TECHNICAL MEMORANDUM

Date:	9/23/14	**Project No.:**	0637109914
To:	Greg Knapp	**Company:**	Lehigh Southwest Cement Company
From:	George Wegmann, PG Bill Fowler, CEG		
cc:	Sean Avant	**Email:**	Greg.Knapp@hanson.biz

RE: COA 76 ANNUAL SUMMARY, LEHIGH PERMANENTE QUARRY

Golder Associates (Golder) has prepared this technical memorandum to document the activities completed at the Lehigh Permanente Quarry from July 1, 2013 through June 30, 2014 related to the Reclamation Plan Condition of Approval (COA) 76. COA 76 pertains to water quality monitoring and states the following:

> Within ninety (90) days of RPA approval, the Mine Operator shall begin and continue throughout the backfilling and reclamation phases and for 5 years following completion of reclamation and for 5 years following the start of groundwater discharge from the Quarry Pit into Permanente Creek as described on page 4.10-39 of the Final Environmental Impact Report, a Verification and Water Quality Monitoring Program. The Mine Operator shall implement the following:
>
> a. Collect quarterly Quarry pit water samples and analyze for general water chemistry and dissolved and total metals, including selenium.
> b. Perform quarterly electrical conductivity and pH measurements of the Quarry water.
> c. Measure and record daily volume of any water that is pumped from the pit area.
> d. Conduct annual seep surveys in March or April of each year within the Quarry pit. Any seeps shall be sampled for general water chemistry and minerals and dissolved metals, and the seep flow rate shall be estimated.
> e. Perform routine testing of each of the various rock types that comprise the overburden to further characterize bulk and leachable concentrations of key metal constituents (selenium in particular). Such testing shall be performed until the average concentrations and the variability within a rock type is no longer changing significantly as new data are gathered.
> f. Sample and test runoff from the EMSA and WMSA throughout and following reclamation to confirm the concepts and closure plans (i.e., that cover with non-limestone material and re-vegetation results in runoff water quality that meets Basin Plan Benchmarks and all other applicable water quality standards, including, but not limited to, a site specific NPDES permit for the Quarry and a TMDL for selenium in Permanente Creek). Stormwater runoff monitoring and sampling shall be conducted following the placement and final grading of the 1 foot run-of-mine non-limestone cover material to ensure that surface water discharging from this cover does not contain selenium at concentrations exceeding Basin Plan Benchmark values. Three rounds of representative surface water samples shall be collected and analyzed to verify rock cover performance prior to the placement of the vegetative growth layer.
> g. Sample and test groundwater discharge from the Quarry Pit into Permanente Creek following reclamation as described on page 4.10-39 of the Final Environmental Impact Report to confirm that water quality in discharge meets Basin Plan Benchmarks and all other applicable water quality standards.

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h. The data obtained through this mitigation measure shall be used to reevaluate the water balance components such as runoff and groundwater inflow and the water quality associated with these within the last five years of active mining. Based on the results of any refined water balance and water quality projections, the Mine Operator shall also review and refine the water management procedures. *(Implements Mitigation Measures 4.4-5 and 4.10-1b.).* All testing data shall be submitted to the Planning Office with the Annual Report by October 1 of each year.

The following provides a summary of tasks completed:.

a. Collect quarterly Quarry pit water samples and analyze for general water chemistry and dissolved and total metals, including selenium.

From July 1, 2013 through June 20, 2014, Golder collected samples from the Quarry pit via Pond 4A. The samples were analyzed for total metals and general water chemistry parameters. The sampling results of the Quarry pit water, including quarterly metals data, are listed on the attached Tables 1 and 2. Tables 1 and 2 also include the discharge data from Ponds 13b, 17, and 30.

b. Perform quarterly electrical conductivity and pH measurements of the Quarry water.

Electrical conductivity and pH measurements of the Quarry water (Pond 4a) are included on Table 1.

c. Measure and record daily volume of any water that is pumped from the pit area.

Daily records of volume of water pumped from the pit are included on Table 1 under Pond 4a.

d. Conduct annual seep surveys in March or April of each year within the Quarry pit. Any seeps shall be sampled for general water chemistry and minerals and dissolved metals, and the seep flow rate shall be estimated.

On April 28, 2014, Golder performed a seep survey within the Quarry pit. Two seeps were identified during the survey: one seep (Seep-850) was located in the southwest portion of the pit where it day-lighted on the 900 and 850 ft elevation benches; and the second seep (Seep-750) was identified by the western/northwestern portion of the pit emanating from above the pit floor along the northwestern pit wall by the Main Slide. Golder did not identify any additional seeps within the Quarry pit. During the seep survey, the two identified seeps were sampled and analyzed for general water chemistry and dissolved metals. The results of the sampling and the estimated flow rates are shown on Table 3 below.

Table 3: Quarry Pit Seep Data

Quarry Pit Seeps	**Seep-750**	**Seep-850**
Sample Date	**4/28/2014**	**4/28/2014**
Metals (dissolved, 200 series)		
Antimony (ug/L)	0.50 J	3.0
Arsenic (ug/L)	7.8	2.6
Barium (ug/L)	85	32
Beryllium (ug/L)	ND	ND
Cadmium (ug/L)	ND	0.71 J
Chromium (ug/L)	ND	ND
Cobalt (ug/L)	0.046 J	0.28 J
Copper (ug/L)	3.8	2.1
Lead (ug/L)	ND	ND

Quarry Pit Seeps	Seep-750	Seep-850
Sample Date	4/28/2014	4/28/2014
Mercury (ug/L)	ND	ND
Molybdenum (ug/L)	130	120
Nickel (ug/L)	2.7	65
Selenium (ug/L)	7.7	34
Silver (ug/L)	ND	ND
Thallium (ug/L)	ND	0.056 J
Vanadium (ug/L)	220	120
Zinc (ug/L)	ND	140
Calcium (mg/L)	24	190
Magnesium (mg/L)	6.9	62
Potassium (mg/L)	2.1	1.1
Sodium (mg/L)	270	20
Additional Parameters		
Bicarbonate (mg/L)	190	270
Total Dissolved Solids (mg/L)	860	980
Total Suspended Solids (mg/L)	ND	28
Hardness	89	740
Nitrate as NO3	2.9	1.2
Chloride (mg/L)	16	16
Fluoride (mg/L)	ND	ND
Sulfate as SO4 (mg/L)	430	500
Turbidity (NTU)	272	3.81
pH - Field (s.u.)	7.74	7.60
Temperature - Field (°C)	23.10	18.41
DO - Field (mg/L)	7.90	9.23
Electrical Conductivity - Field (µS/cm)	1418	769
ORP - Field (mV)	109.8	83.7
Estimated Flow Rate (GPM)	Less than 1	100

Notes:
Samples for dissolved metals analysis were field filtered.
J= Estimated Value (CLP Flag)

e. Perform routine testing of each of the various rock types that comprise the overburden to further characterize bulk and leachable concentrations of key metal constituents (selenium in particular). Such testing shall be performed until the average concentrations and the variability within a rock type is no longer changing significantly as new data are gathered

Golder and WRA collected samples of the following overburden material located within the pit: Santa Clara Formation, Greenstone, and Graywacke. The samples were analyzed for selenium. The results are summarized below:

Table 4: Quarry Overburden Data

Sample Type	Selenium TTLC (mg/kg)	Selenium STLC (mg/L)
Santa Clara Formation	ND	ND
Greenstone	ND	0.00062
Graywacke	ND	0.00150
Method Detection Limit	0.022	0.00026

ND = Not detected above the laboratory method detection limit; TTLC = total threshold limit concentration; STLC = soluble threshold limit concentration.

