13-07-1250-2	07/09/13 11:00	1	Soil
13G0438-08 WVC	13-07-1250-3	07/09/13 11:45	1	Soil

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Project: 13G0438

Date Received: 07/19/13
Work Order: 13-07-1250
Preparation: N/A
Method: ASTM D-2216 (M)
Units: %

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0438-02 Pond 13	**13-07-1250-1-A**	**07/09/13 11:00**	**Soil**	**N/A**	**07/19/13**	**07/19/13 19:30**	**D0719MOIB1**

Parameter	Result	RL	DF	Qualifiers
Moisture	51.7	0.100	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0438-05 Field Duplicate	**13-07-1250-2-A**	**07/09/13 11:00**	**Soil**	**N/A**	**07/19/13**	**07/19/13 19:30**	**D0719MOIB1**

Parameter	Result	RL	DF	Qualifiers
Moisture	45.2	0.100	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0438-08 WVC	**13-07-1250-3-A**	**07/09/13 11:45**	**Soil**	**N/A**	**07/19/13**	**07/19/13 19:30**	**D0719MOIB1**

Parameter	Result	RL	DF	Qualifiers
Moisture	13.8	0.100	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-05-014-3907**	**N/A**	**Soil**	**N/A**	**07/19/13**	**07/19/13 19:30**	**D0719MOIB1**

Parameter	Result	RL	DF	Qualifiers
Moisture	ND	0.100	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Project: 13G0438

Date Received: 07/19/13
Work Order: 13-07-1250
Preparation: N/A
Method: EPA 9060A
Units: mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0438-02 Pond 13	**13-07-1250-1-A**	**07/09/13 11:00**	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Carbon, Total Organic	27000	1000	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0438-05 Field Duplicate	**13-07-1250-2-A**	**07/09/13 11:00**	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Carbon, Total Organic	22000	910	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0438-08 WVC	**13-07-1250-3-A**	**07/09/13 11:45**	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Carbon, Total Organic	8600	580	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-06-013-888**	**N/A**	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Parameter	Result	RL	DF	Qualifiers
Carbon, Total Organic	ND	500	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Project: 13G0438

Date Received: 07/19/13
Work Order: 13-07-1250
Preparation: N/A
Method: ASTM D4464 (M)
Units: %

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0438-02 Pond 13	**13-07-1250-1-A**	**07/09/13 11:00**	**Soil**	**LPSA 1**	**N/A**	**07/23/13 12:19**	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	10.29	
Silt (0.00391 to 0.0625mm)	45.08	
Total Silt and Clay (0 to 0.0625mm)	55.38	
Very Fine Sand (0.0625 to 0.125mm)	20.99	
Fine Sand (0.125 to 0.25mm)	16.79	
Medium Sand (0.25 to 0.5mm)	5.24	
Coarse Sand (0.5 to 1mm)	1.60	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0438-05 Field Duplicate	**13-07-1250-2-A**	**07/09/13 11:00**	**Soil**	**LPSA 1**	**N/A**	**07/23/13 12:28**	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	27.53	
Silt (0.00391 to 0.0625mm)	43.71	
Total Silt and Clay (0 to 0.0625mm)	71.24	
Very Fine Sand (0.0625 to 0.125mm)	4.21	
Fine Sand (0.125 to 0.25mm)	1.18	
Medium Sand (0.25 to 0.5mm)	ND	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	23.37	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

ANALYTICAL REPORT

Alpha Analytical Laboratories		Date Received:	7/19/2013
208 Mason St.		Work Order No.:	13-07-1250
Ukiah, CA 95482-4407		Preparation:	N/A
		Method:	ASTM D422
		Units:	%
Project: 13G0438			Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date/Time Started	QC Batch ID
13G0438-08 WVC	**13-07-1250-3-A**	**07/09/13 11:45**	**Solid**		**07/23/13**	**130723B01**

Parameter	Result	Qual	Parameter	Result	Qual
Total Slit and Clay (0 to 0.0625mm)	0.6		Medium Sand (0.25 to 0.5mm)	6.1	
Very Fine Sand (0.0625 to 0.125mm)	0.8		Coarse Sand (0.5 to 1mm)	18.1	
Fine Sand (0.125 to 0.25mm)	1.8		Very Coarse Sand (1 to 2mm)	27.5	
			Gravel (greater than 2mm)	41.1	

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Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Project: 13G0438

Date Received: 07/19/13
Work Order: 13-07-1250
Preparation: N/A
Method: EPA 9060A

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13G0438-02 Pond 13	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCS2**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	13000	30000	34900	73	38600	85	75-125	10	0-25	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - Sample Duplicate

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Project: 13G0438

Date Received: 07/19/13
Work Order: 13-07-1250
Preparation: N/A
Method: ASTM D-2216 (M)

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
13-07-1254-1	**Soil**	**N/A**	**07/19/13 00:00**	**07/19/13 19:30**	**D0719MOID1**

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Moisture	6.400	6.800	6	0-10	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Project: 13G0438

Date Received: 07/19/13
Work Order: 13-07-1250
Preparation: N/A
Method: EPA 9060A

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-06-013-888	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	6000	4920	82	5704	95	80-120	15	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Sample Analysis Summary Report

Work Order: 13-07-1250

Method	Extraction	Chemist ID	Instrument	Analytical Location
ASTM D-2216 (M)	N/A	689	N/A	1
ASTM D4464 (M)	N/A	843	LPSA 1	3
EPA 9060A	N/A	735	TOC 5	1

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Location 1: 7440 Lincoln Way, Garden Grove, CA 92841
Location 3: 11380 Knott Street, Garden Grove, CA 90630

Glossary of Terms and Qualifiers

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Return to Contents

Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com

Laboratory & Corporate: 208 Mason Street, Ukiah, CA 95482
707-468-0401 Fax: 707-468-5267

Service Center & Micro Lab: 6398 Dougherty Rd, Ste 35, Dublin, CA 94568
925-828-6226 Fax: 925-828-6309

Chain of Custody Record

Reports and Invoices will be delivered by email in .pdf format.

Lab No. 13G0438 Page ____ of ____

Report to:	Invoice to (if different):	Project Info for Report:
Company: Robertson-Bryan, Inc.	Company: Lehigh Southwest Cement Co.	Project ID: Permanente Creek Selenium Impact Study
Attn: Ben Giudice	Attn: Greg Knapp	Project No:
Address: 9888 Kent St., Elk Grove, CA 95624	Address: 12667 Alcosta Blvd., San Ramon, CA 94583	
Phone/Fax: 916-405-8943	Phone/Fax: 925-244-6570	PO/Reference : 4500536207
Email Address: ben@robertson-bryan.com	Email Address: Greg.Knapp@hanson.biz	

Signature below authorizes work under terms stated on reverse side.

