ATTACHMENT F

Lehigh Hanson
HEIDELBERGCEMENT Group

Gregory Knapp
Director Environmental Affairs, Region West
12667 Alcosta Blvd , San Ramon, CA 94583
(925) 244-6570

January 15, 2015

Mr. Rob Eastwood
Principal Planner, County of Santa Clara
Santa Clara County Planning Department

RE: Pond 30 December Stormwater Results

Dear Mr. Eastwood

Attached are the lab sheets for the December 2014 stormwater analysis results from discharges out of Pond 30. We have included a summary of the results below, as you requested. Note that the sampling results show a general increase in recorded total recoverable selenium in comparison to the past two seasons. We are analyzing the causes for this, which may include the large storm flows associated with December storms and reclamation grading during the fall which was anticipated to generate a temporary increase in selenium in runoff. We intend to meet in short order to discuss the results in more detail.

Sample Date December 2

Total Recoverable Selenium: 26 micrograms/liter (ug/L or parts per billion)
Mercury: 2.47 ug/L
Oil & Grease: Non Detect (ND)
Settleable Solids: 80 milliliters per liter/hour (ml/L-hr)
Total Suspended Solids (TSS): 7100 milligrams/liter (mg/L)
Hexavalent chromium ("Chromium 6"): 1.5 ug/L
Total Recoverable Nickel: 890 ug/L
Thallium: 3.2 ug/L

Sample Date December 12

Total Recoverable Selenium: 65 ug/L
Mercury: ND
Total Dissolved Solids (TDS): 170 mg/L Total
Recoverable Nickel: 14 ug/L
Total Recoverable Thallium: 0.24 ug/L
Total Recoverable Antimony: 1.1 ug/L
Total Recoverable Arsenic 3.4 ug/L
Total Recoverable Beryllium: ND
Total Recoverable Cadmium: 0.26 ug/L
Total Recoverable Chromium: 3.9 ug/L
Total Recoverable Copper: 9.6 ug/L
Total Recoverable Lead: 0.15 ug/L
Total Recoverable Silver: ND Total
Recoverable Zinc: 67 ug/L

Sample Date December 22

Total Recoverable Selenium: 81 ug/L
Mercury: ND
Total Dissolved Solids (TDS): 2800 mg/L
Total Recoverable Nickel: 21 ug/L Total
Recoverable Thallium: ND Total
Recoverable Antimony: ND Total
Recoverable Arsenic 3.9 ug/L Total
Recoverable Beryllium: ND
Total Recoverable Cadmium: 0.31 ug/L
Total Recoverable Chromium: 3.3 ug/L
Total Recoverable Copper: 8.3 ug/L Total
Recoverable Lead: 0.25 ug/L Total
Recoverable Silver: ND
Total Recoverable Zinc: 60 ug/L

Any page labeled "Quality Control" indicates reported laboratory method tests using spiked samples to assure actual result accuracy. These results are not actual samples from Pond 30. Any page labeled "Chain of Custody" indicates the transfer of samples from the field through the various laboratories.

Please contact me with any questions.

Gregory Knapp
Director Environmental Affairs
Lehigh Hanson Region West

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 01/08/2015

George Wegmann

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Client Project:	063-7109-916
BCL Project:	Lehigh Pond
BCL Work Order:	1430607
Invoice ID:	B192974

Enclosed are the results of analyses for samples received by the laboratory on 12/22/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Vanessa Sandoval
Client Service Rep

Authorized Signature

Table of Contents

Golder Associates
CHAIN OF CUSTODY

14-30607 Quotation No. _____ Page ___ of ___

PROJECT NO.:	SITE NAME:
063-7109-916	Lehigh Pond 30

SAMPLER(S): David Walter (printed) David C Walt (signature)

CONTRACT LABORATORY: BC Labs

TURN-AROUND TIME: Standard

ANALYSES: TDS, Nitrate, PPI3 (200-series)

EDD required? ☑ Yes ☐ No

EDF required? ☐ Yes ☑ No

Sample I.D.	Lab I.D.	Collection Date	Collection Time	Matrix	Depth	Container Info	Cont. Qty.	Remarks
						Type/Vol.		
						Filter		
						Preserv.		
Pond 30	-1	12-22-14	1400	W		1L / 500ml	2	
						N / N		
						— / HNO_3		

CHK BY MM DISTRIBUTION MAIL SUB-OUT ☐

Relinquished by: (signature)	Received by: (signature)	Date/Time:
David C Walt	PBWS BCL	12/22/14 1305
Relinquished by: (signature) BCL 12/22/14 1445	Received by: (signature) Gary Bogen	Date/Time: 12-22-14 1445
Relinquished by: (signature) Gary Bogen 12-22-14 1930	Received by: (signature)	Date/Time: 12-22-14 18:30

white: lab copy yellow: project file

REL. on 12-22-14 2145 RCVD 2145

SEND RESULTS TO:
Attn: George Wegmann, Greg Knapp, Chow Kip
Golder Associates Inc.
425 Lakeside Drive
Sunnyvale, CA 94085
Phone (408) 220-9223
Fax (408) 220-9224

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1430607 Page 1 of 2

Chain of Custody and Cooler Receipt Form for 1430607 Page 2 of 2

BC LABORATORIES INC. **COOLER RECEIPT FORM** Rev. No. 18 09/04/14 Page 1 Of 1

Submission #: 14-30607

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Federal Express ☐ UPS ☐ Hand Delivery ☐ BC Lab Field Service ☒ Other ☐ (Specify)_____	Ice Chest ☒ None ☐ Box ☐ Other ☐ (Specify)_____	YES ☐ NO ☐

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☒ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☒ YES ☐ NO

Emissivity: 0.98 Container: P15 Thermometer ID: 908 Date/Time 12/23/14 2153

Temperature: (A) 1.6 °C / (C) 1.2 °C Analyst Init SM

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL	A									
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS	B									
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz Amber EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
Summa Canister										

Comments:

Sample Numbering Completed By: AM Date/Time: 12/23/14 2220 [S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMREC]

A = Actual / C = Corrected

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:37
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1430607-01	**COC Number:**	---	**Receive Date:**	12/22/2014 21:45
	Project Number:	---	**Sampling Date:**	12/20/2014 14:00
	Sampling Location:	Pond 30	**Sample Depth:**	---
	Sampling Point:	Pond 30	**Lab Matrix:**	Water
	Sampled By:	David Walter	**Sample Type:**	Water

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:37
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

BCL Sample ID: 1430607-01 | **Client Sample Name:** Pond 30, Pond 30, 12/20/2014 2:00:00PM, David Walter

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Dissolved Solids @ 180 C	2800	mg/L	100	100	EPA-160.1	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-160.1	12/26/14	12/26/14 13:00	CAD	MANUAL	10	BXL2402

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:37
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

BCL Sample ID: 1430607-01 | **Client Sample Name:** Pond 30, Pond 30, 12/20/2014 2:00:00PM, David Walter

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Recoverable Antimony	ND	ug/L	4.0	0.22	EPA-200.8	ND	A07	1
Total Recoverable Arsenic	**3.9**	**ug/L**	**4.0**	**1.4**	**EPA-200.8**	ND	**J,A07**	1
Total Recoverable Beryllium	ND	ug/L	2.0	0.46	EPA-200.8	ND	A07	1
Total Recoverable Cadmium	**0.31**	**ug/L**	**2.0**	**0.22**	**EPA-200.8**	ND	**J,A07**	1
Total Recoverable Chromium	**3.3**	**ug/L**	**6.0**	**1.0**	**EPA-200.8**	ND	**J,A07**	1
Total Recoverable Copper	**8.3**	**ug/L**	**4.0**	**0.44**	**EPA-200.8**	ND	**A07**	1
Total Recoverable Lead	**0.25**	**ug/L**	**2.0**	**0.20**	**EPA-200.8**	ND	**J,A07**	1
Total Recoverable Mercury	ND	ug/L	0.20	0.033	EPA-245.1	ND		2
Total Recoverable Nickel	**21**	**ug/L**	**4.0**	**0.38**	**EPA-200.8**	ND	**A07**	1
Total Recoverable Selenium	**81**	**ug/L**	**4.0**	**0.38**	**EPA-200.8**	ND	**A07**	1
Total Recoverable Silver	ND	ug/L	2.0	0.20	EPA-200.8	ND	A07	1
Total Recoverable Thallium	ND	ug/L	2.0	0.20	EPA-200.8	ND	A07	1
Total Recoverable Zinc	**60**	**ug/L**	**20**	**3.4**	**EPA-200.8**	ND	**A07**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-200.8	01/07/15	01/08/15 13:27	EAR	PE-EL2	2	BYA0348
2	EPA-245.1	01/07/15	01/07/15 17:26	MEV	CETAC1	1	BYA0293

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Reported: 01/08/2015 19:37
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXL2402						
Total Dissolved Solids @ 180 C	BXL2402-BLK1	ND	mg/L	6.7	6.7	

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Sunnyvale, CA 94085

Reported: 01/08/2015 19:37
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BXL2402										
Total Dissolved Solids @ 180 C	BXL2402-BS1	LCS	565.00	586.00	mg/L	96.4		90 - 110		

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Sunnyvale, CA 94085

Reported: 01/08/2015 19:37
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BXL2402	Used client sample: Y - Description: Pond 30, 12/20/2014 14:00										
Total Dissolved Solids @ 180 C	DUP	1430607-01	2830.0	2840.0		mg/L	0.4		10		

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Sunnyvale, CA 94085

Reported: 01/08/2015 19:37
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BYA0293						
Total Recoverable Mercury	BYA0293-BLK1	ND	ug/L	0.20	0.033	
QC Batch ID: BYA0348						
Total Recoverable Antimony	BYA0348-BLK1	ND	ug/L	2.0	0.11	
Total Recoverable Arsenic	BYA0348-BLK1	ND	ug/L	2.0	0.70	
Total Recoverable Beryllium	BYA0348-BLK2	ND	ug/L	1.0	0.23	
Total Recoverable Cadmium	BYA0348-BLK1	ND	ug/L	1.0	0.11	
Total Recoverable Chromium	BYA0348-BLK1	ND	ug/L	3.0	0.50	
Total Recoverable Copper	BYA0348-BLK1	ND	ug/L	2.0	0.22	
Total Recoverable Lead	BYA0348-BLK1	ND	ug/L	1.0	0.10	
Total Recoverable Nickel	BYA0348-BLK1	ND	ug/L	2.0	0.19	
Total Recoverable Selenium	BYA0348-BLK1	ND	ug/L	2.0	0.19	
Total Recoverable Silver	BYA0348-BLK1	ND	ug/L	1.0	0.10	
Total Recoverable Thallium	BYA0348-BLK1	ND	ug/L	1.0	0.10	
Total Recoverable Zinc	BYA0348-BLK1	ND	ug/L	10	1.7	

Golder Associates
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Sunnyvale, CA 94085

Reported: 01/08/2015 19:37
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BYA0293										
Total Recoverable Mercury	BYA0293-BS1	LCS	0.99750	1.0000	ug/L	99.8		85 - 115		
QC Batch ID: BYA0348										
Total Recoverable Antimony	BYA0348-BS1	LCS	41.048	40.000	ug/L	103		85 - 115		
Total Recoverable Arsenic	BYA0348-BS1	LCS	105.54	100.00	ug/L	106		85 - 115		
Total Recoverable Beryllium	BYA0348-BS2	LCS	45.832	40.000	ug/L	115		85 - 115		
Total Recoverable Cadmium	BYA0348-BS1	LCS	42.892	40.000	ug/L	107		85 - 115		
Total Recoverable Chromium	BYA0348-BS1	LCS	43.366	40.000	ug/L	108		85 - 115		
Total Recoverable Copper	BYA0348-BS1	LCS	110.91	100.00	ug/L	111		85 - 115		
Total Recoverable Lead	BYA0348-BS1	LCS	103.18	100.00	ug/L	103		85 - 115		
Total Recoverable Nickel	BYA0348-BS1	LCS	107.54	100.00	ug/L	108		85 - 115		
Total Recoverable Selenium	BYA0348-BS1	LCS	104.66	100.00	ug/L	105		85 - 115		
Total Recoverable Silver	BYA0348-BS1	LCS	41.670	40.000	ug/L	104		85 - 115		
Total Recoverable Thallium	BYA0348-BS1	LCS	40.919	40.000	ug/L	102		85 - 115		
Total Recoverable Zinc	BYA0348-BS1	LCS	110.65	100.00	ug/L	111		85 - 115		