COA 76 f, g, and h

These tasks will be completed going forward when appropriate based on the timeline outlined in COA 76 f, g, and h.

Attachments

Table 1
Table 2

Table 1: Monitoring Data Summary
Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location		Flow Rate		Turbidity	pH	Chlorine Residual	Temp	DO	EC	Chloride			TSS			Total Set Mat			TDS			O&G			TOC		
	Units	gpm	MGD	NTU	s.u.	mg/L	C	mg/L	µS/cm	mg/L			mg/L			mL/L/hr			mg/L			mg/L			mg/L		
	Test Method			Field	Field	Field	Field	Field	Field	EPA 300.0			SM2540D			SM2540F			SM2540C			EPA 1664			SM5310C		
	Date	Field		Result	Result	Result	Result	Result	Result	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL
Pond 4A Discharge	7/1/2013	424.6	0.611	4.32	8.03	ND				15	0.03	5.0				ND	0.1	0.10	860	5	10						
	7/2/2013	436.3	0.628	2.88	7.97								ND	0.3	1.0												
	7/3/2013	373.7	0.538	3.86	7.79																						
	7/4/2013	233.3	0.336																								
	7/5/2013	340.5	0.490	8.86	8.05																						
	7/6/2013	338.6	0.488	5.12	7.92																						
	7/7/2013	402.3	0.579	3.93	8.07																						
	7/8/2013	355.1	0.511	4.66	7.95																						
	7/9/2013	353.8	0.509	4.58	7.97	ND				16	0.03	12				ND	0.1	0.10	880	5	10						
	7/10/2013	353.7	0.509	7.01	7.98								ND	0.3	1.0												
	7/11/2013	299.0	0.431	4.78	8.08																						
	7/12/2013	271.8	0.391	7.34	7.93																						
	7/13/2013	421.2	0.607	7.05	7.95																						
	7/14/2013	311.4	0.448	2.58	7.99																						
	7/15/2013	414.8	0.597	2.25	7.97																						
	7/16/2013	223.2	0.321	3.22	7.98																						
	7/18/2013	2.0	0.003	3.44	7.89	ND				15	0.03	5.0				ND	0.1	0.10	830	5	10						
	7/19/2013	2.0	0.003	4.02	7.90								1.7	0.3	1.0												
	7/29/2013	0.0	0.000	3.52	8.01	ND				18	0.03	5.0							760	5	10	ND	0.80	5.0			
	7/30/2013	0.0	0.000	2.45	8.02								1.9	0.3	1.0												
	7/31/2013	0.0	0.000	4.34	7.87																						
	8/1/2013	0.0	0.000	4.50	7.78																						
	8/7/2013	2.0	0.003	2.27	7.90	ND				26	0.03	5.0				ND	0.1	0.10	780	5	10						
	8/8/2013	2.0	0.003	2.06	8.04								ND	0.3	1.0												
	8/10/2013	2.0	0.003	1.53	7.69																						
	8/17/2013	2.0	0.003	1.69	7.97																						
	8/19/2013	2.0	0.003	4.00	8.05																						
	8/20/2013	2.0	0.003	9.22	8.18																						
	8/23/2013	2.0	0.003	2.79	7.84	ND				41	0.03	5.0	0.40 J	0.3	1.0	ND*	0.1	0.10	870	5	10						
	8/26/2013	2.0	0.003	2.91	8.12																						
	8/29/2013	2.0	0.003	1.44	8.00	ND				44	0.03	5.0				ND	0.1	0.10	860	5	10	1.2 J^	0.80	1.4			
	9/6/2013	2.0	0.003	2.16	8.14																						
	9/7/2013	2.0	0.003	2.21	8.19																						
	9/8/2013	2.0	0.003	2.27	8.15				1103																		
	9/11/2013	2.0	0.003	2.54	8.09	ND				49	0.03	5.0	ND	0.3	0.50	ND	0.1	0.10	920	5	10						
	9/13/2013	2.0	0.003	3.09	7.95																						
	9/19/2013	2.0	0.003	1.03	8.07	ND				52	0.03	5.0				ND	0.1	0.10	840	5	10						
	9/20/2013	2.0	0.003	2.82	8.19																						

Table 1: Monitoring Data Summary
Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location		Flow Rate		Turbidity	pH	Chlorine Residual	Temp	DO	EC	Chloride			TSS			Total Set Mat			TDS			O&G			TOC		
	Units	gpm	MGD	NTU	s.u.	mg/L	C	mg/L	µS/cm	mg/L			mg/L			mL/L/hr			mg/L			mg/L			mg/L		
	Test Method			Field	Field	Field	Field	Field	Field	EPA 300.0			SM2540D			SM2540F			SM2540C			EPA 1664			SM5310C		
	Date	Field		Result	Result	Result	Result	Result	Result	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL
Pond 4A Discharge	9/23/2013	2.0	0.003	7.05	8.30																						
	9/25/2013	2.0	0.003	2.89	7.74	ND				55	0.03	5.0				ND	0.1	0.10	920	5	10						
	9/26/2013	2.0	0.003	2.20	7.98																						
	10/1/2013	2.0	0.003	2.22	8.12	ND	20.59	8.13	988	57^	0.60	10				ND	0.20	0.20	920	5.0	10						
	10/2/2013	2.0	0.003	3.97	8.10																						
	10/3/2013	2.0	0.003	5.65	8.19																						
	10/4/2013	2.0	0.003	4.10	8.14																						
	10/5/2013	0.0	0.000	3.80	7.33								3.0	0.30	0.50												
	10/7/2013	2.0	0.003	7.33	8.05																						
	10/10/2013	2.0	0.003	0.77	7.91	ND	18.36	7.94		61	0.60	10				ND	0.10	0.10	970*	5.0	10	1.4	0.80	1.4			
	10/11/2013	0.0	0.000	3.04	8.04								2.6^	0.30	0.50												
	10/15/2013	0.0	0.000	1.04	7.38	ND	17.40	7.78		71	0.75	12				ND	0.10	0.10	860	5.0	10						
	10/16/2013	2.0	0.003	1.32	8.08								1.2	0.30	0.50												
	10/17/2013	2.0	0.003	2.42	7.99																						
	10/18/2013	2.0	0.003	4.48	8.09																						
	10/21/2013	2.0	0.003	3.51	8.40																						
	10/22/2013	0.0	0.000	2.2	7.96	ND	18.8	6.9		70	0.60	10				ND	0.10	0.10	860	5.0	10						
	10/23/2013	0.0	0.000	1.2	6.75								3.2	0.30	0.50												
	10/28/2013	2.0	0.003	2.11	7.07																						
	10/29/2013	0.0	0.000	1.91	8.16	ND	14.75	7.48		66	0.60	10				ND	0.10	0.10	950	5.0	10						
	10/30/2013	2.0	0.003	2.57	8.28								5.6^	0.30	0.50												
	11/6/2013	2.0	0.003	2.51	8.29																						
	11/7/2013	2.0	0.003	4.31	7.41	ND	17.37	7.81	1092	69	0.60	10				ND	0.10	0.10	980	5.0	10						
	11/8/2013	2.0	0.003	4.53	7.82								2.8	0.30	0.50												
	11/13/2013	2.0	0.003	7.17	8.23																						
	11/14/2013	2.0	0.003	4.91	6.91	ND	14.63	7.82		72	0.75	12				ND	0.10	0.10	1100	5.0	10						
	11/15/2013	0.0	0.000	5.12	7.89								1.0^	0.30	0.50												
	11/19/2013	2.0	0.003	2.17	8.08																						
	11/20/2013	2.0	0.003	2.42	7.89	ND	13.42	7.85		78	0.30	0.50				ND	0.10	0.10	950	5.0	10	2.0^	0.80	1.4			
	11/21/2013	0.0	0.000	2.76	8.44								1.2	0.30	0.50												
	11/22/2013	0.0	0.000	3.14	7.88																						
	11/24/2013	0.0	0.000	3.16	7.81																						
	11/25/2013	2.0	0.003	3.97	7.04	ND	12.20	10.34		97	0.60	10				ND	0.10	0.10	950	5.0	10						
	11/26/2013	0.0	0.000	5.01	7.81								3.8	0.30	0.50												
	11/27/2013	2.0	0.003	1.22	7.94																						
	11/29/2013	2.0	0.003	8.62	8.13																						
	12/2/2013	2.0	0.003	4.00	7.81																						
	12/3/2013	2.0	0.003	2.87	7.21	ND	10.66	9.62		78 K	0.60	10				ND	0.10	0.10	880	5.0	10						
	12/4/2013	0.0	0.000	4.05	7.76								4.0	0.30	0.50												