Samplers Signature:

Print:

Sample Identification	Sampled: Date	Sampled: Time	Container: 40ml VOA	Poly	Amber	Sleeve	Other	Preservative: HCL	HNO3	H2SO4	Other	None	Matrix: Water	Soil	Other	:Total Number of Containers	Analyses Requested: TOC	Hardness, TSS, Sulfate, Alkalinity	Chlorophyll a	Sulfate, grain size, TOC	Sample Notes or CDPH Source Numbers:
POND 13	7-9	1100	2								✓		✓			2	✓				
POND 13	7-9	1100		1								✓	✓			1		✓			
POND 13	7-9	1100		1								✓	✓			1			✓		
POND 13	7-9	1100					3					✓		✓		3				✓	
FIELD BLANK	7-9	1100		1								✓	✓			1		✓			TSS only
FIELD DUPLICATE	7-9	1100		1								✓	✓			1		✓			TSS only
FIELD DUPLICATE	7-9	1100					3					✓		✓		3				✓	
POND 14	7-9	1340	2								✓		✓			2	✓				
POND 14	7-9	1340		1								✓	✓			1		✓			
POND 14	7-9	1340		1								✓	✓			1			✓		

TAT: 10 days ○ RUSH: 5 days ○ 48 hours ○ Other: ____days ○

Lab Approval Required For Rush TATs

Sample Notes (lab use only)

Temperature: 4 deg. C

Shipment Method:

Custody Seals: Y / N

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	7-9-13	1442 1439
[signature]	[signature]	7-9-13	1900
[signature]	LAB [signature]	7-9-13	2300

CDPH Write On EDT Report? ○ Yes ○ No

State System Number: _____

If "Y" please enter the Source Number(s) in the column above

CA Geotracker EDF Report? ○ Yes ○ No

Sampling Company Log Code: Global ID:

EDF to (Email Address):

Travel and Site Time: Mileage: Misc. Supplies:

Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com

Laboratory & Corporate: 208 Mason Street, Ukiah, CA 95482
707-468-0401 Fax: 707-468-5267

Service Center & Micro Lab: 6398 Dougherty Rd, Ste 35, Dublin, CA 94568
925-828-6226 Fax: 925-828-6309

Chain of Custody Record

Reports and Invoices will be delivered by email in .pdf format.

Lab No. 13G0438 Page ____ of ____

Report to:	Invoice to (if different):	Project Info for Report:
Company: Robertson-Bryan, Inc.	Company: Lehigh Southwest Cement Co.	Project ID: Permanente Creek Selenium Impact Study
Attn: Ben Giudice	Attn: Greg Knapp	Project No:
Address: 9888 Kent St., Elk Grove, CA 95624	Address: 12667 Alcosta Blvd., San Ramon, CA 94583	
Phone/Fax: 916-405-8943	Phone/Fax: 925-244-6570	PO/Reference : 4500536207
Email Address: ben@robertson-bryan.com	Email Address: Greg.Knapp@hanson.biz	

Signature below authorizes work under terms stated on reverse side.

Samplers Signature:

Print:

Sample Identification	Sampled: Date	Sampled: Time	Container: 40ml VOA	Poly	Amber	Sleeve	Other	Preservative: HCL	HNO3	H2SO4	Other	None	Matrix: Water	Soil	Other	Total Number of Containers	Analyses Requested: TOC	Hardness, TSS, Sulfate, Alkalinity	Chlorophyll a	Sulfate, grain size, TOC
~~POND 14~~ BG							3					✓		✓		3				✓
PER070	7-9	1410	2								✓		✓			2	✓			
PER070	7-9	1410		1								✓	✓			1		✓		
PER070	7-9	1410		1								✓	✓			1			✓	
WVC	7-9	1145					3					✓		✓		3				✓

TAT: 10 days ○ RUSH: 5 days ○ 48 hours ○ Other: ____days ○

Lab Approval Required For Rush TATs

Sample Notes (lab use only)

Temperature: 4 deg. C

Shipment Method:

Custody Seals: Y / N

Sample Notes or CDPH Source Numbers:

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	7-9-13	1437
[signature]	R. Wood	7-9-13	1900
R. Wood	LAB Return	7-9-13	2300

CDPH Write On EDT Report? ○ Yes ○ No

State System Number:

If "Y" please enter the Source Number(s) in the column above

CA Geotracker EDF Report? ○ Yes ○ No

Sampling Company Log Code: Global ID:

EDF to (Email Address):

Travel and Site Time: Mileage: Misc. Supplies:

Chelsea Sandelin @ Alpha Labs

From: Robbie Phillips [robbie@alpha-labs.com]
Sent: Wednesday, July 10, 2013 12:27 PM
To: Chelsea Sandelin
Subject: Fwd: Lehigh sediment samples

Robbie C. Phillips
650-464-3237

Begin forwarded message:

> **From:** "Paul Bedore" <paul@robertson-bryan.com>
> **Date:** July 10, 2013, 11:54:24 PDT
> **To:** "Robbie Phillips (Alpha Labs)" <robbie@alpha-labs.com>
> **Cc:** "Ben Giudice" <Ben@robertson-bryan.com>
> **Subject: RE: Today**
>
> Robbie –
>
> We forgot to place a note on the COCs reminding the lab that the three sediment jars per sample need to be homogenized at the lab. Can you please let your analysts know that the 3 jars are intended to be combined and homogenized to produce one sample per site?
>
> Thanks,
>
> Paul
>
> ---
>
> **From:** Robbie Phillips (Alpha Labs) [mailto:robbie@alpha-labs.com]
> **Sent:** Tuesday, July 09, 2013 7:19 AM
> **To:** Paul Bedore
> **Subject:** Today
>
> Hello Paul,
>
> We're scheduled to arrive at the gate at 15:00 sharp. Should anything change, simply let me know.
>
> Thanks again!
>
> Alpha Analytical Laboratories, Inc.
> Robbie C. Phillips
> Project Management
> 925-828-6226 Desk
> 925-828-6309 Fax
> 650-464-3237 Mobile

Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com
Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