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:37
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BYA0293	Used client sample: N										
Total Recoverable Mercury	DUP	1430474-04	ND	ND		ug/L			20		
	MS	1430474-04	ND	0.99250	1.0000	ug/L		99.2		70 - 130	
	MSD	1430474-04	ND	1.0125	1.0000	ug/L	2.0	101	20	70 - 130	
QC Batch ID: BYA0348	Used client sample: N										
Total Recoverable Antimony	DUP	1430603-01	ND	ND		ug/L			20		
	MS	1430603-01	ND	40.190	40.000	ug/L		100		70 - 130	
	MSD	1430603-01	ND	41.191	40.000	ug/L	2.5	103	20	70 - 130	
Total Recoverable Arsenic	DUP	1430603-01	ND	ND		ug/L			20		
	MS	1430603-01	ND	110.99	100.00	ug/L		111		70 - 130	
	MSD	1430603-01	ND	112.57	100.00	ug/L	1.4	113	20	70 - 130	
Total Recoverable Beryllium	DUP	1430603-01	ND	ND		ug/L			20		
	MS	1430603-01	ND	40.061	40.000	ug/L		100		70 - 130	
	MSD	1430603-01	ND	40.749	40.000	ug/L	1.7	102	20	70 - 130	
Total Recoverable Cadmium	DUP	1430603-01	ND	ND		ug/L			20		
	MS	1430603-01	ND	37.127	40.000	ug/L		92.8		70 - 130	
	MSD	1430603-01	ND	37.972	40.000	ug/L	2.3	94.9	20	70 - 130	
Total Recoverable Chromium	DUP	1430603-01	ND	0.76000		ug/L			20		J
	MS	1430603-01	ND	38.752	40.000	ug/L		96.9		70 - 130	
	MSD	1430603-01	ND	39.850	40.000	ug/L	2.8	99.6	20	70 - 130	
Total Recoverable Copper	DUP	1430603-01	3.6450	3.4230		ug/L	6.3		20		
	MS	1430603-01	3.6450	103.05	100.00	ug/L		99.4		70 - 130	
	MSD	1430603-01	3.6450	103.38	100.00	ug/L	0.3	99.7	20	70 - 130	
Total Recoverable Lead	DUP	1430603-01	0.15400	ND		ug/L			20		
	MS	1430603-01	0.15400	112.07	100.00	ug/L		112		70 - 130	
	MSD	1430603-01	0.15400	112.62	100.00	ug/L	0.5	112	20	70 - 130	
Total Recoverable Nickel	DUP	1430603-01	31.888	32.020		ug/L	0.4		20		
	MS	1430603-01	31.888	117.79	100.00	ug/L		85.9		70 - 130	
	MSD	1430603-01	31.888	119.21	100.00	ug/L	1.2	87.3	20	70 - 130	
Total Recoverable Selenium	DUP	**1430603-01**	**0.92400**	**1.2630**		**ug/L**	**31.0**		**20**		**J,A02**
	MS	**1430603-01**	**0.92400**	**107.02**	**100.00**	**ug/L**		**106**		**70 - 130**	
	MSD	**1430603-01**	**0.92400**	**108.35**	**100.00**	**ug/L**	**1.2**	**107**	**20**	**70 - 130**	
Total Recoverable Silver	DUP	1430603-01	ND	ND		ug/L			20		
	MS	1430603-01	ND	38.733	40.000	ug/L		96.8		70 - 130	
	MSD	1430603-01	ND	39.055	40.000	ug/L	0.8	97.6	20	70 - 130	
Total Recoverable Thallium	DUP	1430603-01	ND	ND		ug/L			20		
	MS	1430603-01	ND	45.200	40.000	ug/L		113		70 - 130	
	MSD	1430603-01	ND	45.332	40.000	ug/L	0.3	113	20	70 - 130	

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:37
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BYA0348	Used client sample: N										
Total Recoverable Zinc	DUP	1430603-01	6.4950	5.6730		ug/L	13.5		20		J
	MS	1430603-01	6.4950	102.20	100.00	ug/L		95.7		70 - 130	
	MSD	1430603-01	6.4950	101.66	100.00	ug/L	0.5	95.2	20	70 - 130	

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:37
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A02	The difference between duplicate readings is less than the PQL.
A07	PQL's were raised due to sample dilution caused by high analyte concentration or matrix interference.

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 01/08/2015

George Wegmann

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Client Project:	063-7109-916
BCL Project:	Lehigh Pond
BCL Work Order:	1430608
Invoice ID:	B192975

Enclosed are the results of analyses for samples received by the laboratory on 12/22/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Vanessa Sandoval
Client Service Rep

Authorized Signature

Table of Contents

Golder Associates
CHAIN OF CUSTODY

14-30608

Page 1 of 1

Quotation No.

PROJECT NO.: 063-7109-916	SITE NAME: Pond 30 Lehigh NPDES
SAMPLER(S): David Walter (printed)	David C. Walt (signature)
CONTRACT LABORATORY: BC Labs	
TURN-AROUND TIME: Standard	

ANALYSES: TDS, Hg, 1613 (200-series)

EDD required? ☑ Yes ☐ No

EDF required? ☐ Yes ☑ No

Sample I.D.	Lab I.D.	Collection Date	Collection Time	Matrix	Depth	Container Info	Type/Vol.			Cont. Qty.	Remarks
							1L	500ml	200ml		
							Filter	N	N	N	
							Preserv.	–	HNO_3	–	
~~Eff 086~~ PD30	-1	12-2-14	1710	W			1	1	1	3	PD30 = Pond 30

CHK BY MW | DISTRIBUTION MAMT SUB-OUT ☒

Relinquished by: (signature)	Received by: (signature)	Date/Time:	SEND RESULTS TO:
David C. Walt	PBINS	12/22/14 1305	Attn: George Weginann, Greg Knapp, Chow Yip
Relinquished by: (signature) BCL 12/22/14 1445	Received by: (signature)	Date/Time: 12-22-14 1445	Golder Associates Inc.
Relinquished by: (signature)	Received by: (signature)	Date/Time: 12-22-14 18:30	425 Lakeside Drive
			Sunnyvale, CA 94085
			Phone (408) 220-9223
			Fax (408) 220-9224

white: lab copy yellow: project file

RFI. 12-22-14 2145 12-22-14 2145

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1430608 Page 1 of 2

4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com

Chain of Custody and Cooler Receipt Form for 1430608 Page 2 of 2

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 18 09/04/14 Page 1 Of 1

Submission #: 14-30608

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Federal Express ☐ UPS ☐ Hand Delivery ☐	Ice Chest ☐ None ☐ Box ☐	YES ☐ NO ☐
BC Lab Field Service ☑ Other ☐ (Specify)_____	Other ☐ (Specify)_____	

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☑ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.98 Container: 215 Thermometer ID: 208 Date/Time 12/22/14 2158

Temperature: (A) 1.6 °C / (C) 1.2 °C Analyst Init JM

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL	A									
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS	B									
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz Amber EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR	C									
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
Summa Canister										

Comments:

Sample Numbering Completed By: JM Date/Time: 12/23/14 0720 (S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMREC)

A = Actual / C = Corrected

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported:	01/08/2015 19:38
Project:	Lehigh Pond
Project Number:	063-7109-916
Project Manager:	George Wegmann

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1430608-01	**COC Number:**	---	**Receive Date:**	12/22/2014 21:45
	Project Number:	---	**Sampling Date:**	12/12/2014 17:10
	Sampling Location:	PD30	**Sample Depth:**	---
	Sampling Point:	PD30	**Lab Matrix:**	Water
	Sampled By:	David Walter	**Sample Type:**	Water

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:38
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

BCL Sample ID: 1430608-01 | **Client Sample Name:** PD30, PD30, 12/12/2014 5:10:00PM, David Walter

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Dissolved Solids @ 180 C	170	mg/L	6.7	6.7	EPA-160.1	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-160.1	12/26/14	12/26/14 13:00	CAD	MANUAL	0.667	BXL2402

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:38
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

BCL Sample ID: 1430608-01 | **Client Sample Name:** PD30, PD30, 12/12/2014 5:10:00PM, David Walter

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Recoverable Antimony	**1.1**	**ug/L**	**2.0**	**0.11**	**EPA-200.8**	ND	J	1
Total Recoverable Arsenic	**3.4**	**ug/L**	**2.0**	**0.70**	**EPA-200.8**	ND		1
Total Recoverable Beryllium	ND	ug/L	1.0	0.23	EPA-200.8	ND		2
Total Recoverable Cadmium	**0.26**	**ug/L**	**1.0**	**0.11**	**EPA-200.8**	ND	J	1
Total Recoverable Chromium	**3.9**	**ug/L**	**3.0**	**0.50**	**EPA-200.8**	ND		1
Total Recoverable Copper	**9.6**	**ug/L**	**2.0**	**0.22**	**EPA-200.8**	ND		1
Total Recoverable Lead	**0.15**	**ug/L**	**1.0**	**0.10**	**EPA-200.8**	ND	J	1
Total Recoverable Mercury	ND	ug/L	0.20	0.033	EPA-245.1	ND		3
Total Recoverable Nickel	**14**	**ug/L**	**2.0**	**0.19**	**EPA-200.8**	ND		1
Total Recoverable Selenium	**65**	**ug/L**	**2.0**	**0.19**	**EPA-200.8**	ND		1
Total Recoverable Silver	ND	ug/L	1.0	0.10	EPA-200.8	ND		1
Total Recoverable Thallium	**0.24**	**ug/L**	**1.0**	**0.10**	**EPA-200.8**	ND	J	1
Total Recoverable Zinc	**67**	**ug/L**	**10**	**1.7**	**EPA-200.8**	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-200.8	01/07/15	01/07/15 23:45	SRM	PE-EL2	1	BYA0348
2	EPA-200.8	01/07/15	01/08/15 13:31	EAR	PE-EL2	1	BYA0348
3	EPA-245.1	01/07/15	01/07/15 17:29	MEV	CETAC1	1	BYA0293

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:38
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXL2402						
Total Dissolved Solids @ 180 C	BXL2402-BLK1	ND	mg/L	6.7	6.7	

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:38
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BXL2402										
Total Dissolved Solids @ 180 C	BXL2402-BS1	LCS	565.00	586.00	mg/L	96.4		90 - 110		

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:38
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BXL2402	Used client sample: Y - Description: Pond 30, 12/20/2014 14:00										
Total Dissolved Solids @ 180 C	DUP	1430607-01	2830.0	2840.0		mg/L	0.4		10		

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:38
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BYA0293						
Total Recoverable Mercury	BYA0293-BLK1	ND	ug/L	0.20	0.033	
QC Batch ID: BYA0348						
Total Recoverable Antimony	BYA0348-BLK1	ND	ug/L	2.0	0.11	
Total Recoverable Arsenic	BYA0348-BLK1	ND	ug/L	2.0	0.70	
Total Recoverable Beryllium	BYA0348-BLK2	ND	ug/L	1.0	0.23	
Total Recoverable Cadmium	BYA0348-BLK1	ND	ug/L	1.0	0.11	
Total Recoverable Chromium	BYA0348-BLK1	ND	ug/L	3.0	0.50	
Total Recoverable Copper	BYA0348-BLK1	ND	ug/L	2.0	0.22	
Total Recoverable Lead	BYA0348-BLK1	ND	ug/L	1.0	0.10	
Total Recoverable Nickel	BYA0348-BLK1	ND	ug/L	2.0	0.19	
Total Recoverable Selenium	BYA0348-BLK1	ND	ug/L	2.0	0.19	
Total Recoverable Silver	BYA0348-BLK1	ND	ug/L	1.0	0.10	
Total Recoverable Thallium	BYA0348-BLK1	ND	ug/L	1.0	0.10	
Total Recoverable Zinc	BYA0348-BLK1	ND	ug/L	10	1.7	