Table 1: Monitoring Data Summary
Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location		Flow Rate		Turbidity	pH	Chlorine Residual	Temp	DO	EC	Chloride			TSS			Total Set Mat			TDS			O&G			TOC		
	Units	gpm	MGD	NTU	s.u.	mg/L	C	mg/L	µS/cm	mg/L			mg/L			mL/L/hr			mg/L			mg/L			mg/L		
	Test Method			Field	Field	Field	Field	Field	Field	EPA 300.0			SM2540D			SM2540F			SM2540C			EPA 1664			SM5310C		
	Date	Field		Result	Result	Result	Result	Result	Result	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL
Pond 4A Discharge	12/5/2013	0.0	0.000	3.84	7.09																						
	12/10/2013	0.0	0.000	2.23	7.09	ND	5.76	11.14		77	0.60	10				ND	0.10	0.10	930	5.0	10						
	12/11/2013	0.0	0.000	2.29	7.44								4.8	0.30	0.50												
	12/17/2013	0.0	0.000	1.55	7.81	ND	6.48	11.65		83	0.60	10				ND	0.10	0.10	990	5.0	10	1.1 J	0.80	1.4			
	12/18/2013	0.0	0.000	2.48	7.98								0.60^	0.30	0.50												
	2/28/2014	3.0	0.004	1.67	8.56	ND	13.55	10.00	1111	74	0.15	2.5	1.7	0.30	0.50	ND	0.10	0.10	900	5.0	10	ND	0.80	1.4			
	3/1/2014	634.8	0.914	2.52	8.14																						
	3/2/2014	609.6	0.878	3.92	7.91																						
	3/3/2014	536.9	0.773	14.26	8.07																						
	3/4/2014	485.1	0.698	6.41	7.82																						
	3/5/2014	511.4	0.736	3.76	8.04																						
	3/6/2014	545.4	0.785	1.71	8.01	ND	21.77	6.76		13	0.75	12				ND	0.10	0.10	1000	5.0	10						
	3/7/2014	543.9	0.783	1.87	8.10								1.5	0.30	0.50												
	3/8/2014	542.5	0.781	1.73	7.55																						
	3/9/2014	542.4	0.781	1.94	7.95																						
	3/10/2014	595.7	0.858	2.53	7.98																						
	3/11/2014	531.2	0.765	1.62	8.00																						
	3/12/2014	541.0	0.779	2.23	7.96																						
	3/13/2014	549.8	0.792	2.8	7.95	ND	21.63	8.24		12	0.15	2.5				ND	0.10	0.10	970	5.0	10						
	3/14/2014	548.5	0.790	1.57	8.09			9.93					3.6	0.30	0.50												
	3/15/2014	548.1	0.789	1.37	7.93																						
	3/16/2014	547.8	0.789	0.96	-																						
	3/17/2014	625.0	0.900	0.78	7.79																						
	3/18/2014	735.4	1.059	2.21	7.94																						
	3/19/2014	738.3	1.063	1.03	7.91																						
	3/20/2014	702.9	1.012	1.41	7.92	ND	20.57	6.65		13	0.60	10				ND	0.10	0.10	1000	5.0	10						
	3/21/2014	702.2	1.011	1.46	7.98								ND	0.30	0.50												
	3/22/2014	701.5	1.010	0.92	8.02																						
	3/23/2014	701.1	1.010	1.83	7.26																						
	3/24/2014	680.4	0.980	1.39	8.01																						
	3/25/2014	634.5	0.914	1.04	8.02																						
	3/26/2014	653.3	0.941	0.62	7.98	ND	20.90	9.02														1.2 J	0.80	1.4			
	3/27/2014	674.3	0.971	0.99	8.03			7.18		13	0.15	2.5	0.84	0.30	0.50	ND	0.10	0.10	1000	5.0	10						
	3/28/2014	618.0	0.890	0.95	7.98																						
	3/29/2014	602.8	0.868	1.09	7.95																						
	3/30/2014	602.0	0.867	0.82	8.05																						
	3/31/2014	665.1	0.958	2.16	7.55																						
	4/1/2014	614.5	0.885	7.44	7.55	ND	18.33	11.01	1171	16	0.60	10				ND	0.10	0.10	940	5.0	10	2.4^	0.80	1.4			