ELAP Certificate Numbers 1551 and 2728

25 July 2013

Lehigh Southwest Cement Company
Attn: Chow Yip
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
RE: Permanente Creek Selenium Impact Study
Work Order: 13G0588

Enclosed are the results of analyses for samples received by the laboratory on 07/10/13 21:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette Poplin

Jeanette L. Poplin For Robbie C. Phillips
Project Manager

Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com
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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/25/13 13:30
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0588	07/10/2013 21:50	SEL HANSONCUP	4500536207

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PER 080	13G0588-01	Water	07/09/13 14:50	07/10/13 21:50
PER 060	13G0588-02	Water	07/09/13 15:20	07/10/13 21:50
PER 060	13G0588-03	Other (W)	07/09/13 15:20	07/10/13 21:50
PER 045	13G0588-04	Other (W)	07/09/13 16:00	07/10/13 21:50
PER 035	13G0588-05	Other (W)	07/09/13 16:40	07/10/13 21:50
PER 010	13G0588-06	Water	07/09/13 17:20	07/10/13 21:50
PER 010	13G0588-07	Other (W)	07/09/13 17:20	07/10/13 21:50
STE 020	13G0588-08	Water	07/09/13 18:10	07/10/13 21:50
STE 020	13G0588-09	Other (W)	07/09/13 18:10	07/10/13 21:50
STE 010	13G0588-10	Water	07/09/13 18:51	07/10/13 21:50
STE 010	13G0588-11	Other (W)	07/09/13 18:51	07/10/13 21:50

Bruce Gove
Laboratory Director

7/25/2013

Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com
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Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/25/13 13:30
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0588	07/10/2013 21:50	SEL HANSONCUP	4500536207

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
PER 080 (13G0588-01)			**Sample Type: Water**			**Sampled: 07/09/13 14:50**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AG31833	07/18/13 11:46	07/19/13 16:03	1	**70 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**45 "**	**1.0**	
Conventional Chemistry Parameters by APHA/EPA Methods								
Chlorophyll-a	SM10200H	AG31043	07/11/13 14:30	07/16/13 16:15	1	ND mg/l	0.010	
Total Suspended Solids	SM2540D	AG31631	07/16/13 08:13	07/17/13 14:34	"	**1.3 "**	**1.0**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AG31226	07/12/13 11:52	07/12/13 17:00	"	**320 "**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Alkalinity as CaCO3	"	"	"	"	"	**320 "**	**5.0**	
Hardness, Total	SM2340B	AG31833	07/18/13 11:46	07/19/13 16:03	"	**360 "**	**5**	
Total Organic Carbon	SM5310C	AG31763	07/17/13 15:27	07/19/13 18:44	"	**1.71 "**	**0.300**	
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG31302	07/13/13 10:15	07/13/13 16:33	5	**46 mg/l**	**2.5**	
PER 060 (13G0588-02)			**Sample Type: Water**			**Sampled: 07/09/13 15:20**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AG31833	07/18/13 11:46	07/19/13 16:08	1	**150 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**50 "**	**1.0**	
Conventional Chemistry Parameters by APHA/EPA Methods								
Chlorophyll-a	SM10200H	AG31043	07/11/13 14:30	07/16/13 16:15	1	ND mg/l	0.010	
Total Suspended Solids	SM2540D	AG31631	07/16/13 08:13	07/17/13 14:34	"	**1.9 "**	**1.0**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AG31226	07/12/13 11:52	07/12/13 17:00	"	**200 "**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Alkalinity as CaCO3	"	"	"	"	"	**200 "**	**5.0**	
Hardness, Total	SM2340B	AG31833	07/18/13 11:46	07/19/13 16:08	"	**587 "**	**5**	
Total Organic Carbon	SM5310C	AG31763	07/17/13 15:27	07/19/13 18:56	"	**0.750 "**	**0.300**	

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.

Bruce Gove
Laboratory Director

7/25/2013

Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com
Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/25/13 13:30
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0588	07/10/2013 21:50	SEL HANSONCUP	4500536207

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
PER 060 (13G0588-02)			**Sample Type: Water**			**Sampled: 07/09/13 15:20**		
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG31302	07/13/13 10:15	07/18/13 03:10	20	**120 mg/l**	**10**	
PER 060 (13G0588-03)			**Sample Type: Other (W)**			**Sampled: 07/09/13 15:20**		
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG32270	07/22/13 14:36	07/23/13 02:18	1	**75 mg/kg**	**5.0**	
PER 045 (13G0588-04)			**Sample Type: Other (W)**			**Sampled: 07/09/13 16:00**		
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG32270	07/22/13 14:36	07/23/13 03:49	1	**19 mg/kg**	**5.0**	
PER 035 (13G0588-05)			**Sample Type: Other (W)**			**Sampled: 07/09/13 16:40**		
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG32270	07/22/13 14:36	07/23/13 04:19	1	**56 mg/kg**	**5.0**	
PER 010 (13G0588-06)			**Sample Type: Water**			**Sampled: 07/09/13 17:20**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AG31833	07/18/13 11:46	07/19/13 16:14	1	**80 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**58 "**	**1.0**	

Bruce Gove
Laboratory Director

7/25/2013

Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com
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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/25/13 13:30
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0588	07/10/2013 21:50	SEL HANSONCUP	4500536207

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
PER 010 (13G0588-06)			**Sample Type: Water**			**Sampled: 07/09/13 17:20**		
Conventional Chemistry Parameters by APHA/EPA Methods								
Chlorophyll-a	SM10200H	AG31043	07/11/13 14:30	07/16/13 16:15	5	**0.012 mg/l**	**0.010**	
Total Suspended Solids	SM2540D	AG31631	07/16/13 08:13	07/17/13 14:34	1	**1.5 "**	**1.0**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AG31226	07/12/13 11:52	07/12/13 17:00	"	**300 "**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Alkalinity as CaCO3	"	"	"	"	"	**300 "**	**5.0**	
Hardness, Total	SM2340B	AG31833	07/18/13 11:46	07/19/13 16:14	"	**440 "**	**5**	
Total Organic Carbon	SM5310C	AG31763	07/17/13 15:27	07/19/13 19:10	"	**3.43 "**	**0.300**	
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG31302	07/13/13 10:15	07/13/13 17:03	5	**150 mg/l**	**2.5**	
PER 010 (13G0588-07)			**Sample Type: Other (W)**			**Sampled: 07/09/13 17:20**		
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG32270	07/22/13 14:36	07/23/13 05:19	1	**74 mg/kg**	**5.0**	
STE 020 (13G0588-08)			**Sample Type: Water**			**Sampled: 07/09/13 18:10**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AG31833	07/18/13 11:46	07/19/13 16:19	1	**100 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**39 "**	**1.0**	