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:38
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BYA0293										
Total Recoverable Mercury	BYA0293-BS1	LCS	0.99750	1.0000	ug/L	99.8		85 - 115		
QC Batch ID: BYA0348										
Total Recoverable Antimony	BYA0348-BS1	LCS	41.048	40.000	ug/L	103		85 - 115		
Total Recoverable Arsenic	BYA0348-BS1	LCS	105.54	100.00	ug/L	106		85 - 115		
Total Recoverable Beryllium	BYA0348-BS2	LCS	45.832	40.000	ug/L	115		85 - 115		
Total Recoverable Cadmium	BYA0348-BS1	LCS	42.892	40.000	ug/L	107		85 - 115		
Total Recoverable Chromium	BYA0348-BS1	LCS	43.366	40.000	ug/L	108		85 - 115		
Total Recoverable Copper	BYA0348-BS1	LCS	110.91	100.00	ug/L	111		85 - 115		
Total Recoverable Lead	BYA0348-BS1	LCS	103.18	100.00	ug/L	103		85 - 115		
Total Recoverable Nickel	BYA0348-BS1	LCS	107.54	100.00	ug/L	108		85 - 115		
Total Recoverable Selenium	BYA0348-BS1	LCS	104.66	100.00	ug/L	105		85 - 115		
Total Recoverable Silver	BYA0348-BS1	LCS	41.670	40.000	ug/L	104		85 - 115		
Total Recoverable Thallium	BYA0348-BS1	LCS	40.919	40.000	ug/L	102		85 - 115		
Total Recoverable Zinc	BYA0348-BS1	LCS	110.65	100.00	ug/L	111		85 - 115		

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:38
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BYA0293	Used client sample: N										
Total Recoverable Mercury	DUP	1430474-04	ND	ND		ug/L			20		
	MS	1430474-04	ND	0.99250	1.0000	ug/L		99.2		70 - 130	
	MSD	1430474-04	ND	1.0125	1.0000	ug/L	2.0	101	20	70 - 130	
QC Batch ID: BYA0348	Used client sample: N										
Total Recoverable Antimony	DUP	1430603-01	ND	ND		ug/L			20		
	MS	1430603-01	ND	40.190	40.000	ug/L		100		70 - 130	
	MSD	1430603-01	ND	41.191	40.000	ug/L	2.5	103	20	70 - 130	
Total Recoverable Arsenic	DUP	1430603-01	ND	ND		ug/L			20		
	MS	1430603-01	ND	110.99	100.00	ug/L		111		70 - 130	
	MSD	1430603-01	ND	112.57	100.00	ug/L	1.4	113	20	70 - 130	
Total Recoverable Beryllium	DUP	1430603-01	ND	ND		ug/L			20		
	MS	1430603-01	ND	40.061	40.000	ug/L		100		70 - 130	
	MSD	1430603-01	ND	40.749	40.000	ug/L	1.7	102	20	70 - 130	
Total Recoverable Cadmium	DUP	1430603-01	ND	ND		ug/L			20		
	MS	1430603-01	ND	37.127	40.000	ug/L		92.8		70 - 130	
	MSD	1430603-01	ND	37.972	40.000	ug/L	2.3	94.9	20	70 - 130	
Total Recoverable Chromium	DUP	1430603-01	ND	0.76000		ug/L			20		J
	MS	1430603-01	ND	38.752	40.000	ug/L		96.9		70 - 130	
	MSD	1430603-01	ND	39.850	40.000	ug/L	2.8	99.6	20	70 - 130	
Total Recoverable Copper	DUP	1430603-01	3.6450	3.4230		ug/L	6.3		20		
	MS	1430603-01	3.6450	103.05	100.00	ug/L		99.4		70 - 130	
	MSD	1430603-01	3.6450	103.38	100.00	ug/L	0.3	99.7	20	70 - 130	
Total Recoverable Lead	DUP	1430603-01	0.15400	ND		ug/L			20		
	MS	1430603-01	0.15400	112.07	100.00	ug/L		112		70 - 130	
	MSD	1430603-01	0.15400	112.62	100.00	ug/L	0.5	112	20	70 - 130	
Total Recoverable Nickel	DUP	1430603-01	31.888	32.020		ug/L	0.4		20		
	MS	1430603-01	31.888	117.79	100.00	ug/L		85.9		70 - 130	
	MSD	1430603-01	31.888	119.21	100.00	ug/L	1.2	87.3	20	70 - 130	
Total Recoverable Selenium	DUP	**1430603-01**	**0.92400**	**1.2630**		**ug/L**	**31.0**		**20**		**J,A02**
	MS	**1430603-01**	**0.92400**	**107.02**	**100.00**	**ug/L**		**106**		**70 - 130**	
	MSD	**1430603-01**	**0.92400**	**108.35**	**100.00**	**ug/L**	**1.2**	**107**	**20**	**70 - 130**	
Total Recoverable Silver	DUP	1430603-01	ND	ND		ug/L			20		
	MS	1430603-01	ND	38.733	40.000	ug/L		96.8		70 - 130	
	MSD	1430603-01	ND	39.055	40.000	ug/L	0.8	97.6	20	70 - 130	
Total Recoverable Thallium	DUP	1430603-01	ND	ND		ug/L			20		
	MS	1430603-01	ND	45.200	40.000	ug/L		113		70 - 130	
	MSD	1430603-01	ND	45.332	40.000	ug/L	0.3	113	20	70 - 130	

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:38
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BYA0348	Used client sample: N										
Total Recoverable Zinc	DUP	1430603-01	6.4950	5.6730		ug/L	13.5		20		J
	MS	1430603-01	6.4950	102.20	100.00	ug/L		95.7		70 - 130	
	MSD	1430603-01	6.4950	101.66	100.00	ug/L	0.5	95.2	20	70 - 130	

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 01/08/2015 19:38
Project: Lehigh Pond
Project Number: 063-7109-916
Project Manager: George Wegmann

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A02	The difference between duplicate readings is less than the PQL.

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 12/23/2014

George Wegmann

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Client Project:	063-7109-916
BCL Project:	Lehigh NPDES
BCL Work Order:	1428700
Invoice ID:	B191556

Enclosed are the results of analyses for samples received by the laboratory on 12/3/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Vanessa Sandoval
Client Service Rep

Authorized Signature

Golder Associates

Golder Associates
CHAIN OF CUSTODY

14. 28700

Page 1 of 1
Quotation No.

PROJECT NO.: 063-7109-916
SITE NAME: (Quarterly) Lehigh NPDES
SAMPLER(S): David Walter (printed) David C Walt (signature)
CONTRACT LABORATORY: BC Labs
TURN-AROUND TIME: Standard

EDD required? ☑ Yes ☐ No
EDF required? ☐ Yes ☑ No

ANALYSES

Sample I.D.	Lab I.D.	Collection Date	Collection Time	Matrix	Depth	Container Info	TSS	Total Settleable Matter	TDS	Sulfides	Chloride	Hg	Ni, Se, Tl	Cr6+	Hardness	O+G		Cont. Qty.	Remarks
						Type/Vol.	1L	1L	1L	500ml	1L	200ml	500ml	100ml	500ml	1L			
						Filter	N	N	N	N	N	N	N	N	N	N			
						Preserv.	–	–	–	ZnAc	–	–	HNO3	Cr6+ Buffer	HNO3	HCl			
EFF-005	-1	12-2-14	0745	W			X	X				X	X	X		X		5	
FB	-2	↓	0745	↓								X						1	
EFF-006	-3	↓	0945	↓			X	X				X	X	X		X		5	
EFF-003	-4	↓	1100	↓			X	X				X	X	X		X		5	
RSW-004	-5	↓	1025	↓					X	X	X	X	X	X	X			5	
RSW-003	-6	↓	1130	↓					X	X	X	X	X	X	X			5	
EFF-001	-7	↓	1400	↓			X	X	X			X	X	X		X		5	

218 SHORT HOLDING TIME
Cr^{+6} NO_2 NO_3 OP SS
DO Cl_2 BOD MBAS COT

CHK BY DISTRIBUTION
SUB-OUT ☒

Relinquished by: (signature)	Received by: (signature)	Date/Time:
David C Walt	Gary Bogan	12-3-14 1320
Gary Bogan 12-3-14 1830	[signature]	12-3-14 18:30
[signature]	[signature]	12-3-14 2200

SEND RESULTS TO:
Attn: George Wegmann, Greg Knapp, Chow Yip
Golder Associates Inc.
425 Lakeside Drive
Sunnyvale, CA 94085
Phone (408) 220-9223
Fax (408) 220-9224

white: lab copy yellow: project file

Chain of Custody and Cooler Receipt Form for 1428700 Page 2 of 3

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 18 09/04/14 Page 1 Of 1

Submission #: 14-28700

SHIPPING INFORMATION
Federal Express ☐ UPS ☐ Hand Delivery ☐
BC Lab Field Service ☒ Other ☐ (Specify)

SHIPPING CONTAINER
Ice Chest ☒ None ☐ Box ☐
Other ☐ (Specify)

FREE LIQUID
YES ☐ NO ☐

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☒ YES ☐ NO

Emissivity: 0.98 Container: PE Thermometer ID: 208 Date/Time 12/31/14 2200

Temperature: (A) 0.8 °C / (C) 0.4 °C Analyst Init KLB

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL	A		A	A	A	A	A			
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS	B		B	B	B	B	B			
~~PT CYANIDE~~ Hg Glass 1631	C	A	C	C	C	C	C			
PT NITROGEN FORMS										
PT TOTAL SULFIDE					E	E				
2oz. ~~NITRATE/NITRITE~~ cr6	D		D	D	D	D	D			
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 413.1, 413.2, 418.1	E		E	E			E			
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz Amber EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
Summa Canister										

Comments:

Sample Numbering Completed By: Date/Time: 12.31.14 2356 [S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMREC]

A = Actual / C = Corrected

Chain of Custody and Cooler Receipt Form for 1428700 Page 3 of 3

14-28700 Methods

Parameter	Method	RL	Units
Chromium (VI)	SM 3500	5	µg/L
Mercury	1631	0.002	ng/L
Nickel	249.2	1	µg/L
Selenium	200.8	1	µg/L
Thallium	279.2	1	µg/L
Sulfides			
Total Dissolved Solids	SM2540C	10	mg/L
Chloride	EPA 300.0	12	mg/L
Hardness	SM2520B	2	mg/L
TSS	SM2540D	1	mg/L
Oil and Grease	EPA 1664A	1.4	mg/L
TOC	EPA 9060A		mg/L
Settleable Matter	SM2540F	0.10	mL/L-hr