Table 1: Monitoring Data Summary
Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location	Units / Test Method	Flow Rate gpm	Flow Rate MGD	Turbidity NTU Field	pH s.u. Field	Chlorine Residual mg/L Field	Temp C Field	DO mg/L Field	EC µS/cm Field	Chloride mg/L EPA 300.0			TSS mg/L SM2540D			Total Set Mat mL/L/hr SM2540F			TDS mg/L SM2540C			O&G mg/L EPA 1664			TOC mg/L SM5310C		
	Date	Field		Result	Result	Result	Result	Result	Result	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL
Pond 4A Discharge	4/2/2014	615.4	0.886	3.12	8.18								4.2	0.30	1.0												
	4/3/2014	614.6	0.885	1.95	7.38																						
	4/4/2014	612.8	0.882	7.92	7.81																						
	4/6/2014	567.1	0.817	2.17	8.01																						
	4/7/2014	536.4	0.772	1.44	8.10																						
	4/8/2014	559.8	0.806	1.76	7.93	ND	22.35	7.16		14	0.60	10				ND	0.10	0.10	930	5.0	10						
	4/9/2014	507.2	0.730	1.93	7.97								0.84	0.30	0.50												
	4/10/2014	537.5	0.774	1.54	7.94																						
	4/11/2014	619.8	0.892	1.68	7.96																						
	4/12/2014	527.8	0.760	1.63	8.06																						
	4/14/2014	531.7	0.766	1.70	8.00																						
	4/15/2014	545.4	0.785	1.25	8.00	ND	22.42	7.74		15	0.60	10				ND	0.10	0.10	840	5.0	10						
	4/16/2014	545.0	0.785	2.20	7.90								1.3	0.30	0.50												
	4/17/2014	504.8	0.727	1.37	7.72																						
	4/18/2014	480.5	0.692	2.00	7.99																						
	4/19/2014	470.4	0.677	2.36	8.04																						
	4/21/2014	436.9	0.629	1.71	8.00	ND	22.52	7.46		15	0.60	10				ND	0.10	0.10	960	5.0	10						
	4/22/2014	260.8	0.376	2.35	8.05								0.84	0.30	0.50												
Pond 30 Discharge	2/27/2014	15.0	0.022	58.23	7.49	ND	12.69	9.34	1261				26	0.30	1.0							ND	0.80	5.0			
	4/2/2014			8.37	6.69		12.45	14.74	966				13	0.30	1.0				1100	5.0	10	1.7 J	0.80	5.0	2.90	0.100	0.300
Pond 17 Discharge	9/10/2013	75.0	0.108	1.60	7.84	ND				29	0.03	12				ND	0.1	0.10	2100	5	10						
	9/11/2013	75.0	0.108	1.50	8.16								ND	0.3	0.50												
	9/12/2013	75.0	0.108	0.84	8.13																						
	9/13/2013	10.0	0.014	0.85	8.23	ND																1.2 J	0.80	1.4			
	9/14/2013	60.0	0.086	1.58	7.68																						
	9/15/2013	10.0	0.014	0.92	8.14																						
	9/16/2013	50.0	0.072	1.48	7.57																						
	9/17/2013	50.0	0.072	1.51	7.62																						
	9/18/2013	20.0	0.029	1.65	8.09	ND				110	0.03	25				ND	0.1	0.10	2000	5	10						
	9/19/2013	75.0	0.108	4.28	8.14								ND	0.3	0.50												
	9/20/2013	10.0	0.014	1.88	8.16																						
	9/21/2013	70.0	0.101	1.28	7.52																						
	9/22/2013	10.0	0.014	0.71	7.92																						
	9/23/2013	20.0	0.029	1.55	8.17																						
	9/24/2013	75.0	0.108	1.52	7.96	ND				110	0.03	5.0				ND	0.1	0.10	2000	5	10						
	9/25/2013	60.0	0.086	0.65	8.16								1.4	0.3	0.50												
	9/26/2013	60.0	0.086	1.18	8.04																						
	9/27/2013	60.0	0.086	0.55	7.01																						
	9/28/2013	30.0	0.043	0.83	8.11																						
	9/30/2013	75.0	0.108	0.90	8.09																						

Table 1: Monitoring Data Summary
Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location		Flow Rate		Turbidity	pH	Chlorine Residual	Temp	DO	EC	Chloride			TSS			Total Set Mat			TDS			O&G			TOC		
	Units	gpm	MGD	NTU	s.u.	mg/L	C	mg/L	µS/cm	mg/L			mg/L			mL/L/hr			mg/L			mg/L			mg/L		
	Test Method			Field	Field	Field	Field	Field	Field	EPA 300.0			SM2540D			SM2540F			SM2540C			EPA 1664			SM5310C		
	Date	Field		Result	Result	Result	Result	Result	Result	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL
Pond 17 Discharge	10/1/2013	0.5	0.001	0.19	8.15	ND	20.12	7.10		110^	1.5	25				ND	0.10	0.10	1700	5.0	10						
	10/2/2013	40.0	0.058	3.56	8.17																						
	10/3/2013	2.0	0.003	0.50	8.23																						
	10/4/2013	2.0	0.003	1.22	8.16								0.40 J	0.30	0.50												
	10/5/2013	80.0	0.115	1.78	8.16																						
	10/6/2013	10.0	0.014	0.55	8.03																						
	10/7/2013	20.0	0.029	1.60	8.12																						
	10/8/2013	5.0	0.007	0.83	8.15																						
	10/9/2013	20.0	0.029	1.35	8.15																						
	10/10/2013	0.3	0.000	4.37	8.04	ND	15.50	8.92		110	0.75	12				ND	0.10	0.10	1600*	5.0	10	1.3 J	0.80	1.4			
	10/11/2013	100.0	0.144	7.91	8.08								10^	0.30	0.50												
	10/12/2013	300.0	0.432	-	8.09																						
	10/13/2013	75.0	0.108	5.37	8.24																						
	10/14/2013	200.0	0.288	3.84	8.11																						
	10/15/2013	100.0	0.144	3.00	8.09	ND	16.80	8.13		160	0.75	12				ND	0.10	0.10	1100	5.0	10						
	10/16/2013	60.0	0.086	2.01	8.25																						
	10/17/2013	25.0	0.036	0.90	8.14																						
	10/18/2013	50.0	0.072	2.81	8.13								2.2	0.30	0.50												
	10/19/2013	50.0	0.072	1.36	8.00																						
	10/20/2013	20.0	0.029	1.22	7.94																						
	10/21/2013	10.0	0.014	3.39	7.93																						
	10/22/2013	100.0	0.144	2.69	8.05	ND	18.6	7.80		100	1.5	25				ND	0.10	0.10	1800	5.0	10						
	10/23/2013	3.5	0.005	3.60	8.24																						
	10/24/2013	10.0	0.014	3.00	7.90								7.0	0.30	0.50												
	10/27/2013	15.0	0.022	6.26	8.03																						
	10/30/2013	80.0	0.115	7.22	7.68	ND	15.47	7.22		65	0.75	12				ND	0.10	0.10	1800	5.0	10						
	10/31/2013	75.0	0.108	1.12	7.91								40^	0.30	0.50												
	11/1/2013	75.0	0.108	1.09	7.68																						
	11/2/2013	80.0	0.115	0.61	7.73																						
	11/3/2013	60.0	0.086	0.66	7.69																						
	11/4/2013	60.0	0.086	0.72	7.59																						
	11/5/2013	37.5	0.054	2.26	7.77																						
	11/6/2013	70.0	0.101	0.71	7.52																						
	11/7/2013	80.0	0.115	1.09	8.32	ND	15.42	7.11		110	0.15	2.5				ND	0.10	0.10	1700	5.0	10						
	11/8/2013	100.0	0.144	4.50	7.79																						
	11/9/2013	50.0	0.072	1.45	7.92								2.4	0.30	0.50												
	11/10/2013	50.0	0.072	1.64	7.78																						
	11/11/2013	50.0	0.072	1.67	8.11																						
	11/12/2013	50.0	0.072	1.92	8.27																						