Bruce Gove
Laboratory Director

7/25/2013

Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com
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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/25/13 13:30
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0588	07/10/2013 21:50	SEL HANSONCUP	4500536207

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
STE 020 (13G0588-08)			**Sample Type: Water**			**Sampled: 07/09/13 18:10**		
Conventional Chemistry Parameters by APHA/EPA Methods								
Chlorophyll-a	SM10200H	AG31043	07/11/13 14:30	07/16/13 16:15	1	ND mg/l	0.010	
Total Suspended Solids	SM2540D	AG31631	07/16/13 08:13	07/17/13 14:34	"	**1.6 "**	**1.0**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AG31226	07/12/13 11:52	07/12/13 17:00	"	**380 "**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Alkalinity as CaCO3	"	"	"	"	"	**380 "**	**5.0**	
Hardness, Total	SM2340B	AG31833	07/18/13 11:46	07/19/13 16:19	"	**415 "**	**5**	
Total Organic Carbon	SM5310C	AG31763	07/17/13 15:27	07/19/13 19:23	"	**1.10 "**	**0.300**	
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG31302	07/13/13 10:15	07/13/13 17:18	5	**100 mg/l**	**2.5**	
STE 020 (13G0588-09)			**Sample Type: Other (W)**			**Sampled: 07/09/13 18:10**		
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG32270	07/22/13 14:36	07/23/13 05:49	1	**50 mg/kg**	**5.0**	
STE 010 (13G0588-10)			**Sample Type: Water**			**Sampled: 07/09/13 18:51**		
Metals by EPA 200 Series Methods								
Calcium	EPA 200.7	AG31833	07/18/13 11:46	07/19/13 16:24	1	**130 mg/l**	**1.0**	
Magnesium	"	"	"	"	"	**87 "**	**1.0**	

Bruce Gove
Laboratory Director

7/25/2013

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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/25/13 13:30
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0588	07/10/2013 21:50	SEL HANSONCUP	4500536207

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
STE 010 (13G0588-10)			**Sample Type: Water**			**Sampled: 07/09/13 18:51**		
Conventional Chemistry Parameters by APHA/EPA Methods								
Chlorophyll-a	SM10200H	AG31043	07/11/13 14:30	07/16/13 16:15	5	**0.015 mg/l**	**0.010**	
Total Suspended Solids	SM2540D	AG31631	07/16/13 08:13	07/17/13 14:34	1	**540 "**	**1.0**	
Bicarbonate Alkalinity as CaCO3	SM2320B	AG31226	07/12/13 11:52	07/12/13 17:00	"	**360 "**	**5.0**	
Carbonate Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Hydroxide Alkalinity as CaCO3	"	"	"	"	"	ND "	5.0	
Total Alkalinity as CaCO3	"	"	"	"	"	**360 "**	**5.0**	
Hardness, Total	SM2340B	AG31833	07/18/13 11:46	07/19/13 16:24	"	**680 "**	**5**	
Total Organic Carbon	SM5310C	AG31763	07/17/13 15:27	07/19/13 19:38	"	**2.11 "**	**0.300**	
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG31302	07/13/13 10:15	07/13/13 18:03	5	**160 mg/l**	**2.5**	
STE 010 (13G0588-11)			**Sample Type: Other (W)**			**Sampled: 07/09/13 18:51**		
Anions by EPA Method 300.0								
Sulfate as SO4	EPA 300.0	AG32270	07/22/13 14:36	07/23/13 06:04	5	**480 mg/kg**	**25**	

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Attn: Chow Yip

Report Date: 07/25/13 13:30
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0588	07/10/2013 21:50	SEL HANSONCUP	4500536207

Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AG31833 - Metals Digest										
Blank (AG31833-BLK1)				Prepared: 07/18/13 Analyzed: 07/19/13						
Calcium	ND	1.0	mg/l							
Magnesium	ND	1.0	"							
LCS (AG31833-BS1)				Prepared: 07/18/13 Analyzed: 07/19/13						
Calcium	5.14	1.0	mg/l	6.00		85.7	85-115			
Magnesium	6.93	1.0	"	8.00		86.6	85-115			
Duplicate (AG31833-DUP1)	**Source: 13G0629-02**			Prepared: 07/18/13 Analyzed: 07/19/13						
Calcium	94.2	1.0	mg/l		94.3			0.175	20	
Magnesium	37.3	1.0	"		37.6			0.953	20	
Matrix Spike (AG31833-MS1)	**Source: 13G0629-02**			Prepared: 07/18/13 Analyzed: 07/19/13						
Calcium	101	1.0	mg/l	6.00	94.3	109	70-130			
Magnesium	42.7	1.0	"	8.00	37.6	62.9	70-130			QM-4X
Matrix Spike (AG31833-MS2)	**Source: 13G0653-01**			Prepared: 07/18/13 Analyzed: 07/19/13						
Calcium	15.1	1.0	mg/l	6.00	9.67	90.1	70-130			
Magnesium	16.3	1.0	"	8.00	8.53	96.6	70-130			
Matrix Spike Dup (AG31833-MSD1)	**Source: 13G0629-02**			Prepared: 07/18/13 Analyzed: 07/19/13						
Calcium	98.3	1.0	mg/l	6.00	94.3	65.9	70-130	2.59	20	QM-4X
Magnesium	44.7	1.0	"	8.00	37.6	87.6	70-130	4.52	20	

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7/25/2013

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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
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Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/25/13 13:30
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0588	07/10/2013 21:50	SEL HANSONCUP	4500536207