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1428700-01	COC Number:	---	Receive Date:	12/03/2014 22:00
	Project Number:	---	Sampling Date:	12/02/2014 07:45
	Sampling Location:	EFF-005	Sample Depth:	---
	Sampling Point:	EFF-005	Lab Matrix:	Water
	Sampled By:	David Walter	Sample Type:	Water
1428700-02	COC Number:	---	Receive Date:	12/03/2014 22:00
	Project Number:	---	Sampling Date:	12/03/2014 07:45
	Sampling Location:	FB	Sample Depth:	---
	Sampling Point:	FB	Lab Matrix:	Water
	Sampled By:	David Walter	Sample Type:	Water
1428700-03	COC Number:	---	Receive Date:	12/03/2014 22:00
	Project Number:	---	Sampling Date:	12/02/2014 09:45
	Sampling Location:	EFF-006	Sample Depth:	---
	Sampling Point:	EFF-006	Lab Matrix:	Water
	Sampled By:	David Walter	Sample Type:	Water
1428700-04	COC Number:	---	Receive Date:	12/03/2014 22:00
	Project Number:	---	Sampling Date:	12/02/2014 11:00
	Sampling Location:	EFF-003	Sample Depth:	---
	Sampling Point:	EFF-003	Lab Matrix:	Water
	Sampled By:	David Walter	Sample Type:	Water
1428700-05	COC Number:	---	Receive Date:	12/03/2014 22:00
	Project Number:	---	Sampling Date:	12/02/2014 10:25
	Sampling Location:	RSW-004	Sample Depth:	---
	Sampling Point:	RSW-004	Lab Matrix:	Water
	Sampled By:	David Walter	Sample Type:	Water
1428700-06	COC Number:	---	Receive Date:	12/03/2014 22:00
	Project Number:	---	Sampling Date:	12/02/2014 11:30
	Sampling Location:	RSW-003	Sample Depth:	---
	Sampling Point:	RSW-003	Lab Matrix:	Water
	Sampled By:	David Walter	Sample Type:	Water
1428700-07	COC Number:	---	Receive Date:	12/03/2014 22:00
	Project Number:	---	Sampling Date:	12/02/2014 14:00
	Sampling Location:	EFF-001	Sample Depth:	---
	Sampling Point:	EFF-001	Lab Matrix:	Water
	Sampled By:	David Walter	Sample Type:	Water

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

EPA Method 1664

BCL Sample ID: 1428700-03 | **Client Sample Name:** EFF-006, EFF-006, 12/2/2014 9:45:00AM, David Walter

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	ND	mg/L	5.0	1.2	EPA-1664A HEM	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	12/11/14	12/11/14 07:00	MAM	MAN-SV	1	BXL1387

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Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

BCL Sample ID: 1428700-03 | **Client Sample Name:** EFF-006, EFF-006, 12/2/2014 9:45:00AM, David Walter

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Suspended Solids (Glass Fiber)	7100	mg/L	33	33	SM-2540D	ND		1
Settleable Solids	80	ml/L-hr	0.10	0.10	SM-2540F			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-2540D	12/08/14	12/08/14 11:35	VV1	MANUAL	66.667	BXL0753
2	SM-2540F	12/04/14	12/04/14 08:00	MSA	MANUAL	1	BXL1520

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Sunnyvale, CA 94085

Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

BCL Sample ID: 1428700-03 | **Client Sample Name:** EFF-006, EFF-006, 12/2/2014 9:45:00AM, David Walter

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	1.5	ug/L	0.20	0.055	EPA-218.6	ND		1
Total Recoverable Nickel	890	ug/L	4.0	0.38	EPA-200.8	ND	A10	2
Total Recoverable Selenium	26	ug/L	4.0	0.38	EPA-200.8	ND	A10	2
Total Recoverable Thallium	3.2	ug/L	2.0	0.20	EPA-200.8	ND	A10	2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	12/05/14	12/05/14 15:34	OLH	IC-4	1	BXL0638
2	EPA-200.8	12/10/14	12/10/14 23:02	EAR	PE-EL2	2	BXL0992

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Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

EPA Method 1664

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXL1387						
Oil and Grease	BXL1387-BLK1	ND	mg/L	5.0	1.2	

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Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

EPA Method 1664

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BXL1387										
Oil and Grease	BXL1387-BS1	LCS	34.450	39.700	mg/L	86.8		78 - 114		

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Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

EPA Method 1664

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BXL1387	Used client sample: N										
Oil and Grease	DUP	1428224-21	ND	ND		mg/L			18		
	MS	1428224-21	ND	33.700	39.700	mg/L		84.9		78 - 114	
	MSD	1428224-21	ND	32.100	39.700	mg/L	4.9	80.9	18	78 - 114	

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Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXL0471						
Total Sulfide	BXL0471-BLK1	ND	mg/L	0.10	0.050	
QC Batch ID: BXL0474						
Hardness as CaCO3	BXL0474-BLK1	ND	mg/L	0.50	0.10	
QC Batch ID: BXL0723						
Total Dissolved Solids @ 180 C	BXL0723-BLK1	ND	mg/L	6.7	6.7	
QC Batch ID: BXL0753						
Total Suspended Solids (Glass Fiber)	BXL0753-BLK1	ND	mg/L	0.50	0.50	
QC Batch ID: BXL0754						
Total Suspended Solids (Glass Fiber)	BXL0754-BLK1	ND	mg/L	0.50	0.50	
QC Batch ID: BXL0989						
Total Recoverable Calcium	BXL0989-BLK1	ND	mg/L	0.10	0.014	
Total Recoverable Magnesium	BXL0989-BLK1	ND	mg/L	0.050	0.019	
QC Batch ID: BXL1036						
Chloride	BXL1036-BLK1	ND	mg/L	0.50	0.061	

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Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BXL0471										
Total Sulfide	BXL0471-BS1	LCS	0.51362	0.50000	mg/L	103		90 - 110		
QC Batch ID: BXL0723										
Total Dissolved Solids @ 180 C	BXL0723-BS1	LCS	545.00	586.00	mg/L	93.0		90 - 110		
QC Batch ID: BXL0989										
Total Recoverable Calcium	BXL0989-BS1	LCS	10.301	10.000	mg/L	103		85 - 115		
Total Recoverable Magnesium	BXL0989-BS1	LCS	11.287	10.000	mg/L	113		85 - 115		
QC Batch ID: BXL1036										
Chloride	BXL1036-BS1	LCS	51.881	50.000	mg/L	104		90 - 110		

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Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BXL0471	Used client sample: N										
Total Sulfide	DUP	1428509-11	ND	ND		mg/L			10		
	MS	1428509-11	ND	0.43632	0.50000	mg/L		87.3		80 - 120	
	MSD	1428509-11	ND	0.44137	0.50000	mg/L	1.2	88.3	10	80 - 120	
QC Batch ID: BXL0723	Used client sample: N										
Total Dissolved Solids @ 180 C	DUP	1428663-01	26000	26300		mg/L	1.1		10		
QC Batch ID: BXL0753	Used client sample: N										
Total Suspended Solids (Glass Fiber)	DUP	1428675-02	2900.0	2640.0		mg/L	9.4		10		
QC Batch ID: BXL0754	Used client sample: Y - Description: SW-2, 12/02/2014 08:51										
Total Suspended Solids (Glass Fiber)	DUP	1428732-02	921.82	1000.0		mg/L	8.1		10		
QC Batch ID: BXL0989	Used client sample: N										
Total Recoverable Calcium	DUP	**1429136-01**	**240.45**	**235.32**		**mg/L**	**2.2**		**20**		
	MS	**1429136-01**	**240.45**	**241.72**	**10.000**	**mg/L**		**12.7**		**75 - 125**	**A03**
	MSD	**1429136-01**	**240.45**	**234.73**	**10.000**	**mg/L**	**2.9**	**-57.2**	**20**	**75 - 125**	**A03**
Total Recoverable Magnesium	DUP	**1429136-01**	**92.274**	**91.788**		**mg/L**	**0.5**		**20**		
	MS	**1429136-01**	**92.274**	**99.866**	**10.000**	**mg/L**		**75.9**		**75 - 125**	
	MSD	**1429136-01**	**92.274**	**97.276**	**10.000**	**mg/L**	**2.6**	**50.0**	**20**	**75 - 125**	**A03**
QC Batch ID: BXL1036	Used client sample: N										
Chloride	DUP	1429326-01	1.4950	1.5140		mg/L	1.3		10		
	MS	1429326-01	1.4950	53.219	50.505	mg/L		102		80 - 120	
	MSD	1429326-01	1.4950	53.315	50.505	mg/L	0.2	103	10	80 - 120	
QC Batch ID: BXL1520	Used client sample: N										
Settleable Solids	DUP	1428677-05	ND	ND		ml/L-hr			10		

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Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXL0638						
Hexavalent Chromium	BXL0638-BLK1	ND	ug/L	0.20	0.055	
QC Batch ID: BXL0992						
Total Recoverable Nickel	BXL0992-BLK1	ND	ug/L	2.0	0.19	
Total Recoverable Selenium	BXL0992-BLK1	ND	ug/L	2.0	0.19	
Total Recoverable Thallium	BXL0992-BLK1	ND	ug/L	1.0	0.10	

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Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BXL0638										
Hexavalent Chromium	BXL0638-BS1	LCS	20.603	20.000	ug/L	103		90 - 110		
QC Batch ID: BXL0992										
Total Recoverable Nickel	BXL0992-BS1	LCS	108.75	100.00	ug/L	109		85 - 115		
Total Recoverable Selenium	BXL0992-BS1	LCS	105.71	100.00	ug/L	106		85 - 115		
Total Recoverable Thallium	BXL0992-BS1	LCS	40.087	40.000	ug/L	100		85 - 115		

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Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BXL0638	Used client sample: Y - Description: EFF-005, 12/02/2014 07:45										
Hexavalent Chromium	DUP	1428700-01	24.608	24.308		ug/L	1.2		10		
	MS	1428700-01	24.608	45.607	20.202	ug/L		104		90 - 110	
	MSD	1428700-01	24.608	45.267	20.202	ug/L	0.7	102	10	90 - 110	
QC Batch ID: BXL0992	Used client sample: Y - Description: EFF-001, 12/02/2014 14:00										
Total Recoverable Nickel	DUP	1428700-07	13.622	13.300		ug/L	2.4		20		
	MS	1428700-07	13.622	116.09	100.00	ug/L		102		70 - 130	
	MSD	1428700-07	13.622	113.41	100.00	ug/L	2.3	99.8	20	70 - 130	
Total Recoverable Selenium	DUP	1428700-07	6.8440	5.8670		ug/L	15.4		20		
	MS	1428700-07	6.8440	107.40	100.00	ug/L		101		70 - 130	
	MSD	1428700-07	6.8440	104.81	100.00	ug/L	2.4	98.0	20	70 - 130	
Total Recoverable Thallium	DUP	1428700-07	ND	ND		ug/L			20		
	MS	1428700-07	ND	42.520	40.000	ug/L		106		70 - 130	
	MSD	1428700-07	ND	41.008	40.000	ug/L	3.6	103	20	70 - 130	

basic laboratory
www.basiclab.com
2218 Railroad Avenue Redding, California 96001 voice 530.243.7234 fax 530.243.7494
3860 Morrow Lane, Suite F Chico, California 95928 voice 530.894.8966 fax 530.894.5143

December 16, 2014

Lab ID: 14L0474

VANESSA SANDOVAL
B C LABORATORIES INCORPORATED
4100 ATLAS COURT
BAKERSFIELD, CA 93308
RE: HG 1631 TESTING 1428700

Dear VANESSA SANDOVAL ,

Enclosed are the analysis results for Work Order number 14L0474. All analysis were performed under strict adherence to our established Quality Assurance Plan. Any abnormalities are listed in the qualifier section of this report.

If you have any questions regarding these results, please feel free to contact us at any time. We appreciate the opportunity to service your environmental testing needs.