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Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location		Flow Rate		Turbidity	pH	Chlorine Residual	Temp	DO	EC	Chloride			TSS			Total Set Mat			TDS			O&G			TOC		
	Units	gpm	MGD	NTU	s.u.	mg/L	C	mg/L	µS/cm	mg/L			mg/L			mL/L/hr			mg/L			mg/L			mg/L		
	Test Method			Field	Field	Field	Field	Field	Field	EPA 300.0			SM2540D			SM2540F			SM2540C			EPA 1664			SM5310C		
	Date	Field		Result	Result	Result	Result	Result	Result	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL
Pond 17 Discharge	11/13/2013	80.0	0.115	2.67	7.98																						
	11/14/2013	80.0	0.115	4.08	7.74	ND	17.91	7.27		93	0.75	12				ND	0.10	0.10	1300	5.0	10						
	11/15/2013	80.0	0.115	4.91	7.81								1.6^	0.30	0.50												
	11/16/2013	100.0	0.144	4.96	8.05																						
	11/17/2013	100.0	0.144	4.62	8.06																						
	11/18/2013	60.0	0.086	2.50	7.95																						
	11/19/2013	100.0	0.144	3.85	7.49																						
	11/20/2013	100.0	0.144	6.85	7.87	ND	15.15	8.02		80	0.60	10				ND	0.10	0.10	1300	5.0	10	1.1 J^	0.80	1.4			
	11/21/2013	100.0	0.144	4.47	7.63								6.0	0.30	0.50												
	11/22/2013	80.0	0.115	2.66	8.10																						
	11/23/2013	80.0	0.115	2.45	7.76																						
	11/24/2013	25.0	0.036	2.46	8.11																						
	11/25/2013	50.0	0.072	4.03	7.81	ND	12.33	9.34		110	0.75	12				ND	0.10	0.10	1200	5.0	10						
	11/26/2013	40.0	0.058	1.90	7.88								1.6	0.30	0.50												
	11/27/2013	25.0	0.036	1.65	8.08																						
	11/29/2013	30.0	0.043	1.72	7.88																						
	12/2/2013	15.0	0.022	1.39	7.92																						
	12/3/2013	20.0	0.029	1.91	7.75	ND	10.94	9.29		450 K	0.75	12				ND	0.10	0.10	1600	5.0	10						
	12/4/2013	30.0	0.043	1.41	7.74								2.2	0.30	0.50												
	12/5/2013	100.0	0.144	2.26	7.72																						
	12/6/2013	100.0	0.144	5.56	7.51																						
	12/7/2013	30.0	0.043	14.3	7.67																						
	12/10/2013	80.0	0.115	11.6	8.03	ND	4.89	12.42		100	0.60	10				ND	0.10	0.10	920	5.0	10						
	12/11/2013	0.0	0.000	8.8	8.11								1.2	0.30	0.50												
	12/12/2013	60.0	0.086	7.85	7.88																						
	12/17/2013	40.0	0.058	4.14	7.97	ND	10.18	10.11		110	0.60	10				ND	0.10	0.10	1100	5.0	10	1.5	0.80	1.4			
	12/18/2013	75.0	0.108	3.84	7.81								3.4^	0.30	0.50												
	12/19/2013	50.0	0.072	3.46	7.91																						
	12/21/2013	80.0	0.115	1.82	7.84																						
	12/23/2013	60.0	0.086	1.61	7.91																						
	12/24/2013	20.0	0.029	1.16	7.93																						
	12/26/2013	70.0	0.101	0.86	7.92																						
	12/27/2013	30.0	0.043	1.57	7.71	ND	7.65	10.70		89^	0.75	12	2.6	0.30	0.50	ND	0.10	0.10	1500	5.0	10						
	12/28/2013	75.0	0.108	1.22	7.55																						
	12/30/2013	150.0	0.216	2.21	7.76																						
	12/31/2013	70.0	0.101	3.58	7.82																						
	1/3/2014	75.0	0.108	4.05	7.72	ND	8.42	10.73		91	0.75	12	5.2	0.30	0.50	ND*	0.10	0.10	1800	5.0	10						
	1/4/2014	75.0	0.108	1.74	7.70																						
	1/6/2014	60.0	0.086	0.86	7.66																						
	1/7/2014	5.0	0.007	1.08	7.68																						

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Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location		Flow Rate		Turbidity	pH	Chlorine Residual	Temp	DO	EC	Chloride			TSS			Total Set Mat			TDS			O&G			TOC		
	Units	gpm	MGD	NTU	s.u.	mg/L	C	mg/L	µS/cm	mg/L			mg/L			mL/L/hr			mg/L			mg/L			mg/L		
	Test Method			Field	Field	Field	Field	Field	Field	EPA 300.0			SM2540D			SM2540F			SM2540C			EPA 1664			SM5310C		
	Date	Field		Result	Result	Result	Result	Result	Result	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL
Pond 17 Discharge	1/8/2014	5.0	0.007	2.90	7.41																						
	1/9/2014	60.0	0.086	2.65	7.73	ND	9.17	10.63		110	0.75	12				ND	0.10	0.10	1600	5.0	10						
	1/10/2014	60.0	0.086	1.93	7.71								8.7	0.30	0.50												
	1/11/2014	100.0	0.144	1.35	7.66																						
	1/13/2014	75.0	0.108	3.32	7.65																						
	1/14/2014	40.0	0.058	3.18	7.70																						
	1/15/2014	40.0	0.058	4.55	7.73	ND	8.83	12.74		130	0.75	12				ND	0.10	0.10	1600	5.0	10						
	1/16/2014	20.0	0.029	3.77	7.55								2.9	0.30	0.50												
	1/17/2014	20.0	0.029	2.94	7.58																						
	1/18/2014	50.0	0.072	2.61	7.67																						
	1/22/2014	15.0	0.022	0.85	7.48																						
	1/23/2014	10.0	0.014	1.45	7.72	ND	10.73	9.91		110	0.75	12				ND	0.10	0.10	2000	5.0	10	1.0 J	0.80	1.4			
	1/24/2014	75.0	0.108	0.97	7.64								3.6	0.30	0.50												
	1/25/2014	50.0	0.072	2.99	7.56																						
	1/26/2014	15.0	0.022	1.09	7.47																						
	1/27/2014	50.0	0.072	2.87	7.49																						
	1/28/2014	70.0	0.101	3.68	7.42																						
	2/1/2014	5.0	0.007	2.02	7.76																						
	2/2/2014	70.0	0.101	1.31	8.25																						
	2/3/2014	15.0	0.022	1.61	7.7																						
	2/4/2014	1.0	0.001	1.74	7.25																						
	2/5/2014	40.0	0.058	0.92	7.85																						
	2/6/2014	70.0	0.101	13.7	7.83	ND	10.80			90	1.5	25	3.4	0.30	0.50	ND	0.10	0.10	1900	5.0	10	1.3 J	0.80	1.4			
	2/7/2014	10.0	0.014	27.1	7.78																						
	2/8/2014	60.0	0.086	30	7.61																						
	2/9/2014	50.0	0.072	14.7	7.88																						
	2/10/2014	40.0	0.058	16.3	7.88																						
	2/11/2014	40.0	0.058	18.6	7.41																						
	2/12/2014	50.0	0.072	4.73	7.85	ND	11.33	9.30		120	1.5	25				ND	0.10	0.10	1800	5.0	10						
	2/13/2014	5.0	0.007	4.38	7.93								3.0^	0.30	0.50												
	2/14/2014	150.0	0.216	3.18	7.91																						
	2/15/2014	40.0	0.058	1.48	7.97																						
	2/17/2014	10.0	0.014	2.13	7.75																						
	2/18/2014	10.0	0.014	1.56	7.71																						
	2/19/2014	80.0	0.115	1.21	7.76																						
	2/20/2014	40.0	0.058	3.02	7.77	ND	13.02	9.29		130	1.5	25				ND	0.10	0.10	2300	5.0	10						
	2/21/2014	50.0	0.072	9.51	7.98								20^	0.30	0.50												
	2/22/2014	40.0	0.058	9.13	7.82																						
	2/24/2014	75.0	0.108	5.04	7.70																						
	2/25/2014	20.0	0.029	4.14	7.86																						

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Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location	Units / Test Method	Flow Rate gpm	Flow Rate MGD	Turbidity NTU Field	pH s.u. Field	Chlorine Residual mg/L Field	Temp C Field	DO mg/L Field	EC µS/cm Field	Chloride mg/L EPA 300.0			TSS mg/L SM2540D			Total Set Mat mL/L/hr SM2540F			TDS mg/L SM2540C			O&G mg/L EPA 1664			TOC mg/L SM5310C		
	Date	Field		Result	Result	Result	Result	Result	Result	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL
Pond 17 Discharge	2/26/2014	80.0	0.115	4.27	7.93																						
	2/27/2014	150.0	0.216	44.36	7.68																						
	2/28/2014	100.0	0.144	35.1	8.14	ND	14.65	8.09		73	0.75	12	19	0.30	0.50	0.10	0.10	0.10	1000	5.0	10						
	3/1/2014	100.0	0.144	16.1	7.88																						
	3/2/2014	105.0	0.151	20.77	7.88																						
	3/3/2014	50.0	0.072	16.86	7.62																						
	3/4/2014	60.0	0.086	10.85	7.92																						
	3/5/2014	75.0	0.108	12.63	7.86																						
	3/6/2014	1.0	0.001	3.05	8.06	ND	15.99	8.44		130	1.5	25				ND	0.10	0.10	1500	5.0	10						
	3/7/2014	0.0	0.000										80	0.30	0.50												
	3/22/2014	5.0	0.007	3.81	7.66																						
	3/29/2014	5.0	0.007	3.31	7.80																						
	3/30/2014	3.0	0.004	13.2	8.11	ND	16.07	9.83		96^	0.60	10	20	0.30	0.50	ND	0.10	0.10	720	5.0	10	3.0	0.80	1.4			
	3/31/2014	50.0	0.072	19.8	7.83																						
	7/1/2013	1.0	0.001	4.39	8.28	ND				55	0.03	5.0				ND	0.1	0.10	1200	5	10						
Pond 13A Discharge	7/2/2013	1.0	0.001	6.85	7.83								3.5	0.3	1.0												
into Pond 13B	7/3/2013	1.5	0.002	6.98	8.29																						
	7/5/2013	1.0	0.001	6.31	8.25																						
	7/6/2013	3.0	0.004	4.14	7.11																						
	7/7/2013	1.0	0.001	5.12	8.35																						
	7/8/2013	1.0	0.001	5.16	8.30																						
	7/9/2013	1.0	0.001	5.45	8.27	ND				50	0.03	12				ND	0.1	0.10	1200	5	10						
	7/10/2013	1.0	0.001	10.10	8.30								8.2	0.3	1.0												
	7/11/2013	1.0	0.001	5.45	8.12																						
	7/12/2013	1.0	0.001	7.33	8.26																						
	7/13/2013	2.0	0.003	10.09	8.32																						
	7/14/2013	1.0	0.001	6.50	8.33																						
	7/15/2013	1.0	0.001	4.91	8.33																						
	7/16/2013	1.0	0.001	4.58	8.25																						
	7/17/2013	1.0	0.001	5.26	8.31																						
	7/18/2013	1.0	0.001	2.64	8.23	ND				55	0.03	5.0				ND	0.1	0.10	1400	5	10						
	7/19/2013	1.0	0.001	3.12	8.31								3.1	0.3	1.0												
	7/20/2013	1.0	0.001	10.14	8.29																						
	7/21/2013	1.0	0.001	2.43	8.30																						
	7/22/2013	1.0	0.001	2.17	8.15																						
	7/23/2013	1.0	0.001	10.22	8.34																						
	7/24/2013	2.0	0.003	4.32	8.23																						
	7/25/2013	1.0	0.001	2.50	8.21	ND				53	0.03	5.0				ND	0.1	0.10	1200	5	10						
	7/26/2013	2.0	0.003	6.04	8.16								1.0	0.3	1.0												

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Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location	Units / Test Method	Flow Rate gpm	Flow Rate MGD	Turbidity NTU Field	pH s.u. Field	Chlorine Residual mg/L Field	Temp C Field	DO mg/L Field	EC µS/cm Field	Chloride mg/L EPA 300.0			TSS mg/L SM2540D			Total Set Mat mL/L/hr SM2540F			TDS mg/L SM2540C			O&G mg/L EPA 1664			TOC mg/L SM5310C		
	Date	Field		Result	Result	Result	Result	Result	Result	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL
Pond 13A Discharge into Pond 13B	7/27/2013	1.0	0.001	2.84	8.16																						
	7/29/2013	1.0	0.001	4.95	8.27	ND				68	0.03	5.0				ND	0.1	0.10	1300	5	10	ND	0.80	5.0			
	7/30/2013	1.0	0.001	4.21	8.24								3.7	0.3	1.0												
	7/31/2013	1.0	0.001	3.40	8.27																						
	8/1/2013	1.0	0.001	1.85	8.37																						
	8/2/2013	1.0	0.001	1.65	8.33																						
	8/3/2013	1.0	0.001	10.16	8.34																						
	8/4/2013	1.0	0.001	4.23	8.34																						
	8/5/2013	1.0	0.001	9.84	8.11																						
	8/6/2013	2.0	0.003	9.92	8.19																						
	8/7/2013	1.0	0.001	1.79	8.29	ND				66	0.03	5.0				ND	0.1	0.10	1300	5	10						
	8/8/2013	1.0	0.001	2.85	8.31								1.7	0.3	1.0												
	8/9/2013	1.0	0.001	1.92	8.27																						
	8/10/2013	1.0	0.001	1.84	8.24																						
	8/11/2013	1.0	0.001	1.70	8.12																						
	8/12/2013	1.0	0.001	2.14	8.16																						
	8/13/2013	0.0	0.000																								
	8/14/2013	1.0	0.001	1.50	8.34	ND				56	0.03	5.0				ND	0.1	0.10	1400	5	10						
	8/15/2013	1.0	0.001	2.22	8.21								10	0.3	1.0												
	8/17/2013	1.0	0.001	2.55	7.11																						
	8/18/2013	1.0	0.001	4.91	7.29																						
	8/19/2013	1.0	0.001	2.45	8.41																						
	8/20/2013	1.0	0.001	2.30	8.32																						
	8/21/2013	2.0	0.003	5.22	7.31																						
	8/22/2013	0.5	0.001	2.88	8.29	ND				54	0.03	12				ND	0.1	0.10	1400	5	10						
	8/23/2013	0.5	0.001	2.39	8.37								1.9	0.3	1.0												
	8/24/2013	2.0	0.003	2.91	8.39																						
	8/25/2013	0.5	0.001	2.40	8.29																						
	8/26/2013	2.0	0.003	3.10	8.21																						
	8/27/2013	0.5	0.001	11.60	7.94																						
	8/28/2013	0.5	0.001	2.91	8.18	ND				54	0.03	5.0				ND	0.1	0.10	1300	5	10	1.7 J^	0.80	5.0			
	8/29/2013	0.5	0.001	2.84	8.32								6.0	0.3	1.0												
	8/30/2013	0.5	0.001	15.50	8.03																						
	8/31/2013	0.5	0.001	3.17	8.11																						
	9/1/2013	0.5	0.001	3.25	8.23																						
	9/3/2013	0.3	0.000	1.65	7.91																						
	9/4/2013	0.3	0.000	3.23	8.39	ND				53	0.03	12				ND	0.1	0.10	1400	5	10	1.5^	0.80	1.4			
	9/5/2013	1.0	0.001	1.56	8.37								ND	0.3	0.50												
	9/6/2013	0.5	0.001	6.52	8.26																						
	9/7/2013	0.5	0.001	6.44	8.19																						

Table 1: Monitoring Data Summary
Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location	Units / Test Method	Flow Rate gpm	Flow Rate MGD	Turbidity NTU Field	pH s.u. Field	Chlorine Residual mg/L Field	Temp C Field	DO mg/L Field	EC µS/cm Field	Chloride mg/L EPA 300.0			TSS mg/L SM2540D			Total Set Mat mL/L/hr SM2540F			TDS mg/L SM2540C			O&G mg/L EPA 1664			TOC mg/L SM5310C		
	Date	Field		Result	Result	Result	Result	Result	Result	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL
	9/8/2013	0.5	0.001	6.39	8.21																						
	9/9/2013	0.5	0.001	6.29	8.19																						
Pond 13A Discharge	9/10/2013	0.0	0.000	15.40	8.30	ND				16	0.03	12	25	0.3	0.50	0.22	0.1	0.10	1400	5	10						
into Pond 13B	9/11/2013	0.0	0.000	0.99	8.11																						
	9/12/2013	0.0	0.000	5.23	8.07																						
	9/13/2013	0.0	0.000	1.57	8.31																						
	9/14/2013	0.5	0.001	2.92	8.35																						
	9/15/2013	0.1	0.000	1.33	8.21																						
	9/16/2013	180.0	0.259	0.29	8.13																						
	9/17/2013	40.0	0.058	0.23	8.19																						
	9/18/2013	4.0	0.006	3.26	7.73	ND				100	0.03	12				ND	0.1	0.10	1600	5	10						
	9/19/2013	0.5	0.001	1.53	8.20								1.4	0.3	0.50												
	9/20/2013	0.5	0.001	1.95	8.26																						
	9/21/2013	0.5	0.001	2.91	8.33																						
	9/22/2013	1.0	0.001	2.33	8.10																						
	9/23/2013	0.3	0.000	1.41	8.30																						
	9/24/2013	0.3	0.000	1.34	8.18	ND				71	0.03	5.0				ND	0.1	0.10	1500	5	10						
	9/25/2013	0.5	0.001	0.88	8.18																						
	9/26/2013	0.5	0.001	1.01	8.19																						
	9/27/2013	0.2	0.000	0.68	8.30																						
	9/28/2013	0.5	0.001	1.59	8.38																						
	9/30/2013	0.3	0.000	1.66	8.29																						
	10/1/2013	0.3	0.000	0.84	8.28	ND	18.20	8.33		65^	0.60	10				ND	0.20	0.20	1600	5.0	10						
	10/2/2013	0.3	0.000	3.35	8.28																						
	10/3/2013	0.3	0.000	0.77	8.33																						
	10/4/2013	0.3	0.000	1.2	8.36								1.0	0.30	0.50												
	10/5/2013	0.5	0.001	2.37	8.36																						
	10/6/2013	0.0	0.000	1.12	8.39																						
	10/7/2013	0.0	0.000	0.68	8.37																						
	10/8/2013	0.3	0.000	0.99	8.09																						
	10/9/2013	0.3	0.000	1.33	8.16																						
	10/10/2013	0.3	0.000	0.75	8.21	ND	18.22	7.59		58	0.75	12				ND	0.10	0.10	1300*	5.0	10	1.1 J	0.80	1.4			
	10/11/2013	0.3	0.000	1.26	8.24																						
	10/12/2013	1.0	0.001	1.06	7.95								0.60^	0.30	0.50												
	10/13/2013	0.3	0.000	0.54	8.11																						
	10/14/2013	0.5	0.001	1.03	7.91																						
	10/15/2013	0.0	0.000	0.85	8.26	ND	19.62	2.00		69	0.75	12				ND	0.10	0.10	1500	5.0	10						
	10/16/2013	0.0	0.000	0.65	8.41																						
	10/17/2013	0.0	0.000	1.81	8.34																						
	10/18/2013	0.0	0.000	3.03	8.28								ND	0.30	0.50												

Table 1: Monitoring Data Summary
Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location		Flow Rate		Turbidity	pH	Chlorine Residual	Temp	DO	EC	Chloride			TSS			Total Set Mat			TDS			O&G			TOC		
	Units	gpm	MGD	NTU	s.u.	mg/L	C	mg/L	µS/cm	mg/L			mg/L			mL/L/hr			mg/L			mg/L			mg/L		
	Test Method			Field	Field	Field	Field	Field	Field	EPA 300.0			SM2540D			SM2540F			SM2540C			EPA 1664			SM5310C		
	Date	Field		Result	Result	Result	Result	Result	Result	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL	Result	MDL	RL
	10/19/2013	0.0	0.000	1.9	8.36																						
Pond 13A Discharge	10/20/2013	1.0	0.001	0.88	8.32																						
into Pond 13B	10/21/2013	1.0	0.001	1.68	8.35																						
	10/22/2013	0.0	0.000	1.07	8.12	ND	17.5	6.73		67	0.75	12				ND	0.10	0.10	1300	5.0	10						
	10/23/2013	2.0	0.003	1.14	8.23								ND	0.30	0.50												
	10/24/2013	2.0	0.003	0.78	8.23																						
	10/25/2013	0.3	0.000	0.77	8.11																						
	10/26/2013	0.5	0.001	0.73	8.07																						
	10/27/2013	0.3	0.000	2.52	8.11																						
	10/28/2013	0.5	0.001	1.07	8.11																						
	10/29/2013	0.5	0.001	1.01	8.16	ND	14.04	3.91		64	0.75	12				ND	0.10	0.10	1400	5.0	10						
	10/30/2013	0.5	0.001	0.68	8.19								1.8^	0.30	0.50												
	10/31/2013	0.3	0.000	1.03	7.92																						
	11/1/2013	0.3	0.000	0.60	8.30																						
	11/2/2013	0.5	0.001	0.72	8.18																						
	11/3/2013	0.5	0.001	0.78	8.21																						
	11/4/2013	0.5	0.001	0.73	8.17																						
	11/5/2013	2.5	0.004	0.97	7.99																						
	11/6/2013	0.5	0.001	0.66	8.21																						
	11/7/2013	0.5	0.001	1.01	8.19	ND	17.41	7.11		63	0.75	12				ND	0.10	0.10	1600	5.0	10						
	11/8/2013	1.5	0.002	13.3	7.96								7.4	0.30	0.50												
	11/9/2013	0.5	0.001	0.98	8.09																						
	11/10/2013	0.5	0.001	1.19	8.07																						
	11/11/2013	0.3	0.000	1.07	8.04																						
	11/12/2013	20.0	0.029	>1000	7.51																						
	11/13/2013	20.0	0.029	27.8	7.94																						
	11/14/2013	0.5	0.001	61	8.02	ND	16.98	6.94		59	0.75	12				ND	0.10	0.10	1400	5.0	10						
	11/15/2013	0.0	0.000										220^	0.30	0.50												
	2/27/2014	3.0	0.004	833.8	7.99	ND	16.44	8.90		36	0.75	12	28	0.30	0.50	ND	0.10	0.10	1200	5.0	10	ND	0.80	1.4			
	2/28/2014	10.0	0.014	74.0	8.16																						
	3/1/2014	3.0	0.004	49.5	8.06																						

Notes: all samples are grab samples, except for TSS samples. TSS sampes are 24-hr composites from the Pond discharge samples. The date listed for 24-hour composites is when sampling was finished.
J = Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
ND = Analyte not detected at or above the reporting limit.
^ Lab blank contained trace amount of oil & grease.
* Analysis exceeded sampling holding time limit.
Only days are shown for when discharges occurred.

Table 2: Metals Data Summary
Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location	Sample Date	Antimony (ug/L)				Arsenic (ug/L)				Beryllium (ug/L)				Cadmium (ug/L)				Copper (ug/L)				Chromium (ug/L)				Hexachrome (ug/L)			
		1638				1638 DRC				1638				1638				1638				1638 DRC				218.6			
		Result	MDL	RL	Qualifier	Result	MDL	RL	Qualifier	Result	MDL	RL	Qualifier	Result	MDL	RL	Qualifier	Result	MDL	RL	Qualifier	Result	MDL	RL	Qualifier	Result	MDL	RL	Qualifier
Pond 4A	10/30/13	3.11	0.011	0.042	-	1.32	0.047	0.158	-	ND	0.053	0.158	U	1.22	0.007	0.021	-	1.72	0.042	0.126	-	0.652	0.079	0.237	-	-	-	-	-
	12/17/13	2.87	0.011	0.042	-	1.07	0.009	0.032	-	ND	0.053	0.158	U	0.373	0.007	0.021	-	2.55	0.042	0.126	F	0.643	0.395	1.18	B, Ft	ND	0.0050	0.010	-
	3/6/14	5.68	0.011	0.042	-	1.63	0.009	0.032	-	ND	0.053	0.158	U	1.31	0.007	0.021	-	1.63	0.042	0.126	F	0.265	0.009	0.032	F	ND	0.0050	0.010	-
	4/1/14	5.11	0.011	0.042	-	1.70	0.009	0.032	-	ND	0.053	0.158	U	1.11	0.007	0.021	-	2.33	0.042	0.126	F	0.623	0.009	0.032	F	ND	0.0050	0.010	-
Pond 17	9/13/13	2.10	0.011	0.042	-	0.478	0.006	0.026	-	ND	0.053	0.158	-	0.285	0.007	0.021	-	2.48	0.042	0.126	-	0.425	0.047	0.158	-	0.41	0.02	0.20	-
	12/17/13	1.21	0.011	0.042	-	0.504	0.009	0.032	-	ND	0.053	0.158	U	0.102	0.007	0.021	-	3.45	0.042	0.126	F	0.956	0.395	1.18	B, Ft	ND	0.0050	0.010	-
	2/6/14	1.91	0.011	0.042	-	0.606	0.047	0.158	-	ND	0.053	0.158	U	0.221	0.007	0.021	-	4.77	0.042	0.126	F	3.53	0.158	0.474	Ft	ND	0.0050	0.010	-
Pond 13A/13B	9/4/13	0.613	0.010	0.040	J	1.22	0.006	0.025	-	ND	0.051	0.152	-	0.043	0.007	0.020	-	2.83	0.040	0.121	-	0.499	0.045	0.152	-	ND	0.02	0.20	-
	2/27/14	0.779	0.011	0.042	-	0.705	0.009	0.032	-	ND	0.053	0.158	U	0.094	0.007	0.021	-	5.64	0.042	0.126	-	3.43	0.009	0.032	-	ND [1]	0.0050	0.010	-
Pond 30	2/27/14	0.505	0.011	0.042	-	1.93	0.009	0.032	-	ND	0.053	0.158	U	0.134	0.007	0.021	-	7.47	0.042	0.126	F	11.1	0.009	0.032	Ft	ND	0.0050	0.010	-
	4/2/14	0.720	0.011	0.042	-	0.854	0.009	0.032	-	ND	0.053	0.158	U	0.156	0.007	0.021	-	4.07	0.042	0.126	-	6.73	0.009	0.032	-	ND	0.0050	0.010	-

Notes:

1 = sample collected on 2/28/2014 for hexchrome.

9/4/13 field and bottle blanks contained concentrations of Cr, Cu, Pb, and Zn above the reporting limit. Ni was also found in the bottle blank.

9/13/2013 field blank contained concentrations of Cr, Cu, Pb, and Zn above the reporting limit.

All locations were grab samples collected via "clean hands/dirty hands" EPA sampling method

J = Estimated value because blank spike had a low recovery of 70%.

MDL = Method detection limit

N = Spike recovery was not within acceptance criteria. Result is estimated.

F = Analyte detected above the RL in field blank.

Ft = Analyte detected at trace concentration in field blank.

M = Method blank contained trace detection of this analyte.

MDL = Method detection limit

B = Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.

ND = Not detected at or above the indicated MDL or RL.

mg/L = milligrams per liter; ng/L = nanograms per liter; ug/L = micrograms per liter

RL = Reporting limit; U = Result is ≤ the method detection limit.

Table 2: Metals Data Summary
Lehigh Southwest Cement Company Permanente Quarry
October 2014

Sample Location	Sample Date	Lead (ug/L)				Mercury (ng/L)				Nickel (ug/L)				Selenium (ug/L)				Silver (ug/L)				Thallium (ug/L)				Zinc (ug/L)			
		1638				1631E				1638 DRC				1638 DRC				1638				1638				1638			
		Result	MDL	RL	Qualifier	Result	MDL	RL	Qualifier	Result	MDL	RL	Qualifier	Result	MDL	RL	Qualifier	Result	MDL	RL	Qualifier	Result	MDL	RL	Qualifier	Result	MDL	RL	Qualifier
Pond 4A	10/30/13	0.075	0.006	0.026	-	10.4	0.200	0.500	-	16.9	0.263	1.05	-	29.6	0.105	0.316	-	ND	0.005	0.021	N, U	0.317	0.003	0.011	-	4.68	0.06	0.21	-
	12/17/13	0.042	0.006	0.026	F	6.24	0.200	0.500	-	14.1	1.32	5.26	-	20.4	0.021	0.063	-	ND	0.005	0.021	U	0.237	0.003	0.011	-	4.65	0.06	0.21	F
	3/6/14	0.047	0.006	0.026	F	1.30	0.200	0.500	-	59.4	0.053	0.211	-	33.8	0.021	0.063	-	ND	0.005	0.021	U	0.174	0.003	0.011	-	56.8	0.06	0.21	F
	4/1/14	0.024	0.006	0.026	B, F	1.30	0.200	0.500	-	73.7	0.053	0.211	-	53.1	0.021	0.063	-	ND	0.005	0.021	U	0.183	0.003	0.011	-	58.0	0.06	0.21	F
Pond 17	9/13/13	0.029	0.006	0.026	-	10.8	0.200	0.500	-	8.36	0.247	1.05	-	19.0	0.024	0.072	-	ND	0.005	0.021	N	0.157	0.003	0.011	-	8.94	0.06	0.21	-
	12/17/13	0.055	0.006	0.026	F	13.2	0.200	0.500	-	8.36	1.32	5.26	-	7.66	0.021	0.063	-	0.006	0.005	0.021	B	0.154	0.003	0.011	-	7.04	0.06	0.21	F
	2/6/14	0.124	0.006	0.026	F	17.1	0.200	0.500	-	25.6	0.526	2.11	-	27.6	0.105	0.316	-	0.012	0.005	0.021	B	0.318	0.003	0.011	-	12.1	0.06	0.21	F
Pond 13A/13B	9/4/13	0.071	0.006	0.025	-	9.22	0.200	0.500	-	3.96	0.237	1.01	-	2.42	0.023	0.069	-	ND	0.005	0.020	-	0.027	0.003	0.010	-	12.1	0.06	0.20	-
	2/27/14	0.644	0.006	0.026	-	19.7	0.200	0.500	-	7.37	0.053	0.211	-	22.8	0.021	0.063	-	0.011	0.005	0.021	B	0.041	0.003	0.011	-	9.01	0.06	0.21	-
Pond 30	2/27/14	0.300	0.006	0.026	F	22.4	0.200	0.500		15.0	0.053	0.211	-	14.6	0.021	0.063	-	0.011	0.005	0.021	B	0.068	0.003	0.011	-	18.9	0.06	0.21	F
	4/2/14	0.151	0.006	0.026	-	12.0	0.200	0.500	-	8.86	0.053	0.211	-	29.2	0.021	0.063	-	0.008	0.005	0.021	B	0.061	0.003	0.011	-	15.9	0.06	0.21	-

Notes:

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