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AG31043 - General Preparation										
Blank (AG31043-BLK1)				Prepared: 07/10/13 Analyzed: 07/16/13						
Chlorophyll-a	ND	0.010	mg/l							
Duplicate (AG31043-DUP1)		**Source: 13G0427-01**		Prepared: 07/10/13 Analyzed: 07/16/13						
Chlorophyll-a	0.00318	0.010	mg/l		ND				50	
Duplicate (AG31043-DUP2)		**Source: 13G0588-01**		Prepared: 07/11/13 Analyzed: 07/16/13						
Chlorophyll-a	0.000265	0.010	mg/l		ND				50	
Batch AG31226 - General Preparation										
Duplicate (AG31226-DUP1)		**Source: 13G0513-01**		Prepared & Analyzed: 07/12/13						
Total Alkalinity as CaCO3	220	5.0	mg/l		220			0.00	20	
Carbonate Alkalinity as CaCO3	ND	5.0	"		ND				20	
Bicarbonate Alkalinity as CaCO3	220	5.0	"		220			0.00	20	
Hydroxide Alkalinity as CaCO3	ND	5.0	"		ND				20	
Batch AG31631 - General Preparation										
Blank (AG31631-BLK1)				Prepared: 07/16/13 Analyzed: 07/17/13						
Total Suspended Solids	ND	1.0	mg/l							
Duplicate (AG31631-DUP1)		**Source: 13G0588-10**		Prepared: 07/16/13 Analyzed: 07/17/13						
Total Suspended Solids	540	1.0	mg/l		536			0.743	30	
Duplicate (AG31631-DUP2)		**Source: 13G0780-02**		Prepared: 07/16/13 Analyzed: 07/17/13						
Total Suspended Solids	223	1.0	mg/l		208			6.63	30	

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CHEMICAL EXAMINATION REPORT

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Attn: Chow Yip

Report Date: 07/25/13 13:30
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0588	07/10/2013 21:50	SEL HANSONCUP	4500536207

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AG31763 - General Prep										
Blank (AG31763-BLK1)				Prepared: 07/17/13 Analyzed: 07/19/13						
Total Organic Carbon	ND	0.300	mg/l							
LCS (AG31763-BS1)				Prepared: 07/17/13 Analyzed: 07/19/13						
Total Organic Carbon	10.3	0.300	mg/l	10.0		103	85-115			
LCS Dup (AG31763-BSD1)				Prepared: 07/17/13 Analyzed: 07/19/13						
Total Organic Carbon	10.2	0.300	mg/l	10.0		102	85-115	0.499	20	
Duplicate (AG31763-DUP1)	**Source: 13G0579-01**			Prepared: 07/17/13 Analyzed: 07/19/13						
Total Organic Carbon	3.58	0.300	mg/l		3.70			3.34	20	
Matrix Spike (AG31763-MS1)	**Source: 13G0579-02**			Prepared: 07/17/13 Analyzed: 07/19/13						
Total Organic Carbon	22.4	0.600	mg/l	20.0	1.59	104	70-130			
Matrix Spike Dup (AG31763-MSD1)	**Source: 13G0579-02**			Prepared: 07/17/13 Analyzed: 07/19/13						
Total Organic Carbon	22.0	0.600	mg/l	20.0	1.59	102	70-130	1.73	20	
Batch AG31833 - Metals Digest										
Blank (AG31833-BLK1)				Prepared: 07/18/13 Analyzed: 07/19/13						
Hardness, Total	ND	5	mg/l							
Duplicate (AG31833-DUP1)	**Source: 13G0629-02**			Prepared: 07/18/13 Analyzed: 07/19/13						
Hardness, Total	389	5	mg/l		391			0.483	20	

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Attn: Chow Yip

Report Date: 07/25/13 13:30
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0588	07/10/2013 21:50	SEL HANSONCUP	4500536207

Anions by EPA Method 300.0 - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AG31302 - General Preparation										
Blank (AG31302-BLK1)				Prepared & Analyzed: 07/13/13						
Sulfate as SO4	ND	0.50	mg/l							
LCS (AG31302-BS1)				Prepared & Analyzed: 07/13/13						
Sulfate as SO4	19.9	0.50	mg/l	20.0		99.4	90-110			
Duplicate (AG31302-DUP1)	**Source: 13G0545-01**			Prepared & Analyzed: 07/13/13						
Sulfate as SO4	37.8	2.5	mg/l		37.8			0.0794	20	
Matrix Spike (AG31302-MS1)	**Source: 13G0545-01**			Prepared & Analyzed: 07/13/13						
Sulfate as SO4	60.2	2.5	mg/l	22.2	37.8	101	80-120			
Matrix Spike (AG31302-MS2)	**Source: 13G0601-01**			Prepared & Analyzed: 07/13/13						
Sulfate as SO4	30.6	2.5	mg/l	22.2	9.82	93.7	80-120			
Matrix Spike Dup (AG31302-MSD1)	**Source: 13G0545-01**			Prepared & Analyzed: 07/13/13						
Sulfate as SO4	60.2	2.5	mg/l	22.2	37.8	101	80-120	0.00923	20	
Batch AG32270 - General Preparation										
Blank (AG32270-BLK1)				Prepared: 07/22/13 Analyzed: 07/23/13						
Sulfate as SO4	ND	5.0	mg/kg							
LCS (AG32270-BS1)				Prepared: 07/22/13 Analyzed: 07/23/13						
Sulfate as SO4	200	5.0	mg/kg	200		100	90-110			
Duplicate (AG32270-DUP1)	**Source: 13G0588-03**			Prepared: 07/22/13 Analyzed: 07/23/13						
Sulfate as SO4	75.0	5.0	mg/kg		74.9			0.107	20	

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.

Bruce Gove
Laboratory Director

7/25/2013

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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/25/13 13:30
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0588	07/10/2013 21:50	SEL HANSONCUP	4500536207

Anions by EPA Method 300.0 - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AG32270 - General Preparation										
Matrix Spike (AG32270-MS1)	**Source: 13G0588-03**			Prepared: 07/22/13 Analyzed: 07/23/13						
Sulfate as SO4	258	25	mg/kg	200	74.9	91.5	80-120			
Matrix Spike Dup (AG32270-MSD1)	**Source: 13G0588-03**			Prepared: 07/22/13 Analyzed: 07/23/13						
Sulfate as SO4	257	25	mg/kg	200	74.9	90.9	80-120	0.486	20	

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7/25/2013

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CHEMICAL EXAMINATION REPORT

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Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 07/25/13 13:30
Project No: [none]
Project ID: Permanente Creek Selenium Impact Study

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
13G0588	07/10/2013 21:50	SEL HANSONCUP	4500536207

Notes and Definitions

QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
PQL	Practical Quantitation Limit

Bruce Gove
Laboratory Director

7/25/2013

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 13-07-1161

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Alpha Analytical Laboratories, Inc.

Client Project Name: 13G0588

Attention: Robbie C. Phillips
208 Mason St.
Ukiah, CA 95482-4407

Approved for release on 07/25/2013 by:
Stephen Nowak
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc.