Sincerely,

For Ricky Jensen

Ricky D. Jensen
Laboratory Director
California ELAP Certification Number 1677

Page 1 of 3

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2218 Railroad Avenue Redding, California 96001 voice 530.243.7234 fax 530.243.7494
3860 Morrow Lane, Suite F Chico, California 95928 voice 530.894.8966 fax 530.894.5143

Report To: B C LABORATORIES INCORPORATED
4100 ATLAS COURT
BAKERSFIELD, CA 93308
Attention: VANESSA SANDOVAL
Project: HG 1631 TESTING 1428700

Lab No: 14L0474
Reported: 12/16/14
Phone: (661) 327-4911
P.O. #

Metals - Total

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
1428700-01 Water (14L0474-01) Sampled:12/02/14 07:45 Received:12/09/14 13:16 Temp (C): 9.3									
Mercury	ng/l	436	QC-08	1.00	2.50	EPA 1631E	12/15/14	12/15/14	B4L1066
1428700-02 FIELD BLANK Blank (14L0474-02) Sampled:12/03/14 07:45 Received:12/09/14 13:16 Temp (C): 10.0									
Mercury Field Blank	ng/l	0.25	J	0.20	0.50	EPA 1631E	12/15/14	12/15/14	B4L1066
1428700-03 Water (14L0474-03) Sampled:12/02/14 09:45 Received:12/09/14 13:16 Temp (C): 7.4									
Mercury	ng/l	2470	QC-08	10.0	25.0	EPA 1631E	12/15/14	12/15/14	B4L1066
1428700-04 Water (14L0474-04) Sampled:12/02/14 11:00 Received:12/09/14 13:16 Temp (C): 8.4									
Mercury	ng/l	49.6	QC-08, R-08	1.00	2.50	EPA 1631E	12/15/14	12/15/14	B4L1066
1428700-05 Water (14L0474-05) Sampled:12/02/14 10:25 Received:12/09/14 13:16 Temp (C): 8.6									
Mercury	ng/l	35.5		0.20	0.50	EPA 1631E	12/15/14	12/15/14	B4L1066
1428700-06 Water (14L0474-06) Sampled:12/02/14 11:30 Received:12/09/14 13:16 Temp (C): 8.9									
Mercury	ng/l	94.8	QC-08, R-08	1.00	2.50	EPA 1631E	12/15/14	12/15/14	B4L1066
1428700-07 Water (14L0474-07) Sampled:12/02/14 14:00 Received:12/09/14 13:16 Temp (C): 8.0									
Mercury	ng/l	1.26		0.20	0.50	EPA 1631E	12/15/14	12/15/14	B4L1066

Quality Control Data

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Metals - Total										
Batch B4L1066 - BrCl Digestion										
Blank										
Mercury	ND	0.50	ng/l							
Blank										
Mercury	ND	0.50	ng/l							QC-08
Blank										
Mercury	ND	0.50	ng/l							QC-08
LCS										
Mercury	21.6	0.50	ng/l	20.0		108	84.1-120			
Matrix Spike Source: 14L0395-01										
Mercury	22.8	0.50	ng/l	20.0	1.34	107	74.3-125			
Matrix Spike Source: 14L0458-01										
Mercury	134	2.55	ng/l	100	25.2	109	74.3-125			
Matrix Spike Dup Source: 14L0395-01										
Mercury	23.5	0.50	ng/l	20.0	1.34	111	74.3-125	3.27	24	
Matrix Spike Dup Source: 14L0458-01										
Mercury	137	2.55	ng/l	100	25.2	112	74.3-125	2.06	24	

Approved By
Basic Laboratory, Inc.
California ELAP Cert #1677 and #2718

Page 2 of 3

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3860 Morrow Lane, Suite F Chico, California 95928 voice 530.894.8966 fax 530.894.5143

Report To: B C LABORATORIES INCORPORATED
4100 ATLAS COURT
BAKERSFIELD, CA 93308
Attention: VANESSA SANDOVAL
Project: HG 1631 TESTING 1428700

Lab No: 14L0474
Reported: 12/16/14
Phone: (661) 327-4911
P.O. #

Notes and Definitions

R-08	The sample was diluted due to sample matrix resulting in elevated reporting limits.
QC-08	An increased concentration of BrCl was necessary to fully oxidize this sample. As required by EPA 1631E, a laboratory method blank containing the additional BrCl was analyzed with the sample.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag). The J flag is equivalent to the DNQ Estimated Concentration flag.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
<	Less than reporting limit
≤	Less than or equal to reporting limit
>	Greater than reporting limit
≥	Greater than or equal to reporting limit
MDL	Method Detection Limit
RL/ML	Minimum Level of Quantitation
MCL/AL	Maxium Contaminant Level/Action Level
mg/kg	Results reported as wet weight
TTLC	Total Threshold Limit Concentration
STLC	Soluble Threshold Limit Concentration
TCLP	Toxicity Characteristic Leachate Procedure
Note 1	Received Temperature - according to EPA guidelines, samples for most chemistry methods should be held at ≤6 degrees C after collection, including during transportation, unless the time from sampling to delivery is <2 hours. Regulating agencies may invalidate results if temperature requirements are not met.
Note 2	According to 40 CFR Part 136 Table II, the following tests should be analyzed in the field within 15 minutes of sampling: pH, chlorine, dissolved oxygen, and sulfite.

Approved By
Basic Laboratory, Inc.
California ELAP Cert #1677 and #2718

Page 3 of 3

SUBCONTRACT ORDER
BC Laboratories
1428700

14L0474

Due ~~12-19-14~~ 12-16-14

SENDING LABORATORY:

BC Laboratories
4100 Atlas Court
Bakersfield, CA 93308
Phone: 661-327-4911
FAX: 661-327-1918
Project Manager: Vanessa Sandoval

RECEIVING LABORATORY:

Basic Laboratory, Inc.
2218 Railroad Ave.
Redding, CA 96001
James E. Hawley
Phone: 530-243-7234
FAX: ---

14L0474 J

BSCLB

Analysis	Due	Expires	Comments
Sample ID: 1428700-01 Water		**Sampled: 12/02/14 07:45**	9.3°C
EPA 1631 - Mercury	12/17/14 17:00	06/01/15 07:45	
Containers supplied:			
Sample ID: 1428700-02 Water		**Sampled: 12/03/14 07:45**	Field Blank 10.0°C
EPA 1631 - Mercury	12/17/14 17:00	06/02/15 07:45	
Containers supplied:			
Sample ID: 1428700-03 Water		**Sampled: 12/02/14 09:45**	7.4°C
EPA 1631 - Mercury	12/17/14 17:00	06/01/15 09:45	
Containers supplied:			
Sample ID: 1428700-04 Water		**Sampled: 12/02/14 11:00**	8.4°C
EPA 1631 - Mercury	12/17/14 17:00	06/01/15 11:00	
Containers supplied:			
Sample ID: 1428700-05 Water		**Sampled: 12/02/14 10:25**	8.6°C
EPA 1631 - Mercury	12/17/14 17:00	06/01/15 10:25	
Containers supplied:			
Sample ID: 1428700-06 Water		**Sampled: 12/02/14 11:30**	8.9°C
EPA 1631 - Mercury	12/17/14 17:00	06/01/15 11:30	
Containers supplied:			
Sample ID: 1428700-07 Water		**Sampled: 12/02/14 14:00**	8.0°C
EPA 1631 - Mercury	12/17/14 17:00	06/01/15 14:00	
Containers supplied:			

Released By	Date	Received By	Date	
	12814		12.9.14	13:16
Released By	Date	Received By	Date	
			12/10/14	13:42

BSCLB

Page 1 of 1

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 12/23/2014 14:18
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A03	The sample concentration is more than 4 times the spike level.
A10	PQL's and MDL's were raised due to matrix interference.

Lehigh Hanson
HEIDELBERGCEMENT Group

Gregory Knapp
Director Environmental Affairs, Region West
12667 Alcosta Blvd , San Ramon, CA 94583
(925) 244-6570

March 2, 2015

Mr. Rob Eastwood
Principal Planner, County of Santa Clara
Santa Clara County Planning Department

RE: Pond 30 February Stormwater Results

Dear Mr. Eastwood

Attached are the lab sheets for the February 2015 stormwater analysis results from discharge out of Pond 30. An explanation of these is as follows:

Sample Date February 7

Total Recoverable Selenium: 31 micrograms/liter (ug/L or parts per billion)
Mercury 0.042 ug/L
Oil & Grease: Non Detect (ND)
Settleable Solids: 0.1 milliliters per liter/hour (ml/L-hr)
Total Suspended Solids (TSS): 23 milligrams/liter (mg/L)
Hexavalent chromium ("Chromium 6"): 2.5 ug/L
Total Recoverable Nickel: 9.0 ug/L
Thallium: 0.12 ug/L

Any page labeled "Quality Control" indicates reported laboratory method tests using spiked samples to assure actual result accuracy. These results are not actual samples from Pond 30. Any page labeled "Chain of Custody" indicates the transfer of samples from the field through the various laboratories.

Please contact me with any questions.

Gregory Knapp
Director Environmental Affairs
Lehigh Hanson Region West

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 02/26/2015

George Wegmann

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Client Project:	063-7109-916
BCL Project:	Lehigh NPDES
BCL Work Order:	1503204
Invoice ID:	B196722

Enclosed are the results of analyses for samples received by the laboratory on 2/9/2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Vanessa Sandoval
Client Service Rep

Authorized Signature

Golder Associates

Golder Associates
CHAIN OF CUSTODY

15-03204

Page 1 of 1
Quotation No. ____

PROJECT NO.: 063-7109-916	SITE NAME: (Quarterly) Lehigh NPDES
SAMPLER(S): David Walter (printed)	David C. Walt (signature)
CONTRACT LABORATORY: BC Labs	
TURN-AROUND TIME: Standard	

EDD required? ☑ Yes ☐ No

EDF required? ☐ Yes ☑ No

Sample I.D.	Lab I.D.	Collection Date	Collection Time	Matrix	Depth	Container Info	Tot Set Matter TSS	O+G	Cr 6+	Hg	Ni, Se, Tl	Cont. Qty.	Remarks
						Type/Vol.	1L	1L	200ml	500ml	500ml		
						Filter	N	N	N	N	N		
						Preserv.	—	HCL	CrO4 Buffer	—	HNO3		
EFF-005	-1	2-7-15	1000	W			1	1	1	1	1	5	
EFF-006	-2	↓	1040	↓			1	1	1	1	1	5	
EFF-003	-3	↓	1130	↓			1	1	1	1	1	5	
FB-2-7-15	-4	2-7-15	1000	W						1		1	

SHORT HOLDING TIME
(Cr^{+6}) NO_2 NO_3 OP (SS)
DO Cl_2 BOD MBAS COT

CHK BY: [initials] DISTRIBUTION: [initials]
SUB-OUT ☒

Relinquished by: (signature)	Received by: (signature)	Date/Time:
David C. Walt	[signature]	2/9/15 1000
Relinquished by: (signature)	Received by: (signature)	Date/Time:
Relinquished by: (signature)	Received by: (signature)	Date/Time:

SEND RESULTS TO:
Attn: George Wegmann, Greg Knapp, Chow Ko
Golder Associates Inc.
425 Lakeside Drive
Sunnyvale, CA 94085
Phone (408) 220-9223
Fax (408) 220-9224

white: lab copy yellow: project file

Shipped via Fed Ex

Chain of Custody and Cooler Receipt Form for 1503204 Page 2 of 2

BC LABORATORIES INC. **COOLER RECEIPT FORM** Rev. No. 18 09/04/14 Page 1 Of 1

Submission #: 15-03204

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Federal Express ☑ UPS ☐ Hand Delivery ☐	Ice Chest ☑ None ☐ Box ☐	YES ☐ NO ☐
BC Lab Field Service ☐ Other ☐ (Specify)_____	Other ☐ (Specify)_____	

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☑ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.97 Container: PE Thermometer ID: 208 Date/Time 2915 1000

Temperature: (A) 0.9 °C / (C) 0.7 °C Analyst Init MM

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL	A	A	A							
PT PE UNPRESERVED 2oz Cr+6	B	B	B							
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS	C	C	C							
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA ~~413.1, 413.2, 418.1~~ 1664	D	D	D							
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz Amber EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR	E	E	E	A						
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
Summa Canister										

Comments:

Sample Numbering Completed By: MM Date/Time: 2/9/15@1115 [S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMREC]

A = Actual / C = Corrected

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported:	02/26/2015 10:12
Project:	Lehigh NPDES
Project Number:	063-7109-916
Project Manager:	George Wegmann