Contents

Client Project Name: 13G0588
Work Order Number: 13-07-1161

Calscience Environmental Laboratories, Inc.

Work Order Narrative

Work Order: 13-07-1161 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 07/18/13. They were assigned to Work Order 13-07-1161.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Return to Contents

Calscience Environmental Laboratories, Inc.

Sample Summary

Client:	Alpha Analytical Laboratories, Inc.	Work Order:	13-07-1161
	208 Mason St.	Project Name:	13G0588
	Ukiah, CA 95482-4407	PO Number:	
		Date Received:	07/18/13
Attn:	Robbie C. Phillips		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
13G0588-03 PER 060	13-07-1161-1	07/09/13 15:20	1	Soil
13G0588-04 PER 045	13-07-1161-2	07/09/13 16:00	1	Soil
13G0588-05 PER 035	13-07-1161-3	07/09/13 16:40	1	Soil
13G0588-07 PER 010	13-07-1161-4	07/09/13 17:20	1	Soil
13G0588-09 STE 020	13-07-1161-5	07/09/13 18:10	1	Soil
13G0588-11 STE 010	13-07-1161-6	07/09/13 18:51	1	Soil

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Project: 13G0588

Date Received: 07/18/13
Work Order: 13-07-1161
Preparation: N/A
Method: ASTM D-2216 (M)
Units: %

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-03 PER 060	**13-07-1161-1-A**	**07/09/13 15:20**	**Soil**	**N/A**	**07/18/13**	**07/18/13 18:45**	**D0718MOIB3**

Parameter	Result	RL	DF	Qualifiers
Moisture	36.1	0.100	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-04 PER 045	**13-07-1161-2-A**	**07/09/13 16:00**	**Soil**	**N/A**	**07/18/13**	**07/18/13 18:45**	**D0718MOIB3**

Parameter	Result	RL	DF	Qualifiers
Moisture	3.10	0.100	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-05 PER 035	**13-07-1161-3-A**	**07/09/13 16:40**	**Soil**	**N/A**	**07/18/13**	**07/18/13 18:45**	**D0718MOIB3**

Parameter	Result	RL	DF	Qualifiers
Moisture	3.70	0.100	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-07 PER 010	**13-07-1161-4-A**	**07/09/13 17:20**	**Soil**	**N/A**	**07/18/13**	**07/18/13 18:45**	**D0718MOIB3**

Parameter	Result	RL	DF	Qualifiers
Moisture	29.6	0.100	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-09 STE 020	**13-07-1161-5-A**	**07/09/13 18:10**	**Soil**	**N/A**	**07/18/13**	**07/18/13 18:45**	**D0718MOIB3**

Parameter	Result	RL	DF	Qualifiers
Moisture	30.8	0.100	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-11 STE 010	**13-07-1161-6-A**	**07/09/13 18:51**	**Soil**	**N/A**	**07/18/13**	**07/18/13 18:45**	**D0718MOIB3**

Parameter	Result	RL	DF	Qualifiers
Moisture	64.4	0.100	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-05-014-3909**	**N/A**	**Soil**	**N/A**	**07/18/13**	**07/18/13 18:45**	**D0718MOIB3**

Parameter	Result	RL	DF	Qualifiers
Moisture	ND	0.100	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Project: 13G0588

Date Received: 07/18/13
Work Order: 13-07-1161
Preparation: N/A
Method: EPA 9060A
Units: mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-03 PER 060	**13-07-1161-1-A**	**07/09/13 15:20**	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Carbon, Total Organic	8300	780	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-04 PER 045	**13-07-1161-2-A**	**07/09/13 16:00**	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Carbon, Total Organic	4200	520	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-05 PER 035	**13-07-1161-3-A**	**07/09/13 16:40**	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Carbon, Total Organic	28000	520	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-07 PER 010	**13-07-1161-4-A**	**07/09/13 17:20**	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Carbon, Total Organic	9900	710	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-09 STE 020	**13-07-1161-5-A**	**07/09/13 18:10**	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Carbon, Total Organic	7800	720	1	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-11 STE 010	**13-07-1161-6-A**	**07/09/13 18:51**	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Carbon, Total Organic	9300	1400	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Project: 13G0588

Date Received: 07/18/13
Work Order: 13-07-1161
Preparation: N/A
Method: EPA 9060A
Units: mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-06-013-888**	**N/A**	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Parameter	Result	RL	DF	Qualifiers
Carbon, Total Organic	ND	500	1	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Project: 13G0588

Date Received: 07/18/13
Work Order: 13-07-1161
Preparation: N/A
Method: ASTM D4464 (M)
Units: %

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-03 PER 060	**13-07-1161-1-A**	**07/09/13 15:20**	**Soil**	**LPSA 1**	**N/A**	**07/23/13 17:12**	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	1.45	
Silt (0.00391 to 0.0625mm)	4.75	
Total Silt and Clay (0 to 0.0625mm)	6.20	
Very Fine Sand (0.0625 to 0.125mm)	2.21	
Fine Sand (0.125 to 0.25mm)	7.21	
Medium Sand (0.25 to 0.5mm)	16.18	
Coarse Sand (0.5 to 1mm)	14.86	
Very Coarse Sand (1 to 2mm)	8.36	
Gravel (greater than 2mm)	44.99	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-07 PER 010	**13-07-1161-4-A**	**07/09/13 17:20**	**Soil**	**LPSA 1**	**N/A**	**07/23/13 17:25**	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	2.21	
Silt (0.00391 to 0.0625mm)	18.18	
Total Silt and Clay (0 to 0.0625mm)	20.40	
Very Fine Sand (0.0625 to 0.125mm)	5.26	
Fine Sand (0.125 to 0.25mm)	8.18	
Medium Sand (0.25 to 0.5mm)	17.83	
Coarse Sand (0.5 to 1mm)	14.31	
Very Coarse Sand (1 to 2mm)	4.51	
Gravel (greater than 2mm)	29.52	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-09 STE 020	**13-07-1161-5-A**	**07/09/13 18:10**	**Soil**	**LPSA 1**	**N/A**	**07/23/13 17:36**	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	0.55	
Silt (0.00391 to 0.0625mm)	7.16	
Total Silt and Clay (0 to 0.0625mm)	7.72	
Very Fine Sand (0.0625 to 0.125mm)	2.62	
Fine Sand (0.125 to 0.25mm)	3.98	
Medium Sand (0.25 to 0.5mm)	7.83	
Coarse Sand (0.5 to 1mm)	11.36	
Very Coarse Sand (1 to 2mm)	17.70	
Gravel (greater than 2mm)	48.81	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Date Received: 07/18/13
Work Order: 13-07-1161
Preparation: N/A
Method: ASTM D4464 (M)
Units: %