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1503204-01	**COC Number:**	---	**Receive Date:**	02/09/2015 10:00
	Project Number:	---	**Sampling Date:**	02/07/2015 10:00
	Sampling Location:	EFF-005	**Sample Depth:**	---
	Sampling Point:	EFF-005	**Lab Matrix:**	Water
	Sampled By:	David Walter	**Sample Type:**	Water
1503204-02	**COC Number:**	---	**Receive Date:**	02/09/2015 10:00
	Project Number:	---	**Sampling Date:**	02/07/2015 10:40
	Sampling Location:	EFF-006	**Sample Depth:**	---
	Sampling Point:	EFF-006	**Lab Matrix:**	Water
	Sampled By:	David Walter	**Sample Type:**	Water
1503204-03	**COC Number:**	---	**Receive Date:**	02/09/2015 10:00
	Project Number:	---	**Sampling Date:**	02/07/2015 11:30
	Sampling Location:	EFF-003	**Sample Depth:**	---
	Sampling Point:	EFF-003	**Lab Matrix:**	Water
	Sampled By:	David Walter	**Sample Type:**	Water
1503204-04	**COC Number:**	---	**Receive Date:**	02/09/2015 10:00
	Project Number:	---	**Sampling Date:**	02/07/2015 10:00
	Sampling Location:	FB-2-7-15	**Sample Depth:**	---
	Sampling Point:	FB-2-7-15	**Lab Matrix:**	Water
	Sampled By:	David Walter	**Sample Type:**	Blank Water

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 02/26/2015 10:12
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

EPA Method 1664

BCL Sample ID: 1503204-02 | **Client Sample Name:** EFF-006, EFF-006, 2/7/2015 10:40:00AM, David Walter

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	ND	mg/L	5.0	1.2	EPA-1664A HEM	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	02/11/15	02/11/15 09:45	MAM	MAN-SV	1	BYB1255

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 02/26/2015 10:12
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

BCL Sample ID: 1503204-02 | **Client Sample Name:** EFF-006, EFF-006, 2/7/2015 10:40:00AM, David Walter

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Suspended Solids (Glass Fiber)	23	mg/L	0.50	0.50	SM-2540D	ND		1
Settleable Solids	0.10	ml/L-hr	0.10	0.10	SM-2540F		S05	2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-2540D	02/11/15	02/11/15 15:15	VV1	MANUAL	1.053	BYB1003
2	SM-2540F	02/10/15	02/10/15 07:15	HPR	KONE-1	1	BYB0911

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 02/26/2015 10:12
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

BCL Sample ID: 1503204-02 | **Client Sample Name:** EFF-006, EFF-006, 2/7/2015 10:40:00AM, David Walter

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	**2.5**	**ug/L**	**0.20**	**0.055**	**EPA-218.6**	0.074		1
Total Recoverable Nickel	**9.0**	**ug/L**	**2.0**	**0.19**	**EPA-200.8**	ND		2
Total Recoverable Selenium	**31**	**ug/L**	**2.0**	**0.19**	**EPA-200.8**	ND		2
Total Recoverable Thallium	0.12	ug/L	1.0	0.10	EPA-200.8	ND	J	2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	02/09/15	02/09/15 21:14	BMW	IC-4	1	BYB0742
2	EPA-200.8	02/11/15	02/12/15 05:35	EAR	PE-EL2	1	BYB0967

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 02/26/2015 10:12
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

EPA Method 1664

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BYB1255						
Oil and Grease	BYB1255-BLK1	ND	mg/L	5.0	1.2	

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 02/26/2015 10:12
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

EPA Method 1664

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BYB1255										
Oil and Grease	BYB1255-BS1	LCS	33.950	40.200	mg/L	84.5		78 - 114		

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 02/26/2015 10:12
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

EPA Method 1664

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BYB1255	Used client sample: N										
Oil and Grease	DUP	1428224-89	ND	ND		mg/L			18		
	MS	1428224-89	ND	37.950	40.200	mg/L		94.4		78 - 114	
	MSD	1428224-89	ND	37.600	40.200	mg/L	0.9	93.5	18	78 - 114	

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 02/26/2015 10:12
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BYB1003						
Total Suspended Solids (Glass Fiber)	BYB1003-BLK1	ND	mg/L	0.50	0.50	

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 02/26/2015 10:12
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BYB0911	Used client sample: Y - Description: EFF-005, 02/07/2015 10:00										
Settleable Solids	DUP	1503204-01	5.1000	5.1000		ml/L-hr	0		10		
QC Batch ID: BYB1003	Used client sample: Y - Description: EFF-005, 02/07/2015 10:00										
Total Suspended Solids (Glass Fiber)	DUP	1503204-01	1855.0	1854.0		mg/L	0.1		10		

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 02/26/2015 10:12
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BYB0742						
Hexavalent Chromium	BYB0742-BLK1	0.074000	ug/L	0.20	0.055	J
QC Batch ID: BYB0967						
Total Recoverable Nickel	BYB0967-BLK1	ND	ug/L	2.0	0.19	
Total Recoverable Selenium	BYB0967-BLK1	ND	ug/L	2.0	0.19	
Total Recoverable Thallium	BYB0967-BLK1	ND	ug/L	1.0	0.10	

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 02/26/2015 10:12
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BYB0742										
Hexavalent Chromium	BYB0742-BS1	LCS	19.993	20.000	ug/L	100		90 - 110		
QC Batch ID: BYB0967										
Total Recoverable Nickel	BYB0967-BS1	LCS	103.00	100.00	ug/L	103		85 - 115		
Total Recoverable Selenium	BYB0967-BS1	LCS	102.14	100.00	ug/L	102		85 - 115		
Total Recoverable Thallium	BYB0967-BS1	LCS	39.423	40.000	ug/L	98.6		85 - 115		

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 02/26/2015 10:12
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Metals Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BYB0742	Used client sample: N										
Hexavalent Chromium	DUP	1503198-01	1.2030	1.1140		ug/L	7.7		10		
	MS	1503198-01	1.2030	22.104	20.202	ug/L		103		90 - 110	
	MSD	1503198-01	1.2030	22.268	20.202	ug/L	0.7	104	10	90 - 110	
QC Batch ID: BYB0967	Used client sample: N										
Total Recoverable Nickel	DUP	1503050-08	1.6810	1.6340		ug/L	2.8		20		J
	MS	1503050-08	1.6810	84.539	100.00	ug/L		82.9		70 - 130	
	MSD	1503050-08	1.6810	82.349	100.00	ug/L	2.6	80.7	20	70 - 130	
Total Recoverable Selenium	DUP	1503050-08	0.41700	ND		ug/L			20		
	MS	1503050-08	0.41700	105.75	100.00	ug/L		105		70 - 130	
	MSD	1503050-08	0.41700	102.74	100.00	ug/L	2.9	102	20	70 - 130	
Total Recoverable Thallium	DUP	1503050-08	ND	ND		ug/L			20		
	MS	1503050-08	ND	43.080	40.000	ug/L		108		70 - 130	
	MSD	1503050-08	ND	41.561	40.000	ug/L	3.6	104	20	70 - 130	

basic laboratory
www.basiclab.com
2218 Railroad Avenue Redding, California 96001 voice 530.243.7234 fax 530.243.7494
3860 Morrow Lane, Suite F Chico, California 95928 voice 530.894.8966 fax 530.894.5143

February 24, 2015

Lab ID: 15B0501

VANESSA SANDOVAL
B C LABORATORIES INCORPORATED
4100 ATLAS COURT
BAKERSFIELD, CA 93308
RE: HG 1631 TESTING 1503204

Dear VANESSA SANDOVAL ,

Enclosed are the analysis results for Work Order number 15B0501. All analysis were performed under strict adherence to our established Quality Assurance Plan. Any abnormalities are listed in the qualifier section of this report.

If you have any questions regarding these results, please feel free to contact us at any time. We appreciate the opportunity to service your environmental testing needs.

Sincerely,

For Ricky Jensen

Ricky D. Jensen
Laboratory Director
California ELAP Certification Number 1677

Page 1 of 3

basic laboratory
www.basiclab.com
2218 Railroad Avenue Redding, California 96001 voice 530.243.7234 fax 530.243.7494
3860 Morrow Lane, Suite F Chico, California 95928 voice 530.894.8966 fax 530.894.5143

Report To: B C LABORATORIES INCORPORATED
4100 ATLAS COURT
BAKERSFIELD, CA 93308
Attention: VANESSA SANDOVAL
Project: HG 1631 TESTING 1503204

Lab No: 15B0501
Reported: 02/24/15
Phone: (661) 327-4911
P.O. #

Metals - Total

Analyte		Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
1503204-01 Water (15B0501-01) Sampled:02/07/15 10:00 Received:02/10/15 13:50 Temp (C): 6.8										
Mercury		ng/l	**5170**	QC-08	20.0	50.0	EPA 1631E	02/18/15	02/18/15	B5B1112
1503204-02 Water (15B0501-02) Sampled:02/07/15 10:40 Received:02/10/15 13:50 Temp (C): 7.8										
Mercury		ng/l	**42.3**		0.20	0.50	EPA 1631E	02/18/15	02/18/15	B5B1112
1503204-03 Water (15B0501-03) Sampled:02/07/15 11:30 Received:02/10/15 13:50 Temp (C): 8.3										
Mercury		ng/l	**84.9**		0.20	0.50	EPA 1631E	02/18/15	02/18/15	B5B1112
1503204-04 Water (15B0501-04) Sampled:02/07/15 10:00 Received:02/10/15 13:50 Temp (C): 9.6										
Mercury		ng/l	ND		0.20	0.50	EPA 1631E	02/18/15	02/18/15	B5B1112

Quality Control Data

Analyte		Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Metals - Total											
Batch B5B1112 - BrCl Digestion											
Blank											
Mercury		ND	0.50	ng/l							
Blank											
Mercury		ND	0.50	ng/l							
Blank											
Mercury		ND	0.50	ng/l							QC-08
LCS											
Mercury		20.3	0.50	ng/l	20.0		102	84.1-120			
Matrix Spike	**Source: 15B0501-02**										
Mercury		63.7	0.50	ng/l	20.0	42.3	107	74.3-125			
Matrix Spike	**Source: 15B0503-01**										
Mercury		20.4	0.50	ng/l	20.0	1.20	96.2	74.3-125			
Matrix Spike Dup	**Source: 15B0501-02**										
Mercury		62.2	0.50	ng/l	20.0	42.3	99.6	74.3-125	2.40	24	
Matrix Spike Dup	**Source: 15B0503-01**										
Mercury		20.0	0.50	ng/l	20.0	1.20	93.9	74.3-125	2.33	24	

Approved By
Basic Laboratory, Inc.
California ELAP Cert #1677 and #2718

Page 2 of 3

basic laboratory
www.basiclab.com
2218 Railroad Avenue Redding, California 96001 voice 530.243.7234 fax 530.243.7494
3860 Morrow Lane, Suite F Chico, California 95928 voice 530.894.8966 fax 530.894.5143

Report To: B C LABORATORIES INCORPORATED
4100 ATLAS COURT
BAKERSFIELD, CA 93308
Attention: VANESSA SANDOVAL
Project: HG 1631 TESTING 1503204

Lab No: 15B0501
Reported: 02/24/15
Phone: (661) 327-4911
P.O. #

Notes and Definitions

QC-08	An increased concentration of BrCl was necessary to fully oxidize this sample. As required by EPA 1631E, a laboratory method blank containing the additional BrCl was analyzed with the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
<	Less than reporting limit
≤	Less than or equal to reporting limit
>	Greater than reporting limit
≥	Greater than or equal to reporting limit
MDL	Method Detection Limit
RL/ML	Minimum Level of Quantitation
MCL/AL	Maxium Contaminant Level/Action Level
mg/kg	Results reported as wet weight
TTLC	Total Threshold Limit Concentration
STLC	Soluble Threshold Limit Concentration
TCLP	Toxicity Characteristic Leachate Procedure
Note 1	Received Temperature - according to EPA guidelines, samples for most chemistry methods should be held at ≤6 degrees C after collection, including during transportation, unless the time from sampling to delivery is <2 hours. Regulating agencies may invalidate results if temperature requirements are not met.
Note 2	According to 40 CFR Part 136 Table II, the following tests should be analyzed in the field within 15 minutes of sampling: pH, chlorine, dissolved oxygen, and sulfite.