Project: 13G0588

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
13G0588-11 STE 010	**13-07-1161-6-A**	**07/09/13 18:51**	**Soil**	**LPSA 1**	**N/A**	**07/23/13 17:45**	

Parameter	Result	Qualifiers
Clay (less than 0.00391mm)	40.64	
Silt (0.00391 to 0.0625mm)	56.59	
Total Silt and Clay (0 to 0.0625mm)	97.23	
Very Fine Sand (0.0625 to 0.125mm)	2.77	
Fine Sand (0.125 to 0.25mm)	ND	
Medium Sand (0.25 to 0.5mm)	ND	
Coarse Sand (0.5 to 1mm)	ND	
Very Coarse Sand (1 to 2mm)	ND	
Gravel (greater than 2mm)	ND	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

ANALYTICAL REPORT

Alpha Analytical Laboratories		Date Received:	7/18/2013
208 Mason St.		Work Order No.:	13-07-1161
Ukiah, CA 95482-4407		Preparation:	N/A
		Method:	ASTM D422
		Units:	%
Project: 13G0588			Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date/Time Started	QC Batch ID
13G0588-04 PER 045	**13-07-1161-2-A**	**07/09/13 16:00**	**Solid**		**07/23/13**	**130723B02**

Parameter	Result	Qual	Parameter	Result	Qual
Total Slit and Clay (0 to 0.0625mm)	0.7		Medium Sand (0.25 to 0.5mm)	6.1	
Very Fine Sand (0.0625 to 0.125mm)	0.7		Coarse Sand (0.5 to 1mm)	13.1	
Fine Sand (0.125 to 0.25mm)	1.6		Very Coarse Sand (1 to 2mm)	23.2	
			Gravel (greater than 2mm)	53.3	

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date/Time Started	QC Batch ID
13G0588-05 PER 035	**13-07-1161-3-A**	**07/09/13 16:40**	**Solid**		**07/23/13**	**130723B02**

Parameter	Result	Qual	Parameter	Result	Qual
Total Slit and Clay (0 to 0.0625mm)	4.3		Medium Sand (0.25 to 0.5mm)	9.5	
Very Fine Sand (0.0625 to 0.125mm)	4.7		Coarse Sand (0.5 to 1mm)	12.5	
Fine Sand (0.125 to 0.25mm)	8.2		Very Coarse Sand (1 to 2mm)	16.9	
			Gravel (greater than 2mm)	42.4	

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Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Project: 13G0588

Date Received: 07/18/13
Work Order: 13-07-1161
Preparation: N/A
Method: EPA 9060A

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-07-1250-1	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCS2**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	13000	30000	34900	73	38600	85	75-125	10	0-25	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - Sample Duplicate

Alpha Analytical Laboratories, Inc.		Date Received:	07/18/13
208 Mason St.		Work Order:	13-07-1161
Ukiah, CA 95482-4407		Preparation:	N/A
		Method:	ASTM D-2216 (M)
Project: 13G0588			Page 1 of 1

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
13G0588-03 PER 060	**Soil**	**N/A**	**07/18/13 00:00**	**07/18/13 18:45**	**D0718MOID3**

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Moisture	36.10	34.80	4	0-10	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482-4407

Project: 13G0588

Date Received: 07/18/13
Work Order: 13-07-1161
Preparation: N/A
Method: EPA 9060A

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-06-013-888	**Soil**	**TOC 5**	**07/23/13**	**07/24/13 12:52**	**D0723TOCL2**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	6000	4920	82	5704	95	80-120	15	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Sample Analysis Summary Report

Work Order: 13-07-1161 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
ASTM D-2216 (M)	N/A	689	N/A	1
ASTM D4464 (M)	N/A	843	LPSA 1	3
EPA 9060A	N/A	735	TOC 5	1

Return to Contents

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order: 13-07-1161 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Return to Contents

alpha
Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com

Laboratory & Corporate: 208 Mason Street, Ukiah, CA 95482
707-468-0401 Fax: 707-468-5267

Service Center & Micro Lab: 6398 Dougherty Rd, Ste 35, Dublin, CA 94568
925-828-6226 Fax: 925-828-6309

Chain of Custody Record

Reports and Invoices will be delivered by email in .pdf format.

Lab No. 13GD588 Page 1 of 3

Report to:	Invoice to (if different):	Project Info for Report:
Company: Robertson-Bryan, Inc.	Company: Lehigh Southwest Cement Co.	Project ID: Permanente Creek Selenium Impact Study
Attn: Ben Giudice	Attn: Greg Knapp	
Address: 9888 Kent St., Elk Grove, CA 95624	Address: 12667 Alcosta Blvd., San Ramon, CA 94583	Project No:
Phone/Fax: 916-405-8943	Phone/Fax: 925-244-6570	PO/Reference : 4500536207
Email Address: ben@robertson-bryan.com	Email Address: Greg.Knapp@hanson.biz	

Signature below authorizes work under terms stated on reverse side.

Samplers Signature: [signature]

Print: Ben Giudice

Sample Identification	Sampled: Date	Sampled: Time	Container: 40ml VOA	Container: Poly	Container: Amber	Container: Sleeve	Container: Other	Preservative: HCL	Preservative: HNO3	Preservative: H2SO4	Preservative: Other	Preservative: None	Matrix: Water	Matrix: Soil	Matrix: Other	Total Number of Containers	Analyses Requested: TOC	Hardness, TSS, Sulfate, Alkalinity	Chlorophyll a	Sulfate, grain size, TOC	Sample Notes or CDPH Source Numbers:
PER080	7-9	1450	2								✓		✓			2	✓				
PER080	7-9	1450		1								✓	✓			1		✓			
PER080	7-9	1450		1								✓	✓			1			✓		
PER060	7-9	1520	2								✓		✓			2	✓				
PER060	7-9	1520		1								✓	✓			1		✓			
PER060	7-9	1520		1								✓	✓			1			✓		
PER060	7-9	1520					3					✓		✓		3				✓	
PER045	7-9	1600					3					✓		✓		3				✓	
PER035	7-9	1640					3					✓		✓		3				✓	
PER010	7-9	1720	2								✓		✓			2	✓				