Approved By
Basic Laboratory, Inc.
California ELAP Cert #1677 and #2718

Page 3 of 3

SUBCONTRACT ORDER 15B0501

BC Laboratories
1503204

1 15B0501

SENDING LABORATORY:
BC Laboratories
4100 Atlas Court
Bakersfield, CA 93308
Phone: 661-327-4911
FAX: 661-327-1918
Project Manager: Vanessa Sandoval

RECEIVING LABORATORY: Due 2-20-15 **BSCLB**
Basic Laboratory, Inc.
2218 Railroad Ave.
Redding, CA 96001
James E. Hawley
Phone: 530-243-7234
FAX: —

Analysis	Due	Expires	Comments
Sample ID: 1503204-01 **Water**	**Sampled: 02/07/15 10:00**		Standard TAT 6.8°C
EPA 1631 - Mercury	02/24/15 17:00	08/07/15 10:00	
Containers supplied:			
Sample ID: 1503204-02 **Water**	**Sampled: 02/07/15 10:40**		Standard TAT 7.8°C
EPA 1631 - Mercury	02/24/15 17:00	08/07/15 10:40	
Containers supplied:			
Sample ID: 1503204-03 **Water**	**Sampled: 02/07/15 11:30**		Standard TAT 8.3°C
EPA 1631 - Mercury	02/24/15 17:00	08/07/15 11:30	
Containers supplied:			
Sample ID: 1503204-04 **Water**	**Sampled: 02/07/15 10:00**		Standard TAT 9.6°C
EPA 1631 - Mercury	02/24/15 17:00	08/07/15 10:00	
Containers supplied:			

Released By	Date	Received By	Date
[signature]	2915	T Wiebelhaus	2/10/15 13:50
		P. Oclan	2-11-15 16:56
Released By	Date	Received By	Date

BSCLB Page 1 of 1

Golder Associates
425 Lakeside Drive
Sunnyvale, CA 94085

Reported: 02/26/2015 10:12
Project: Lehigh NPDES
Project Number: 063-7109-916
Project Manager: George Wegmann

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A07	PQL's were raised due to sample dilution caused by high analyte concentration or matrix interference.
S05	The sample holding time was exceeded.

TECHNICAL MEMORANDUM

Date:	March 31, 2015	**Project No.:**	123-81502.08
To:	Alan Sabawi	**Company:**	Lehigh Southwest Cement Co.
From:	Wes Oehmig, Victor Wirick		
cc:	Kevin Conroy, Tom Rutkowski		
RE:	**LEHIGH INTERIM TREATMENT SYSTEM OPERATIONS - SYSTEM PERFORMANCE REPORT (MARCH 31, 2015)**		

1.0 INTRODUCTION AND PURPOSE

The Lehigh Permanente Cement Plant and Quarry (Site), located at 24001 Stevens Creek Blvd., Cupertino, CA, is owned by Hanson Permanente Cement, Inc. and operated by Lehigh Southwest Cement Company. In accordance with Cease and Desist Order No. R2-2014-0011, issued by the San Francisco Regional Water Quality Control Board, (herein referred to as "CDO"), the Interim Treatment System (ITS) at the Site began treating quarry water prior to discharge via Pond 4A (Discharge Point No. 001 in the permit) in the fall of 2014. Beginning December 1, 2014, the ITS is required to remove total selenium (Se) by 50% from influent water, or achieve an effluent concentration of less than or equal to 10 µg/L Se if the influent is 20 µg/L Se or less.

1.1 Document Scope

Since ITS startup in October 2014, weekly monitoring has been conducted at the inlet and outlet of the ITS for the pollutants listed in the CDO, Table 1, for Discharge Point No. 001. This report is presented in compliance with the CDO, Table 3, Task f., which states: *"Provide a report evaluating and describing the effectiveness of the interim treatment system at reducing effluent concentrations of the pollutants listed in Table 1 for Discharge Point No. 001. In the evaluation of treatment effectiveness, compare pollutant concentrations in the interim treatment system effluent to those in the influent and to Permit effluent limitations."* The main objective of this report, therefore, is to use the weekly monitoring data to evaluate the performance of the ITS.

1.2 System Description

The ITS is a multiple-component water treatment system designed to treat at least 400 gallons per minute for the removal of total selenium. The system is composed primarily of two parallel bioreactor modules (manufactured and operated by Frontier Water Systems) and an effluent aeration tank. Selenium is reduced and retained in the anaerobic bioreactors through a biologically mediated process. The bioreactors also generate sulfide which precipitates some metals as metal sulfides within the bioreactors. The sulfide is generated through biological sulfate reduction.

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1.3 Sampling and Analysis

The pollutants listed in Table 1 of the CDO for Discharge Point No. 001 include selenium (Se), nickel (Ni), chromium (Cr(VI)), mercury (Hg), settleable matter, and turbidity. These parameters have been monitored with weekly sampling events and analyses. Sampling was carried out as 24-hr composite samples; the same composites were generally used for other parameters tested, except for Hg which was analyzed from grab samples.

A contracted laboratory, BC Laboratories, conducted all analyses for these parameters, except for Hg, which was subcontracted to another lab. The analytical methods used to quantify each parameter are:

- Se, Ni - EPA-200.8
- Cr(VI) - EPA-218.6
- Hg - EPA-1631E
- Settleable matter - EPA-160.5
- Turbidity - EPA-180.1

2.0 SYSTEM PERFORMANCE

The following sections detail the performance of the ITS for the treatment of selenium, chromium, nickel, mercury, settleable matter, and turbidity. Table 1 displays the concentrations of these parameters in weekly monitoring samples. Table 2 summarizes the system performance with monthly average concentrations for these parameters.

2.1 Total Selenium

Influent selenium concentrations (Table 1) ranged from 40 to 97 µg/L with an average of 61 µg/L since December 2014. In compliance with the CDO, Table 3, Task e., the ITS has removed selenium at a rate greater than 50% since December 1, 2014. Figure 1 shows influent, effluent, average monthly effluent concentrations, and removal percentage of total selenium. These are compared to the Maximum Daily Effluent Limit (MDEL) and Average Monthly Effluent Limit (AMEL) specified in the Permit (Regional Water Board Order R2-2014-0010).

Selenium removal has been consistently over 90% throughout the operational period, and has therefore met the task e requirement for 50% removal. Effluent concentrations have, with only one exception, met the permit MDEL of 8.2 µg/L. Average effluent concentration for all sample data has been 5.1 µg/L. Monthly averages (Table 2) have been at or near the permit AMEL of 4.1 µg/L since December 2014.

To date, selenium removal has far exceeded the removal goal of 50%, and has produced effluent concentrations consistently meeting the MDEL. Selenium treatment since January 1, 2015 has produced effluent with monthly average concentrations under the AMEL. The system has shown pronounced effectiveness in removing selenium, as supported by this performance data.

2.2 Total Nickel

As shown in Table 1, influent nickel concentrations have averaged 67 µg/L, and peaked at 110 µg/L. The removal of nickel has averaged 67% since December 1, 2014, and has been as high as 87%. Effluent concentrations (averaging 18 µg/L) have not exceeded the MDEL of 160 µg/L (Figure 2), and flow-weighted monthly averages have consistently been below the AMEL of 82 µg/L.

Though the ITS was chiefly designed for the removal of selenium, it has been effective in consistently reducing nickel concentrations as well. Nickel removal is likely occurring due to nickel sulfide precipitation within the bioreactors.

2.3 Hexavalent Chromium

Chromium (VI) has been present in the ITS influent in concentrations averaging 0.49 µg/L (with a maximum of 1.6 µg/L) since December 1 (Table 1). Effluent concentrations (Figure 3) have routinely been non-detect, signifying very high removal rates. On average, effluent chromium (VI) has been 0.014 µg/L, which is three orders of magnitude below the MDEL. Average monthly concentrations have similarly been far below the AMEL.

The removal of chromium (VI) by the ITS may be generally explained by biological reduction. The anaerobic conditions present in the ITS are suitable for the reduction of chromium (VI) to chromium (III) likely followed by precipitation of chromium (III).

2.4 Mercury

Mercury has been present in low concentrations in both the influent (average is 4.0 ng/L) and effluent (average is 1.5 ng/L) of the ITS. The ITS effluent has been below the MDEL and AMEL in all sampling events thus far (Figure 4). Based on these data, the system shows ability to remove mercury, even at very low influent concentrations. Mercury removal is likely occurring due to sulfide precipitation.

2.5 Settleable Matter and Turbidity

Settleable matter in the ITS influent and effluent has been largely non-detect (Table 1). With the exception of one sampling event, the effluent has consistently been below the MDEL of 0.2 mL/L-hr; monthly averages have all been below the AMEL.

The turbidity of influent water has been low, averaging 1.7 NTU (Table 1). Effluent trends show turbidity increasing with treatment (Figure 5) to a magnitude greater than the MDEL or AMEL in the CDO (average effluent concentration is 23 NTU), but well below the CDO interim limit. Organic solids from the bioreactors or precipitates associated with aeration may be possible explanations for this increase in turbidity. The ITS effluent turbidity is currently meeting the numeric interim effluent limitations provided in Table 2 of the permit. Upgrades to the ITS are being considered to meet the permitted discharge turbidity requirements by the stated task i date of March 31, 2016.

3.0 SUMMARY AND CLOSING

The Interim Treatment System has been in operation since October 1, 2014 and is currently meeting all interim and Table 3 task e limits, as identified in the CDO. Influent and effluent concentrations of selenium, nickel, chromium (VI), mercury, and settleable matter are consistently less than the final permit limits identified in the CDO. The bioreactor technology is effective not only for selenium removal, but also nickel, chromium, and mercury removal. Turbidity in the effluent is above final limits, and is seen to increase with treatment. Consideration is being given to improvements to the ITS system to meet the final permit limits for turbidity by the March 2016 task i deadline.

TABLES

Table 1: Weekly ITS Monitoring Data

	Se (ug/L)		Cr(VI) (ug/L)		Ni (ug/L)		Hg (ng/L)		Settleable Matter (mL/L-hr)		Turbidity (NTU)	
	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF
MDEL	-	**8.2**	-	**16**	-	**160**	-	**41**	-	**0.2**	-	**10**
12/3/2014	93	7.0	0.22	ND	21	17	1.3	0.74	ND	ND	1.6	3.8
12/10/2014	97	12	0.28	ND	23	15	1.1	0.82	ND	ND	0.74	3.6
12/17/2014	44	2.0 J	1.6	ND	35	18	31 *	12 *	0.1	ND	3.7	4.7
12/22/2014	-	-	0.12 J	ND	110	37	0.83	0.49 J	ND	0.2	1.3	18
12/23/2014	56	2.1	-	-	-	-	-	-	-	-	-	-
12/29/2014	-	-	ND	ND	90	20	2.9	0.41 J	ND	0.1	3.2	33
12/30/2014	59	1.2 J	-	-	-	-	-	-	-	-	-	-
1/7/2015	58	1.5 J	0.44	ND	72	16	2.0	0.49 J	ND	ND	0.84	37
1/14/2015	56	1.8 J	0.41	ND	68	14	2.4	0.55	ND	ND	1.6	27
1/21/2015	71	2.8	0.55	ND	54	16	2.0	0.8	ND	ND	0.87	22
1/28/2015	59	3.9	0.14 J	ND	80	15	2.4	0.72	ND	ND	1.6	42
2/4/2015	62	3.7	0.31	0.071 J	58	12	1.6	0.87	ND	ND	1.0	18
2/11/2015	-	-	0.27	0.11 J	-	-	1.1	0.42 J	ND	ND	1.9	39
2/13/2015	44	1.4 J	-	-	99	13	-	-	-	-	-	-
2/19/2015	52	1.4 J	1.0	ND	76	21	1.6	0.47 J	ND	ND	1.7	27
2/25/2015	40	3.9	0.97	ND	90	26	1.5	0.68	ND	ND	2.6	30
Minimum	40	1.2	ND	ND	21	12	0.48	0.39	ND	ND	0.74	3.6
Maximum	97	12	1.6	0.12	110	37	31 *	12 *	0.1	0.2	3.7	42
Average	61	5.1	0.49	0.014	67	18	4.0	1.5	0.0077	0.023	1.7	23

Notes:

MDEL = Maximum Daily Effluent Limit

J = Detected, but not quantified

ND = Not detected

* = Data flagged for having significantly high relative percent difference compared to duplicates

Table 2: Monthly Average Concentrations

	Se (ug/L)		Cr(VI) (ug/L)		Ni (ug/L)		Hg (ng/L)		Settleable Matter (mL/L-hr)		Turbidity (NTU)	
	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF
AMEL	-	**4.1**	-	**8.0**	-	**82**	-	**20**	-	**0.1**	-	**5.0**
December	70	4.9	0.49	0.00	63	22	7.4	2.9	0.020	0.060	2.1	13
January	61	2.5	0.38	0.00	69	15	2.2	0.64	0.00	0.00	1.2	32
February	50	2.6	0.64	0.046	81	18	1.5	0.61	0.00	0.00	1.8	29

Notes:

AMEL = Average Monthly Effluent Limit

FIGURES

Figure 1: Selenium (Se) Monitoring Data

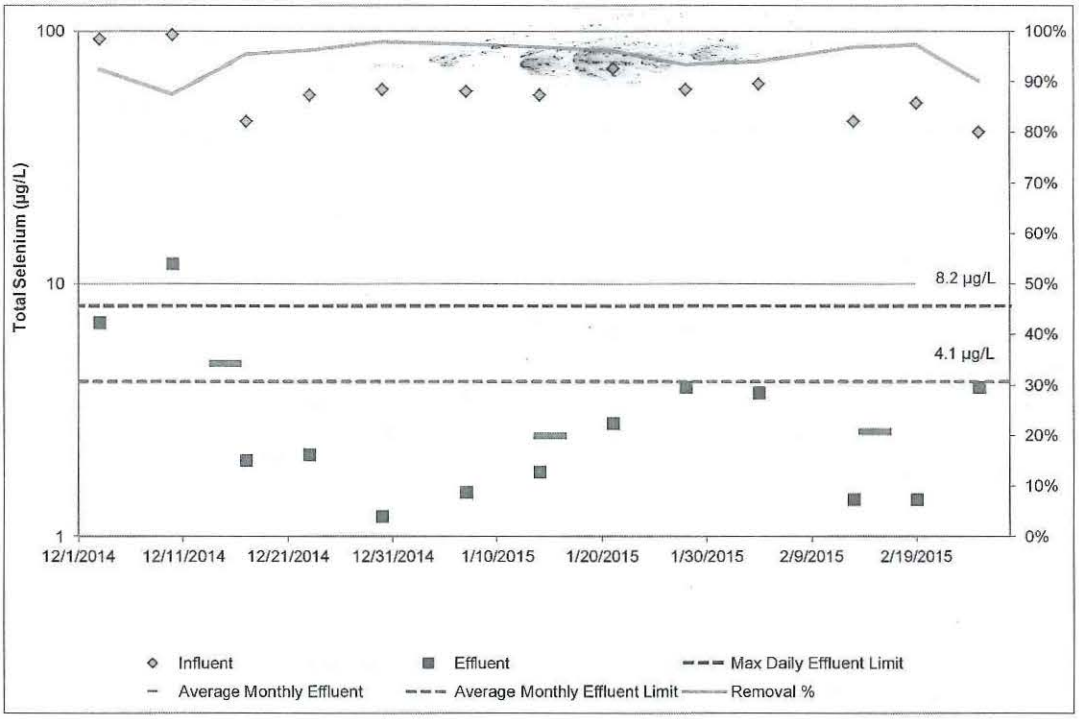

Figure 2: Nickel (Ni) Monitoring Data

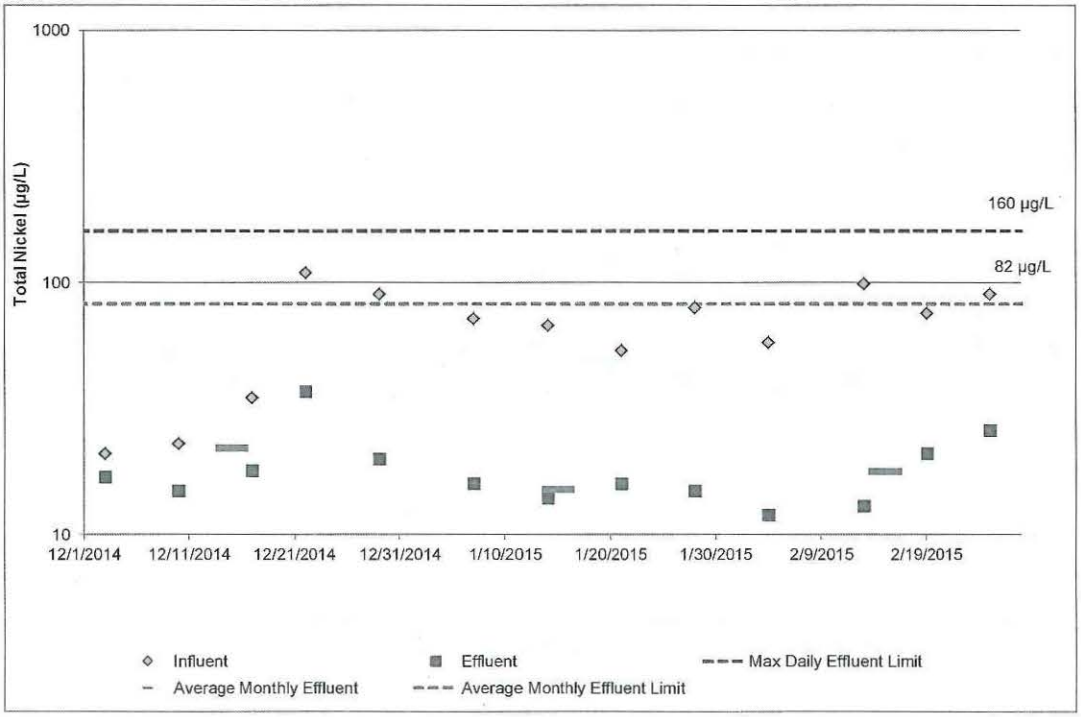

Figure 3: Hexavalent Chromium (Cr(VI)) Monitoring Data

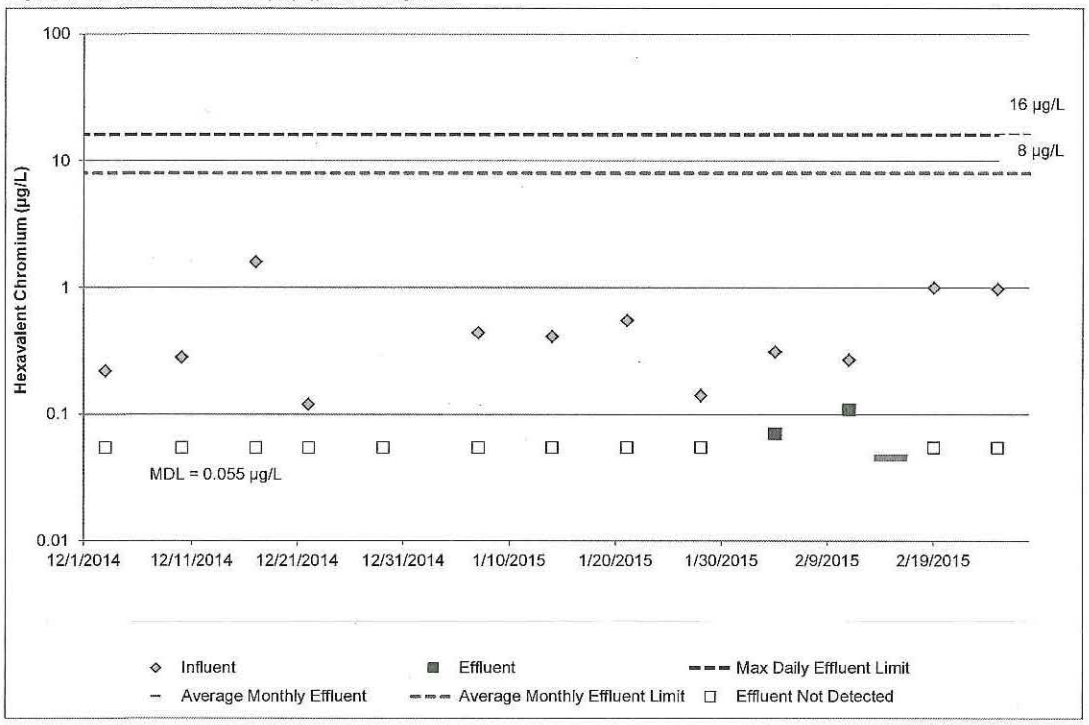

Figure 4: Mercury (Hg) Monitoring Data

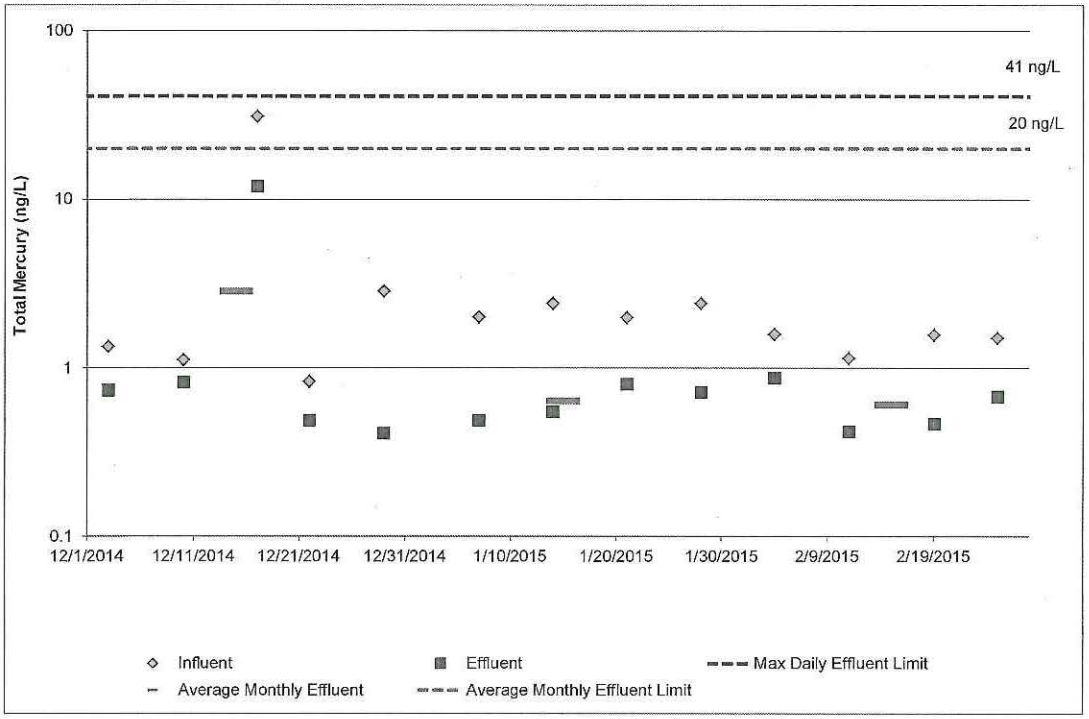

Figure 5: Turbidity Monitoring Data