TAT: 10 days ○ RUSH: 5 days ○ 48 hours ○ Other: ____days ○

Lab Approval Required For Rush TATs

Sample Notes (lab use only)

Temperature: 4 deg. C

Shipment Method:

Custody Seals: Y / N

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	07/09/13	20:40
[signature]	Rodney Santillan		
	[signature]	7-10-13	1855
[signature]	[signature]	7-10-13	1950

CDPH Write On EDT Report? ○ Yes ○ No

State System Number:

If "Y" please enter the Source Number(s) in the column above

CA Geotracker EDF Report? ○ Yes ○ No

Sampling Company Log Code: Global ID:

EDF to (Email Address):

Travel and Site Time: Mileage: Misc. Supplies:

alpha
Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com

Laboratory & Corporate: 208 Mason Street, Ukiah, CA 95482
707-468-0401 Fax: 707-468-5267

Service Center & Micro Lab: 6398 Dougherty Rd, Ste 35, Dublin, CA 94568
925-828-6226 Fax: 925-828-6309

Chain of Custody Record

Reports and Invoices will be delivered by email in .pdf format.

Lab No. 13G0588 Page 2 of 3

Report to:	Invoice to (if different):	Project Info for Report:
Company: Robertson-Bryan, Inc.	Company: Lehigh Southwest Cement Co.	Project ID: Permanente Creek Selenium Impact Study
Attn: Ben Giudice	Attn: Greg Knapp	
Address: 9888 Kent St., Elk Grove, CA 95624	Address: 12667 Alcosta Blvd., San Ramon, CA 94583	Project No:
Phone/Fax: 916-405-8943	Phone/Fax: 925-244-6570	
Email Address: ben@robertson-bryan.com	Email Address: Greg.Knapp@hanson.biz	PO/Reference : 4500536207

Samplers Signature: [signature]
Print: Ben Giudice

Signature below authorizes work under terms stated on reverse side.

Sample Identification	Sampled: Date	Sampled: Time	Container: 40ml VOA	Container: Poly	Container: Amber	Container: Sleeve	Container: Other	Preservative: HCL	Preservative: HNO3	Preservative: H2SO4	Preservative: Other	Preservative: None	Matrix: Water	Matrix: Soil	Matrix: Other	Total Number of Containers	Analyses Requested: TOC	Hardness, TSS, Sulfate, Alkalinity	Chlorophyll a	Sulfate, grain size, TOC	Sample Notes or CDPH Source Numbers:
PER 010	7-9	1720		1								✓	✓			1		✓			
PER 010	7-9	1720		1								✓	✓			1			✓		
PER 010	7-9	1720					3					✓		✓		3				✓	
STE 020	7-9	1810	2								✓		✓			2	✓				
STE 020	7-9	1810		1								✓	✓			1		✓			
STE 020	7-9	1810		1								✓	✓			1			✓		
STE 020	7-9	1810					3					✓		✓		3				✓	
STE 010	7-9	1851	2								✓		✓			2	✓				
STE 010	7-9	1851		1								✓	✓			1		✓			
STE 010	7-9	1851		1								✓	✓			1			✓		

TAT: 10 days ○ RUSH: 5 days ○ 48 hours ○ Other: ____days ○

Lab Approval Required For Rush TATs

Sample Notes (lab use only)
Temperature: 4 deg. C
Shipment Method:
Custody Seals: Y / N

Relinquished by:	Received by:	Date:	Time:
[signature]	Rodney Santillan	07/09/13	20:40
[signature]	[signature]	07/09/13	1855
[signature]	[signature]	7-10-13	0750

CDPH Write On EDT Report? ○ Yes ○ No
State System Number:
If "Y" please enter the Source Number(s) in the column above

CA Geotracker EDF Report? ○ Yes ○ No
Sampling Company Log Code:
Global ID:
EDF to (Email Address):

Travel and Site Time:
Mileage:
Misc. Supplies:

Alpha Analytical Laboratories Inc.
e-mail: clientservices@alpha-labs.com

Laboratory & Corporate: 208 Mason Street, Ukiah, CA 95482
707-468-0401 Fax: 707-468-5267

Service Center & Micro Lab: 6398 Dougherty Rd, Ste 35, Dublin, CA 94568
925-828-6226 Fax: 925-828-6309

Chain of Custody Record

Reports and Invoices will be delivered by email in .pdf format.

Lab No. 1360588 Page 3 of 3

Report to:	Invoice to (if different):	Project Info for Report:
Company: Robertson-Bryan, Inc.	Company: Lehigh Southwest Cement Co.	Project ID: Permanente Creek Selenium Impact Study
Attn: Ben Giudice	Attn: Greg Knapp	Project No:
Address: 9888 Kent St., Elk Grove, CA 95624	Address: 12667 Alcosta Blvd., San Ramon, CA 94583	
Phone/Fax: 916-405-8943	Phone/Fax: 925-244-6570	PO/Reference : 4500536207
Email Address: ben@robertson-bryan.com	Email Address: Greg.Knapp@hanson.biz	

Samplers Signature: [signature]

Print: Ben Giudice

Signature below authorizes work under terms stated on reverse side.

Sample Identification	Sampled: Date	Sampled: Time	Container: 40ml VOA	Poly	Amber	Sleeve	Other	Preservative: HCL	HNO3	H2SO4	Other	None	Matrix: Water	Soil	Other	:Total Number of Containers	Analyses Requested: TOC	Hardness, TSS, Sulfate, Alkalinity	Chlorophyll a	Sulfate, grain size, TOC	Sample Notes or CDPH Source Numbers:
STB010	7-9	1851					3					✓		✓						✓	

TAT: 10 days ○ RUSH: 5 days ○ 48 hours ○ Other: ___days ○

Lab Approval Required For Rush TATs

Sample Notes (lab use only)

Temperature: 4B deg. C

Shipment Method:

Custody Seals: Y / N

Relinquished by:	Received by:	Date:	Time:
[signature]	Rodney Santillan	07/09/13	20.40
R. Iwori	R. Iwori	7-10-13	1855
R. Iwori	LAB R. Iwori	7-10-13	2150

CDPH Write On EDT Report? ○ Yes ○ No

State System Number:

If "Y" please enter the Source Number(s) in the column above

CA Geotracker EDF Report? ○ Yes ○ No

Sampling Company Log Code: Global ID:

EDF to (Email Address):

Travel and Site Time: Mileage: Misc. Supplies: