

December 09, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-152
Pace Project No.: 60158712

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 02, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60158712001	316-152	Water	12/01/13 09:31	12/02/13 13:40
60158712002	TRIP BLANK	Water	12/01/13 09:31	12/02/13 13:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60158712001	316-152	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
		EPA 624 Low	EAK	25
60158712002	TRIP BLANK			

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-152
Pace Project No.: 60158712

Sample: 316-152		Lab ID: 60158712001	Collected: 12/01/13 09:31	Received: 12/02/13 13:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	7440	ug/L	375	1	12/03/13 11:00	12/05/13 13:54	7429-90-5	
Antimony	ND	ug/L	50.0	1	12/03/13 11:00	12/05/13 13:54	7440-36-0	
Arsenic	838	ug/L	50.0	1	12/03/13 11:00	12/05/13 13:54	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/03/13 11:00	12/05/13 13:54	7440-41-7	D3
Cadmium	ND	ug/L	25.0	1	12/03/13 11:00	12/05/13 13:54	7440-43-9	D3
Chromium	277	ug/L	25.0	1	12/03/13 11:00	12/05/13 13:54	7440-47-3	
Cobalt	27.3	ug/L	25.0	1	12/03/13 11:00	12/05/13 13:54	7440-48-4	
Copper	ND	ug/L	50.0	1	12/03/13 11:00	12/05/13 13:54	7440-50-8	
Iron	896000	ug/L	250	1	12/03/13 11:00	12/05/13 13:54	7439-89-6	
Lead	160	ug/L	25.0	1	12/03/13 11:00	12/05/13 13:54	7439-92-1	
Nickel	65.4	ug/L	25.0	1	12/03/13 11:00	12/05/13 13:54	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/03/13 11:00	12/05/13 13:54	7782-49-2	
Silver	ND	ug/L	35.0	1	12/03/13 11:00	12/05/13 13:54	7440-22-4	
Thallium	ND	ug/L	100	1	12/03/13 11:00	12/05/13 13:54	7440-28-0	D3
Zinc	11200	ug/L	500	2	12/03/13 11:00	12/05/13 14:17	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2980	ug/L	375	1	12/04/13 09:00	12/05/13 13:00	7429-90-5	
Antimony, Dissolved	ND	ug/L	50.0	1	12/04/13 09:00	12/05/13 13:00	7440-36-0	
Arsenic, Dissolved	530	ug/L	50.0	1	12/04/13 09:00	12/05/13 13:00	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/04/13 09:00	12/05/13 13:00	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	12/04/13 09:00	12/05/13 13:00	7440-43-9	
Chromium, Dissolved	174	ug/L	25.0	1	12/04/13 09:00	12/05/13 13:00	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/04/13 09:00	12/05/13 13:00	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/04/13 09:00	12/05/13 13:00	7440-50-8	
Iron, Dissolved	510000	ug/L	250	1	12/04/13 09:00	12/05/13 13:00	7439-89-6	
Lead, Dissolved	60.2	ug/L	25.0	1	12/04/13 09:00	12/05/13 13:00	7439-92-1	
Nickel, Dissolved	42.3	ug/L	25.0	1	12/04/13 09:00	12/05/13 13:00	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/04/13 09:00	12/05/13 13:00	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/04/13 09:00	12/05/13 13:00	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/04/13 09:00	12/05/13 13:00	7440-28-0	D3
Zinc, Dissolved	8250	ug/L	500	2	12/04/13 09:00	12/05/13 13:22	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	6.0	1	12/05/13 14:40	12/06/13 13:31	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/05/13 14:40	12/06/13 13:04	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/04/13 00:00	12/05/13 09:45	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/04/13 00:00	12/05/13 09:45	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/04/13 00:00	12/05/13 09:45	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/04/13 00:00	12/05/13 09:45	67-72-1	
Naphthalene	1200	ug/L	1000	2	12/04/13 00:00	12/05/13 09:45	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/04/13 00:00	12/05/13 09:45	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

Sample: 316-152		Lab ID: 60158712001	Collected: 12/01/13 09:31	Received: 12/02/13 13:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/04/13 00:00	12/05/13 09:45	87-86-5	
Phenol	10400 ug/L		1000	2	12/04/13 00:00	12/05/13 09:45	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/04/13 00:00	12/05/13 09:45	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/04/13 00:00	12/05/13 09:45	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	124 %		33-120	2	12/04/13 00:00	12/05/13 09:45	4165-60-0	S0
2-Fluorobiphenyl (S)	81 %		39-120	2	12/04/13 00:00	12/05/13 09:45	321-60-8	
Terphenyl-d14 (S)	95 %		45-120	2	12/04/13 00:00	12/05/13 09:45	1718-51-0	
Phenol-d6 (S)	32 %		11-120	2	12/04/13 00:00	12/05/13 09:45	13127-88-3	
2-Fluorophenol (S)	45 %		17-120	2	12/04/13 00:00	12/05/13 09:45	367-12-4	
2,4,6-Tribromophenol (S)	98 %		39-120	2	12/04/13 00:00	12/05/13 09:45	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/03/13 14:29	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/03/13 14:29	75-27-4	
Bromoform	ND ug/L		200	200		12/03/13 14:29	75-25-2	
Bromomethane	ND ug/L		1000	200		12/03/13 14:29	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/03/13 14:29	56-23-5	
Chloroethane	ND ug/L		200	200		12/03/13 14:29	75-00-3	
Chloroform	ND ug/L		200	200		12/03/13 14:29	67-66-3	
1,4-Dichlorobenzene	682 ug/L		200	200		12/03/13 14:29	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/03/13 14:29	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/03/13 14:29	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/03/13 14:29	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/03/13 14:29	100-41-4	
Methylene chloride	ND ug/L		200	200		12/03/13 14:29	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/03/13 14:29	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/03/13 14:29	127-18-4	
Toluene	ND ug/L		200	200		12/03/13 14:29	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/03/13 14:29	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/03/13 14:29	79-00-5	
Trichloroethene	ND ug/L		200	200		12/03/13 14:29	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/03/13 14:29	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/03/13 14:29	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	200		12/03/13 14:29	460-00-4	D3
Toluene-d8 (S)	95 %		80-120	200		12/03/13 14:29	2037-26-5	
1,2-Dichloroethane-d4 (S)	109 %		80-120	200		12/03/13 14:29	17060-07-0	
Preservation pH	6.0		1.0	200		12/03/13 14:29		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	876 mg/L		5.0	1		12/05/13 07:01		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	8.4 mg/L		5.0	1		12/09/13 10:00		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

Sample: 316-152		Lab ID: 60158712001	Collected: 12/01/13 09:31	Received: 12/02/13 13:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3880	mg/L	5.0	1		12/03/13 10:58		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		12/04/13 11:45		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	25800	mg/L	2.0	1	12/02/13 17:17	12/07/13 10:10		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	718	mg/L	50.0	500		12/06/13 10:06	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	55100	mg/L	10000	1000		12/06/13 16:10		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

Sample: TRIP BLANK		Lab ID: 60158712002	Collected: 12/01/13 09:31	Received: 12/02/13 13:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/03/13 14:44	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/03/13 14:44	75-27-4	
Bromoform	ND ug/L		1.0	1		12/03/13 14:44	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/03/13 14:44	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/03/13 14:44	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/03/13 14:44	75-00-3	
Chloroform	ND ug/L		1.0	1		12/03/13 14:44	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/03/13 14:44	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/03/13 14:44	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/03/13 14:44	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/03/13 14:44	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/03/13 14:44	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/03/13 14:44	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/03/13 14:44	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/03/13 14:44	127-18-4	
Toluene	ND ug/L		1.0	1		12/03/13 14:44	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/03/13 14:44	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/03/13 14:44	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/03/13 14:44	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/03/13 14:44	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/03/13 14:44	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	1		12/03/13 14:44	460-00-4	
Toluene-d8 (S)	93 %		80-120	1		12/03/13 14:44	2037-26-5	
1,2-Dichloroethane-d4 (S)	109 %		80-120	1		12/03/13 14:44	17060-07-0	
Preservation pH	6.0		1.0	1		12/03/13 14:44		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

QC Batch: MERP/7969

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60158712001

METHOD BLANK: 1300947

Matrix: Water

Associated Lab Samples: 60158712001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/06/13 13:11	

LABORATORY CONTROL SAMPLE: 1300948

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1300949 1300950

Parameter	Units	60158711001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	150	150	81.9	71.4	54	47	70-130	14	20	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

QC Batch: MERP/7968

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60158712001

METHOD BLANK: 1300660

Matrix: Water

Associated Lab Samples: 60158712001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/06/13 12:44	

LABORATORY CONTROL SAMPLE: 1300661

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.5	89	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1300662 1300663

Parameter	Units	60158711001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	75.9	74.7	51	50	70-130	2	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152
Pace Project No.: 60158712

QC Batch: MPRP/25405 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60158712001

METHOD BLANK: 1298911 Matrix: Water
Associated Lab Samples: 60158712001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/05/13 13:32	
Antimony	ug/L	ND	10.0	12/05/13 13:32	
Arsenic	ug/L	ND	10.0	12/05/13 13:32	
Beryllium	ug/L	ND	1.0	12/05/13 13:32	
Cadmium	ug/L	ND	5.0	12/05/13 13:32	
Chromium	ug/L	ND	5.0	12/05/13 13:32	
Cobalt	ug/L	ND	5.0	12/05/13 13:32	
Copper	ug/L	ND	10.0	12/05/13 13:32	
Iron	ug/L	ND	50.0	12/05/13 13:32	
Lead	ug/L	ND	5.0	12/05/13 13:32	
Nickel	ug/L	ND	5.0	12/05/13 13:32	
Selenium	ug/L	ND	15.0	12/05/13 13:32	
Silver	ug/L	ND	7.0	12/05/13 13:32	
Thallium	ug/L	ND	20.0	12/05/13 13:32	
Zinc	ug/L	ND	50.0	12/05/13 13:32	

LABORATORY CONTROL SAMPLE: 1298912

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10300	103	85-115	
Antimony	ug/L	1000	1030	103	85-115	
Arsenic	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1010	101	85-115	
Cadmium	ug/L	1000	1020	102	85-115	
Chromium	ug/L	1000	992	99	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Copper	ug/L	1000	975	98	85-115	
Iron	ug/L	10000	9780	98	85-115	
Lead	ug/L	1000	1030	103	85-115	
Nickel	ug/L	1000	1040	104	85-115	
Selenium	ug/L	1000	1010	101	85-115	
Silver	ug/L	500	490	98	85-115	
Thallium	ug/L	1000	1050	105	85-115	
Zinc	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1298913 1298914

Parameter	Units	60158711001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	6560	50000	50000	62000	61500	111	110	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1298913 1298914											
Parameter	Units	60158711001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	5000	5000	5420	5420	108	107	70-130	0	7
Arsenic	ug/L	834	5000	5000	6420	6420	112	112	70-130	0	10
Beryllium	ug/L	ND	5000	5000	4890	4880	98	98	70-130	0	7
Cadmium	ug/L	ND	5000	5000	5320	5320	106	106	70-130	0	10
Chromium	ug/L	283	5000	5000	5120	5110	97	97	70-130	0	10
Cobalt	ug/L	ND	5000	5000	4910	4890	98	97	70-130	0	6
Copper	ug/L	ND	5000	5000	5180	5170	103	103	70-130	0	11
Iron	ug/L	872000	50000	50000	932000	932000	120	119	70-130	0	10
Lead	ug/L	139	5000	5000	4850	4810	94	93	70-130	1	10
Nickel	ug/L	63.1	5000	5000	4970	4940	98	98	70-130	0	10
Selenium	ug/L	ND	5000	5000	5960	6020	119	120	70-130	1	10
Silver	ug/L	ND	2500	2500	2580	2590	103	104	70-130	1	10
Thallium	ug/L	ND	5000	5000	4450	4410	89	88	70-130	1	6
Zinc	ug/L	10900	5000	5000	16100	15900	105	100	70-130	2	11

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152
Pace Project No.: 60158712

QC Batch:	MPRP/25433	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60158712001		

METHOD BLANK: 1299524 Matrix: Water
Associated Lab Samples: 60158712001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/05/13 12:39	
Antimony, Dissolved	ug/L	ND	10.0	12/05/13 12:39	
Arsenic, Dissolved	ug/L	ND	10.0	12/05/13 12:39	
Beryllium, Dissolved	ug/L	ND	1.0	12/05/13 12:39	
Cadmium, Dissolved	ug/L	ND	5.0	12/05/13 12:39	
Chromium, Dissolved	ug/L	ND	5.0	12/05/13 12:39	
Cobalt, Dissolved	ug/L	ND	5.0	12/05/13 12:39	
Copper, Dissolved	ug/L	ND	10.0	12/05/13 12:39	
Iron, Dissolved	ug/L	ND	50.0	12/05/13 12:39	
Lead, Dissolved	ug/L	ND	5.0	12/05/13 12:39	
Nickel, Dissolved	ug/L	ND	5.0	12/05/13 12:39	
Selenium, Dissolved	ug/L	ND	15.0	12/05/13 12:39	
Silver, Dissolved	ug/L	ND	7.0	12/05/13 12:39	
Thallium, Dissolved	ug/L	ND	20.0	12/05/13 12:39	
Zinc, Dissolved	ug/L	ND	50.0	12/05/13 12:39	

LABORATORY CONTROL SAMPLE: 1299525

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10200	102	85-115	
Antimony, Dissolved	ug/L	1000	997	100	85-115	
Arsenic, Dissolved	ug/L	1000	976	98	85-115	
Beryllium, Dissolved	ug/L	1000	998	100	85-115	
Cadmium, Dissolved	ug/L	1000	1000	100	85-115	
Chromium, Dissolved	ug/L	1000	974	97	85-115	
Cobalt, Dissolved	ug/L	1000	983	98	85-115	
Copper, Dissolved	ug/L	1000	949	95	85-115	
Iron, Dissolved	ug/L	10000	9690	97	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	984	98	85-115	
Silver, Dissolved	ug/L	500	480	96	85-115	
Thallium, Dissolved	ug/L	1000	1020	102	85-115	
Zinc, Dissolved	ug/L	1000	971	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1299526 1299527

Parameter	Units	60158711001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	3150	50000	50000	55800	54000	105	102	70-130	3	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1299526 1299527											
Parameter	Units	60158711001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony, Dissolved	ug/L	ND	5000	5000	5340	5140	106	102	70-130	4	7
Arsenic, Dissolved	ug/L	623	5000	5000	6090	5880	109	105	70-130	4	10
Beryllium, Dissolved	ug/L	ND	5000	5000	4980	4820	100	96	70-130	3	7
Cadmium, Dissolved	ug/L	ND	5000	5000	5270	5080	105	102	70-130	4	10
Chromium, Dissolved	ug/L	192	5000	5000	4990	4830	96	93	70-130	3	10
Cobalt, Dissolved	ug/L	ND	5000	5000	4810	4640	96	93	70-130	3	6
Copper, Dissolved	ug/L	ND	5000	5000	5060	4910	101	98	70-130	3	11
Iron, Dissolved	ug/L	552000	50000	50000	624000	611000	142	117	70-130	2	10 M1
Lead, Dissolved	ug/L	69.2	5000	5000	4730	4590	93	90	70-130	3	10
Nickel, Dissolved	ug/L	46.2	5000	5000	4940	4780	98	95	70-130	3	10
Selenium, Dissolved	ug/L	ND	5000	5000	5740	5550	114	111	70-130	3	10
Silver, Dissolved	ug/L	ND	2500	2500	2530	2460	101	98	70-130	3	10
Thallium, Dissolved	ug/L	ND	5000	5000	4480	4340	90	87	70-130	3	6
Zinc, Dissolved	ug/L	8210	5000	5000	13300	13100	101	97	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

QC Batch: MSV/58116 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60158712001, 60158712002

METHOD BLANK: 1298997 Matrix: Water

Associated Lab Samples: 60158712001, 60158712002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/03/13 12:28	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/03/13 12:28	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/03/13 12:28	
1,2-Dichloroethane	ug/L	ND	1.0	12/03/13 12:28	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/03/13 12:28	
Benzene	ug/L	ND	1.0	12/03/13 12:28	
Bromodichloromethane	ug/L	ND	1.0	12/03/13 12:28	
Bromoform	ug/L	ND	1.0	12/03/13 12:28	
Bromomethane	ug/L	ND	5.0	12/03/13 12:28	
Carbon tetrachloride	ug/L	ND	1.0	12/03/13 12:28	
Chloroethane	ug/L	ND	1.0	12/03/13 12:28	
Chloroform	ug/L	ND	1.0	12/03/13 12:28	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/03/13 12:28	
Ethylbenzene	ug/L	ND	1.0	12/03/13 12:28	
Methylene chloride	ug/L	1.1	1.0	12/03/13 12:28	
Tetrachloroethene	ug/L	ND	1.0	12/03/13 12:28	
Toluene	ug/L	ND	1.0	12/03/13 12:28	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/03/13 12:28	
Trichloroethene	ug/L	ND	1.0	12/03/13 12:28	
Vinyl chloride	ug/L	ND	1.0	12/03/13 12:28	
Xylene (Total)	ug/L	ND	3.0	12/03/13 12:28	
1,2-Dichloroethane-d4 (S)	%	104	80-120	12/03/13 12:28	
4-Bromofluorobenzene (S)	%	102	80-120	12/03/13 12:28	
Toluene-d8 (S)	%	98	80-120	12/03/13 12:28	

LABORATORY CONTROL SAMPLE: 1298998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	21.7	108	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	19.1	96	59-138	
1,1,2-Trichloroethane	ug/L	20	20.0	100	69-127	
1,2-Dichloroethane	ug/L	20	22.4	112	71-129	
1,4-Dichlorobenzene	ug/L	20	21.4	107	68-124	
Benzene	ug/L	20	20.6	103	73-129	
Bromodichloromethane	ug/L	20	20.1	100	63-129	
Bromoform	ug/L	20	21.7	108	52-123	
Bromomethane	ug/L	20	17.0	85	10-160	
Carbon tetrachloride	ug/L	20	21.6	108	70-140	
Chloroethane	ug/L	20	18.8	94	42-160	
Chloroform	ug/L	20	22.4	112	60-120	
cis-1,2-Dichloroethene	ug/L	20	21.7	109	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

LABORATORY CONTROL SAMPLE: 1298998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.3	97	66-133	
Methylene chloride	ug/L	20	21.5	108	56-135	
Tetrachloroethene	ug/L	20	21.3	106	64-143	
Toluene	ug/L	20	20.0	100	70-130	
trans-1,2-Dichloroethene	ug/L	20	20.9	104	67-149	
Trichloroethene	ug/L	20	20.6	103	71-130	
Vinyl chloride	ug/L	20	17.0	85	41-160	
Xylene (Total)	ug/L	60	59.2	99	67-130	
1,2-Dichloroethane-d4 (S)	%			106	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			96	80-120	

MATRIX SPIKE SAMPLE: 1298999

Parameter	Units	60158711001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4390	110	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3790	95	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	4340	109	52-150	
1,2-Dichloroethane	ug/L	ND	4000	4240	106	49-155	
1,4-Dichlorobenzene	ug/L	723	4000	4800	102	18-147	
Benzene	ug/L	ND	4000	4060	101	37-151	
Bromodichloromethane	ug/L	ND	4000	3930	98	35-155	
Bromoform	ug/L	ND	4000	4010	100	45-133	
Bromomethane	ug/L	ND	4000	2770	69	10-160	
Carbon tetrachloride	ug/L	ND	4000	4610	115	70-140	
Chloroethane	ug/L	ND	4000	3500	88	14-160	
Chloroform	ug/L	ND	4000	4300	107	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	4150	104	19-160	
Ethylbenzene	ug/L	ND	4000	4070	101	37-154	
Methylene chloride	ug/L	206	4000	3930	93	15-156	
Tetrachloroethene	ug/L	ND	4000	4600	115	64-148	
Toluene	ug/L	ND	4000	3820	95	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	4100	102	54-156	
Trichloroethene	ug/L	ND	4000	4110	103	71-157	
Vinyl chloride	ug/L	ND	4000	3470	87	10-160	
Xylene (Total)	ug/L	ND	12000	12300	102	12-153	
1,2-Dichloroethane-d4 (S)	%				104	80-120	
4-Bromofluorobenzene (S)	%				103	80-120	
Toluene-d8 (S)	%				93	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152
Pace Project No.: 60158712

QC Batch:	OEXT/41742	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60158712001		

METHOD BLANK: 1299334 Matrix: Water
Associated Lab Samples: 60158712001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/05/13 08:23	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/05/13 08:23	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/05/13 08:23	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/05/13 08:23	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/05/13 08:23	
Hexachloroethane	ug/L	ND	5.0	12/05/13 08:23	
Naphthalene	ug/L	ND	5.0	12/05/13 08:23	
Nitrobenzene	ug/L	ND	5.0	12/05/13 08:23	
Pentachlorophenol	ug/L	ND	5.0	12/05/13 08:23	
Phenol	ug/L	ND	5.0	12/05/13 08:23	
2,4,6-Tribromophenol (S)	%	74	39-120	12/05/13 08:23	
2-Fluorobiphenyl (S)	%	81	39-120	12/05/13 08:23	
2-Fluorophenol (S)	%	46	17-120	12/05/13 08:23	
Nitrobenzene-d5 (S)	%	77	33-120	12/05/13 08:23	
Phenol-d6 (S)	%	30	11-120	12/05/13 08:23	
Terphenyl-d14 (S)	%	95	45-120	12/05/13 08:23	

LABORATORY CONTROL SAMPLE: 1299335

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	41.9	84	46-120	
2,4,6-Trichlorophenol	ug/L	50	43.4	87	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	47.5	95	40-133	
Hexachloro-1,3-butadiene	ug/L	50	41.0	82	44-116	
Hexachlorocyclopentadiene	ug/L	100	74.9	75	24-120	
Hexachloroethane	ug/L	50	41.2	82	43-113	
Naphthalene	ug/L	50	43.3	87	48-120	
Nitrobenzene	ug/L	50	43.7	87	48-120	
Pentachlorophenol	ug/L	50	40.2	80	47-120	
Phenol	ug/L	50	15.5	31	16-112	
2,4,6-Tribromophenol (S)	%			92	39-120	
2-Fluorobiphenyl (S)	%			86	39-120	
2-Fluorophenol (S)	%			45	17-120	
Nitrobenzene-d5 (S)	%			84	33-120	
Phenol-d6 (S)	%			29	11-120	
Terphenyl-d14 (S)	%			93	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

MATRIX SPIKE SAMPLE:		1299336					
Parameter	Units	60158711001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3550	71	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4180	84	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	4320J	86	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3460	69	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	6750	68	11-120	
Hexachloroethane	ug/L	ND	5000	3440	69	40-113	
Naphthalene	ug/L	ND	5000	4380	73	45-120	
Nitrobenzene	ug/L	ND	5000	3710	74	38-120	
Pentachlorophenol	ug/L	ND	5000	4640	93	43-135	
Phenol	ug/L	10400	5000	10800	9	13-112	M1
2,4,6-Tribromophenol (S)	%				87	39-120	
2-Fluorobiphenyl (S)	%				76	39-120	
2-Fluorophenol (S)	%				42	17-120	
Nitrobenzene-d5 (S)	%				80	33-120	
Phenol-d6 (S)	%				30	11-120	
Terphenyl-d14 (S)	%				86	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

QC Batch:	WET/44942	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60158712001		

METHOD BLANK: 1300222 Matrix: Water

Associated Lab Samples: 60158712001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/05/13 07:00	

LABORATORY CONTROL SAMPLE: 1300223

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	42.0	105	78-114	

MATRIX SPIKE SAMPLE: 1300227

Parameter	Units	60158495001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.4	40.3	97	78-114	

SAMPLE DUPLICATE: 1300226

Parameter	Units	60158711001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	947	924	2	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

QC Batch: WET/45009

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60158712001

METHOD BLANK: 1302478

Matrix: Water

Associated Lab Samples: 60158712001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/09/13 09:58	

LABORATORY CONTROL SAMPLE: 1302479

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.7	104	64-132	

MATRIX SPIKE SAMPLE: 1302500

Parameter	Units	60158918002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	15.1	20.4	37.7	111	64-132	

SAMPLE DUPLICATE: 1302487

Parameter	Units	60158711001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	6.4	5.6	13	34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

QC Batch: WET/44885

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60158712001

METHOD BLANK: 1298808

Matrix: Water

Associated Lab Samples: 60158712001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/03/13 10:53	

SAMPLE DUPLICATE: 1298809

Parameter	Units	60158536002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	212	196	8	25	

SAMPLE DUPLICATE: 1298810

Parameter	Units	60158711001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	3300	3360	2	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

QC Batch: WET/44913

Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B

Analysis Description: 4500H+B pH

Associated Lab Samples: 60158712001

SAMPLE DUPLICATE: 1299403

Parameter	Units	60158711001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.6	5.6	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

QC Batch: WET/44876

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60158712001

METHOD BLANK: 1298610

Matrix: Water

Associated Lab Samples: 60158712001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/07/13 10:02	

LABORATORY CONTROL SAMPLE: 1298611

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	189	95	85-115	

SAMPLE DUPLICATE: 1298612

Parameter	Units	60158711001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	28700	28600	0	17	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152
Pace Project No.: 60158712

QC Batch: WETA/27379 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 60158712001

METHOD BLANK: 1300664 Matrix: Water
Associated Lab Samples: 60158712001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/06/13 09:54	

LABORATORY CONTROL SAMPLE: 1300665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1300666

Parameter	Units	60158558001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	694	1000	1640	95	90-110	

MATRIX SPIKE SAMPLE: 1300667

Parameter	Units	60158711001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	709	1000	1680	97	90-110	

MATRIX SPIKE SAMPLE: 1300668

Parameter	Units	60158813001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	671	1000	1680	101	90-110	

SAMPLE DUPLICATE: 1300669

Parameter	Units	60158954001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	711	664	7	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152
Pace Project No.: 60158712

QC Batch:	WETA/27383	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60158712001		

METHOD BLANK: 1300810 Matrix: Water
Associated Lab Samples: 60158712001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/06/13 15:50	

LABORATORY CONTROL SAMPLE: 1300811

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	48.0	96	90-110	

MATRIX SPIKE SAMPLE: 1300812

Parameter	Units	60158558001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	48500	50000	94000	91	90-110	

MATRIX SPIKE SAMPLE: 1300813

Parameter	Units	60158666001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	60100	50000	99400	78	90-110	M1

MATRIX SPIKE SAMPLE: 1300814

Parameter	Units	60158688001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	58000	50000	105000	95	90-110	

MATRIX SPIKE SAMPLE: 1300815

Parameter	Units	60158689001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	56600	50000	107000	101	90-110	

MATRIX SPIKE SAMPLE: 1300816

Parameter	Units	60158711001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	61200	50000	107000	91	90-110	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

MATRIX SPIKE SAMPLE: 1300817

Parameter	Units	60158712001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	55100	50000	106000	102	90-110	

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QUALIFIERS

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-152

Pace Project No.: 60158712

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60158712001	316-152	EPA 200.7	MPRP/25405	EPA 200.7	ICP/19557
60158712001	316-152	EPA 200.7	MPRP/25433	EPA 200.7	ICP/19572
60158712001	316-152	EPA 245.1	MERP/7969	EPA 245.1	MERC/7924
60158712001	316-152	EPA 245.1	MERP/7968	EPA 245.1	MERC/7925
60158712001	316-152	EPA 625	OEXT/41742	EPA 625	MSSV/13264
60158712001	316-152	EPA 624 Low	MSV/58116		
60158712002	TRIP BLANK	EPA 624 Low	MSV/58116		
60158712001	316-152	EPA 1664A	WET/44942		
60158712001	316-152	EPA 1664A	WET/45009		
60158712001	316-152	SM 2540D	WET/44885		
60158712001	316-152	SM 4500-H+B	WET/44913		
60158712001	316-152	SM 5210B	WET/44876	SM 5210B	WET/45010
60158712001	316-152	EPA 350.1	WETA/27379		
60158712001	316-152	EPA 410.4	WETA/27383		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

NO#: 60158712



60158712

Client Name: Barr Engin.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ Local

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-239 / T-194

Type of Ice: Wet ☒ Blue ☐ None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 1-0

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 12/2/13 [Signature]

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☐ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☐ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☐ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☐ No ☐ N/A	6. <u>300, pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>Covered</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.
Client Notification/ Resolution:	Copy COC to Client? Y ☐ N ☒ Field Data Required? Y ☐ N ☒	23.
Person Contacted:	Date/Time:	24.
Comments/ Resolution:		25.
Project Manager Review:	Date:	26.

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted:

Date/Time:

Comments/ Resolution:

Project Manager Review:

Date:

December 11, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-153
Pace Project No.: 60158813

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 04, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60158813001	316-153	Water	12/02/13 10:15	12/04/13 02:30
60158813002	TRIP BLANK	Water	12/02/13 10:15	12/04/13 02:30

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60158813001	316-153	EPA 200.7	SMW	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
		EPA 624 Low	EAK	25
60158813002	TRIP BLANK			

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

Date: December 11, 2013

The samples were received outside of required temperature range. Analysis was completed upon client approval.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

Sample: 316-153		Lab ID: 60158813001	Collected: 12/02/13 10:15	Received: 12/04/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	4520 ug/L		375	1	12/06/13 11:00	12/10/13 12:51	7429-90-5	
Antimony	ND ug/L		50.0	1	12/06/13 11:00	12/10/13 12:51	7440-36-0	D3
Arsenic	642 ug/L		50.0	1	12/06/13 11:00	12/10/13 12:51	7440-38-2	
Beryllium	ND ug/L		5.0	1	12/06/13 11:00	12/10/13 12:51	7440-41-7	
Cadmium	ND ug/L		25.0	1	12/06/13 11:00	12/10/13 12:51	7440-43-9	
Chromium	191 ug/L		25.0	1	12/06/13 11:00	12/10/13 12:51	7440-47-3	
Cobalt	ND ug/L		25.0	1	12/06/13 11:00	12/10/13 12:51	7440-48-4	
Copper	ND ug/L		50.0	1	12/06/13 11:00	12/10/13 12:51	7440-50-8	
Iron	644000 ug/L		250	1	12/06/13 11:00	12/10/13 12:51	7439-89-6	M1,R1
Lead	116 ug/L		25.0	1	12/06/13 11:00	12/10/13 12:51	7439-92-1	
Nickel	44.8 ug/L		25.0	1	12/06/13 11:00	12/10/13 12:51	7440-02-0	
Selenium	ND ug/L		75.0	1	12/06/13 11:00	12/10/13 12:51	7782-49-2	
Silver	ND ug/L		35.0	1	12/06/13 11:00	12/10/13 12:51	7440-22-4	
Thallium	ND ug/L		100	1	12/06/13 11:00	12/10/13 12:51	7440-28-0	
Zinc	8530 ug/L		500	2	12/06/13 11:00	12/10/13 12:54	7440-66-6	M1,R1
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2720 ug/L		375	1	12/09/13 10:00	12/10/13 12:06	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	1	12/09/13 10:00	12/10/13 12:06	7440-36-0	D3
Arsenic, Dissolved	586 ug/L		50.0	1	12/09/13 10:00	12/10/13 12:06	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	1	12/09/13 10:00	12/10/13 12:06	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	1	12/09/13 10:00	12/10/13 12:06	7440-43-9	
Chromium, Dissolved	156 ug/L		25.0	1	12/09/13 10:00	12/10/13 12:06	7440-47-3	
Cobalt, Dissolved	ND ug/L		25.0	1	12/09/13 10:00	12/10/13 12:06	7440-48-4	
Copper, Dissolved	ND ug/L		50.0	1	12/09/13 10:00	12/10/13 12:06	7440-50-8	
Iron, Dissolved	486000 ug/L		250	1	12/09/13 10:00	12/10/13 12:06	7439-89-6	M1
Lead, Dissolved	58.1 ug/L		25.0	1	12/09/13 10:00	12/10/13 12:06	7439-92-1	
Nickel, Dissolved	40.9 ug/L		25.0	1	12/09/13 10:00	12/10/13 12:06	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	1	12/09/13 10:00	12/10/13 12:06	7782-49-2	
Silver, Dissolved	ND ug/L		35.0	1	12/09/13 10:00	12/10/13 12:06	7440-22-4	
Thallium, Dissolved	ND ug/L		100	1	12/09/13 10:00	12/10/13 12:06	7440-28-0	
Zinc, Dissolved	7640 ug/L		500	2	12/09/13 10:00	12/10/13 12:13	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND ug/L		6.0	1	12/05/13 14:40	12/06/13 13:40	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		6.0	1	12/09/13 11:20	12/10/13 11:53	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	2	12/04/13 00:00	12/05/13 10:05	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	2	12/04/13 00:00	12/05/13 10:05	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	2	12/04/13 00:00	12/05/13 10:05	77-47-4	
Hexachloroethane	ND ug/L		1000	2	12/04/13 00:00	12/05/13 10:05	67-72-1	
Naphthalene	ND ug/L		1000	2	12/04/13 00:00	12/05/13 10:05	91-20-3	
Nitrobenzene	ND ug/L		1000	2	12/04/13 00:00	12/05/13 10:05	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

Sample: 316-153		Lab ID: 60158813001	Collected: 12/02/13 10:15	Received: 12/04/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/04/13 00:00	12/05/13 10:05	87-86-5	
Phenol	11000 ug/L		1000	2	12/04/13 00:00	12/05/13 10:05	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/04/13 00:00	12/05/13 10:05	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/04/13 00:00	12/05/13 10:05	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	96 %		33-120	2	12/04/13 00:00	12/05/13 10:05	4165-60-0	
2-Fluorobiphenyl (S)	90 %		39-120	2	12/04/13 00:00	12/05/13 10:05	321-60-8	
Terphenyl-d14 (S)	100 %		45-120	2	12/04/13 00:00	12/05/13 10:05	1718-51-0	
Phenol-d6 (S)	33 %		11-120	2	12/04/13 00:00	12/05/13 10:05	13127-88-3	
2-Fluorophenol (S)	47 %		17-120	2	12/04/13 00:00	12/05/13 10:05	367-12-4	
2,4,6-Tribromophenol (S)	104 %		39-120	2	12/04/13 00:00	12/05/13 10:05	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/04/13 12:34	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/04/13 12:34	75-27-4	
Bromoform	ND ug/L		200	200		12/04/13 12:34	75-25-2	
Bromomethane	ND ug/L		1000	200		12/04/13 12:34	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/04/13 12:34	56-23-5	
Chloroethane	ND ug/L		200	200		12/04/13 12:34	75-00-3	
Chloroform	ND ug/L		200	200		12/04/13 12:34	67-66-3	
1,4-Dichlorobenzene	748 ug/L		200	200		12/04/13 12:34	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/04/13 12:34	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/04/13 12:34	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/04/13 12:34	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/04/13 12:34	100-41-4	
Methylene chloride	ND ug/L		200	200		12/04/13 12:34	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/04/13 12:34	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/04/13 12:34	127-18-4	
Toluene	ND ug/L		200	200		12/04/13 12:34	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/04/13 12:34	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/04/13 12:34	79-00-5	
Trichloroethene	ND ug/L		200	200		12/04/13 12:34	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/04/13 12:34	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/04/13 12:34	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	95 %		80-120	200		12/04/13 12:34	460-00-4	D3,HS
Toluene-d8 (S)	95 %		80-120	200		12/04/13 12:34	2037-26-5	
1,2-Dichloroethane-d4 (S)	105 %		80-120	200		12/04/13 12:34	17060-07-0	
Preservation pH	6.0		1.0	200		12/04/13 12:34		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	1270 mg/L		5.0	1		12/06/13 07:22		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	6.0 mg/L		5.0	1		12/11/13 07:46		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

Sample: 316-153		Lab ID: 60158813001	Collected: 12/02/13 10:15	Received: 12/04/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2080	mg/L	5.0	1		12/04/13 11:11		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		12/04/13 16:05		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	35300	mg/L	2.0	1	12/04/13 09:43	12/09/13 10:37		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	671	mg/L	50.0	500		12/06/13 10:08	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	55200	mg/L	10000	1000		12/09/13 13:39		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

Sample: TRIP BLANK		Lab ID: 60158813002	Collected: 12/02/13 10:15	Received: 12/04/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/04/13 13:04	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/04/13 13:04	75-27-4	
Bromoform	ND ug/L		1.0	1		12/04/13 13:04	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/04/13 13:04	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/04/13 13:04	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/04/13 13:04	75-00-3	
Chloroform	ND ug/L		1.0	1		12/04/13 13:04	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/04/13 13:04	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/04/13 13:04	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/04/13 13:04	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/04/13 13:04	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/04/13 13:04	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/04/13 13:04	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/04/13 13:04	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/04/13 13:04	127-18-4	
Toluene	ND ug/L		1.0	1		12/04/13 13:04	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/04/13 13:04	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/04/13 13:04	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/04/13 13:04	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/04/13 13:04	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/04/13 13:04	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	104 %		80-120	1		12/04/13 13:04	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		12/04/13 13:04	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	1		12/04/13 13:04	17060-07-0	
Preservation pH	6.0		1.0	1		12/04/13 13:04		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

QC Batch: MERP/7969

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60158813001

METHOD BLANK: 1300947

Matrix: Water

Associated Lab Samples: 60158813001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/06/13 13:11	

LABORATORY CONTROL SAMPLE: 1300948

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1300949 1300950

Parameter	Units	60158711001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	150	150	81.9	71.4	54	47	70-130	14	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

QC Batch: MERP/7974

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60158813001

METHOD BLANK: 1302450

Matrix: Water

Associated Lab Samples: 60158813001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/10/13 11:41	

LABORATORY CONTROL SAMPLE: 1302451

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302452 1302453

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	145	150	97	100	70-130	3	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153
Pace Project No.: 60158813

QC Batch:	MPRP/25481	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
Associated Lab Samples:	60158813001		

METHOD BLANK: 1301532 Matrix: Water
Associated Lab Samples: 60158813001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/10/13 12:49	
Antimony	ug/L	ND	10.0	12/10/13 12:49	
Arsenic	ug/L	ND	10.0	12/10/13 12:49	
Beryllium	ug/L	ND	1.0	12/10/13 12:49	
Cadmium	ug/L	ND	5.0	12/10/13 12:49	
Chromium	ug/L	ND	5.0	12/10/13 12:49	
Cobalt	ug/L	ND	5.0	12/10/13 12:49	
Copper	ug/L	ND	10.0	12/10/13 12:49	
Iron	ug/L	ND	50.0	12/10/13 12:49	
Lead	ug/L	ND	5.0	12/10/13 12:49	
Nickel	ug/L	ND	5.0	12/10/13 12:49	
Selenium	ug/L	ND	15.0	12/10/13 12:49	
Silver	ug/L	ND	7.0	12/10/13 12:49	
Thallium	ug/L	ND	20.0	12/10/13 12:49	
Zinc	ug/L	ND	50.0	12/10/13 12:49	

LABORATORY CONTROL SAMPLE: 1301533

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10000	100	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	991	99	85-115	
Beryllium	ug/L	1000	992	99	85-115	
Cadmium	ug/L	1000	1010	101	85-115	
Chromium	ug/L	1000	974	97	85-115	
Cobalt	ug/L	1000	994	99	85-115	
Copper	ug/L	1000	947	95	85-115	
Iron	ug/L	10000	9500	95	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1030	103	85-115	
Selenium	ug/L	1000	999	100	85-115	
Silver	ug/L	500	487	97	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	988	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1301534 1301535

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	4520	50000	50000	58800	57900	109	107	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:												1301534	1301535	
Parameter	Units	60158813001		MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max	Qual
		Result	Conc.	Spike	Spike									
Antimony	ug/L	ND	5000	5000	5000	5200	5220	103	104	70-130	0	7		
Arsenic	ug/L	642	5000	5000	5000	6440	6240	116	112	70-130	3	10		
Beryllium	ug/L	ND	5000	5000	5000	4830	4860	96	97	70-130	1	7		
Cadmium	ug/L	ND	5000	5000	5000	5210	5210	104	104	70-130	0	10		
Chromium	ug/L	191	5000	5000	5000	4940	5000	95	96	70-130	1	10		
Cobalt	ug/L	ND	5000	5000	5000	4790	4810	95	96	70-130	0	6		
Copper	ug/L	ND	5000	5000	5000	5000	5040	99	100	70-130	1	11		
Iron	ug/L	644000	50000	50000	50000	898000	799000	510	311	70-130	12	10	M1, R1	
Lead	ug/L	116	5000	5000	5000	4790	4810	94	94	70-130	0	10		
Nickel	ug/L	44.8	5000	5000	5000	4880	4900	97	97	70-130	0	10		
Selenium	ug/L	ND	5000	5000	5000	5880	5740	118	115	70-130	2	10		
Silver	ug/L	ND	2500	2500	2500	2540	2540	101	101	70-130	0	10		
Thallium	ug/L	ND	5000	5000	5000	4370	4400	87	88	70-130	1	6		
Zinc	ug/L	8530	5000	5000	5000	16400	14600	157	121	70-130	12	11	M1, R1	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153
Pace Project No.: 60158813

QC Batch:	MPRP/25504	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60158813001		

METHOD BLANK: 1302496 Matrix: Water
Associated Lab Samples: 60158813001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/10/13 12:03	
Antimony, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Arsenic, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Beryllium, Dissolved	ug/L	ND	1.0	12/10/13 12:03	
Cadmium, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Chromium, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Cobalt, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Copper, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Iron, Dissolved	ug/L	ND	50.0	12/10/13 12:03	
Lead, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Nickel, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Selenium, Dissolved	ug/L	ND	15.0	12/10/13 12:03	
Silver, Dissolved	ug/L	ND	7.0	12/10/13 12:03	
Thallium, Dissolved	ug/L	ND	20.0	12/10/13 12:03	
Zinc, Dissolved	ug/L	ND	50.0	12/10/13 12:03	

LABORATORY CONTROL SAMPLE: 1302497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10000	100	85-115	
Antimony, Dissolved	ug/L	1000	999	100	85-115	
Arsenic, Dissolved	ug/L	1000	989	99	85-115	
Beryllium, Dissolved	ug/L	1000	990	99	85-115	
Cadmium, Dissolved	ug/L	1000	1020	102	85-115	
Chromium, Dissolved	ug/L	1000	975	97	85-115	
Cobalt, Dissolved	ug/L	1000	991	99	85-115	
Copper, Dissolved	ug/L	1000	938	94	85-115	
Iron, Dissolved	ug/L	10000	9560	96	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1030	103	85-115	
Selenium, Dissolved	ug/L	1000	995	99	85-115	
Silver, Dissolved	ug/L	500	465	93	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	981	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302498 1302499

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2720	50000	50000	51800	52700	98	100	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302498 1302499											
Parameter	Units	60158813001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						
				Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5000	5040	5100	101	102	70-130	1
Arsenic, Dissolved	ug/L	586	5000	5000	5000	5650	5840	101	105	70-130	3
Beryllium, Dissolved	ug/L	ND	5000	5000	5000	4730	4790	95	96	70-130	1
Cadmium, Dissolved	ug/L	ND	5000	5000	5000	5020	5080	100	101	70-130	1
Chromium, Dissolved	ug/L	156	5000	5000	5000	4760	4830	92	93	70-130	1
Cobalt, Dissolved	ug/L	ND	5000	5000	5000	4630	4650	92	93	70-130	0
Copper, Dissolved	ug/L	ND	5000	5000	5000	4830	4880	96	97	70-130	1
Iron, Dissolved	ug/L	486000	50000	50000	50000	518000	570000	64	169	70-130	10
Lead, Dissolved	ug/L	58.1	5000	5000	5000	4610	4620	91	91	70-130	0
Nickel, Dissolved	ug/L	40.9	5000	5000	5000	4730	4770	94	95	70-130	1
Selenium, Dissolved	ug/L	ND	5000	5000	5000	5290	5340	106	107	70-130	1
Silver, Dissolved	ug/L	ND	2500	2500	2500	2460	2480	98	99	70-130	1
Thallium, Dissolved	ug/L	ND	5000	5000	5000	4340	4370	87	87	70-130	1
Zinc, Dissolved	ug/L	7640	5000	5000	5000	11800	12700	84	101	70-130	7

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

QC Batch: MSV/58145 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60158813001, 60158813002

METHOD BLANK: 1299684

Matrix: Water

Associated Lab Samples: 60158813001, 60158813002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/04/13 11:49	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/04/13 11:49	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/04/13 11:49	
1,2-Dichloroethane	ug/L	ND	1.0	12/04/13 11:49	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/04/13 11:49	
Benzene	ug/L	ND	1.0	12/04/13 11:49	
Bromodichloromethane	ug/L	ND	1.0	12/04/13 11:49	
Bromoform	ug/L	ND	1.0	12/04/13 11:49	
Bromomethane	ug/L	ND	5.0	12/04/13 11:49	
Carbon tetrachloride	ug/L	ND	1.0	12/04/13 11:49	
Chloroethane	ug/L	ND	1.0	12/04/13 11:49	
Chloroform	ug/L	ND	1.0	12/04/13 11:49	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/04/13 11:49	
Ethylbenzene	ug/L	ND	1.0	12/04/13 11:49	
Methylene chloride	ug/L	1.0	1.0	12/04/13 11:49	
Tetrachloroethene	ug/L	ND	1.0	12/04/13 11:49	
Toluene	ug/L	ND	1.0	12/04/13 11:49	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/04/13 11:49	
Trichloroethene	ug/L	ND	1.0	12/04/13 11:49	
Vinyl chloride	ug/L	ND	1.0	12/04/13 11:49	
Xylene (Total)	ug/L	ND	3.0	12/04/13 11:49	
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/04/13 11:49	
4-Bromofluorobenzene (S)	%	98	80-120	12/04/13 11:49	
Toluene-d8 (S)	%	93	80-120	12/04/13 11:49	

LABORATORY CONTROL SAMPLE: 1299685

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	21.9	110	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	17.8	89	59-138	
1,1,2-Trichloroethane	ug/L	20	18.1	90	69-127	
1,2-Dichloroethane	ug/L	20	20.0	100	71-129	
1,4-Dichlorobenzene	ug/L	20	21.5	107	68-124	
Benzene	ug/L	20	20.7	104	73-129	
Bromodichloromethane	ug/L	20	19.6	98	63-129	
Bromoform	ug/L	20	19.1	96	52-123	
Bromomethane	ug/L	20	19.4	97	10-160	
Carbon tetrachloride	ug/L	20	21.4	107	70-140	
Chloroethane	ug/L	20	17.3	87	42-160	
Chloroform	ug/L	20	22.0	110	60-120	
cis-1,2-Dichloroethene	ug/L	20	21.9	109	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

LABORATORY CONTROL SAMPLE: 1299685

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	21.9	109	66-133	
Methylene chloride	ug/L	20	21.8	109	56-135	
Tetrachloroethene	ug/L	20	23.3	116	64-143	
Toluene	ug/L	20	21.8	109	70-130	
trans-1,2-Dichloroethene	ug/L	20	21.2	106	67-149	
Trichloroethene	ug/L	20	20.2	101	71-130	
Vinyl chloride	ug/L	20	15.9	79	41-160	
Xylene (Total)	ug/L	60	65.3	109	67-130	
1,2-Dichloroethane-d4 (S)	%			96	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			98	80-120	

MATRIX SPIKE SAMPLE: 1299686

Parameter	Units	60158813001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3880	97	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3620	87	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3280	82	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3790	95	49-155	
1,4-Dichlorobenzene	ug/L	748	4000	4400	91	18-147	
Benzene	ug/L	ND	4000	3410	85	37-151	
Bromodichloromethane	ug/L	ND	4000	3430	86	35-155	
Bromoform	ug/L	ND	4000	3280	82	45-133	
Bromomethane	ug/L	ND	4000	2230	56	10-160	
Carbon tetrachloride	ug/L	ND	4000	4080	102	70-140	
Chloroethane	ug/L	ND	4000	3050	76	14-160	
Chloroform	ug/L	ND	4000	3740	93	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3690	92	19-160	
Ethylbenzene	ug/L	ND	4000	3360	84	37-154	
Methylene chloride	ug/L	ND	4000	3370	83	15-156	
Tetrachloroethene	ug/L	ND	4000	3990	100	64-148	
Toluene	ug/L	ND	4000	3320	83	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3520	88	54-156	
Trichloroethene	ug/L	ND	4000	3560	89	71-157	
Vinyl chloride	ug/L	ND	4000	2800	70	10-160	
Xylene (Total)	ug/L	ND	12000	10300	86	12-153	
1,2-Dichloroethane-d4 (S)	%				104	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	D3,HS
Toluene-d8 (S)	%				94	80-120	
Preservation pH			6.0	6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153
Pace Project No.: 60158813

QC Batch:	OEXT/41742	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60158813001		

METHOD BLANK: 1299334 Matrix: Water
Associated Lab Samples: 60158813001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/05/13 08:23	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/05/13 08:23	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/05/13 08:23	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/05/13 08:23	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/05/13 08:23	
Hexachloroethane	ug/L	ND	5.0	12/05/13 08:23	
Naphthalene	ug/L	ND	5.0	12/05/13 08:23	
Nitrobenzene	ug/L	ND	5.0	12/05/13 08:23	
Pentachlorophenol	ug/L	ND	5.0	12/05/13 08:23	
Phenol	ug/L	ND	5.0	12/05/13 08:23	
2,4,6-Tribromophenol (S)	%	74	39-120	12/05/13 08:23	
2-Fluorobiphenyl (S)	%	81	39-120	12/05/13 08:23	
2-Fluorophenol (S)	%	46	17-120	12/05/13 08:23	
Nitrobenzene-d5 (S)	%	77	33-120	12/05/13 08:23	
Phenol-d6 (S)	%	30	11-120	12/05/13 08:23	
Terphenyl-d14 (S)	%	95	45-120	12/05/13 08:23	

LABORATORY CONTROL SAMPLE: 1299335

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	41.9	84	46-120	
2,4,6-Trichlorophenol	ug/L	50	43.4	87	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	47.5	95	40-133	
Hexachloro-1,3-butadiene	ug/L	50	41.0	82	44-116	
Hexachlorocyclopentadiene	ug/L	100	74.9	75	24-120	
Hexachloroethane	ug/L	50	41.2	82	43-113	
Naphthalene	ug/L	50	43.3	87	48-120	
Nitrobenzene	ug/L	50	43.7	87	48-120	
Pentachlorophenol	ug/L	50	40.2	80	47-120	
Phenol	ug/L	50	15.5	31	16-112	
2,4,6-Tribromophenol (S)	%			92	39-120	
2-Fluorobiphenyl (S)	%			86	39-120	
2-Fluorophenol (S)	%			45	17-120	
Nitrobenzene-d5 (S)	%			84	33-120	
Phenol-d6 (S)	%			29	11-120	
Terphenyl-d14 (S)	%			93	45-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

MATRIX SPIKE SAMPLE:		1299336					
Parameter	Units	60158711001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3550	71	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4180	84	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	4320J	86	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3460	69	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	6750	68	11-120	
Hexachloroethane	ug/L	ND	5000	3440	69	40-113	
Naphthalene	ug/L	ND	5000	4380	73	45-120	
Nitrobenzene	ug/L	ND	5000	3710	74	38-120	
Pentachlorophenol	ug/L	ND	5000	4640	93	43-135	
Phenol	ug/L	10400	5000	10800	9	13-112	M1
2,4,6-Tribromophenol (S)	%				87	39-120	
2-Fluorobiphenyl (S)	%				76	39-120	
2-Fluorophenol (S)	%				42	17-120	
Nitrobenzene-d5 (S)	%				80	33-120	
Phenol-d6 (S)	%				30	11-120	
Terphenyl-d14 (S)	%				86	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

QC Batch:	WET/44971	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60158813001		

METHOD BLANK: 1301245 Matrix: Water

Associated Lab Samples: 60158813001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/06/13 07:18	

LABORATORY CONTROL SAMPLE: 1301246

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	38.6	96	78-114	

MATRIX SPIKE SAMPLE: 1301250

Parameter	Units	60158559002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	39.6	44.4	102	78-114	

SAMPLE DUPLICATE: 1301249

Parameter	Units	60159027001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	79.9	2.6J		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

QC Batch: WET/45046

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60158813001

METHOD BLANK: 1303342

Matrix: Water

Associated Lab Samples: 60158813001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/11/13 07:46	

LABORATORY CONTROL SAMPLE: 1303343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	17.7	88	64-132	

MATRIX SPIKE SAMPLE: 1303347

Parameter	Units	60158881001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	22	21.4	96	64-132	

SAMPLE DUPLICATE: 1303348

Parameter	Units	60158881002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

QC Batch: WET/44920

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60158813001

METHOD BLANK: 1299465

Matrix: Water

Associated Lab Samples: 60158813001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/04/13 11:10	

SAMPLE DUPLICATE: 1299466

Parameter	Units	60158813001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	2080	2180	5	25	

SAMPLE DUPLICATE: 1299467

Parameter	Units	60158788001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	7200	7020	3	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

QC Batch:	WET/44936	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60158813001		

SAMPLE DUPLICATE: 1300147

Parameter	Units	60158864001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.1	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

QC Batch: WET/44925

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60158813001

METHOD BLANK: 1299560

Matrix: Water

Associated Lab Samples: 60158813001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/09/13 10:30	

LABORATORY CONTROL SAMPLE: 1299561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	215	109	85-115	

SAMPLE DUPLICATE: 1299562

Parameter	Units	60158813001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	35300	36100	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153
Pace Project No.: 60158813

QC Batch: WETA/27379 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 60158813001

METHOD BLANK: 1300664 Matrix: Water
Associated Lab Samples: 60158813001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/06/13 09:54	

LABORATORY CONTROL SAMPLE: 1300665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1300666

Parameter	Units	60158558001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	694	1000	1640	95	90-110	

MATRIX SPIKE SAMPLE: 1300667

Parameter	Units	60158711001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	709	1000	1680	97	90-110	

MATRIX SPIKE SAMPLE: 1300668

Parameter	Units	60158813001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	671	1000	1680	101	90-110	

SAMPLE DUPLICATE: 1300669

Parameter	Units	60158954001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	711	664	7	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

QC Batch: WETA/27400

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 60158813001

METHOD BLANK: 1301516

Matrix: Water

Associated Lab Samples: 60158813001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/09/13 13:37	

LABORATORY CONTROL SAMPLE: 1301517

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.0	100	90-110	

MATRIX SPIKE SAMPLE: 1301518

Parameter	Units	60158813001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	55200	50000	106000	101	90-110	

MATRIX SPIKE SAMPLE: 1301519

Parameter	Units	60158840001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	58800	50000	114000	110	90-110	

MATRIX SPIKE SAMPLE: 1301520

Parameter	Units	60158954001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	57400	50000	110000	106	90-110	

MATRIX SPIKE SAMPLE: 1301521

Parameter	Units	60159098001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	72100	50000	126000	108	90-110	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

HS Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-153

Pace Project No.: 60158813

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60158813001	316-153	EPA 200.7	MPRP/25481	EPA 200.7	ICP/19595
60158813001	316-153	EPA 200.7	MPRP/25504	EPA 200.7	ICP/19605
60158813001	316-153	EPA 245.1	MERP/7969	EPA 245.1	MERC/7924
60158813001	316-153	EPA 245.1	MERP/7974	EPA 245.1	MERC/7931
60158813001	316-153	EPA 625	OEXT/41742	EPA 625	MSSV/13264
60158813001	316-153	EPA 624 Low	MSV/58145		
60158813002	TRIP BLANK	EPA 624 Low	MSV/58145		
60158813001	316-153	EPA 1664A	WET/44971		
60158813001	316-153	EPA 1664A	WET/45046		
60158813001	316-153	SM 2540D	WET/44920		
60158813001	316-153	SM 4500-H+B	WET/44936		
60158813001	316-153	SM 5210B	WET/44925	SM 5210B	WET/45011
60158813001	316-153	EPA 350.1	WETA/27379		
60158813001	316-153	EPA 410.4	WETA/27400		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60158813



Client Name: Barr

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ Hand

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-239 / T-194

Type of Ice: Wet ☐ Blue ☒ None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 8.0

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 12/4/13

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2. <u>temp > 6°C all ice melted</u>
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Barr pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	Initial HNO ₃ vol ~6.0; added 2.5 ml; final pH ~4.0
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	Initial H ₂ SO ₄ vol ~6.0; added 2ml; final pH ~2.0
Exceptions: VOA, coliform, TOC, <u>DO</u> , WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>12/4/13</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative <u>12520</u>
Pace Trip Blank lot # (if purchased):		16.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	17. <u>15 of 15 sample vials have headspace</u>
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	18. <u>FOOTNOTE LEAD/ARSENIC FOR ITS BASED ON HISTORICAL INFORMATION</u>

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☐ N ☒

Person Contacted: Bill / CCED / Scott Date/Time: 12/4

Comments/ Resolution: ENVI RE: TEMP.

Project Manager Review: [Signature]

Date: 12/4/13

Samples Intact
(Y/N)

December 24, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-154
Pace Project No.: 60158840

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 04, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report revised 12/12/13 for sample ID correction.

Amended report #2 revised to include Acetone on 12/24/13.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60158840001	316-154	Water	12/03/13 10:10	12/04/13 02:30
60158840002	TRIP BLANK	Water	12/03/13 10:10	12/04/13 02:30

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60158840001	316-154	EPA 200.7	SMW	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60158840002	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

Sample: 316-154		Lab ID: 60158840001	Collected: 12/03/13 10:10	Received: 12/04/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	6940	ug/L	375	1	12/06/13 11:00	12/10/13 13:09	7429-90-5	D3
Antimony	ND	ug/L	50.0	1	12/06/13 11:00	12/10/13 13:09	7440-36-0	
Arsenic	861	ug/L	50.0	1	12/06/13 11:00	12/10/13 13:09	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/06/13 11:00	12/10/13 13:09	7440-41-7	
Cadmium	ND	ug/L	25.0	1	12/06/13 11:00	12/10/13 13:09	7440-43-9	
Chromium	223	ug/L	25.0	1	12/06/13 11:00	12/10/13 13:09	7440-47-3	
Cobalt	26.6	ug/L	25.0	1	12/06/13 11:00	12/10/13 13:09	7440-48-4	
Copper	ND	ug/L	50.0	1	12/06/13 11:00	12/10/13 13:09	7440-50-8	
Iron	821000	ug/L	250	1	12/06/13 11:00	12/10/13 13:09	7439-89-6	
Lead	174	ug/L	25.0	1	12/06/13 11:00	12/10/13 13:09	7439-92-1	
Nickel	79.4	ug/L	25.0	1	12/06/13 11:00	12/10/13 13:09	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/06/13 11:00	12/10/13 13:09	7782-49-2	
Silver	ND	ug/L	35.0	1	12/06/13 11:00	12/10/13 13:09	7440-22-4	
Thallium	ND	ug/L	100	1	12/06/13 11:00	12/10/13 13:09	7440-28-0	
Zinc	10600	ug/L	500	2	12/06/13 11:00	12/10/13 13:12	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3160	ug/L	375	1	12/09/13 10:00	12/10/13 12:24	7429-90-5	D3
Antimony, Dissolved	ND	ug/L	50.0	1	12/09/13 10:00	12/10/13 12:24	7440-36-0	
Arsenic, Dissolved	736	ug/L	50.0	1	12/09/13 10:00	12/10/13 12:24	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/09/13 10:00	12/10/13 12:24	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:24	7440-43-9	
Chromium, Dissolved	180	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:24	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:24	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/09/13 10:00	12/10/13 12:24	7440-50-8	
Iron, Dissolved	566000	ug/L	250	1	12/09/13 10:00	12/10/13 12:24	7439-89-6	
Lead, Dissolved	75.0	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:24	7439-92-1	
Nickel, Dissolved	64.1	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:24	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/09/13 10:00	12/10/13 12:24	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/09/13 10:00	12/10/13 12:24	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/09/13 10:00	12/10/13 12:24	7440-28-0	
Zinc, Dissolved	8630	ug/L	500	2	12/09/13 10:00	12/10/13 12:26	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	6.0	1	12/05/13 14:40	12/06/13 13:42	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/09/13 11:20	12/10/13 12:00	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/05/13 00:00	12/09/13 17:24	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/05/13 00:00	12/09/13 17:24	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/05/13 00:00	12/09/13 17:24	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/05/13 00:00	12/09/13 17:24	67-72-1	
Naphthalene	1830	ug/L	1000	2	12/05/13 00:00	12/09/13 17:24	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/05/13 00:00	12/09/13 17:24	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

Sample: 316-154		Lab ID: 60158840001	Collected: 12/03/13 10:10	Received: 12/04/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/05/13 00:00	12/09/13 17:24	87-86-5	M1
Phenol	15300 ug/L		1000	2	12/05/13 00:00	12/09/13 17:24	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/05/13 00:00	12/09/13 17:24	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/05/13 00:00	12/09/13 17:24	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	89 %		33-120	2	12/05/13 00:00	12/09/13 17:24	4165-60-0	
2-Fluorobiphenyl (S)	82 %		39-120	2	12/05/13 00:00	12/09/13 17:24	321-60-8	
Terphenyl-d14 (S)	89 %		45-120	2	12/05/13 00:00	12/09/13 17:24	1718-51-0	
Phenol-d6 (S)	38 %		11-120	2	12/05/13 00:00	12/09/13 17:24	13127-88-3	
2-Fluorophenol (S)	53 %		17-120	2	12/05/13 00:00	12/09/13 17:24	367-12-4	
2,4,6-Tribromophenol (S)	93 %		39-120	2	12/05/13 00:00	12/09/13 17:24	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/04/13 12:03	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/04/13 12:03	75-27-4	
Bromoform	ND ug/L		200	200		12/04/13 12:03	75-25-2	
Bromomethane	ND ug/L		1000	200		12/04/13 12:03	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/04/13 12:03	56-23-5	
Chloroethane	ND ug/L		200	200		12/04/13 12:03	75-00-3	
Chloroform	ND ug/L		200	200		12/04/13 12:03	67-66-3	
1,4-Dichlorobenzene	901 ug/L		200	200		12/04/13 12:03	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/04/13 12:03	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/04/13 12:03	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/04/13 12:03	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/04/13 12:03	100-41-4	
Methylene chloride	ND ug/L		200	200		12/04/13 12:03	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/04/13 12:03	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/04/13 12:03	127-18-4	
Toluene	ND ug/L		200	200		12/04/13 12:03	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/04/13 12:03	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/04/13 12:03	79-00-5	
Trichloroethene	ND ug/L		200	200		12/04/13 12:03	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/04/13 12:03	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/04/13 12:03	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	200		12/04/13 12:03	460-00-4	D3
Toluene-d8 (S)	103 %		80-120	200		12/04/13 12:03	2037-26-5	
1,2-Dichloroethane-d4 (S)	106 %		80-120	200		12/04/13 12:03	17060-07-0	
Preservation pH	6.0		1.0	200		12/04/13 12:03		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	154000 ug/L		2000	200		12/04/13 12:03	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	200		12/04/13 12:03	460-00-4	
Toluene-d8 (S)	103 %		80-120	200		12/04/13 12:03	2037-26-5	
1,2-Dichloroethane-d4 (S)	106 %		80-120	200		12/04/13 12:03	17060-07-0	

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

Sample: 316-154		Lab ID: 60158840001	Collected: 12/03/13 10:10	Received: 12/04/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	1610	mg/L	5.0	1		12/06/13 07:23		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	8.0	mg/L	5.0	1		12/11/13 07:47		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3760	mg/L	5.0	1		12/05/13 09:32		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		12/04/13 16:05		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	32800	mg/L	2.0	1	12/04/13 13:53	12/09/13 13:31		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	599	mg/L	50.0	500		12/06/13 10:10	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	58800	mg/L	10000	1000		12/09/13 13:40		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

Sample: TRIP BLANK		Lab ID: 60158840002	Collected: 12/03/13 10:10	Received: 12/04/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/04/13 12:18	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/04/13 12:18	75-27-4	
Bromoform	ND ug/L		1.0	1		12/04/13 12:18	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/04/13 12:18	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/04/13 12:18	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/04/13 12:18	75-00-3	
Chloroform	ND ug/L		1.0	1		12/04/13 12:18	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/04/13 12:18	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/04/13 12:18	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/04/13 12:18	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/04/13 12:18	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/04/13 12:18	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/04/13 12:18	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/04/13 12:18	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/04/13 12:18	127-18-4	
Toluene	ND ug/L		1.0	1		12/04/13 12:18	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/04/13 12:18	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/04/13 12:18	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/04/13 12:18	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/04/13 12:18	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/04/13 12:18	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	105 %		80-120	1		12/04/13 12:18	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		12/04/13 12:18	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	1		12/04/13 12:18	17060-07-0	
Preservation pH	6.0		1.0	1		12/04/13 12:18		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/04/13 12:18	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	105 %		80-120	1		12/04/13 12:18	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		12/04/13 12:18	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	1		12/04/13 12:18	17060-07-0	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

QC Batch: MERP/7969

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60158840001

METHOD BLANK: 1300947

Matrix: Water

Associated Lab Samples: 60158840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/06/13 13:11	

LABORATORY CONTROL SAMPLE: 1300948

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1300949 1300950

Parameter	Units	60158711001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	150	150	81.9	71.4	54	47	70-130	14	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

QC Batch: MERP/7974

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60158840001

METHOD BLANK: 1302450

Matrix: Water

Associated Lab Samples: 60158840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/10/13 11:41	

LABORATORY CONTROL SAMPLE: 1302451

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302452 1302453

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	145	150	97	100	70-130	3	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154
Pace Project No.: 60158840

QC Batch: MPRP/25481 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60158840001

METHOD BLANK: 1301532 Matrix: Water
Associated Lab Samples: 60158840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/10/13 12:49	
Antimony	ug/L	ND	10.0	12/10/13 12:49	
Arsenic	ug/L	ND	10.0	12/10/13 12:49	
Beryllium	ug/L	ND	1.0	12/10/13 12:49	
Cadmium	ug/L	ND	5.0	12/10/13 12:49	
Chromium	ug/L	ND	5.0	12/10/13 12:49	
Cobalt	ug/L	ND	5.0	12/10/13 12:49	
Copper	ug/L	ND	10.0	12/10/13 12:49	
Iron	ug/L	ND	50.0	12/10/13 12:49	
Lead	ug/L	ND	5.0	12/10/13 12:49	
Nickel	ug/L	ND	5.0	12/10/13 12:49	
Selenium	ug/L	ND	15.0	12/10/13 12:49	
Silver	ug/L	ND	7.0	12/10/13 12:49	
Thallium	ug/L	ND	20.0	12/10/13 12:49	
Zinc	ug/L	ND	50.0	12/10/13 12:49	

LABORATORY CONTROL SAMPLE: 1301533

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10000	100	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	991	99	85-115	
Beryllium	ug/L	1000	992	99	85-115	
Cadmium	ug/L	1000	1010	101	85-115	
Chromium	ug/L	1000	974	97	85-115	
Cobalt	ug/L	1000	994	99	85-115	
Copper	ug/L	1000	947	95	85-115	
Iron	ug/L	10000	9500	95	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1030	103	85-115	
Selenium	ug/L	1000	999	100	85-115	
Silver	ug/L	500	487	97	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	988	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1301534 1301535

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	4520	50000	50000	58800	57900	109	107	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1301534 1301535											
Parameter	Units	60158813001		MS	MSD	MS		MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony	ug/L	ND	5000	5000	5000	5200	5220	103	104	70-130	0
Arsenic	ug/L	642	5000	5000	5000	6440	6240	116	112	70-130	3
Beryllium	ug/L	ND	5000	5000	5000	4830	4860	96	97	70-130	1
Cadmium	ug/L	ND	5000	5000	5000	5210	5210	104	104	70-130	0
Chromium	ug/L	191	5000	5000	5000	4940	5000	95	96	70-130	1
Cobalt	ug/L	ND	5000	5000	5000	4790	4810	95	96	70-130	0
Copper	ug/L	ND	5000	5000	5000	5000	5040	99	100	70-130	1
Iron	ug/L	644000	50000	50000	50000	898000	799000	510	311	70-130	12
Lead	ug/L	116	5000	5000	5000	4790	4810	94	94	70-130	0
Nickel	ug/L	44.8	5000	5000	5000	4880	4900	97	97	70-130	0
Selenium	ug/L	ND	5000	5000	5000	5880	5740	118	115	70-130	2
Silver	ug/L	ND	2500	2500	2500	2540	2540	101	101	70-130	0
Thallium	ug/L	ND	5000	5000	5000	4370	4400	87	88	70-130	1
Zinc	ug/L	8530	5000	5000	5000	16400	14600	157	121	70-130	12

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154
Pace Project No.: 60158840

QC Batch: MPRP/25504 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60158840001

METHOD BLANK: 1302496 Matrix: Water
Associated Lab Samples: 60158840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/10/13 12:03	
Antimony, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Arsenic, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Beryllium, Dissolved	ug/L	ND	1.0	12/10/13 12:03	
Cadmium, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Chromium, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Cobalt, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Copper, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Iron, Dissolved	ug/L	ND	50.0	12/10/13 12:03	
Lead, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Nickel, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Selenium, Dissolved	ug/L	ND	15.0	12/10/13 12:03	
Silver, Dissolved	ug/L	ND	7.0	12/10/13 12:03	
Thallium, Dissolved	ug/L	ND	20.0	12/10/13 12:03	
Zinc, Dissolved	ug/L	ND	50.0	12/10/13 12:03	

LABORATORY CONTROL SAMPLE: 1302497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10000	100	85-115	
Antimony, Dissolved	ug/L	1000	999	100	85-115	
Arsenic, Dissolved	ug/L	1000	989	99	85-115	
Beryllium, Dissolved	ug/L	1000	990	99	85-115	
Cadmium, Dissolved	ug/L	1000	1020	102	85-115	
Chromium, Dissolved	ug/L	1000	975	97	85-115	
Cobalt, Dissolved	ug/L	1000	991	99	85-115	
Copper, Dissolved	ug/L	1000	938	94	85-115	
Iron, Dissolved	ug/L	10000	9560	96	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1030	103	85-115	
Selenium, Dissolved	ug/L	1000	995	99	85-115	
Silver, Dissolved	ug/L	500	465	93	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	981	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302498 1302499

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2720	50000	50000	51800	52700	98	100	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302498 1302499													
Parameter	Units	60158813001		MS	MSD	MS	MSD	MS	MSD	% Rec Limits	Max		Qual
		Result	Conc.	Spike	Spike						Result	Result	
Antimony, Dissolved	ug/L	ND	5000	5000	5040	5100	101	102	70-130	1	7		
Arsenic, Dissolved	ug/L	586	5000	5000	5650	5840	101	105	70-130	3	10		
Beryllium, Dissolved	ug/L	ND	5000	5000	4730	4790	95	96	70-130	1	7		
Cadmium, Dissolved	ug/L	ND	5000	5000	5020	5080	100	101	70-130	1	10		
Chromium, Dissolved	ug/L	156	5000	5000	4760	4830	92	93	70-130	1	10		
Cobalt, Dissolved	ug/L	ND	5000	5000	4630	4650	92	93	70-130	0	6		
Copper, Dissolved	ug/L	ND	5000	5000	4830	4880	96	97	70-130	1	11		
Iron, Dissolved	ug/L	486000	50000	50000	518000	570000	64	169	70-130	10	10	M1	
Lead, Dissolved	ug/L	58.1	5000	5000	4610	4620	91	91	70-130	0	10		
Nickel, Dissolved	ug/L	40.9	5000	5000	4730	4770	94	95	70-130	1	10		
Selenium, Dissolved	ug/L	ND	5000	5000	5290	5340	106	107	70-130	1	10		
Silver, Dissolved	ug/L	ND	2500	2500	2460	2480	98	99	70-130	1	10		
Thallium, Dissolved	ug/L	ND	5000	5000	4340	4370	87	87	70-130	1	6		
Zinc, Dissolved	ug/L	7640	5000	5000	11800	12700	84	101	70-130	7	11		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

QC Batch: MSV/58145 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60158840001, 60158840002

METHOD BLANK: 1299684

Matrix: Water

Associated Lab Samples: 60158840001, 60158840002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/04/13 11:49	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/04/13 11:49	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/04/13 11:49	
1,2-Dichloroethane	ug/L	ND	1.0	12/04/13 11:49	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/04/13 11:49	
Benzene	ug/L	ND	1.0	12/04/13 11:49	
Bromodichloromethane	ug/L	ND	1.0	12/04/13 11:49	
Bromoform	ug/L	ND	1.0	12/04/13 11:49	
Bromomethane	ug/L	ND	5.0	12/04/13 11:49	
Carbon tetrachloride	ug/L	ND	1.0	12/04/13 11:49	
Chloroethane	ug/L	ND	1.0	12/04/13 11:49	
Chloroform	ug/L	ND	1.0	12/04/13 11:49	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/04/13 11:49	
Ethylbenzene	ug/L	ND	1.0	12/04/13 11:49	
Methylene chloride	ug/L	1.0	1.0	12/04/13 11:49	
Tetrachloroethene	ug/L	ND	1.0	12/04/13 11:49	
Toluene	ug/L	ND	1.0	12/04/13 11:49	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/04/13 11:49	
Trichloroethene	ug/L	ND	1.0	12/04/13 11:49	
Vinyl chloride	ug/L	ND	1.0	12/04/13 11:49	
Xylene (Total)	ug/L	ND	3.0	12/04/13 11:49	
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/04/13 11:49	
4-Bromofluorobenzene (S)	%	98	80-120	12/04/13 11:49	
Toluene-d8 (S)	%	93	80-120	12/04/13 11:49	

LABORATORY CONTROL SAMPLE: 1299685

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	21.9	110	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	17.8	89	59-138	
1,1,2-Trichloroethane	ug/L	20	18.1	90	69-127	
1,2-Dichloroethane	ug/L	20	20.0	100	71-129	
1,4-Dichlorobenzene	ug/L	20	21.5	107	68-124	
Benzene	ug/L	20	20.7	104	73-129	
Bromodichloromethane	ug/L	20	19.6	98	63-129	
Bromoform	ug/L	20	19.1	96	52-123	
Bromomethane	ug/L	20	19.4	97	10-160	
Carbon tetrachloride	ug/L	20	21.4	107	70-140	
Chloroethane	ug/L	20	17.3	87	42-160	
Chloroform	ug/L	20	22.0	110	60-120	
cis-1,2-Dichloroethene	ug/L	20	21.9	109	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

LABORATORY CONTROL SAMPLE: 1299685

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	21.9	109	66-133	
Methylene chloride	ug/L	20	21.8	109	56-135	
Tetrachloroethene	ug/L	20	23.3	116	64-143	
Toluene	ug/L	20	21.8	109	70-130	
trans-1,2-Dichloroethene	ug/L	20	21.2	106	67-149	
Trichloroethene	ug/L	20	20.2	101	71-130	
Vinyl chloride	ug/L	20	15.9	79	41-160	
Xylene (Total)	ug/L	60	65.3	109	67-130	
1,2-Dichloroethane-d4 (S)	%			96	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			98	80-120	

MATRIX SPIKE SAMPLE: 1299686

Parameter	Units	60158813001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3880	97	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3620	87	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3280	82	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3790	95	49-155	
1,4-Dichlorobenzene	ug/L	748	4000	4400	91	18-147	
Benzene	ug/L	ND	4000	3410	85	37-151	
Bromodichloromethane	ug/L	ND	4000	3430	86	35-155	
Bromoform	ug/L	ND	4000	3280	82	45-133	
Bromomethane	ug/L	ND	4000	2230	56	10-160	
Carbon tetrachloride	ug/L	ND	4000	4080	102	70-140	
Chloroethane	ug/L	ND	4000	3050	76	14-160	
Chloroform	ug/L	ND	4000	3740	93	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3690	92	19-160	
Ethylbenzene	ug/L	ND	4000	3360	84	37-154	
Methylene chloride	ug/L	ND	4000	3370	83	15-156	
Tetrachloroethene	ug/L	ND	4000	3990	100	64-148	
Toluene	ug/L	ND	4000	3320	83	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3520	88	54-156	
Trichloroethene	ug/L	ND	4000	3560	89	71-157	
Vinyl chloride	ug/L	ND	4000	2800	70	10-160	
Xylene (Total)	ug/L	ND	12000	10300	86	12-153	
1,2-Dichloroethane-d4 (S)	%				104	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	D3,HS
Toluene-d8 (S)	%				94	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

QC Batch:	MSV/58573	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples: 60158840001, 60158840002			

METHOD BLANK: 1311258 Matrix: Water

Associated Lab Samples: 60158840001, 60158840002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/04/13 11:49	N2
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/04/13 11:49	
4-Bromofluorobenzene (S)	%	98	80-120	12/04/13 11:49	
Toluene-d8 (S)	%	93	80-120	12/04/13 11:49	

LABORATORY CONTROL SAMPLE: 1311259

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	150	150	40-160	N2
1,2-Dichloroethane-d4 (S)	%			96	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			98	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154
Pace Project No.: 60158840

QC Batch:	OEXT/41764	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60158840001		

METHOD BLANK: 1300246 Matrix: Water
Associated Lab Samples: 60158840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/09/13 13:17	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/09/13 13:17	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/09/13 13:17	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/09/13 13:17	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/09/13 13:17	
Hexachloroethane	ug/L	ND	5.0	12/09/13 13:17	
Naphthalene	ug/L	ND	5.0	12/09/13 13:17	
Nitrobenzene	ug/L	ND	5.0	12/09/13 13:17	
Pentachlorophenol	ug/L	ND	5.0	12/09/13 13:17	
Phenol	ug/L	ND	5.0	12/09/13 13:17	
2,4,6-Tribromophenol (S)	%	75	39-120	12/09/13 13:17	
2-Fluorobiphenyl (S)	%	79	39-120	12/09/13 13:17	
2-Fluorophenol (S)	%	47	17-120	12/09/13 13:17	
Nitrobenzene-d5 (S)	%	74	33-120	12/09/13 13:17	
Phenol-d6 (S)	%	31	11-120	12/09/13 13:17	
Terphenyl-d14 (S)	%	93	45-120	12/09/13 13:17	

LABORATORY CONTROL SAMPLE: 1300247

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	38.6	77	46-120	
2,4,6-Trichlorophenol	ug/L	50	41.6	83	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	46.3	93	40-133	
Hexachloro-1,3-butadiene	ug/L	50	36.1	72	44-116	
Hexachlorocyclopentadiene	ug/L	100	63.6	64	24-120	
Hexachloroethane	ug/L	50	36.5	73	43-113	
Naphthalene	ug/L	50	40.2	80	48-120	
Nitrobenzene	ug/L	50	40.2	80	48-120	
Pentachlorophenol	ug/L	50	41.5	83	47-120	
Phenol	ug/L	50	17.8	36	16-112	
2,4,6-Tribromophenol (S)	%			90	39-120	
2-Fluorobiphenyl (S)	%			83	39-120	
2-Fluorophenol (S)	%			50	17-120	
Nitrobenzene-d5 (S)	%			79	33-120	
Phenol-d6 (S)	%			34	11-120	
Terphenyl-d14 (S)	%			91	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

MATRIX SPIKE SAMPLE:		1300248					
Parameter	Units	60158840001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3570	71	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4370	87	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	4360J	87	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3490	70	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	6320	63	11-120	
Hexachloroethane	ug/L	ND	5000	3620	72	40-113	
Naphthalene	ug/L	1830	5000	5180	67	45-120	
Nitrobenzene	ug/L	ND	5000	3570	71	38-120	
Pentachlorophenol	ug/L	ND	5000	4610	92	43-135	
Phenol	ug/L	15300	5000	15100	-5	13-112	M1
2,4,6-Tribromophenol (S)	%				90	39-120	
2-Fluorobiphenyl (S)	%				78	39-120	
2-Fluorophenol (S)	%				50	17-120	
Nitrobenzene-d5 (S)	%				113	33-120	
Phenol-d6 (S)	%				37	11-120	
Terphenyl-d14 (S)	%				84	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

QC Batch: WET/44971

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60158840001

METHOD BLANK: 1301245

Matrix: Water

Associated Lab Samples: 60158840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/06/13 07:18	

LABORATORY CONTROL SAMPLE: 1301246

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	38.6	96	78-114	

MATRIX SPIKE SAMPLE: 1301250

Parameter	Units	60158559002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	39.6	44.4	102	78-114	

SAMPLE DUPLICATE: 1301249

Parameter	Units	60159027001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	79.9	2.6J		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

QC Batch: WET/45046

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60158840001

METHOD BLANK: 1303342

Matrix: Water

Associated Lab Samples: 60158840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/11/13 07:46	

LABORATORY CONTROL SAMPLE: 1303343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	17.7	88	64-132	

MATRIX SPIKE SAMPLE: 1303347

Parameter	Units	60158881001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	22	21.4	96	64-132	

SAMPLE DUPLICATE: 1303348

Parameter	Units	60158881002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

QC Batch: WET/44945

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60158840001

METHOD BLANK: 1300299

Matrix: Water

Associated Lab Samples: 60158840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/05/13 09:30	

SAMPLE DUPLICATE: 1300300

Parameter	Units	60158846001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1300301

Parameter	Units	60158834001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

QC Batch:	WET/44936	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60158840001		

SAMPLE DUPLICATE: 1300147

Parameter	Units	60158864001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.1	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

QC Batch: WET/44930

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60158840001

METHOD BLANK: 1299711

Matrix: Water

Associated Lab Samples: 60158840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/09/13 11:34	

LABORATORY CONTROL SAMPLE: 1299712

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	204	103	85-115	

SAMPLE DUPLICATE: 1299713

Parameter	Units	60158867001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	1630	1600	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154
Pace Project No.: 60158840

QC Batch: WETA/27379 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 60158840001

METHOD BLANK: 1300664 Matrix: Water
Associated Lab Samples: 60158840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/06/13 09:54	

LABORATORY CONTROL SAMPLE: 1300665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1300666

Parameter	Units	60158558001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	694	1000	1640	95	90-110	

MATRIX SPIKE SAMPLE: 1300667

Parameter	Units	60158711001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	709	1000	1680	97	90-110	

MATRIX SPIKE SAMPLE: 1300668

Parameter	Units	60158813001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	671	1000	1680	101	90-110	

SAMPLE DUPLICATE: 1300669

Parameter	Units	60158954001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	711	664	7	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-154
Pace Project No.: 60158840

QC Batch:	WETA/27400	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60158840001		

METHOD BLANK: 1301516 Matrix: Water
Associated Lab Samples: 60158840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/09/13 13:37	

LABORATORY CONTROL SAMPLE: 1301517

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.0	100	90-110	

MATRIX SPIKE SAMPLE: 1301518

Parameter	Units	60158813001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	55200	50000	106000	101	90-110	

MATRIX SPIKE SAMPLE: 1301519

Parameter	Units	60158840001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	58800	50000	114000	110	90-110	

MATRIX SPIKE SAMPLE: 1301520

Parameter	Units	60158954001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	57400	50000	110000	106	90-110	

MATRIX SPIKE SAMPLE: 1301521

Parameter	Units	60159098001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	72100	50000	126000	108	90-110	

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QUALIFIERS

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

HS Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

R1 RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-154

Pace Project No.: 60158840

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60158840001	316-154	EPA 200.7	MPRP/25481	EPA 200.7	ICP/19595
60158840001	316-154	EPA 200.7	MPRP/25504	EPA 200.7	ICP/19605
60158840001	316-154	EPA 245.1	MERP/7969	EPA 245.1	MERC/7924
60158840001	316-154	EPA 245.1	MERP/7974	EPA 245.1	MERC/7931
60158840001	316-154	EPA 625	OEXT/41764	EPA 625	MSSV/13278
60158840001	316-154	EPA 624 Low	MSV/58145		
60158840002	TRIP BLANK	EPA 624 Low	MSV/58145		
60158840001	316-154	EPA 624 Low	MSV/58573		
60158840002	TRIP BLANK	EPA 624 Low	MSV/58573		
60158840001	316-154	EPA 1664A	WET/44971		
60158840001	316-154	EPA 1664A	WET/45046		
60158840001	316-154	SM 2540D	WET/44945		
60158840001	316-154	SM 4500-H+B	WET/44936		
60158840001	316-154	SM 5210B	WET/44930	SM 5210B	WET/45016
60158840001	316-154	EPA 350.1	WETA/27379		
60158840001	316-154	EPA 410.4	WETA/27400		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60158840



60158840

Client Name: Barr

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ xroad

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☒ None ☐ Other ☒ 2AL

Thermometer Used: T-239 / T-194

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.4

Date and initials of person examining contents: 12/4/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Bob PH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☐ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>093013-3</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 12/4/13

December 11, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: WEEKLY UNTREATED COMMINGLED
Pace Project No.: 60158910

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 04, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60158910

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60158910

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60158910001	TCLP 12-3	Water	12/03/13 10:00	12/04/13 02:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60158910

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60158910001	TCLP 12-3	EPA 8260	JKL	13
		EPA 5030B/8260	PRG	25
		SM 2540B	RAH	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60158910

Sample: TCLP 12-3		Lab ID: 60158910001	Collected: 12/03/13 10:00	Received: 12/04/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV TCLP		Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 12/07/13 00:00						
Benzene	317 ug/L		250	5		12/10/13 18:08	71-43-2	
2-Butanone (MEK)	65300 ug/L		5000	5		12/10/13 18:08	78-93-3	
Carbon tetrachloride	ND ug/L		250	5		12/10/13 18:08	56-23-5	
Chlorobenzene	ND ug/L		250	5		12/10/13 18:08	108-90-7	
Chloroform	ND ug/L		1000	5		12/10/13 18:08	67-66-3	
1,2-Dichloroethane	ND ug/L		250	5		12/10/13 18:08	107-06-2	
1,1-Dichloroethene	ND ug/L		250	5		12/10/13 18:08	75-35-4	
Tetrachloroethene	ND ug/L		250	5		12/10/13 18:08	127-18-4	
Trichloroethene	ND ug/L		250	5		12/10/13 18:08	79-01-6	
Vinyl chloride	ND ug/L		100	5		12/10/13 18:08	75-01-4	
Surrogates								
1,2-Dichloroethane-d4 (S)	99 %		80-120	5		12/10/13 18:08	17060-07-0	
Toluene-d8 (S)	101 %		80-120	5		12/10/13 18:08	2037-26-5	
4-Bromofluorobenzene (S)	102 %		80-120	5		12/10/13 18:08	460-00-4	
8260 MSV		Analytical Method: EPA 5030B/8260						
Benzene	534 ug/L		200	200		12/05/13 13:25	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/05/13 13:25	75-27-4	
Bromoform	ND ug/L		200	200		12/05/13 13:25	75-25-2	
Bromomethane	ND ug/L		1000	200		12/05/13 13:25	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/05/13 13:25	56-23-5	
Chloroethane	ND ug/L		200	200		12/05/13 13:25	75-00-3	
Chloroform	ND ug/L		200	200		12/05/13 13:25	67-66-3	
1,4-Dichlorobenzene	255 ug/L		200	200		12/05/13 13:25	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/05/13 13:25	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/05/13 13:25	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/05/13 13:25	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/05/13 13:25	100-41-4	
Methylene chloride	ND ug/L		200	200		12/05/13 13:25	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/05/13 13:25	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/05/13 13:25	127-18-4	
Toluene	ND ug/L		200	200		12/05/13 13:25	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/05/13 13:25	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/05/13 13:25	79-00-5	
Trichloroethene	ND ug/L		200	200		12/05/13 13:25	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/05/13 13:25	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/05/13 13:25	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	95 %		80-120	200		12/05/13 13:25	460-00-4	
1,2-Dichloroethane-d4 (S)	98 %		80-120	200		12/05/13 13:25	17060-07-0	
Toluene-d8 (S)	102 %		80-120	200		12/05/13 13:25	2037-26-5	
Preservation pH	7.0		0.10	200		12/05/13 13:25		pH
2540B Total Solids		Analytical Method: SM 2540B						
Total Solids	45400 mg/L		5.0	1		12/10/13 17:12		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60158910

QC Batch: MSV/58222

Analysis Method: EPA 8260

QC Batch Method: EPA 8260

Analysis Description: 8260 MSV TCLP

Associated Lab Samples: 60158910001

METHOD BLANK: 1302596

Matrix: Water

Associated Lab Samples: 60158910001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	12/10/13 17:53	
1,2-Dichloroethane	ug/L	ND	50.0	12/10/13 17:53	
2-Butanone (MEK)	ug/L	ND	1000	12/10/13 17:53	
Benzene	ug/L	ND	50.0	12/10/13 17:53	
Carbon tetrachloride	ug/L	ND	50.0	12/10/13 17:53	
Chlorobenzene	ug/L	ND	50.0	12/10/13 17:53	
Chloroform	ug/L	ND	200	12/10/13 17:53	
Tetrachloroethene	ug/L	ND	50.0	12/10/13 17:53	
Trichloroethene	ug/L	ND	50.0	12/10/13 17:53	
Vinyl chloride	ug/L	ND	20.0	12/10/13 17:53	
1,2-Dichloroethane-d4 (S)	%	104	80-120	12/10/13 17:53	
4-Bromofluorobenzene (S)	%	99	80-120	12/10/13 17:53	
Toluene-d8 (S)	%	99	80-120	12/10/13 17:53	

LABORATORY CONTROL SAMPLE: 1302597

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	1000	882	88	70-127	
1,2-Dichloroethane	ug/L	1000	962	96	72-122	
2-Butanone (MEK)	ug/L	5000	5100	102	69-124	
Benzene	ug/L	1000	996	100	73-122	
Carbon tetrachloride	ug/L	1000	983	98	73-125	
Chlorobenzene	ug/L	1000	978	98	80-120	
Chloroform	ug/L	1000	945	95	76-120	
Tetrachloroethene	ug/L	1000	956	96	79-122	
Trichloroethene	ug/L	1000	929	93	76-120	
Vinyl chloride	ug/L	1000	756	76	57-140	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1302598

Parameter	Units	60158910001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	ND	5000	4220	84	66-142	
1,2-Dichloroethane	ug/L	ND	5000	4810	96	53-144	
2-Butanone (MEK)	ug/L	65300	25000	80600	61	54-127	
Benzene	ug/L	317	5000	5040	94	48-150	
Carbon tetrachloride	ug/L	ND	5000	4530	91	68-145	
Chlorobenzene	ug/L	ND	5000	4810	96	68-131	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60158910

MATRIX SPIKE SAMPLE:		1302598					
Parameter	Units	60158910001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	ND	5000	4620	92	69-126	
Tetrachloroethene	ug/L	ND	5000	4410	88	66-139	
Trichloroethene	ug/L	ND	5000	4430	89	67-130	
Vinyl chloride	ug/L	ND	5000	3510	70	47-159	
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				100	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: WEEKLY UNTREATED COMMINGLED
Pace Project No.: 60158910

QC Batch:	MSV/58166	Analysis Method:	EPA 5030B/8260
QC Batch Method:	EPA 5030B/8260	Analysis Description:	8260 MSV Water 10 mL Purge
Associated Lab Samples:	60158910001		

METHOD BLANK: 1300415 Matrix: Water
Associated Lab Samples: 60158910001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/05/13 10:20	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/05/13 10:20	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/05/13 10:20	
1,2-Dichloroethane	ug/L	ND	1.0	12/05/13 10:20	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/05/13 10:20	
Benzene	ug/L	ND	1.0	12/05/13 10:20	
Bromodichloromethane	ug/L	ND	1.0	12/05/13 10:20	
Bromoform	ug/L	ND	1.0	12/05/13 10:20	
Bromomethane	ug/L	ND	5.0	12/05/13 10:20	
Carbon tetrachloride	ug/L	ND	1.0	12/05/13 10:20	
Chloroethane	ug/L	ND	1.0	12/05/13 10:20	
Chloroform	ug/L	ND	1.0	12/05/13 10:20	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/05/13 10:20	
Ethylbenzene	ug/L	ND	1.0	12/05/13 10:20	
Methylene chloride	ug/L	ND	1.0	12/05/13 10:20	
Tetrachloroethene	ug/L	ND	1.0	12/05/13 10:20	
Toluene	ug/L	ND	1.0	12/05/13 10:20	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/05/13 10:20	
Trichloroethene	ug/L	ND	1.0	12/05/13 10:20	
Vinyl chloride	ug/L	ND	1.0	12/05/13 10:20	
Xylene (Total)	ug/L	ND	3.0	12/05/13 10:20	
1,2-Dichloroethane-d4 (S)	%	100	80-120	12/05/13 10:20	
4-Bromofluorobenzene (S)	%	99	80-120	12/05/13 10:20	
Toluene-d8 (S)	%	100	80-120	12/05/13 10:20	

LABORATORY CONTROL SAMPLE: 1300416

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	22.3	112	75-124	
1,1,2,2-Tetrachloroethane	ug/L	20	19.2	96	73-120	
1,1,2-Trichloroethane	ug/L	20	19.1	95	76-120	
1,2-Dichloroethane	ug/L	20	20.0	100	72-122	
1,4-Dichlorobenzene	ug/L	20	20.6	103	80-120	
Benzene	ug/L	20	21.3	107	73-122	
Bromodichloromethane	ug/L	20	20.7	104	73-120	
Bromoform	ug/L	20	20.5	103	74-120	
Bromomethane	ug/L	20	19.2	96	40-146	
Carbon tetrachloride	ug/L	20	22.2	111	73-125	
Chloroethane	ug/L	20	16.6	83	56-159	
Chloroform	ug/L	20	21.0	105	76-120	
cis-1,2-Dichloroethene	ug/L	20	20.8	104	69-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60158910

LABORATORY CONTROL SAMPLE: 1300416

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	21.8	109	76-123	
Methylene chloride	ug/L	20	19.6	98	71-123	
Tetrachloroethene	ug/L	20	22.9	115	79-122	
Toluene	ug/L	20	21.3	107	76-122	
trans-1,2-Dichloroethene	ug/L	20	21.0	105	78-126	
Trichloroethene	ug/L	20	21.8	109	76-120	
Vinyl chloride	ug/L	20	16.3	81	57-140	
Xylene (Total)	ug/L	60	65.3	109	76-122	
1,2-Dichloroethane-d4 (S)	%			98	80-120	
4-Bromofluorobenzene (S)	%			95	80-120	
Toluene-d8 (S)	%			102	80-120	

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QUALITY CONTROL DATA

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60158910

QC Batch: WET/45042

Analysis Method: SM 2540B

QC Batch Method: SM 2540B

Analysis Description: 2540B Total Solids

Associated Lab Samples: 60158910001

METHOD BLANK: 1303244

Matrix: Water

Associated Lab Samples: 60158910001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	mg/L	ND	5.0	12/10/13 17:11	

LABORATORY CONTROL SAMPLE: 1303245

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	mg/L	1000	958	96	80-120	

SAMPLE DUPLICATE: 1303246

Parameter	Units	60158788001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	mg/L	16000	16500	3	10	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60158910

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSV/58166

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

pH Post-analysis pH measurement indicates insufficient VOA sample preservation.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60158910

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60158910001	TCLP 12-3	EPA 8260	MSV/58222		
60158910001	TCLP 12-3	EPA 5030B/8260	MSV/58166		
60158910001	TCLP 12-3	SM 2540B	WET/45042		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60158910



60158910

Client Name: Barr

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ xroad

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☒ None ☐ Other ☒ 2PIC

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.2

Temperature should be above freezing to 6°C

Date and initials of person examining contents: pu 12/4/13

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☒ No ☐ N/A	6.
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☐ No	Initial when completed
Trip Blank present:	☒ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):	<u>-put 12/4</u>	18.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20.

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 12/10/13

of

TCLP/SPLP Determination of Percent Solids
(Only if sample is liquid or semi-liquid. Skip if sample is obviously 100% solid.)



Date: 11/6/13

Batch: _____

Analyst: JDZ

Balance ID: 000EXT3 Reviewed by: _____

Sample Number	A Weight of Beaker (g)	B Weight of Sample & Beaker (g)	C Weight of Filtrate Container (g)	D Weight of 142-mm TCLP Filter (g)	E Weight of Waste Beaker After Filtration (g)	F Weight of Filtrate & Container (g)	G Weight of Filter and Solid Phase After Filtration (g)	H Weight of Filtrate (g) (F - C)	I Weight of Waste Filtered (g) (E - B)	J Percent WET Solids $\left(\frac{(I - H)}{I \times 0.01}\right)$	K DRY Weight #1 of Solid Phase plus Filter (g)	L DRY Weight #2 of Solid Phase plus Filter (g) (1)	M Percent DRY Solids $\left(\frac{(L - D)}{I \times 0.01}\right)$	If Multiphase, Are Phases Compatible (2)
60156913001	107.9	204.7	283.8	1.3	113.1	362.6	8.7	78.8	91.6	13.97	4.4	4.3	3.28	Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA

NOTE: If Wet Solids are ≥ 0.5 and $< 5\%$ and a small amount of liquid is entrapped in the filter, then determine Percent Dry Solids. If the entrapped liquid is oily (non-aqueous) do not determine Percent Dry Solids. If Solids are $< 0.5\%$, tumbling is not required because the filtrate is considered to be the TCLP/SPLP extract.

- (1) Dry Weight #1 and Dry Weight #2 must be within 1% of each other. If the weights are within 1% of each other, use Dry Weight #2 in further calculations. If not within 1%, continue drying and weighing until two successive weighings are within 1%.
- (2) If compatible, combine the filtered liquid resulting from extraction with the initial liquid phase of sample. If the initial liquid phase is not compatible with the filtered liquid resulting from extraction, do not combine. Analyze liquids separately and combine the results mathematically.

If solids are ≥ 5.0 and $< 100\%$	Weight of waste to charge the ZHE = $\frac{25}{\text{Percent solids}} \times 100$
	Weight of waste to filter = $\frac{\text{mL of leachate required}}{20 \times \text{Percent solids}} \times 100$

December 24, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-155
Pace Project No.: 60158954

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 05, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report revised to include Acetone on 12/24/13.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60158954001	316-155	Water	12/04/13 11:10	12/05/13 01:15
60158954002	TRIP BLANK	Water	12/04/13 00:00	12/05/13 01:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60158954001	316-155	EPA 200.7	SMW	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60158954002	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

Sample: 316-155		Lab ID: 60158954001	Collected: 12/04/13 11:10		Received: 12/05/13 01:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	7680	ug/L	375	1	12/06/13 11:00	12/10/13 13:14	7429-90-5	D3
Antimony	ND	ug/L	50.0	1	12/06/13 11:00	12/10/13 13:14	7440-36-0	
Arsenic	920	ug/L	50.0	1	12/06/13 11:00	12/10/13 13:14	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/06/13 11:00	12/10/13 13:14	7440-41-7	
Cadmium	ND	ug/L	25.0	1	12/06/13 11:00	12/10/13 13:14	7440-43-9	
Chromium	246	ug/L	25.0	1	12/06/13 11:00	12/10/13 13:14	7440-47-3	
Cobalt	ND	ug/L	25.0	1	12/06/13 11:00	12/10/13 13:14	7440-48-4	
Copper	52.4	ug/L	50.0	1	12/06/13 11:00	12/10/13 13:14	7440-50-8	
Iron	826000	ug/L	250	1	12/06/13 11:00	12/10/13 13:14	7439-89-6	
Lead	175	ug/L	25.0	1	12/06/13 11:00	12/10/13 13:14	7439-92-1	
Nickel	70.4	ug/L	25.0	1	12/06/13 11:00	12/10/13 13:14	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/06/13 11:00	12/10/13 13:14	7782-49-2	
Silver	ND	ug/L	35.0	1	12/06/13 11:00	12/10/13 13:14	7440-22-4	
Thallium	ND	ug/L	100	1	12/06/13 11:00	12/10/13 13:14	7440-28-0	
Zinc	10400	ug/L	500	2	12/06/13 11:00	12/10/13 13:17	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3320	ug/L	375	1	12/09/13 10:00	12/10/13 12:28	7429-90-5	D3
Antimony, Dissolved	ND	ug/L	50.0	1	12/09/13 10:00	12/10/13 12:28	7440-36-0	
Arsenic, Dissolved	721	ug/L	50.0	1	12/09/13 10:00	12/10/13 12:28	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/09/13 10:00	12/10/13 12:28	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:28	7440-43-9	
Chromium, Dissolved	194	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:28	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:28	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/09/13 10:00	12/10/13 12:28	7440-50-8	
Iron, Dissolved	566000	ug/L	250	1	12/09/13 10:00	12/10/13 12:28	7439-89-6	
Lead, Dissolved	73.2	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:28	7439-92-1	
Nickel, Dissolved	57.8	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:28	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/09/13 10:00	12/10/13 12:28	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/09/13 10:00	12/10/13 12:28	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/09/13 10:00	12/10/13 12:28	7440-28-0	
Zinc, Dissolved	8860	ug/L	500	2	12/09/13 10:00	12/10/13 12:31	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	21.5	ug/L	6.0	1	12/10/13 17:00	12/11/13 10:09	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/09/13 11:20	12/10/13 12:06	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/06/13 00:00	12/09/13 16:22	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/06/13 00:00	12/09/13 16:22	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/06/13 00:00	12/09/13 16:22	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/06/13 00:00	12/09/13 16:22	67-72-1	
Naphthalene	1370	ug/L	1000	2	12/06/13 00:00	12/09/13 16:22	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/06/13 00:00	12/09/13 16:22	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

Sample: 316-155		Lab ID: 60158954001	Collected: 12/04/13 11:10	Received: 12/05/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/06/13 00:00	12/09/13 16:22	87-86-5	
Phenol	14800 ug/L		1000	2	12/06/13 00:00	12/09/13 16:22	108-95-2	M1
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/06/13 00:00	12/09/13 16:22	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/06/13 00:00	12/09/13 16:22	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	126 %		33-120	2	12/06/13 00:00	12/09/13 16:22	4165-60-0	S0
2-Fluorobiphenyl (S)	79 %		39-120	2	12/06/13 00:00	12/09/13 16:22	321-60-8	
Terphenyl-d14 (S)	87 %		45-120	2	12/06/13 00:00	12/09/13 16:22	1718-51-0	
Phenol-d6 (S)	37 %		11-120	2	12/06/13 00:00	12/09/13 16:22	13127-88-3	
2-Fluorophenol (S)	50 %		17-120	2	12/06/13 00:00	12/09/13 16:22	367-12-4	
2,4,6-Tribromophenol (S)	83 %		39-120	2	12/06/13 00:00	12/09/13 16:22	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/09/13 16:57	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/09/13 16:57	75-27-4	
Bromoform	ND ug/L		200	200		12/09/13 16:57	75-25-2	
Bromomethane	ND ug/L		1000	200		12/09/13 16:57	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/09/13 16:57	56-23-5	
Chloroethane	ND ug/L		200	200		12/09/13 16:57	75-00-3	
Chloroform	ND ug/L		200	200		12/09/13 16:57	67-66-3	
1,4-Dichlorobenzene	534 ug/L		200	200		12/09/13 16:57	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/09/13 16:57	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/09/13 16:57	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/09/13 16:57	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/09/13 16:57	100-41-4	
Methylene chloride	ND ug/L		200	200		12/09/13 16:57	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/09/13 16:57	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/09/13 16:57	127-18-4	
Toluene	ND ug/L		200	200		12/09/13 16:57	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/09/13 16:57	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/09/13 16:57	79-00-5	
Trichloroethene	ND ug/L		200	200		12/09/13 16:57	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/09/13 16:57	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/09/13 16:57	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	200		12/09/13 16:57	460-00-4	D3
Toluene-d8 (S)	96 %		80-120	200		12/09/13 16:57	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	200		12/09/13 16:57	17060-07-0	
Preservation pH	6.0		1.0	200		12/09/13 16:57		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	173000 ug/L		2000	200		12/09/13 16:57	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	200		12/09/13 16:57	460-00-4	
Toluene-d8 (S)	96 %		80-120	200		12/09/13 16:57	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	200		12/09/13 16:57	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

Sample: 316-155		Lab ID: 60158954001	Collected: 12/04/13 11:10	Received: 12/05/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	1220	mg/L	5.0	1		12/06/13 07:28		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	8.8	mg/L	5.0	1		12/11/13 07:47		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3140	mg/L	5.0	1		12/06/13 09:59		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		12/10/13 10:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	33600	mg/L	2.0	1	12/05/13 11:54	12/10/13 09:38		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	711	mg/L	50.0	500		12/06/13 10:13	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	57400	mg/L	10000	1000		12/09/13 13:40		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

Sample: TRIP BLANK		Lab ID: 60158954002	Collected: 12/04/13 00:00	Received: 12/05/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/09/13 17:27	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/09/13 17:27	75-27-4	
Bromoform	ND ug/L		1.0	1		12/09/13 17:27	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/09/13 17:27	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/09/13 17:27	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/09/13 17:27	75-00-3	
Chloroform	ND ug/L		1.0	1		12/09/13 17:27	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/09/13 17:27	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/09/13 17:27	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/09/13 17:27	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/09/13 17:27	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/09/13 17:27	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/09/13 17:27	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/09/13 17:27	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/09/13 17:27	127-18-4	
Toluene	ND ug/L		1.0	1		12/09/13 17:27	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/09/13 17:27	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/09/13 17:27	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/09/13 17:27	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/09/13 17:27	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/09/13 17:27	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	1		12/09/13 17:27	460-00-4	
Toluene-d8 (S)	103 %		80-120	1		12/09/13 17:27	2037-26-5	
1,2-Dichloroethane-d4 (S)	109 %		80-120	1		12/09/13 17:27	17060-07-0	
Preservation pH	6.0		1.0	1		12/09/13 17:27		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/09/13 17:27	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	1		12/09/13 17:27	460-00-4	
Toluene-d8 (S)	103 %		80-120	1		12/09/13 17:27	2037-26-5	
1,2-Dichloroethane-d4 (S)	109 %		80-120	1		12/09/13 17:27	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

QC Batch: MERP/7982

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60158954001

METHOD BLANK: 1303157

Matrix: Water

Associated Lab Samples: 60158954001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/11/13 09:42	

LABORATORY CONTROL SAMPLE: 1303158

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	91	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303159 1303160

Parameter	Units	60158703001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.4	4.2	87	83	70-130	5	20	

MATRIX SPIKE SAMPLE: 1303161

Parameter	Units	60158816001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	4.7	94	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

QC Batch: MERP/7974

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60158954001

METHOD BLANK: 1302450

Matrix: Water

Associated Lab Samples: 60158954001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/10/13 11:41	

LABORATORY CONTROL SAMPLE: 1302451

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302452 1302453

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	145	150	97	100	70-130	3	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155
Pace Project No.: 60158954

QC Batch:	MPRP/25481	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
Associated Lab Samples:	60158954001		

METHOD BLANK: 1301532 Matrix: Water
Associated Lab Samples: 60158954001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/10/13 12:49	
Antimony	ug/L	ND	10.0	12/10/13 12:49	
Arsenic	ug/L	ND	10.0	12/10/13 12:49	
Beryllium	ug/L	ND	1.0	12/10/13 12:49	
Cadmium	ug/L	ND	5.0	12/10/13 12:49	
Chromium	ug/L	ND	5.0	12/10/13 12:49	
Cobalt	ug/L	ND	5.0	12/10/13 12:49	
Copper	ug/L	ND	10.0	12/10/13 12:49	
Iron	ug/L	ND	50.0	12/10/13 12:49	
Lead	ug/L	ND	5.0	12/10/13 12:49	
Nickel	ug/L	ND	5.0	12/10/13 12:49	
Selenium	ug/L	ND	15.0	12/10/13 12:49	
Silver	ug/L	ND	7.0	12/10/13 12:49	
Thallium	ug/L	ND	20.0	12/10/13 12:49	
Zinc	ug/L	ND	50.0	12/10/13 12:49	

LABORATORY CONTROL SAMPLE: 1301533

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10000	100	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	991	99	85-115	
Beryllium	ug/L	1000	992	99	85-115	
Cadmium	ug/L	1000	1010	101	85-115	
Chromium	ug/L	1000	974	97	85-115	
Cobalt	ug/L	1000	994	99	85-115	
Copper	ug/L	1000	947	95	85-115	
Iron	ug/L	10000	9500	95	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1030	103	85-115	
Selenium	ug/L	1000	999	100	85-115	
Silver	ug/L	500	487	97	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	988	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1301534 1301535

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	4520	50000	50000	58800	57900	109	107	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1301534 1301535											
Parameter	Units	60158813001		MS	MSD	MS		MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony	ug/L	ND	5000	5000	5000	5200	5220	103	104	70-130	0
Arsenic	ug/L	642	5000	5000	5000	6440	6240	116	112	70-130	3
Beryllium	ug/L	ND	5000	5000	5000	4830	4860	96	97	70-130	1
Cadmium	ug/L	ND	5000	5000	5000	5210	5210	104	104	70-130	0
Chromium	ug/L	191	5000	5000	5000	4940	5000	95	96	70-130	1
Cobalt	ug/L	ND	5000	5000	5000	4790	4810	95	96	70-130	0
Copper	ug/L	ND	5000	5000	5000	5000	5040	99	100	70-130	1
Iron	ug/L	644000	50000	50000	50000	898000	799000	510	311	70-130	12
Lead	ug/L	116	5000	5000	5000	4790	4810	94	94	70-130	0
Nickel	ug/L	44.8	5000	5000	5000	4880	4900	97	97	70-130	0
Selenium	ug/L	ND	5000	5000	5000	5880	5740	118	115	70-130	2
Silver	ug/L	ND	2500	2500	2500	2540	2540	101	101	70-130	0
Thallium	ug/L	ND	5000	5000	5000	4370	4400	87	88	70-130	1
Zinc	ug/L	8530	5000	5000	5000	16400	14600	157	121	70-130	12

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155
Pace Project No.: 60158954

QC Batch:	MPRP/25504	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60158954001		

METHOD BLANK: 1302496 Matrix: Water
Associated Lab Samples: 60158954001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/10/13 12:03	
Antimony, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Arsenic, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Beryllium, Dissolved	ug/L	ND	1.0	12/10/13 12:03	
Cadmium, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Chromium, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Cobalt, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Copper, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Iron, Dissolved	ug/L	ND	50.0	12/10/13 12:03	
Lead, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Nickel, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Selenium, Dissolved	ug/L	ND	15.0	12/10/13 12:03	
Silver, Dissolved	ug/L	ND	7.0	12/10/13 12:03	
Thallium, Dissolved	ug/L	ND	20.0	12/10/13 12:03	
Zinc, Dissolved	ug/L	ND	50.0	12/10/13 12:03	

LABORATORY CONTROL SAMPLE: 1302497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10000	100	85-115	
Antimony, Dissolved	ug/L	1000	999	100	85-115	
Arsenic, Dissolved	ug/L	1000	989	99	85-115	
Beryllium, Dissolved	ug/L	1000	990	99	85-115	
Cadmium, Dissolved	ug/L	1000	1020	102	85-115	
Chromium, Dissolved	ug/L	1000	975	97	85-115	
Cobalt, Dissolved	ug/L	1000	991	99	85-115	
Copper, Dissolved	ug/L	1000	938	94	85-115	
Iron, Dissolved	ug/L	10000	9560	96	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1030	103	85-115	
Selenium, Dissolved	ug/L	1000	995	99	85-115	
Silver, Dissolved	ug/L	500	465	93	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	981	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302498 1302499

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2720	50000	50000	51800	52700	98	100	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302498 1302499											
Parameter	Units	60158813001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						
				Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5000	5040	5100	101	102	70-130	1
Arsenic, Dissolved	ug/L	586	5000	5000	5000	5650	5840	101	105	70-130	3
Beryllium, Dissolved	ug/L	ND	5000	5000	5000	4730	4790	95	96	70-130	1
Cadmium, Dissolved	ug/L	ND	5000	5000	5000	5020	5080	100	101	70-130	1
Chromium, Dissolved	ug/L	156	5000	5000	5000	4760	4830	92	93	70-130	1
Cobalt, Dissolved	ug/L	ND	5000	5000	5000	4630	4650	92	93	70-130	0
Copper, Dissolved	ug/L	ND	5000	5000	5000	4830	4880	96	97	70-130	1
Iron, Dissolved	ug/L	486000	50000	50000	50000	518000	570000	64	169	70-130	10
Lead, Dissolved	ug/L	58.1	5000	5000	5000	4610	4620	91	91	70-130	0
Nickel, Dissolved	ug/L	40.9	5000	5000	5000	4730	4770	94	95	70-130	1
Selenium, Dissolved	ug/L	ND	5000	5000	5000	5290	5340	106	107	70-130	1
Silver, Dissolved	ug/L	ND	2500	2500	2500	2460	2480	98	99	70-130	1
Thallium, Dissolved	ug/L	ND	5000	5000	5000	4340	4370	87	87	70-130	1
Zinc, Dissolved	ug/L	7640	5000	5000	5000	11800	12700	84	101	70-130	7

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

QC Batch: MSV/58208 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60158954001, 60158954002

METHOD BLANK: 1302404

Matrix: Water

Associated Lab Samples: 60158954001, 60158954002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/09/13 14:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/09/13 14:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/09/13 14:11	
1,2-Dichloroethane	ug/L	ND	1.0	12/09/13 14:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/09/13 14:11	
Benzene	ug/L	ND	1.0	12/09/13 14:11	
Bromodichloromethane	ug/L	ND	1.0	12/09/13 14:11	
Bromoform	ug/L	ND	1.0	12/09/13 14:11	
Bromomethane	ug/L	ND	5.0	12/09/13 14:11	
Carbon tetrachloride	ug/L	ND	1.0	12/09/13 14:11	
Chloroethane	ug/L	ND	1.0	12/09/13 14:11	
Chloroform	ug/L	ND	1.0	12/09/13 14:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/09/13 14:11	
Ethylbenzene	ug/L	ND	1.0	12/09/13 14:11	
Methylene chloride	ug/L	ND	1.0	12/09/13 14:11	
Tetrachloroethene	ug/L	ND	1.0	12/09/13 14:11	
Toluene	ug/L	ND	1.0	12/09/13 14:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/09/13 14:11	
Trichloroethene	ug/L	ND	1.0	12/09/13 14:11	
Vinyl chloride	ug/L	ND	1.0	12/09/13 14:11	
Xylene (Total)	ug/L	ND	3.0	12/09/13 14:11	
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/09/13 14:11	
4-Bromofluorobenzene (S)	%	99	80-120	12/09/13 14:11	
Toluene-d8 (S)	%	96	80-120	12/09/13 14:11	

LABORATORY CONTROL SAMPLE: 1302405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.1	91	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	17.9	89	59-138	
1,1,2-Trichloroethane	ug/L	20	16.0	80	69-127	
1,2-Dichloroethane	ug/L	20	17.0	85	71-129	
1,4-Dichlorobenzene	ug/L	20	18.6	93	68-124	
Benzene	ug/L	20	18.1	90	73-129	
Bromodichloromethane	ug/L	20	17.9	89	63-129	
Bromoform	ug/L	20	16.4	82	52-123	
Bromomethane	ug/L	20	13.6	68	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	13.6	68	42-160	
Chloroform	ug/L	20	16.8	84	60-120	
cis-1,2-Dichloroethene	ug/L	20	17.8	89	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

LABORATORY CONTROL SAMPLE: 1302405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.8	94	66-133	
Methylene chloride	ug/L	20	17.6	88	56-135	
Tetrachloroethene	ug/L	20	18.1	91	64-143	
Toluene	ug/L	20	19.8	99	70-130	
trans-1,2-Dichloroethene	ug/L	20	17.7	89	67-149	
Trichloroethene	ug/L	20	19.4	97	71-130	
Vinyl chloride	ug/L	20	12.1	61	41-160	
Xylene (Total)	ug/L	60	55.1	92	67-130	
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			106	80-120	

MATRIX SPIKE SAMPLE: 1302406

Parameter	Units	60158954001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4270	107	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3740	94	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	4100	102	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3710	93	49-155	
1,4-Dichlorobenzene	ug/L	534	4000	4040	88	18-147	
Benzene	ug/L	ND	4000	3760	94	37-151	
Bromodichloromethane	ug/L	ND	4000	3780	95	35-155	
Bromoform	ug/L	ND	4000	3700	92	45-133	
Bromomethane	ug/L	ND	4000	2280	57	10-160	
Carbon tetrachloride	ug/L	ND	4000	4380	109	70-140	
Chloroethane	ug/L	ND	4000	3010	75	14-160	
Chloroform	ug/L	ND	4000	3570	89	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3860	96	19-160	
Ethylbenzene	ug/L	ND	4000	3960	98	37-154	
Methylene chloride	ug/L	ND	4000	3580	87	15-156	
Tetrachloroethene	ug/L	ND	4000	4300	108	64-148	
Toluene	ug/L	ND	4000	3930	97	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3950	99	54-156	
Trichloroethene	ug/L	ND	4000	4100	103	71-157	
Vinyl chloride	ug/L	ND	4000	2650	66	10-160	
Xylene (Total)	ug/L	ND	12000	11700	97	12-153	
1,2-Dichloroethane-d4 (S)	%				106	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				104	80-120	
Preservation pH			6.0	6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

QC Batch:	MSV/58574	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples: 60158954001, 60158954002			

METHOD BLANK: 1311260 Matrix: Water

Associated Lab Samples: 60158954001, 60158954002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/09/13 14:11	N2
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/09/13 14:11	
4-Bromofluorobenzene (S)	%	99	80-120	12/09/13 14:11	
Toluene-d8 (S)	%	96	80-120	12/09/13 14:11	

LABORATORY CONTROL SAMPLE: 1311261

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	110	110	40-160	N2
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			106	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155
Pace Project No.: 60158954

QC Batch:	OEXT/41775	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60158954001		

METHOD BLANK: 1301267 Matrix: Water
Associated Lab Samples: 60158954001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/09/13 15:21	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/09/13 15:21	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/09/13 15:21	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/09/13 15:21	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/09/13 15:21	
Hexachloroethane	ug/L	ND	5.0	12/09/13 15:21	
Naphthalene	ug/L	ND	5.0	12/09/13 15:21	
Nitrobenzene	ug/L	ND	5.0	12/09/13 15:21	
Pentachlorophenol	ug/L	ND	5.0	12/09/13 15:21	
Phenol	ug/L	ND	5.0	12/09/13 15:21	
2,4,6-Tribromophenol (S)	%	69	39-120	12/09/13 15:21	
2-Fluorobiphenyl (S)	%	76	39-120	12/09/13 15:21	
2-Fluorophenol (S)	%	45	17-120	12/09/13 15:21	
Nitrobenzene-d5 (S)	%	71	33-120	12/09/13 15:21	
Phenol-d6 (S)	%	31	11-120	12/09/13 15:21	
Terphenyl-d14 (S)	%	87	45-120	12/09/13 15:21	

LABORATORY CONTROL SAMPLE: 1301268

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	36.4	73	46-120	
2,4,6-Trichlorophenol	ug/L	50	38.7	77	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	43.3	87	40-133	
Hexachloro-1,3-butadiene	ug/L	50	36.5	73	44-116	
Hexachlorocyclopentadiene	ug/L	100	57.8	58	24-120	
Hexachloroethane	ug/L	50	36.3	73	43-113	
Naphthalene	ug/L	50	37.0	74	48-120	
Nitrobenzene	ug/L	50	37.4	75	48-120	
Pentachlorophenol	ug/L	50	39.7	79	47-120	
Phenol	ug/L	50	18.2	36	16-112	
2,4,6-Tribromophenol (S)	%			82	39-120	
2-Fluorobiphenyl (S)	%			76	39-120	
2-Fluorophenol (S)	%			49	17-120	
Nitrobenzene-d5 (S)	%			71	33-120	
Phenol-d6 (S)	%			34	11-120	
Terphenyl-d14 (S)	%			85	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

MATRIX SPIKE SAMPLE:		1301269					
Parameter	Units	60158954001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3050	61	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	3540	71	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3450J	69	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	2900	58	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	5270	53	11-120	
Hexachloroethane	ug/L	ND	5000	2920	58	40-113	
Naphthalene	ug/L	1370	5000	3990	52	45-120	
Nitrobenzene	ug/L	ND	5000	3140	63	38-120	
Pentachlorophenol	ug/L	ND	5000	3800	76	43-135	
Phenol	ug/L	14800	5000	10600	-84	13-112	M1
2,4,6-Tribromophenol (S)	%				73	39-120	
2-Fluorobiphenyl (S)	%				65	39-120	
2-Fluorophenol (S)	%				40	17-120	
Nitrobenzene-d5 (S)	%				92	33-120	
Phenol-d6 (S)	%				29	11-120	
Terphenyl-d14 (S)	%				70	45-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

QC Batch: WET/44972

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60158954001

METHOD BLANK: 1301256

Matrix: Water

Associated Lab Samples: 60158954001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/06/13 07:24	

LABORATORY CONTROL SAMPLE: 1301257

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	38.8	97	78-114	

MATRIX SPIKE SAMPLE: 1301258

Parameter	Units	60158968002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.4	37.5	90	78-114	

SAMPLE DUPLICATE: 1301259

Parameter	Units	60158501001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	22.8	22.4	2	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

QC Batch: WET/45046

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60158954001

METHOD BLANK: 1303342

Matrix: Water

Associated Lab Samples: 60158954001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/11/13 07:46	

LABORATORY CONTROL SAMPLE: 1303343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	17.7	88	64-132	

MATRIX SPIKE SAMPLE: 1303347

Parameter	Units	60158881001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	22	21.4	96	64-132	

SAMPLE DUPLICATE: 1303348

Parameter	Units	60158881002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

QC Batch: WET/44978

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60158954001

METHOD BLANK: 1301340

Matrix: Water

Associated Lab Samples: 60158954001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/06/13 09:54	

SAMPLE DUPLICATE: 1301341

Parameter	Units	60158862001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	12.0	15.0	22	25	

SAMPLE DUPLICATE: 1301342

Parameter	Units	60158821002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	5.0	ND		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

QC Batch:	WET/44990	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60158954001		

SAMPLE DUPLICATE: 1301827

Parameter	Units	60158817002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

QC Batch: WET/44955

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60158954001

METHOD BLANK: 1300386

Matrix: Water

Associated Lab Samples: 60158954001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/10/13 08:32	

LABORATORY CONTROL SAMPLE: 1300387

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	194	98	85-115	

SAMPLE DUPLICATE: 1300388

Parameter	Units	60158924001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	72.9	68.3	6	17	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155
Pace Project No.: 60158954

QC Batch: WETA/27379 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 60158954001

METHOD BLANK: 1300664 Matrix: Water
Associated Lab Samples: 60158954001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/06/13 09:54	

LABORATORY CONTROL SAMPLE: 1300665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1300666

Parameter	Units	60158558001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	694	1000	1640	95	90-110	

MATRIX SPIKE SAMPLE: 1300667

Parameter	Units	60158711001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	709	1000	1680	97	90-110	

MATRIX SPIKE SAMPLE: 1300668

Parameter	Units	60158813001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	671	1000	1680	101	90-110	

SAMPLE DUPLICATE: 1300669

Parameter	Units	60158954001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	711	664	7	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-155
Pace Project No.: 60158954

QC Batch:	WETA/27400	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60158954001		

METHOD BLANK: 1301516 Matrix: Water
Associated Lab Samples: 60158954001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/09/13 13:37	

LABORATORY CONTROL SAMPLE: 1301517

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.0	100	90-110	

MATRIX SPIKE SAMPLE: 1301518

Parameter	Units	60158813001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	55200	50000	106000	101	90-110	

MATRIX SPIKE SAMPLE: 1301519

Parameter	Units	60158840001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	58800	50000	114000	110	90-110	

MATRIX SPIKE SAMPLE: 1301520

Parameter	Units	60158954001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	57400	50000	110000	106	90-110	

MATRIX SPIKE SAMPLE: 1301521

Parameter	Units	60159098001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	72100	50000	126000	108	90-110	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

R1 RPD value was outside control limits.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-155

Pace Project No.: 60158954

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60158954001	316-155	EPA 200.7	MPRP/25481	EPA 200.7	ICP/19595
60158954001	316-155	EPA 200.7	MPRP/25504	EPA 200.7	ICP/19605
60158954001	316-155	EPA 245.1	MERP/7982	EPA 245.1	MERC/7935
60158954001	316-155	EPA 245.1	MERP/7974	EPA 245.1	MERC/7931
60158954001	316-155	EPA 625	OEXT/41775	EPA 625	MSSV/13280
60158954001	316-155	EPA 624 Low	MSV/58208		
60158954002	TRIP BLANK	EPA 624 Low	MSV/58208		
60158954001	316-155	EPA 624 Low	MSV/58574		
60158954002	TRIP BLANK	EPA 624 Low	MSV/58574		
60158954001	316-155	EPA 1664A	WET/44972		
60158954001	316-155	EPA 1664A	WET/45046		
60158954001	316-155	SM 2540D	WET/44978		
60158954001	316-155	SM 4500-H+B	WET/44990		
60158954001	316-155	SM 5210B	WET/44955	SM 5210B	WET/45082
60158954001	316-155	EPA 350.1	WETA/27379		
60158954001	316-155	EPA 410.4	WETA/27400		

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Sample Condition Upon Receipt

WO#: 60158954



Client Name: BARR

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ YR

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ Zip

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.8

Date and initials of person examining contents: _____

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOB PH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☒ No ☐ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>Dec-02</u>		20.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution: Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☐ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: mw for (AKB)

Date: 12/15/13

December 24, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-156
Pace Project No.: 60159098

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 06, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report revised to include Acetone results on 12/24/13.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159098001	316-156	Water	12/05/13 08:45	12/06/13 01:50
60159098002	TRIP BLANK	Water	12/05/13 08:45	12/06/13 01:50

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159098001	316-156	EPA 200.7	SMW	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60159098002	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

Sample: 316-156		Lab ID: 60159098001	Collected: 12/05/13 08:45	Received: 12/06/13 01:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	6750 ug/L		375	1	12/06/13 11:00	12/10/13 13:19	7429-90-5	
Antimony	57.6 ug/L		50.0	1	12/06/13 11:00	12/10/13 13:19	7440-36-0	
Arsenic	1080 ug/L		50.0	1	12/06/13 11:00	12/10/13 13:19	7440-38-2	
Beryllium	ND ug/L		5.0	1	12/06/13 11:00	12/10/13 13:19	7440-41-7	D3
Cadmium	ND ug/L		25.0	1	12/06/13 11:00	12/10/13 13:19	7440-43-9	
Chromium	315 ug/L		25.0	1	12/06/13 11:00	12/10/13 13:19	7440-47-3	
Cobalt	ND ug/L		25.0	1	12/06/13 11:00	12/10/13 13:19	7440-48-4	
Copper	ND ug/L		50.0	1	12/06/13 11:00	12/10/13 13:19	7440-50-8	
Iron	932000 ug/L		250	1	12/06/13 11:00	12/10/13 13:19	7439-89-6	
Lead	139 ug/L		25.0	1	12/06/13 11:00	12/10/13 13:19	7439-92-1	
Nickel	89.0 ug/L		25.0	1	12/06/13 11:00	12/10/13 13:19	7440-02-0	
Selenium	ND ug/L		75.0	1	12/06/13 11:00	12/10/13 13:19	7782-49-2	
Silver	ND ug/L		35.0	1	12/06/13 11:00	12/10/13 13:19	7440-22-4	
Thallium	ND ug/L		100	1	12/06/13 11:00	12/10/13 13:19	7440-28-0	
Zinc	21700 ug/L		500	2	12/06/13 11:00	12/10/13 13:21	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	4080 ug/L		375	1	12/09/13 10:00	12/10/13 12:33	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	1	12/09/13 10:00	12/10/13 12:33	7440-36-0	D3
Arsenic, Dissolved	716 ug/L		50.0	1	12/09/13 10:00	12/10/13 12:33	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	1	12/09/13 10:00	12/10/13 12:33	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	1	12/09/13 10:00	12/10/13 12:33	7440-43-9	
Chromium, Dissolved	228 ug/L		25.0	1	12/09/13 10:00	12/10/13 12:33	7440-47-3	
Cobalt, Dissolved	ND ug/L		25.0	1	12/09/13 10:00	12/10/13 12:33	7440-48-4	
Copper, Dissolved	ND ug/L		50.0	1	12/09/13 10:00	12/10/13 12:33	7440-50-8	
Iron, Dissolved	700000 ug/L		250	1	12/09/13 10:00	12/10/13 12:33	7439-89-6	
Lead, Dissolved	96.6 ug/L		25.0	1	12/09/13 10:00	12/10/13 12:33	7439-92-1	
Nickel, Dissolved	64.3 ug/L		25.0	1	12/09/13 10:00	12/10/13 12:33	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	1	12/09/13 10:00	12/10/13 12:33	7782-49-2	
Silver, Dissolved	ND ug/L		35.0	1	12/09/13 10:00	12/10/13 12:33	7440-22-4	
Thallium, Dissolved	ND ug/L		100	1	12/09/13 10:00	12/10/13 12:33	7440-28-0	
Zinc, Dissolved	15300 ug/L		500	2	12/09/13 10:00	12/10/13 12:40	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	25.2 ug/L		6.0	1	12/10/13 17:00	12/11/13 10:36	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		6.0	1	12/09/13 11:20	12/10/13 12:09	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	2	12/06/13 00:00	12/09/13 16:43	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	2	12/06/13 00:00	12/09/13 16:43	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	2	12/06/13 00:00	12/09/13 16:43	77-47-4	
Hexachloroethane	ND ug/L		1000	2	12/06/13 00:00	12/09/13 16:43	67-72-1	
Naphthalene	2120 ug/L		1000	2	12/06/13 00:00	12/09/13 16:43	91-20-3	
Nitrobenzene	ND ug/L		1000	2	12/06/13 00:00	12/09/13 16:43	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

Sample: 316-156		Lab ID: 60159098001	Collected: 12/05/13 08:45	Received: 12/06/13 01:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/06/13 00:00	12/09/13 16:43	87-86-5	
Phenol	16600 ug/L		1000	2	12/06/13 00:00	12/09/13 16:43	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/06/13 00:00	12/09/13 16:43	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/06/13 00:00	12/09/13 16:43	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	90 %		33-120	2	12/06/13 00:00	12/09/13 16:43	4165-60-0	
2-Fluorobiphenyl (S)	82 %		39-120	2	12/06/13 00:00	12/09/13 16:43	321-60-8	
Terphenyl-d14 (S)	85 %		45-120	2	12/06/13 00:00	12/09/13 16:43	1718-51-0	
Phenol-d6 (S)	37 %		11-120	2	12/06/13 00:00	12/09/13 16:43	13127-88-3	
2-Fluorophenol (S)	50 %		17-120	2	12/06/13 00:00	12/09/13 16:43	367-12-4	
2,4,6-Tribromophenol (S)	89 %		39-120	2	12/06/13 00:00	12/09/13 16:43	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/09/13 17:57	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/09/13 17:57	75-27-4	
Bromoform	ND ug/L		200	200		12/09/13 17:57	75-25-2	
Bromomethane	ND ug/L		1000	200		12/09/13 17:57	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/09/13 17:57	56-23-5	
Chloroethane	ND ug/L		200	200		12/09/13 17:57	75-00-3	
Chloroform	ND ug/L		200	200		12/09/13 17:57	67-66-3	
1,4-Dichlorobenzene	1030 ug/L		200	200		12/09/13 17:57	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/09/13 17:57	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/09/13 17:57	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/09/13 17:57	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/09/13 17:57	100-41-4	
Methylene chloride	ND ug/L		200	200		12/09/13 17:57	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/09/13 17:57	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/09/13 17:57	127-18-4	
Toluene	ND ug/L		200	200		12/09/13 17:57	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/09/13 17:57	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/09/13 17:57	79-00-5	
Trichloroethene	ND ug/L		200	200		12/09/13 17:57	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/09/13 17:57	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/09/13 17:57	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		12/09/13 17:57	460-00-4	D3
Toluene-d8 (S)	101 %		80-120	200		12/09/13 17:57	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	200		12/09/13 17:57	17060-07-0	
Preservation pH	6.0		1.0	200		12/09/13 17:57		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	200000 ug/L		2000	200		12/09/13 17:57	67-64-1	E,N2
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		12/09/13 17:57	460-00-4	
Toluene-d8 (S)	101 %		80-120	200		12/09/13 17:57	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	200		12/09/13 17:57	17060-07-0	

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

Sample: 316-156		Lab ID: 60159098001	Collected: 12/05/13 08:45	Received: 12/06/13 01:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	1380	mg/L	5.0	1		12/10/13 08:02		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	8.0	mg/L	5.0	1		12/11/13 07:48		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	4080	mg/L	5.0	1		12/10/13 11:17		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.3	Std. Units	0.10	1		12/10/13 10:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	35100	mg/L	2.0	1	12/06/13 12:30	12/11/13 10:27		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	711	mg/L	50.0	500		12/12/13 14:06	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	72100	mg/L	10000	1000		12/09/13 13:42		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

Sample: TRIP BLANK		Lab ID: 60159098002	Collected: 12/05/13 08:45	Received: 12/06/13 01:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/09/13 18:13	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/09/13 18:13	75-27-4	
Bromoform	ND ug/L		1.0	1		12/09/13 18:13	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/09/13 18:13	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/09/13 18:13	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/09/13 18:13	75-00-3	
Chloroform	ND ug/L		1.0	1		12/09/13 18:13	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/09/13 18:13	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/09/13 18:13	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/09/13 18:13	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/09/13 18:13	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/09/13 18:13	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/09/13 18:13	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/09/13 18:13	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/09/13 18:13	127-18-4	
Toluene	ND ug/L		1.0	1		12/09/13 18:13	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/09/13 18:13	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/09/13 18:13	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/09/13 18:13	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/09/13 18:13	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/09/13 18:13	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	1		12/09/13 18:13	460-00-4	
Toluene-d8 (S)	101 %		80-120	1		12/09/13 18:13	2037-26-5	
1,2-Dichloroethane-d4 (S)	103 %		80-120	1		12/09/13 18:13	17060-07-0	
Preservation pH	6.0		1.0	1		12/09/13 18:13		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/09/13 18:13	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	1		12/09/13 18:13	460-00-4	
Toluene-d8 (S)	101 %		80-120	1		12/09/13 18:13	2037-26-5	
1,2-Dichloroethane-d4 (S)	103 %		80-120	1		12/09/13 18:13	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

QC Batch: MERP/7982

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159098001

METHOD BLANK: 1303157

Matrix: Water

Associated Lab Samples: 60159098001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/11/13 09:42	

LABORATORY CONTROL SAMPLE: 1303158

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	91	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303159 1303160

Parameter	Units	60158703001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.4	4.2	87	83	70-130	5	20	

MATRIX SPIKE SAMPLE: 1303161

Parameter	Units	60158816001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	4.7	94	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

QC Batch: MERP/7974

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60159098001

METHOD BLANK: 1302450

Matrix: Water

Associated Lab Samples: 60159098001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/10/13 11:41	

LABORATORY CONTROL SAMPLE: 1302451

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302452 1302453

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	145	150	97	100	70-130	3	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156
Pace Project No.: 60159098

QC Batch: MPRP/25481 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60159098001

METHOD BLANK: 1301532 Matrix: Water
Associated Lab Samples: 60159098001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/10/13 12:49	
Antimony	ug/L	ND	10.0	12/10/13 12:49	
Arsenic	ug/L	ND	10.0	12/10/13 12:49	
Beryllium	ug/L	ND	1.0	12/10/13 12:49	
Cadmium	ug/L	ND	5.0	12/10/13 12:49	
Chromium	ug/L	ND	5.0	12/10/13 12:49	
Cobalt	ug/L	ND	5.0	12/10/13 12:49	
Copper	ug/L	ND	10.0	12/10/13 12:49	
Iron	ug/L	ND	50.0	12/10/13 12:49	
Lead	ug/L	ND	5.0	12/10/13 12:49	
Nickel	ug/L	ND	5.0	12/10/13 12:49	
Selenium	ug/L	ND	15.0	12/10/13 12:49	
Silver	ug/L	ND	7.0	12/10/13 12:49	
Thallium	ug/L	ND	20.0	12/10/13 12:49	
Zinc	ug/L	ND	50.0	12/10/13 12:49	

LABORATORY CONTROL SAMPLE: 1301533

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10000	100	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	991	99	85-115	
Beryllium	ug/L	1000	992	99	85-115	
Cadmium	ug/L	1000	1010	101	85-115	
Chromium	ug/L	1000	974	97	85-115	
Cobalt	ug/L	1000	994	99	85-115	
Copper	ug/L	1000	947	95	85-115	
Iron	ug/L	10000	9500	95	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1030	103	85-115	
Selenium	ug/L	1000	999	100	85-115	
Silver	ug/L	500	487	97	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	988	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1301534 1301535

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	4520	50000	50000	58800	57900	109	107	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1301534 1301535											
Parameter	Units	60158813001		MS	MSD	MS		MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony	ug/L	ND	5000	5000	5000	5200	5220	103	104	70-130	0
Arsenic	ug/L	642	5000	5000	5000	6440	6240	116	112	70-130	3
Beryllium	ug/L	ND	5000	5000	5000	4830	4860	96	97	70-130	1
Cadmium	ug/L	ND	5000	5000	5000	5210	5210	104	104	70-130	0
Chromium	ug/L	191	5000	5000	5000	4940	5000	95	96	70-130	1
Cobalt	ug/L	ND	5000	5000	5000	4790	4810	95	96	70-130	0
Copper	ug/L	ND	5000	5000	5000	5000	5040	99	100	70-130	1
Iron	ug/L	644000	50000	50000	50000	898000	799000	510	311	70-130	12
Lead	ug/L	116	5000	5000	5000	4790	4810	94	94	70-130	0
Nickel	ug/L	44.8	5000	5000	5000	4880	4900	97	97	70-130	0
Selenium	ug/L	ND	5000	5000	5000	5880	5740	118	115	70-130	2
Silver	ug/L	ND	2500	2500	2500	2540	2540	101	101	70-130	0
Thallium	ug/L	ND	5000	5000	5000	4370	4400	87	88	70-130	1
Zinc	ug/L	8530	5000	5000	5000	16400	14600	157	121	70-130	12

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156
Pace Project No.: 60159098

QC Batch: MPRP/25504 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60159098001

METHOD BLANK: 1302496 Matrix: Water
Associated Lab Samples: 60159098001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/10/13 12:03	
Antimony, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Arsenic, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Beryllium, Dissolved	ug/L	ND	1.0	12/10/13 12:03	
Cadmium, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Chromium, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Cobalt, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Copper, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Iron, Dissolved	ug/L	ND	50.0	12/10/13 12:03	
Lead, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Nickel, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Selenium, Dissolved	ug/L	ND	15.0	12/10/13 12:03	
Silver, Dissolved	ug/L	ND	7.0	12/10/13 12:03	
Thallium, Dissolved	ug/L	ND	20.0	12/10/13 12:03	
Zinc, Dissolved	ug/L	ND	50.0	12/10/13 12:03	

LABORATORY CONTROL SAMPLE: 1302497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10000	100	85-115	
Antimony, Dissolved	ug/L	1000	999	100	85-115	
Arsenic, Dissolved	ug/L	1000	989	99	85-115	
Beryllium, Dissolved	ug/L	1000	990	99	85-115	
Cadmium, Dissolved	ug/L	1000	1020	102	85-115	
Chromium, Dissolved	ug/L	1000	975	97	85-115	
Cobalt, Dissolved	ug/L	1000	991	99	85-115	
Copper, Dissolved	ug/L	1000	938	94	85-115	
Iron, Dissolved	ug/L	10000	9560	96	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1030	103	85-115	
Selenium, Dissolved	ug/L	1000	995	99	85-115	
Silver, Dissolved	ug/L	500	465	93	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	981	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302498 1302499

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2720	50000	50000	51800	52700	98	100	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302498 1302499													
Parameter	Units	60158813001		MS	MSD	MS	MSD	MS	MSD	% Rec Limits	Max		Qual
		Result	Conc.	Spike	Spike						Result	Result	
Antimony, Dissolved	ug/L	ND	5000	5000	5040	5100	101	102	70-130	1	7		
Arsenic, Dissolved	ug/L	586	5000	5000	5650	5840	101	105	70-130	3	10		
Beryllium, Dissolved	ug/L	ND	5000	5000	4730	4790	95	96	70-130	1	7		
Cadmium, Dissolved	ug/L	ND	5000	5000	5020	5080	100	101	70-130	1	10		
Chromium, Dissolved	ug/L	156	5000	5000	4760	4830	92	93	70-130	1	10		
Cobalt, Dissolved	ug/L	ND	5000	5000	4630	4650	92	93	70-130	0	6		
Copper, Dissolved	ug/L	ND	5000	5000	4830	4880	96	97	70-130	1	11		
Iron, Dissolved	ug/L	486000	50000	50000	518000	570000	64	169	70-130	10	10	M1	
Lead, Dissolved	ug/L	58.1	5000	5000	4610	4620	91	91	70-130	0	10		
Nickel, Dissolved	ug/L	40.9	5000	5000	4730	4770	94	95	70-130	1	10		
Selenium, Dissolved	ug/L	ND	5000	5000	5290	5340	106	107	70-130	1	10		
Silver, Dissolved	ug/L	ND	2500	2500	2460	2480	98	99	70-130	1	10		
Thallium, Dissolved	ug/L	ND	5000	5000	4340	4370	87	87	70-130	1	6		
Zinc, Dissolved	ug/L	7640	5000	5000	11800	12700	84	101	70-130	7	11		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

QC Batch: MSV/58208 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60159098001, 60159098002

METHOD BLANK: 1302404

Matrix: Water

Associated Lab Samples: 60159098001, 60159098002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/09/13 14:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/09/13 14:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/09/13 14:11	
1,2-Dichloroethane	ug/L	ND	1.0	12/09/13 14:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/09/13 14:11	
Benzene	ug/L	ND	1.0	12/09/13 14:11	
Bromodichloromethane	ug/L	ND	1.0	12/09/13 14:11	
Bromoform	ug/L	ND	1.0	12/09/13 14:11	
Bromomethane	ug/L	ND	5.0	12/09/13 14:11	
Carbon tetrachloride	ug/L	ND	1.0	12/09/13 14:11	
Chloroethane	ug/L	ND	1.0	12/09/13 14:11	
Chloroform	ug/L	ND	1.0	12/09/13 14:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/09/13 14:11	
Ethylbenzene	ug/L	ND	1.0	12/09/13 14:11	
Methylene chloride	ug/L	ND	1.0	12/09/13 14:11	
Tetrachloroethene	ug/L	ND	1.0	12/09/13 14:11	
Toluene	ug/L	ND	1.0	12/09/13 14:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/09/13 14:11	
Trichloroethene	ug/L	ND	1.0	12/09/13 14:11	
Vinyl chloride	ug/L	ND	1.0	12/09/13 14:11	
Xylene (Total)	ug/L	ND	3.0	12/09/13 14:11	
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/09/13 14:11	
4-Bromofluorobenzene (S)	%	99	80-120	12/09/13 14:11	
Toluene-d8 (S)	%	96	80-120	12/09/13 14:11	

LABORATORY CONTROL SAMPLE: 1302405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.1	91	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	17.9	89	59-138	
1,1,2-Trichloroethane	ug/L	20	16.0	80	69-127	
1,2-Dichloroethane	ug/L	20	17.0	85	71-129	
1,4-Dichlorobenzene	ug/L	20	18.6	93	68-124	
Benzene	ug/L	20	18.1	90	73-129	
Bromodichloromethane	ug/L	20	17.9	89	63-129	
Bromoform	ug/L	20	16.4	82	52-123	
Bromomethane	ug/L	20	13.6	68	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	13.6	68	42-160	
Chloroform	ug/L	20	16.8	84	60-120	
cis-1,2-Dichloroethene	ug/L	20	17.8	89	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

LABORATORY CONTROL SAMPLE: 1302405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.8	94	66-133	
Methylene chloride	ug/L	20	17.6	88	56-135	
Tetrachloroethene	ug/L	20	18.1	91	64-143	
Toluene	ug/L	20	19.8	99	70-130	
trans-1,2-Dichloroethene	ug/L	20	17.7	89	67-149	
Trichloroethene	ug/L	20	19.4	97	71-130	
Vinyl chloride	ug/L	20	12.1	61	41-160	
Xylene (Total)	ug/L	60	55.1	92	67-130	
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			106	80-120	

MATRIX SPIKE SAMPLE: 1302406

Parameter	Units	60158954001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4270	107	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3740	94	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	4100	102	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3710	93	49-155	
1,4-Dichlorobenzene	ug/L	534	4000	4040	88	18-147	
Benzene	ug/L	ND	4000	3760	94	37-151	
Bromodichloromethane	ug/L	ND	4000	3780	95	35-155	
Bromoform	ug/L	ND	4000	3700	92	45-133	
Bromomethane	ug/L	ND	4000	2280	57	10-160	
Carbon tetrachloride	ug/L	ND	4000	4380	109	70-140	
Chloroethane	ug/L	ND	4000	3010	75	14-160	
Chloroform	ug/L	ND	4000	3570	89	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3860	96	19-160	
Ethylbenzene	ug/L	ND	4000	3960	98	37-154	
Methylene chloride	ug/L	ND	4000	3580	87	15-156	
Tetrachloroethene	ug/L	ND	4000	4300	108	64-148	
Toluene	ug/L	ND	4000	3930	97	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3950	99	54-156	
Trichloroethene	ug/L	ND	4000	4100	103	71-157	
Vinyl chloride	ug/L	ND	4000	2650	66	10-160	
Xylene (Total)	ug/L	ND	12000	11700	97	12-153	
1,2-Dichloroethane-d4 (S)	%				106	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				104	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

QC Batch:	MSV/58574	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples: 60159098001, 60159098002			

METHOD BLANK: 1311260 Matrix: Water

Associated Lab Samples: 60159098001, 60159098002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/09/13 14:11	N2
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/09/13 14:11	
4-Bromofluorobenzene (S)	%	99	80-120	12/09/13 14:11	
Toluene-d8 (S)	%	96	80-120	12/09/13 14:11	

LABORATORY CONTROL SAMPLE: 1311261

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	110	110	40-160	N2
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			106	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156
Pace Project No.: 60159098

QC Batch:	OEXT/41775	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159098001		

METHOD BLANK: 1301267 Matrix: Water
Associated Lab Samples: 60159098001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/09/13 15:21	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/09/13 15:21	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/09/13 15:21	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/09/13 15:21	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/09/13 15:21	
Hexachloroethane	ug/L	ND	5.0	12/09/13 15:21	
Naphthalene	ug/L	ND	5.0	12/09/13 15:21	
Nitrobenzene	ug/L	ND	5.0	12/09/13 15:21	
Pentachlorophenol	ug/L	ND	5.0	12/09/13 15:21	
Phenol	ug/L	ND	5.0	12/09/13 15:21	
2,4,6-Tribromophenol (S)	%	69	39-120	12/09/13 15:21	
2-Fluorobiphenyl (S)	%	76	39-120	12/09/13 15:21	
2-Fluorophenol (S)	%	45	17-120	12/09/13 15:21	
Nitrobenzene-d5 (S)	%	71	33-120	12/09/13 15:21	
Phenol-d6 (S)	%	31	11-120	12/09/13 15:21	
Terphenyl-d14 (S)	%	87	45-120	12/09/13 15:21	

LABORATORY CONTROL SAMPLE: 1301268

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	36.4	73	46-120	
2,4,6-Trichlorophenol	ug/L	50	38.7	77	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	43.3	87	40-133	
Hexachloro-1,3-butadiene	ug/L	50	36.5	73	44-116	
Hexachlorocyclopentadiene	ug/L	100	57.8	58	24-120	
Hexachloroethane	ug/L	50	36.3	73	43-113	
Naphthalene	ug/L	50	37.0	74	48-120	
Nitrobenzene	ug/L	50	37.4	75	48-120	
Pentachlorophenol	ug/L	50	39.7	79	47-120	
Phenol	ug/L	50	18.2	36	16-112	
2,4,6-Tribromophenol (S)	%			82	39-120	
2-Fluorobiphenyl (S)	%			76	39-120	
2-Fluorophenol (S)	%			49	17-120	
Nitrobenzene-d5 (S)	%			71	33-120	
Phenol-d6 (S)	%			34	11-120	
Terphenyl-d14 (S)	%			85	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

MATRIX SPIKE SAMPLE:		1301269					
Parameter	Units	60158954001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3050	61	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	3540	71	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3450J	69	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	2900	58	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	5270	53	11-120	
Hexachloroethane	ug/L	ND	5000	2920	58	40-113	
Naphthalene	ug/L	1370	5000	3990	52	45-120	
Nitrobenzene	ug/L	ND	5000	3140	63	38-120	
Pentachlorophenol	ug/L	ND	5000	3800	76	43-135	
Phenol	ug/L	14800	5000	10600	-84	13-112	M1
2,4,6-Tribromophenol (S)	%				73	39-120	
2-Fluorobiphenyl (S)	%				65	39-120	
2-Fluorophenol (S)	%				40	17-120	
Nitrobenzene-d5 (S)	%				92	33-120	
Phenol-d6 (S)	%				29	11-120	
Terphenyl-d14 (S)	%				70	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

QC Batch: WET/45025

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60159098001

METHOD BLANK: 1302751

Matrix: Water

Associated Lab Samples: 60159098001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/10/13 08:00	

LABORATORY CONTROL SAMPLE: 1302752

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.2	100	78-114	

MATRIX SPIKE SAMPLE: 1302755

Parameter	Units	60158857002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	40.3	97	78-114	

SAMPLE DUPLICATE: 1302756

Parameter	Units	60158862002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

QC Batch: WET/45046

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159098001

METHOD BLANK: 1303342

Matrix: Water

Associated Lab Samples: 60159098001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/11/13 07:46	

LABORATORY CONTROL SAMPLE: 1303343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	17.7	88	64-132	

MATRIX SPIKE SAMPLE: 1303347

Parameter	Units	60158881001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	22	21.4	96	64-132	

SAMPLE DUPLICATE: 1303348

Parameter	Units	60158881002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

QC Batch: WET/45030

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159098001

METHOD BLANK: 1302830

Matrix: Water

Associated Lab Samples: 60159098001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/10/13 11:11	

SAMPLE DUPLICATE: 1302831

Parameter	Units	60158986001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	5050	5540	9	25	

SAMPLE DUPLICATE: 1302832

Parameter	Units	60158959003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	208	209	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

QC Batch:	WET/44990	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60159098001		

SAMPLE DUPLICATE: 1301827

Parameter	Units	60158817002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

QC Batch: WET/44986

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159098001

METHOD BLANK: 1301524

Matrix: Water

Associated Lab Samples: 60159098001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/11/13 09:42	

LABORATORY CONTROL SAMPLE: 1301525

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	189	95	85-115	

SAMPLE DUPLICATE: 1301526

Parameter	Units	60159046001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	149	143	4	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

QC Batch: WETA/27468

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159098001

METHOD BLANK: 1304188

Matrix: Water

Associated Lab Samples: 60159098001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/12/13 13:49	

LABORATORY CONTROL SAMPLE: 1304189

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	1.9	97	90-110	

MATRIX SPIKE SAMPLE: 1304190

Parameter	Units	60159098001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	711	1000	1650	94	90-110	

SAMPLE DUPLICATE: 1304191

Parameter	Units	60159206001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	749	730	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

QC Batch:	WETA/27400	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60159098001		

METHOD BLANK: 1301516 Matrix: Water
Associated Lab Samples: 60159098001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/09/13 13:37	

LABORATORY CONTROL SAMPLE: 1301517

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.0	100	90-110	

MATRIX SPIKE SAMPLE: 1301518

Parameter	Units	60158813001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	55200	50000	106000	101	90-110	

MATRIX SPIKE SAMPLE: 1301519

Parameter	Units	60158840001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	58800	50000	114000	110	90-110	

MATRIX SPIKE SAMPLE: 1301520

Parameter	Units	60158954001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	57400	50000	110000	106	90-110	

MATRIX SPIKE SAMPLE: 1301521

Parameter	Units	60159098001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	72100	50000	126000	108	90-110	

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QUALIFIERS

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

R1 RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-156

Pace Project No.: 60159098

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159098001	316-156	EPA 200.7	MPRP/25481	EPA 200.7	ICP/19595
60159098001	316-156	EPA 200.7	MPRP/25504	EPA 200.7	ICP/19605
60159098001	316-156	EPA 245.1	MERP/7982	EPA 245.1	MERC/7935
60159098001	316-156	EPA 245.1	MERP/7974	EPA 245.1	MERC/7931
60159098001	316-156	EPA 625	OEXT/41775	EPA 625	MSSV/13280
60159098001	316-156	EPA 624 Low	MSV/58208		
60159098002	TRIP BLANK	EPA 624 Low	MSV/58208		
60159098001	316-156	EPA 624 Low	MSV/58574		
60159098002	TRIP BLANK	EPA 624 Low	MSV/58574		
60159098001	316-156	EPA 1664A	WET/45025		
60159098001	316-156	EPA 1664A	WET/45046		
60159098001	316-156	SM 2540D	WET/45030		
60159098001	316-156	SM 4500-H+B	WET/44990		
60159098001	316-156	SM 5210B	WET/44986	SM 5210B	WET/45108
60159098001	316-156	EPA 350.1	WETA/27468		
60159098001	316-156	EPA 410.4	WETA/27400		

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Sample Condition Upon Receipt

WO#: 60159098



60159098

Client Name: BARR

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ XP

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ Zip

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.2

Date and initials of person examining contents: 2/12/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses Matrix: <u>wt</u>		13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	<u>Added HNO3 to 316-156 6.0/4.0</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	<u>Added H2SO4 2.0 to 316-156 6.0/3.5</u>
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>8</u> Lot # of added preservative <u>12513</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	
Pace Trip Blank lot # (if purchased): <u>Nov. 23</u>		15.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	<u>275 VOA</u>
		16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 12/19/13

December 31, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-157
Pace Project No.: 60159167

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 07, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revised Report - Rev. 1, 12/31/13: This report has been revised to include Acetone in the 624 VOC scan.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Andy Brownfield for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159167001	316-157	Water	12/06/13 09:00	12/07/13 00:35
60159167002	TRIP BLANK	Water	12/06/13 08:00	12/07/13 00:35

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159167001	316-157	EPA 200.7	TDS	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 624 Low	EAK	5
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60159167002	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	5

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

Sample: 316-157		Lab ID: 60159167001		Collected: 12/06/13 09:00		Received: 12/07/13 00:35		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Aluminum	8890	ug/L	375	1	12/11/13 14:00	12/12/13 17:50	7429-90-5	D3	
Antimony	76.5	ug/L	50.0	1	12/11/13 14:00	12/12/13 17:50	7440-36-0		
Arsenic	970	ug/L	50.0	1	12/11/13 14:00	12/12/13 17:50	7440-38-2		
Beryllium	ND	ug/L	5.0	1	12/11/13 14:00	12/12/13 17:50	7440-41-7		
Cadmium	ND	ug/L	25.0	1	12/11/13 14:00	12/12/13 17:50	7440-43-9		
Chromium	310	ug/L	25.0	1	12/11/13 14:00	12/12/13 17:50	7440-47-3		
Cobalt	31.5	ug/L	25.0	1	12/11/13 14:00	12/12/13 17:50	7440-48-4		
Copper	ND	ug/L	50.0	1	12/11/13 14:00	12/12/13 17:50	7440-50-8		
Iron	1060000	ug/L	250	1	12/11/13 14:00	12/12/13 17:50	7439-89-6		
Lead	204	ug/L	25.0	1	12/11/13 14:00	12/12/13 17:50	7439-92-1		
Nickel	84.0	ug/L	25.0	1	12/11/13 14:00	12/12/13 17:50	7440-02-0		
Selenium	ND	ug/L	75.0	1	12/11/13 14:00	12/12/13 17:50	7782-49-2		
Silver	ND	ug/L	35.0	1	12/11/13 14:00	12/12/13 17:50	7440-22-4		
Thallium	ND	ug/L	100	1	12/11/13 14:00	12/12/13 17:50	7440-28-0		
Zinc	15700	ug/L	500	2	12/11/13 14:00	12/12/13 17:52	7440-66-6		
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Aluminum, Dissolved	3640	ug/L	375	1	12/09/13 10:00	12/10/13 12:42	7429-90-5	D3	
Antimony, Dissolved	ND	ug/L	50.0	1	12/09/13 10:00	12/10/13 12:42	7440-36-0		
Arsenic, Dissolved	678	ug/L	50.0	1	12/09/13 10:00	12/10/13 12:42	7440-38-2		
Beryllium, Dissolved	ND	ug/L	5.0	1	12/09/13 10:00	12/10/13 12:42	7440-41-7		
Cadmium, Dissolved	ND	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:42	7440-43-9		
Chromium, Dissolved	200	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:42	7440-47-3		
Cobalt, Dissolved	ND	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:42	7440-48-4		
Copper, Dissolved	ND	ug/L	50.0	1	12/09/13 10:00	12/10/13 12:42	7440-50-8		
Iron, Dissolved	624000	ug/L	250	1	12/09/13 10:00	12/10/13 12:42	7439-89-6		
Lead, Dissolved	84.8	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:42	7439-92-1		
Nickel, Dissolved	54.8	ug/L	25.0	1	12/09/13 10:00	12/10/13 12:42	7440-02-0		
Selenium, Dissolved	ND	ug/L	75.0	1	12/09/13 10:00	12/10/13 12:42	7782-49-2		
Silver, Dissolved	ND	ug/L	35.0	1	12/09/13 10:00	12/10/13 12:42	7440-22-4		
Thallium, Dissolved	ND	ug/L	100	1	12/09/13 10:00	12/10/13 12:42	7440-28-0		
Zinc, Dissolved	10300	ug/L	500	2	12/09/13 10:00	12/10/13 12:45	7440-66-6		
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
Mercury	17.9	ug/L	6.0	1	12/12/13 09:30	12/12/13 15:14	7439-97-6		
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
Mercury, Dissolved	ND	ug/L	6.0	1	12/09/13 11:20	12/10/13 12:11	7439-97-6		
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625							
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/07/13 00:00	12/09/13 19:27	534-52-1		
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/07/13 00:00	12/09/13 19:27	87-68-3		
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/07/13 00:00	12/09/13 19:27	77-47-4		
Hexachloroethane	ND	ug/L	1000	2	12/07/13 00:00	12/09/13 19:27	67-72-1		
Naphthalene	ND	ug/L	1000	2	12/07/13 00:00	12/09/13 19:27	91-20-3		
Nitrobenzene	ND	ug/L	1000	2	12/07/13 00:00	12/09/13 19:27	98-95-3		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

Sample: 316-157		Lab ID: 60159167001	Collected: 12/06/13 09:00	Received: 12/07/13 00:35	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/07/13 00:00	12/09/13 19:27	87-86-5	
Phenol	13200 ug/L		1000	2	12/07/13 00:00	12/09/13 19:27	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/07/13 00:00	12/09/13 19:27	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/07/13 00:00	12/09/13 19:27	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	112 %		33-120	2	12/07/13 00:00	12/09/13 19:27	4165-60-0	
2-Fluorobiphenyl (S)	79 %		39-120	2	12/07/13 00:00	12/09/13 19:27	321-60-8	
Terphenyl-d14 (S)	83 %		45-120	2	12/07/13 00:00	12/09/13 19:27	1718-51-0	
Phenol-d6 (S)	35 %		11-120	2	12/07/13 00:00	12/09/13 19:27	13127-88-3	
2-Fluorophenol (S)	48 %		17-120	2	12/07/13 00:00	12/09/13 19:27	367-12-4	
2,4,6-Tribromophenol (S)	85 %		39-120	2	12/07/13 00:00	12/09/13 19:27	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/09/13 18:43	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/09/13 18:43	75-27-4	
Bromoform	ND ug/L		200	200		12/09/13 18:43	75-25-2	
Bromomethane	ND ug/L		1000	200		12/09/13 18:43	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/09/13 18:43	56-23-5	
Chloroethane	ND ug/L		200	200		12/09/13 18:43	75-00-3	
Chloroform	ND ug/L		200	200		12/09/13 18:43	67-66-3	
1,4-Dichlorobenzene	560 ug/L		200	200		12/09/13 18:43	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/09/13 18:43	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/09/13 18:43	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/09/13 18:43	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/09/13 18:43	100-41-4	
Methylene chloride	ND ug/L		200	200		12/09/13 18:43	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/09/13 18:43	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/09/13 18:43	127-18-4	
Toluene	ND ug/L		200	200		12/09/13 18:43	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/09/13 18:43	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/09/13 18:43	79-00-5	
Trichloroethene	ND ug/L		200	200		12/09/13 18:43	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/09/13 18:43	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/09/13 18:43	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	200		12/09/13 18:43	460-00-4	D3
Toluene-d8 (S)	94 %		80-120	200		12/09/13 18:43	2037-26-5	
1,2-Dichloroethane-d4 (S)	103 %		80-120	200		12/09/13 18:43	17060-07-0	
Preservation pH	6.0		1.0	200		12/09/13 18:43		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	204000 ug/L		2000	200		12/09/13 18:43	67-64-1	E,N2
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	200		12/09/13 18:43	460-00-4	
Toluene-d8 (S)	94 %		80-120	200		12/09/13 18:43	2037-26-5	
1,2-Dichloroethane-d4 (S)	103 %		80-120	200		12/09/13 18:43	17060-07-0	
Preservation pH	6.0		1.0	200		12/09/13 18:43		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

Sample: 316-157		Lab ID: 60159167001	Collected: 12/06/13 09:00	Received: 12/07/13 00:35	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	924	mg/L	5.0	1		12/10/13 08:06		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	6.4	mg/L	5.0	1		12/11/13 07:49		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3060	mg/L	5.0	1		12/11/13 14:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		12/11/13 08:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	35400	mg/L	2.0	1	12/07/13 12:07	12/12/13 13:09		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	785	mg/L	20.0	200		12/12/13 13:54	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	104000	mg/L	10000	1000		12/16/13 11:49		M1

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

Sample: TRIP BLANK		Lab ID: 60159167002	Collected: 12/06/13 08:00	Received: 12/07/13 00:35	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/09/13 18:58	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/09/13 18:58	75-27-4	
Bromoform	ND ug/L		1.0	1		12/09/13 18:58	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/09/13 18:58	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/09/13 18:58	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/09/13 18:58	75-00-3	
Chloroform	ND ug/L		1.0	1		12/09/13 18:58	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/09/13 18:58	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/09/13 18:58	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/09/13 18:58	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/09/13 18:58	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/09/13 18:58	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/09/13 18:58	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/09/13 18:58	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/09/13 18:58	127-18-4	
Toluene	ND ug/L		1.0	1		12/09/13 18:58	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/09/13 18:58	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/09/13 18:58	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/09/13 18:58	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/09/13 18:58	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/09/13 18:58	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	1		12/09/13 18:58	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		12/09/13 18:58	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	1		12/09/13 18:58	17060-07-0	
Preservation pH	6.0		1.0	1		12/09/13 18:58		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/09/13 18:58	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	1		12/09/13 18:58	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		12/09/13 18:58	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	1		12/09/13 18:58	17060-07-0	
Preservation pH	6.0		1.0	1		12/09/13 18:58		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

QC Batch: MERP/7988

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159167001

METHOD BLANK: 1303938

Matrix: Water

Associated Lab Samples: 60159167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/12/13 14:52	

LABORATORY CONTROL SAMPLE: 1303939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	92	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303940 1303941

Parameter	Units	60159029001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	3.3	3.6	67	71	70-130	7	20	M1

MATRIX SPIKE SAMPLE: 1303942

Parameter	Units	60159255001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	4.6	93	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

QC Batch: MERP/7974

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60159167001

METHOD BLANK: 1302450

Matrix: Water

Associated Lab Samples: 60159167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/10/13 11:41	

LABORATORY CONTROL SAMPLE: 1302451

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302452 1302453

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	145	150	97	100	70-130	3	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

QC Batch: MPRP/25549

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60159167001

METHOD BLANK: 1303625

Matrix: Water

Associated Lab Samples: 60159167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/12/13 17:09	
Antimony	ug/L	ND	10.0	12/12/13 17:09	
Arsenic	ug/L	ND	10.0	12/12/13 17:09	
Beryllium	ug/L	ND	1.0	12/12/13 17:09	
Cadmium	ug/L	ND	5.0	12/12/13 17:09	
Chromium	ug/L	ND	5.0	12/12/13 17:09	
Cobalt	ug/L	ND	5.0	12/12/13 17:09	
Copper	ug/L	ND	10.0	12/12/13 17:09	
Iron	ug/L	ND	50.0	12/12/13 17:09	
Lead	ug/L	ND	5.0	12/12/13 17:09	
Nickel	ug/L	ND	5.0	12/12/13 17:09	
Selenium	ug/L	ND	15.0	12/12/13 17:09	
Silver	ug/L	ND	7.0	12/12/13 17:09	
Thallium	ug/L	ND	20.0	12/12/13 17:09	
Zinc	ug/L	ND	50.0	12/12/13 17:09	

LABORATORY CONTROL SAMPLE: 1303626

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10100	101	85-115	
Antimony	ug/L	1000	1030	103	85-115	
Arsenic	ug/L	1000	979	98	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1020	102	85-115	
Chromium	ug/L	1000	1010	101	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Copper	ug/L	1000	996	100	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1030	103	85-115	
Nickel	ug/L	1000	1050	105	85-115	
Selenium	ug/L	1000	1020	102	85-115	
Silver	ug/L	500	487	97	85-115	
Thallium	ug/L	1000	1030	103	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303627

1303628

Parameter	Units	4089124001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	291	10000	10000	9810	10300	95	100	70-130	5	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303627 1303628											
Parameter	Units	4089124001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	<20.0	1000	1000	981	1030	98	103	70-130	5	7
Arsenic	ug/L	187	1000	1000	1150	1180	96	99	70-130	3	10
Beryllium	ug/L	<2.0	1000	1000	941	998	94	100	70-130	6	7
Cadmium	ug/L	<10.0	1000	1000	957	1000	96	100	70-130	4	10
Chromium	ug/L	125	1000	1000	1060	1110	94	99	70-130	5	10
Cobalt	ug/L	16.3	1000	1000	940	1020	92	101	70-130	8	6 R1
Copper	ug/L	<20.0	1000	1000	971	1000	96	99	70-130	3	11
Iron	ug/L	5170	10000	10000	14800	15500	96	104	70-130	5	10
Lead	ug/L	<10.0	1000	1000	900	979	90	98	70-130	8	10
Nickel	ug/L	274	1000	1000	1190	1290	92	102	70-130	8	10
Selenium	ug/L	<30.0	1000	1000	972	1030	97	103	70-130	6	10
Silver	ug/L	<14.0	500	500	489	499	98	100	70-130	2	10
Thallium	ug/L	<40.0	1000	1000	804	908	80	91	70-130	12	6 R1
Zinc	ug/L	<100	1000	1000	1010	1090	94	102	70-130	8	11

MATRIX SPIKE SAMPLE: 1303629							
Parameter	Units	4089124002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	447	10000	10100	96	70-130	
Antimony	ug/L	<20.0	1000	998	98	70-130	
Arsenic	ug/L	233	1000	1200	96	70-130	
Beryllium	ug/L	<2.0	1000	967	97	70-130	
Cadmium	ug/L	<10.0	1000	970	97	70-130	
Chromium	ug/L	201	1000	1150	95	70-130	
Cobalt	ug/L	24.7	1000	986	96	70-130	
Copper	ug/L	<20.0	1000	970	96	70-130	
Iron	ug/L	5180	10000	14600	94	70-130	
Lead	ug/L	<10.0	1000	938	93	70-130	
Nickel	ug/L	332	1000	1280	95	70-130	
Selenium	ug/L	<30.0	1000	950	94	70-130	
Silver	ug/L	<14.0	500	491	98	70-130	
Thallium	ug/L	<40.0	1000	862	86	70-130	
Zinc	ug/L	<100	1000	1050	98	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157
Pace Project No.: 60159167

QC Batch: MPRP/25504 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60159167001

METHOD BLANK: 1302496 Matrix: Water
Associated Lab Samples: 60159167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/10/13 12:03	
Antimony, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Arsenic, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Beryllium, Dissolved	ug/L	ND	1.0	12/10/13 12:03	
Cadmium, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Chromium, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Cobalt, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Copper, Dissolved	ug/L	ND	10.0	12/10/13 12:03	
Iron, Dissolved	ug/L	ND	50.0	12/10/13 12:03	
Lead, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Nickel, Dissolved	ug/L	ND	5.0	12/10/13 12:03	
Selenium, Dissolved	ug/L	ND	15.0	12/10/13 12:03	
Silver, Dissolved	ug/L	ND	7.0	12/10/13 12:03	
Thallium, Dissolved	ug/L	ND	20.0	12/10/13 12:03	
Zinc, Dissolved	ug/L	ND	50.0	12/10/13 12:03	

LABORATORY CONTROL SAMPLE: 1302497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10000	100	85-115	
Antimony, Dissolved	ug/L	1000	999	100	85-115	
Arsenic, Dissolved	ug/L	1000	989	99	85-115	
Beryllium, Dissolved	ug/L	1000	990	99	85-115	
Cadmium, Dissolved	ug/L	1000	1020	102	85-115	
Chromium, Dissolved	ug/L	1000	975	97	85-115	
Cobalt, Dissolved	ug/L	1000	991	99	85-115	
Copper, Dissolved	ug/L	1000	938	94	85-115	
Iron, Dissolved	ug/L	10000	9560	96	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1030	103	85-115	
Selenium, Dissolved	ug/L	1000	995	99	85-115	
Silver, Dissolved	ug/L	500	465	93	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	981	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302498 1302499

Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2720	50000	50000	51800	52700	98	100	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1302498 1302499												
Parameter	Units	60158813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Antimony, Dissolved	ug/L	ND	5000	5000	5040	5100	101	102	70-130	1	7	
Arsenic, Dissolved	ug/L	586	5000	5000	5650	5840	101	105	70-130	3	10	
Beryllium, Dissolved	ug/L	ND	5000	5000	4730	4790	95	96	70-130	1	7	
Cadmium, Dissolved	ug/L	ND	5000	5000	5020	5080	100	101	70-130	1	10	
Chromium, Dissolved	ug/L	156	5000	5000	4760	4830	92	93	70-130	1	10	
Cobalt, Dissolved	ug/L	ND	5000	5000	4630	4650	92	93	70-130	0	6	
Copper, Dissolved	ug/L	ND	5000	5000	4830	4880	96	97	70-130	1	11	
Iron, Dissolved	ug/L	486000	50000	50000	518000	570000	64	169	70-130	10	10	M1
Lead, Dissolved	ug/L	58.1	5000	5000	4610	4620	91	91	70-130	0	10	
Nickel, Dissolved	ug/L	40.9	5000	5000	4730	4770	94	95	70-130	1	10	
Selenium, Dissolved	ug/L	ND	5000	5000	5290	5340	106	107	70-130	1	10	
Silver, Dissolved	ug/L	ND	2500	2500	2460	2480	98	99	70-130	1	10	
Thallium, Dissolved	ug/L	ND	5000	5000	4340	4370	87	87	70-130	1	6	
Zinc, Dissolved	ug/L	7640	5000	5000	11800	12700	84	101	70-130	7	11	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

QC Batch: MSV/58208 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60159167001, 60159167002

METHOD BLANK: 1302404

Matrix: Water

Associated Lab Samples: 60159167001, 60159167002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/09/13 14:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/09/13 14:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/09/13 14:11	
1,2-Dichloroethane	ug/L	ND	1.0	12/09/13 14:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/09/13 14:11	
Benzene	ug/L	ND	1.0	12/09/13 14:11	
Bromodichloromethane	ug/L	ND	1.0	12/09/13 14:11	
Bromoform	ug/L	ND	1.0	12/09/13 14:11	
Bromomethane	ug/L	ND	5.0	12/09/13 14:11	
Carbon tetrachloride	ug/L	ND	1.0	12/09/13 14:11	
Chloroethane	ug/L	ND	1.0	12/09/13 14:11	
Chloroform	ug/L	ND	1.0	12/09/13 14:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/09/13 14:11	
Ethylbenzene	ug/L	ND	1.0	12/09/13 14:11	
Methylene chloride	ug/L	ND	1.0	12/09/13 14:11	
Tetrachloroethene	ug/L	ND	1.0	12/09/13 14:11	
Toluene	ug/L	ND	1.0	12/09/13 14:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/09/13 14:11	
Trichloroethene	ug/L	ND	1.0	12/09/13 14:11	
Vinyl chloride	ug/L	ND	1.0	12/09/13 14:11	
Xylene (Total)	ug/L	ND	3.0	12/09/13 14:11	
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/09/13 14:11	
4-Bromofluorobenzene (S)	%	99	80-120	12/09/13 14:11	
Toluene-d8 (S)	%	96	80-120	12/09/13 14:11	

LABORATORY CONTROL SAMPLE: 1302405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.1	91	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	17.9	89	59-138	
1,1,2-Trichloroethane	ug/L	20	16.0	80	69-127	
1,2-Dichloroethane	ug/L	20	17.0	85	71-129	
1,4-Dichlorobenzene	ug/L	20	18.6	93	68-124	
Benzene	ug/L	20	18.1	90	73-129	
Bromodichloromethane	ug/L	20	17.9	89	63-129	
Bromoform	ug/L	20	16.4	82	52-123	
Bromomethane	ug/L	20	13.6	68	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	13.6	68	42-160	
Chloroform	ug/L	20	16.8	84	60-120	
cis-1,2-Dichloroethene	ug/L	20	17.8	89	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

LABORATORY CONTROL SAMPLE: 1302405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.8	94	66-133	
Methylene chloride	ug/L	20	17.6	88	56-135	
Tetrachloroethene	ug/L	20	18.1	91	64-143	
Toluene	ug/L	20	19.8	99	70-130	
trans-1,2-Dichloroethene	ug/L	20	17.7	89	67-149	
Trichloroethene	ug/L	20	19.4	97	71-130	
Vinyl chloride	ug/L	20	12.1	61	41-160	
Xylene (Total)	ug/L	60	55.1	92	67-130	
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			106	80-120	

MATRIX SPIKE SAMPLE: 1302406

Parameter	Units	60158954001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4270	107	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3740	94	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	4100	102	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3710	93	49-155	
1,4-Dichlorobenzene	ug/L	534	4000	4040	88	18-147	
Benzene	ug/L	ND	4000	3760	94	37-151	
Bromodichloromethane	ug/L	ND	4000	3780	95	35-155	
Bromoform	ug/L	ND	4000	3700	92	45-133	
Bromomethane	ug/L	ND	4000	2280	57	10-160	
Carbon tetrachloride	ug/L	ND	4000	4380	109	70-140	
Chloroethane	ug/L	ND	4000	3010	75	14-160	
Chloroform	ug/L	ND	4000	3570	89	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3860	96	19-160	
Ethylbenzene	ug/L	ND	4000	3960	98	37-154	
Methylene chloride	ug/L	ND	4000	3580	87	15-156	
Tetrachloroethene	ug/L	ND	4000	4300	108	64-148	
Toluene	ug/L	ND	4000	3930	97	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3950	99	54-156	
Trichloroethene	ug/L	ND	4000	4100	103	71-157	
Vinyl chloride	ug/L	ND	4000	2650	66	10-160	
Xylene (Total)	ug/L	ND	12000	11700	97	12-153	
1,2-Dichloroethane-d4 (S)	%				106	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				104	80-120	
Preservation pH			6.0	6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

QC Batch:	MSV/58683	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples: 60159167001, 60159167002			

METHOD BLANK: 1313447 Matrix: Water

Associated Lab Samples: 60159167001, 60159167002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/09/13 14:11	N2
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/09/13 14:11	
4-Bromofluorobenzene (S)	%	99	80-120	12/09/13 14:11	
Toluene-d8 (S)	%	96	80-120	12/09/13 14:11	

LABORATORY CONTROL SAMPLE: 1313448

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	110	110	40-160	N2
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			106	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157
Pace Project No.: 60159167

QC Batch:	OEXT/41795	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159167001		

METHOD BLANK: 1302045 Matrix: Water
Associated Lab Samples: 60159167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/09/13 14:19	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/09/13 14:19	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/09/13 14:19	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/09/13 14:19	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/09/13 14:19	
Hexachloroethane	ug/L	ND	5.0	12/09/13 14:19	
Naphthalene	ug/L	ND	5.0	12/09/13 14:19	
Nitrobenzene	ug/L	ND	5.0	12/09/13 14:19	
Pentachlorophenol	ug/L	ND	5.0	12/09/13 14:19	
Phenol	ug/L	ND	5.0	12/09/13 14:19	
2,4,6-Tribromophenol (S)	%	78	39-120	12/09/13 14:19	
2-Fluorobiphenyl (S)	%	81	39-120	12/09/13 14:19	
2-Fluorophenol (S)	%	46	17-120	12/09/13 14:19	
Nitrobenzene-d5 (S)	%	76	33-120	12/09/13 14:19	
Phenol-d6 (S)	%	29	11-120	12/09/13 14:19	
Terphenyl-d14 (S)	%	94	45-120	12/09/13 14:19	

LABORATORY CONTROL SAMPLE: 1302046

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	32.3	65	46-120	
2,4,6-Trichlorophenol	ug/L	50	34.4	69	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	36.6	73	40-133	
Hexachloro-1,3-butadiene	ug/L	50	30.5	61	44-116	
Hexachlorocyclopentadiene	ug/L	100	49.8	50	24-120	
Hexachloroethane	ug/L	50	29.0	58	43-113	
Naphthalene	ug/L	50	33.4	67	48-120	
Nitrobenzene	ug/L	50	33.7	67	48-120	
Pentachlorophenol	ug/L	50	32.7	65	47-120	
Phenol	ug/L	50	13.7	27	16-112	
2,4,6-Tribromophenol (S)	%			72	39-120	
2-Fluorobiphenyl (S)	%			69	39-120	
2-Fluorophenol (S)	%			40	17-120	
Nitrobenzene-d5 (S)	%			65	33-120	
Phenol-d6 (S)	%			26	11-120	
Terphenyl-d14 (S)	%			73	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

MATRIX SPIKE SAMPLE:		1302047					
Parameter	Units	60159089001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	42.4	85	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	47.9	96	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	50.1	100	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	50	39.9	80	39-116	
Hexachlorocyclopentadiene	ug/L	ND	100	70.8	71	11-120	
Hexachloroethane	ug/L	ND	50	41.0	82	40-113	
Naphthalene	ug/L	ND	50	44.1	88	45-120	
Nitrobenzene	ug/L	ND	50	57.3	115	38-120	
Pentachlorophenol	ug/L	ND	50	48.2	96	43-135	
Phenol	ug/L	ND	50	17.8	36	13-112	
2,4,6-Tribromophenol (S)	%				93	39-120	
2-Fluorobiphenyl (S)	%				89	39-120	
2-Fluorophenol (S)	%				49	17-120	
Nitrobenzene-d5 (S)	%				86	33-120	
Phenol-d6 (S)	%				32	11-120	
Terphenyl-d14 (S)	%				106	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

QC Batch: WET/45025

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60159167001

METHOD BLANK: 1302751

Matrix: Water

Associated Lab Samples: 60159167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/10/13 08:00	

LABORATORY CONTROL SAMPLE: 1302752

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.2	100	78-114	

MATRIX SPIKE SAMPLE: 1302755

Parameter	Units	60158857002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	40.3	97	78-114	

SAMPLE DUPLICATE: 1302756

Parameter	Units	60158862002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

QC Batch: WET/45046

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159167001

METHOD BLANK: 1303342

Matrix: Water

Associated Lab Samples: 60159167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/11/13 07:46	

LABORATORY CONTROL SAMPLE: 1303343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	17.7	88	64-132	

MATRIX SPIKE SAMPLE: 1303347

Parameter	Units	60158881001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	22	21.4	96	64-132	

SAMPLE DUPLICATE: 1303348

Parameter	Units	60158881002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

QC Batch: WET/45051

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159167001

METHOD BLANK: 1303403

Matrix: Water

Associated Lab Samples: 60159167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/11/13 14:51	

SAMPLE DUPLICATE: 1303404

Parameter	Units	60159167001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	3060	3200	4	25	

SAMPLE DUPLICATE: 1303607

Parameter	Units	60159168004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	740	710	4	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

QC Batch: WET/45040 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60159167001

SAMPLE DUPLICATE: 1303241

Parameter	Units	60159167001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.4	5.4	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

QC Batch: WET/44994

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159167001

METHOD BLANK: 1302155

Matrix: Water

Associated Lab Samples: 60159167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/12/13 12:49	

LABORATORY CONTROL SAMPLE: 1302156

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	191	96	85-115	

SAMPLE DUPLICATE: 1302157

Parameter	Units	60159146002 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	655	644	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

QC Batch: WETA/27468

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159167001

METHOD BLANK: 1304188

Matrix: Water

Associated Lab Samples: 60159167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/12/13 13:49	

LABORATORY CONTROL SAMPLE: 1304189

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	1.9	97	90-110	

MATRIX SPIKE SAMPLE: 1304190

Parameter	Units	60159098001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	711	1000	1650	94	90-110	

SAMPLE DUPLICATE: 1304191

Parameter	Units	60159206001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	749	730	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157
Pace Project No.: 60159167

QC Batch: WETA/27481 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 60159167001

METHOD BLANK: 1304938 Matrix: Water
Associated Lab Samples: 60159167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/16/13 11:49	

LABORATORY CONTROL SAMPLE: 1304939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.9	102	90-110	

MATRIX SPIKE SAMPLE: 1304940

Parameter	Units	60159167001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	104000	50000	146000	84	90-110	M1

MATRIX SPIKE SAMPLE: 1304941

Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	95700	50000	146000	101	90-110	

MATRIX SPIKE SAMPLE: 1304942

Parameter	Units	60159207001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	92200	50000	138000	92	90-110	

MATRIX SPIKE SAMPLE: 1304943

Parameter	Units	60159294001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	86500	50000	139000	104	90-110	

MATRIX SPIKE SAMPLE: 1304944

Parameter	Units	60159306001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	77000	50000	129000	104	90-110	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

MATRIX SPIKE SAMPLE:		1304945					
Parameter	Units	60159390001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	75300	50000	128000	106	90-110	

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QUALIFIERS

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-157

Pace Project No.: 60159167

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159167001	316-157	EPA 200.7	MPRP/25549	EPA 200.7	ICP/19627
60159167001	316-157	EPA 200.7	MPRP/25504	EPA 200.7	ICP/19605
60159167001	316-157	EPA 245.1	MERP/7988	EPA 245.1	MERC/7943
60159167001	316-157	EPA 245.1	MERP/7974	EPA 245.1	MERC/7931
60159167001	316-157	EPA 625	OEXT/41795	EPA 625	MSSV/13282
60159167001	316-157	EPA 624 Low	MSV/58208		
60159167002	TRIP BLANK	EPA 624 Low	MSV/58208		
60159167001	316-157	EPA 624 Low	MSV/58683		
60159167002	TRIP BLANK	EPA 624 Low	MSV/58683		
60159167001	316-157	EPA 1664A	WET/45025		
60159167001	316-157	EPA 1664A	WET/45046		
60159167001	316-157	SM 2540D	WET/45051		
60159167001	316-157	SM 4500-H+B	WET/45040		
60159167001	316-157	SM 5210B	WET/44994	SM 5210B	WET/45156
60159167001	316-157	EPA 350.1	WETA/27468		
60159167001	316-157	EPA 410.4	WETA/27481		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60159167



60159167

Client Name: Barr Eng.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ XRoads

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☒ ZPLC

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.4

Date and initials of person examining contents: 12/7/13 BA

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☐ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	14. <u>HNO3 initial pH 6.0, added 2.5ml final 2.5</u> <u>H2SO4 initial pH 6.0, added 2.0, final 2.6</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	
Exceptions: <u>VOA</u> , coliform, TOC, <u>O&G</u> WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>BA</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added HNO3: <u>12513</u> preservative H2SO4: <u>12520</u>
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: mw for ARR

Date: 12/7/13

December 31, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-158R
Pace Project No.: 60159206

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 09, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revised Report - Rev. 1, 12/31/13: This report has been revised to include Acetone in the 624 VOC scan.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Andy Brownfield for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159206001	316-158R	Water	12/07/13 16:09	12/09/13 13:40
60159206002	TRIP BLANK	Water	12/07/13 08:00	12/09/13 13:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159206001	316-158R	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 624 Low	EAK	5
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	NDL	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60159206002	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	5

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

Sample: 316-158R		Lab ID: 60159206001	Collected: 12/07/13 16:09	Received: 12/09/13 13:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	7300	ug/L	375	1	12/11/13 14:00	12/12/13 18:10	7429-90-5	D3
Antimony	57.1	ug/L	50.0	1	12/11/13 14:00	12/12/13 18:10	7440-36-0	
Arsenic	867	ug/L	50.0	1	12/11/13 14:00	12/12/13 18:10	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/11/13 14:00	12/12/13 18:10	7440-41-7	
Cadmium	ND	ug/L	25.0	1	12/11/13 14:00	12/12/13 18:10	7440-43-9	
Chromium	293	ug/L	25.0	1	12/11/13 14:00	12/12/13 18:10	7440-47-3	
Cobalt	ND	ug/L	25.0	1	12/11/13 14:00	12/12/13 18:10	7440-48-4	
Copper	ND	ug/L	50.0	1	12/11/13 14:00	12/12/13 18:10	7440-50-8	
Iron	981000	ug/L	250	1	12/11/13 14:00	12/12/13 18:10	7439-89-6	
Lead	251	ug/L	25.0	1	12/11/13 14:00	12/12/13 18:10	7439-92-1	
Nickel	74.2	ug/L	25.0	1	12/11/13 14:00	12/12/13 18:10	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/11/13 14:00	12/12/13 18:10	7782-49-2	
Silver	ND	ug/L	35.0	1	12/11/13 14:00	12/12/13 18:10	7440-22-4	
Thallium	ND	ug/L	100	1	12/11/13 14:00	12/12/13 18:10	7440-28-0	
Zinc	16500	ug/L	500	2	12/11/13 14:00	12/12/13 18:13	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	4800	ug/L	375	1	12/10/13 16:00	12/11/13 19:37	7429-90-5	D3
Antimony, Dissolved	75.8	ug/L	50.0	1	12/10/13 16:00	12/11/13 19:37	7440-36-0	
Arsenic, Dissolved	836	ug/L	50.0	1	12/10/13 16:00	12/11/13 19:37	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/10/13 16:00	12/11/13 19:37	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	12/10/13 16:00	12/11/13 19:37	7440-43-9	
Chromium, Dissolved	270	ug/L	25.0	1	12/10/13 16:00	12/11/13 19:37	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/10/13 16:00	12/11/13 19:37	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/10/13 16:00	12/11/13 19:37	7440-50-8	
Iron, Dissolved	792000	ug/L	250	1	12/10/13 16:00	12/11/13 19:37	7439-89-6	
Lead, Dissolved	180	ug/L	25.0	1	12/10/13 16:00	12/11/13 19:37	7439-92-1	
Nickel, Dissolved	70.8	ug/L	25.0	1	12/10/13 16:00	12/11/13 19:37	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/10/13 16:00	12/11/13 19:37	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/10/13 16:00	12/11/13 19:37	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/10/13 16:00	12/11/13 19:37	7440-28-0	
Zinc, Dissolved	15000	ug/L	500	2	12/10/13 16:00	12/11/13 19:45	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	6.0	1	12/12/13 09:30	12/12/13 15:23	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/12/13 09:30	12/12/13 16:03	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/12/13 00:00	12/13/13 10:49	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 10:49	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 10:49	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 10:49	67-72-1	
Naphthalene	1240	ug/L	1000	2	12/12/13 00:00	12/13/13 10:49	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 10:49	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

Sample: 316-158R		Lab ID: 60159206001	Collected: 12/07/13 16:09	Received: 12/09/13 13:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/12/13 00:00	12/13/13 10:49	87-86-5	
Phenol	12000 ug/L		1000	2	12/12/13 00:00	12/13/13 10:49	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/12/13 00:00	12/13/13 10:49	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/12/13 00:00	12/13/13 10:49	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	133 %		33-120	2	12/12/13 00:00	12/13/13 10:49	4165-60-0	S0
2-Fluorobiphenyl (S)	93 %		39-120	2	12/12/13 00:00	12/13/13 10:49	321-60-8	
Terphenyl-d14 (S)	100 %		45-120	2	12/12/13 00:00	12/13/13 10:49	1718-51-0	
Phenol-d6 (S)	35 %		11-120	2	12/12/13 00:00	12/13/13 10:49	13127-88-3	
2-Fluorophenol (S)	49 %		17-120	2	12/12/13 00:00	12/13/13 10:49	367-12-4	
2,4,6-Tribromophenol (S)	109 %		39-120	2	12/12/13 00:00	12/13/13 10:49	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/11/13 18:37	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/11/13 18:37	75-27-4	
Bromoform	ND ug/L		200	200		12/11/13 18:37	75-25-2	
Bromomethane	ND ug/L		1000	200		12/11/13 18:37	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/11/13 18:37	56-23-5	
Chloroethane	ND ug/L		200	200		12/11/13 18:37	75-00-3	
Chloroform	ND ug/L		200	200		12/11/13 18:37	67-66-3	
1,4-Dichlorobenzene	960 ug/L		200	200		12/11/13 18:37	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/11/13 18:37	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/11/13 18:37	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/11/13 18:37	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/11/13 18:37	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/12/13 18:48	75-09-2	
1,1,2,2-Tetrachloroethane	204 ug/L		200	200		12/11/13 18:37	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/11/13 18:37	127-18-4	
Toluene	ND ug/L		200	200		12/11/13 18:37	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/11/13 18:37	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/11/13 18:37	79-00-5	
Trichloroethene	ND ug/L		200	200		12/11/13 18:37	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/11/13 18:37	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/11/13 18:37	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	97 %		80-120	200		12/11/13 18:37	460-00-4	D3
Toluene-d8 (S)	97 %		80-120	200		12/11/13 18:37	2037-26-5	
1,2-Dichloroethane-d4 (S)	102 %		80-120	200		12/11/13 18:37	17060-07-0	
Preservation pH	6.0		1.0	200		12/11/13 18:37		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	205000 ug/L		2000	200		12/11/13 18:37	67-64-1	E,N2
Surrogates								
4-Bromofluorobenzene (S)	97 %		80-120	200		12/11/13 18:37	460-00-4	
Toluene-d8 (S)	97 %		80-120	200		12/11/13 18:37	2037-26-5	
1,2-Dichloroethane-d4 (S)	102 %		80-120	200		12/11/13 18:37	17060-07-0	
Preservation pH	6.0		1.0	200		12/11/13 18:37		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

Sample: 316-158R		Lab ID: 60159206001	Collected: 12/07/13 16:09	Received: 12/09/13 13:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	842	mg/L	5.0	1		12/11/13 07:39		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	8.8	mg/L	5.0	1		12/16/13 07:29		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	4140	mg/L	5.0	1		12/11/13 14:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		12/11/13 08:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	35200	mg/L	2.0	1	12/09/13 15:12	12/14/13 14:39		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	749	mg/L	20.0	200		12/12/13 13:55	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	95700	mg/L	10000	1000		12/16/13 11:50		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

Sample: TRIP BLANK		Lab ID: 60159206002	Collected: 12/07/13 08:00	Received: 12/09/13 13:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/11/13 19:07	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/11/13 19:07	75-27-4	
Bromoform	ND ug/L		1.0	1		12/11/13 19:07	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/11/13 19:07	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/11/13 19:07	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/11/13 19:07	75-00-3	
Chloroform	ND ug/L		1.0	1		12/11/13 19:07	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/11/13 19:07	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/11/13 19:07	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/11/13 19:07	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/11/13 19:07	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/11/13 19:07	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/11/13 19:07	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/11/13 19:07	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/11/13 19:07	127-18-4	
Toluene	ND ug/L		1.0	1		12/11/13 19:07	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/11/13 19:07	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/11/13 19:07	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/11/13 19:07	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/11/13 19:07	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/11/13 19:07	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	1		12/11/13 19:07	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		12/11/13 19:07	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	1		12/11/13 19:07	17060-07-0	
Preservation pH	6.0		1.0	1		12/11/13 19:07		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/11/13 19:07	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	1		12/11/13 19:07	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		12/11/13 19:07	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	1		12/11/13 19:07	17060-07-0	
Preservation pH	6.0		1.0	1		12/11/13 19:07		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

QC Batch: MERP/7988

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159206001

METHOD BLANK: 1303938

Matrix: Water

Associated Lab Samples: 60159206001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/12/13 14:52	

LABORATORY CONTROL SAMPLE: 1303939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	92	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303940 1303941

Parameter	Units	60159029001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	3.3	3.6	67	71	70-130	7	20	M1

MATRIX SPIKE SAMPLE: 1303942

Parameter	Units	60159255001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	4.6	93	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

QC Batch: MERP/7989

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60159206001

METHOD BLANK: 1303944

Matrix: Water

Associated Lab Samples: 60159206001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/12/13 15:58	

LABORATORY CONTROL SAMPLE: 1303945

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303946 1303947

Parameter	Units	60159206001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	130	128	87	85	70-130	2	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R
Pace Project No.: 60159206

QC Batch: MPRP/25549 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60159206001

METHOD BLANK: 1303625 Matrix: Water
Associated Lab Samples: 60159206001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/12/13 17:09	
Antimony	ug/L	ND	10.0	12/12/13 17:09	
Arsenic	ug/L	ND	10.0	12/12/13 17:09	
Beryllium	ug/L	ND	1.0	12/12/13 17:09	
Cadmium	ug/L	ND	5.0	12/12/13 17:09	
Chromium	ug/L	ND	5.0	12/12/13 17:09	
Cobalt	ug/L	ND	5.0	12/12/13 17:09	
Copper	ug/L	ND	10.0	12/12/13 17:09	
Iron	ug/L	ND	50.0	12/12/13 17:09	
Lead	ug/L	ND	5.0	12/12/13 17:09	
Nickel	ug/L	ND	5.0	12/12/13 17:09	
Selenium	ug/L	ND	15.0	12/12/13 17:09	
Silver	ug/L	ND	7.0	12/12/13 17:09	
Thallium	ug/L	ND	20.0	12/12/13 17:09	
Zinc	ug/L	ND	50.0	12/12/13 17:09	

LABORATORY CONTROL SAMPLE: 1303626

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10100	101	85-115	
Antimony	ug/L	1000	1030	103	85-115	
Arsenic	ug/L	1000	979	98	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1020	102	85-115	
Chromium	ug/L	1000	1010	101	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Copper	ug/L	1000	996	100	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1030	103	85-115	
Nickel	ug/L	1000	1050	105	85-115	
Selenium	ug/L	1000	1020	102	85-115	
Silver	ug/L	500	487	97	85-115	
Thallium	ug/L	1000	1030	103	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303627 1303628

Parameter	Units	4089124001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	291	10000	10000	9810	10300	95	100	70-130	5	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303627 1303628											
Parameter	Units	4089124001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	<20.0	1000	1000	981	1030	98	103	70-130	5	7
Arsenic	ug/L	187	1000	1000	1150	1180	96	99	70-130	3	10
Beryllium	ug/L	<2.0	1000	1000	941	998	94	100	70-130	6	7
Cadmium	ug/L	<10.0	1000	1000	957	1000	96	100	70-130	4	10
Chromium	ug/L	125	1000	1000	1060	1110	94	99	70-130	5	10
Cobalt	ug/L	16.3	1000	1000	940	1020	92	101	70-130	8	6 R1
Copper	ug/L	<20.0	1000	1000	971	1000	96	99	70-130	3	11
Iron	ug/L	5170	10000	10000	14800	15500	96	104	70-130	5	10
Lead	ug/L	<10.0	1000	1000	900	979	90	98	70-130	8	10
Nickel	ug/L	274	1000	1000	1190	1290	92	102	70-130	8	10
Selenium	ug/L	<30.0	1000	1000	972	1030	97	103	70-130	6	10
Silver	ug/L	<14.0	500	500	489	499	98	100	70-130	2	10
Thallium	ug/L	<40.0	1000	1000	804	908	80	91	70-130	12	6 R1
Zinc	ug/L	<100	1000	1000	1010	1090	94	102	70-130	8	11

MATRIX SPIKE SAMPLE: 1303629							
Parameter	Units	4089124002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	447	10000	10100	96	70-130	
Antimony	ug/L	<20.0	1000	998	98	70-130	
Arsenic	ug/L	233	1000	1200	96	70-130	
Beryllium	ug/L	<2.0	1000	967	97	70-130	
Cadmium	ug/L	<10.0	1000	970	97	70-130	
Chromium	ug/L	201	1000	1150	95	70-130	
Cobalt	ug/L	24.7	1000	986	96	70-130	
Copper	ug/L	<20.0	1000	970	96	70-130	
Iron	ug/L	5180	10000	14600	94	70-130	
Lead	ug/L	<10.0	1000	938	93	70-130	
Nickel	ug/L	332	1000	1280	95	70-130	
Selenium	ug/L	<30.0	1000	950	94	70-130	
Silver	ug/L	<14.0	500	491	98	70-130	
Thallium	ug/L	<40.0	1000	862	86	70-130	
Zinc	ug/L	<100	1000	1050	98	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R
Pace Project No.: 60159206

QC Batch: MPRP/25536 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60159206001

METHOD BLANK: 1303206 Matrix: Water
Associated Lab Samples: 60159206001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/11/13 19:27	
Antimony, Dissolved	ug/L	ND	10.0	12/11/13 19:27	
Arsenic, Dissolved	ug/L	ND	10.0	12/11/13 19:27	
Beryllium, Dissolved	ug/L	ND	1.0	12/11/13 19:27	
Cadmium, Dissolved	ug/L	ND	5.0	12/11/13 19:27	
Chromium, Dissolved	ug/L	ND	5.0	12/11/13 19:27	
Cobalt, Dissolved	ug/L	ND	5.0	12/11/13 19:27	
Copper, Dissolved	ug/L	ND	10.0	12/11/13 19:27	
Iron, Dissolved	ug/L	ND	50.0	12/11/13 19:27	
Lead, Dissolved	ug/L	ND	5.0	12/11/13 19:27	
Nickel, Dissolved	ug/L	ND	5.0	12/11/13 19:27	
Selenium, Dissolved	ug/L	ND	15.0	12/11/13 19:27	
Silver, Dissolved	ug/L	ND	7.0	12/11/13 19:27	
Thallium, Dissolved	ug/L	ND	20.0	12/11/13 19:27	
Zinc, Dissolved	ug/L	ND	50.0	12/11/13 19:27	

LABORATORY CONTROL SAMPLE: 1303207

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9880	99	85-115	
Antimony, Dissolved	ug/L	1000	990	99	85-115	
Arsenic, Dissolved	ug/L	1000	963	96	85-115	
Beryllium, Dissolved	ug/L	1000	966	97	85-115	
Cadmium, Dissolved	ug/L	1000	986	99	85-115	
Chromium, Dissolved	ug/L	1000	981	98	85-115	
Cobalt, Dissolved	ug/L	1000	976	98	85-115	
Copper, Dissolved	ug/L	1000	957	96	85-115	
Iron, Dissolved	ug/L	10000	9160	92	85-115	
Lead, Dissolved	ug/L	1000	992	99	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	966	97	85-115	
Silver, Dissolved	ug/L	500	486	97	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	965	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303208 1303209

Parameter	Units	4089195002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<75.0	10000	10000	9530	9900	95	99	70-130	4	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303208 1303209											
Parameter	Units	4089195002		MS	MSD	MSD		MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	<10.0	1000	1000	1000	994	1020	99	102	70-130	3
Arsenic, Dissolved	ug/L	<10.0	1000	1000	1000	989	1020	98	102	70-130	4
Beryllium, Dissolved	ug/L	<1.0	1000	1000	1000	947	981	95	98	70-130	4
Cadmium, Dissolved	ug/L	<5.0	1000	1000	1000	975	1010	97	101	70-130	3
Chromium, Dissolved	ug/L	<5.0	1000	1000	1000	955	992	95	99	70-130	4
Cobalt, Dissolved	ug/L	8.9	1000	1000	1000	950	982	94	97	70-130	3
Copper, Dissolved	ug/L	<10.0	1000	1000	1000	966	1000	96	100	70-130	4
Iron, Dissolved	ug/L	<50.0	10000	10000	10000	8940	9290	89	93	70-130	4
Lead, Dissolved	ug/L	<5.0	1000	1000	1000	923	954	92	95	70-130	3
Nickel, Dissolved	ug/L	38.4	1000	1000	1000	984	1020	95	98	70-130	3
Selenium, Dissolved	ug/L	<15.0	1000	1000	1000	966	1000	97	100	70-130	4
Silver, Dissolved	ug/L	<7.0	500	500	500	490	509	97	101	70-130	4
Thallium, Dissolved	ug/L	<20.0	1000	1000	1000	893	922	89	92	70-130	3
Zinc, Dissolved	ug/L	<50.0	1000	1000	1000	945	973	94	97	70-130	3

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

QC Batch: MSV/58281 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60159206001, 60159206002

METHOD BLANK: 1303609

Matrix: Water

Associated Lab Samples: 60159206001, 60159206002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,2-Dichloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/11/13 18:22	
Benzene	ug/L	ND	1.0	12/11/13 18:22	
Bromodichloromethane	ug/L	ND	1.0	12/11/13 18:22	
Bromoform	ug/L	ND	1.0	12/11/13 18:22	
Bromomethane	ug/L	ND	5.0	12/11/13 18:22	
Carbon tetrachloride	ug/L	ND	1.0	12/11/13 18:22	
Chloroethane	ug/L	ND	1.0	12/11/13 18:22	
Chloroform	ug/L	ND	1.0	12/11/13 18:22	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/11/13 18:22	
Ethylbenzene	ug/L	ND	1.0	12/11/13 18:22	
Methylene chloride	ug/L	ND	1.0	12/11/13 18:22	
Tetrachloroethene	ug/L	ND	1.0	12/11/13 18:22	
Toluene	ug/L	ND	1.0	12/11/13 18:22	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/11/13 18:22	
Trichloroethene	ug/L	ND	1.0	12/11/13 18:22	
Vinyl chloride	ug/L	ND	1.0	12/11/13 18:22	
Xylene (Total)	ug/L	ND	3.0	12/11/13 18:22	
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/11/13 18:22	
4-Bromofluorobenzene (S)	%	98	80-120	12/11/13 18:22	
Toluene-d8 (S)	%	101	80-120	12/11/13 18:22	

LABORATORY CONTROL SAMPLE: 1303610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.5	87	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	18.9	95	59-138	
1,1,2-Trichloroethane	ug/L	20	17.7	88	69-127	
1,2-Dichloroethane	ug/L	20	17.0	85	71-129	
1,4-Dichlorobenzene	ug/L	20	18.7	94	68-124	
Benzene	ug/L	20	16.7	83	73-129	
Bromodichloromethane	ug/L	20	17.4	87	63-129	
Bromoform	ug/L	20	17.9	90	52-123	
Bromomethane	ug/L	20	12.7	63	10-160	
Carbon tetrachloride	ug/L	20	18.2	91	70-140	
Chloroethane	ug/L	20	11.0	55	42-160	
Chloroform	ug/L	20	16.1	80	60-120	
cis-1,2-Dichloroethene	ug/L	20	16.4	82	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

LABORATORY CONTROL SAMPLE: 1303610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.3	91	66-133	
Methylene chloride	ug/L	20	17.2	86	56-135	
Tetrachloroethene	ug/L	20	18.0	90	64-143	
Toluene	ug/L	20	17.9	90	70-130	
trans-1,2-Dichloroethene	ug/L	20	16.0	80	67-149	
Trichloroethene	ug/L	20	17.8	89	71-130	
Vinyl chloride	ug/L	20	9.4	47	41-160	
Xylene (Total)	ug/L	60	53.4	89	67-130	
1,2-Dichloroethane-d4 (S)	%			91	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			106	80-120	

MATRIX SPIKE SAMPLE: 1303611

Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4260	106	52-160	
1,1,2,2-Tetrachloroethane	ug/L	204	4000	3650	86	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	4000	100	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3710	93	49-155	
1,4-Dichlorobenzene	ug/L	960	4000	4630	92	18-147	
Benzene	ug/L	ND	4000	3720	92	37-151	
Bromodichloromethane	ug/L	ND	4000	3760	94	35-155	
Bromoform	ug/L	ND	4000	3630	91	45-133	
Bromomethane	ug/L	ND	4000	2670	67	10-160	
Carbon tetrachloride	ug/L	ND	4000	4360	109	70-140	
Chloroethane	ug/L	ND	4000	2680	67	14-160	
Chloroform	ug/L	ND	4000	3580	90	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3780	94	19-160	
Ethylbenzene	ug/L	ND	4000	4170	102	37-154	
Tetrachloroethene	ug/L	ND	4000	4170	104	64-148	
Toluene	ug/L	ND	4000	3880	96	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3780	95	54-156	
Trichloroethene	ug/L	ND	4000	4090	102	71-157	
Vinyl chloride	ug/L	ND	4000	2030	51	10-160	
Xylene (Total)	ug/L	ND	12000	11600	97	12-153	
1,2-Dichloroethane-d4 (S)	%				101	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			6.0		6.0		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R
Pace Project No.: 60159206

QC Batch:	MSV/58303	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60159206001		

METHOD BLANK: 1304331 Matrix: Water
Associated Lab Samples: 60159206001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methylene chloride	ug/L	ND	1.0	12/12/13 17:03	
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/12/13 17:03	
4-Bromofluorobenzene (S)	%	99	80-120	12/12/13 17:03	
Toluene-d8 (S)	%	98	80-120	12/12/13 17:03	

LABORATORY CONTROL SAMPLE: 1304332

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methylene chloride	ug/L	20	17.6	88	56-135	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			102	80-120	

MATRIX SPIKE SAMPLE: 1304333

Parameter	Units	60159390001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Methylene chloride	ug/L	ND	4000	3990	100	15-156	
1,2-Dichloroethane-d4 (S)	%				105	80-120	
4-Bromofluorobenzene (S)	%				103	80-120	
Toluene-d8 (S)	%				104	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

QC Batch:	MSV/58684	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples: 60159206001, 60159206002			

METHOD BLANK: 1313449 Matrix: Water

Associated Lab Samples: 60159206001, 60159206002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/11/13 18:22	N2
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/11/13 18:22	
4-Bromofluorobenzene (S)	%	98	80-120	12/11/13 18:22	
Toluene-d8 (S)	%	101	80-120	12/11/13 18:22	

LABORATORY CONTROL SAMPLE: 1313450

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	113	113	40-160	N2
1,2-Dichloroethane-d4 (S)	%			91	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			106	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R
Pace Project No.: 60159206

QC Batch:	OEXT/41871	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159206001		

METHOD BLANK: 1304024 Matrix: Water
Associated Lab Samples: 60159206001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/13/13 09:47	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/13/13 09:47	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/13/13 09:47	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/13/13 09:47	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/13/13 09:47	
Hexachloroethane	ug/L	ND	5.0	12/13/13 09:47	
Naphthalene	ug/L	ND	5.0	12/13/13 09:47	
Nitrobenzene	ug/L	ND	5.0	12/13/13 09:47	
Pentachlorophenol	ug/L	ND	5.0	12/13/13 09:47	
Phenol	ug/L	ND	5.0	12/13/13 09:47	
2,4,6-Tribromophenol (S)	%	80	39-120	12/13/13 09:47	
2-Fluorobiphenyl (S)	%	78	39-120	12/13/13 09:47	
2-Fluorophenol (S)	%	44	17-120	12/13/13 09:47	
Nitrobenzene-d5 (S)	%	73	33-120	12/13/13 09:47	
Phenol-d6 (S)	%	28	11-120	12/13/13 09:47	
Terphenyl-d14 (S)	%	83	45-120	12/13/13 09:47	

LABORATORY CONTROL SAMPLE: 1304025

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	42.9	86	46-120	
2,4,6-Trichlorophenol	ug/L	50	47.6	95	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	61.6	123	40-133	
Hexachloro-1,3-butadiene	ug/L	50	40.0	80	44-116	
Hexachlorocyclopentadiene	ug/L	100	72.6	73	24-120	
Hexachloroethane	ug/L	50	39.9	80	43-113	
Naphthalene	ug/L	50	44.0	88	48-120	
Nitrobenzene	ug/L	50	43.4	87	48-120	
Pentachlorophenol	ug/L	50	53.4	107	47-120	
Phenol	ug/L	50	15.8	32	16-112	
2,4,6-Tribromophenol (S)	%			102	39-120	
2-Fluorobiphenyl (S)	%			90	39-120	
2-Fluorophenol (S)	%			46	17-120	
Nitrobenzene-d5 (S)	%			83	33-120	
Phenol-d6 (S)	%			30	11-120	
Terphenyl-d14 (S)	%			97	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

MATRIX SPIKE SAMPLE:		1304026					
Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3960	79	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4640	93	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	5380	108	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3830	77	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	7160	72	11-120	
Hexachloroethane	ug/L	ND	5000	3820	76	40-113	
Naphthalene	ug/L	1240	5000	5400	83	45-120	
Nitrobenzene	ug/L	ND	5000	3920	78	38-120	
Pentachlorophenol	ug/L	ND	5000	5440	109	43-135	
Phenol	ug/L	12000	5000	13800	36	13-112	
2,4,6-Tribromophenol (S)	%				95	39-120	
2-Fluorobiphenyl (S)	%				83	39-120	
2-Fluorophenol (S)	%				46	17-120	
Nitrobenzene-d5 (S)	%				121	33-120	S0
Phenol-d6 (S)	%				32	11-120	
Terphenyl-d14 (S)	%				85	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

QC Batch: WET/45045

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60159206001

METHOD BLANK: 1303333

Matrix: Water

Associated Lab Samples: 60159206001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/11/13 07:38	

LABORATORY CONTROL SAMPLE: 1303334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	37.8	94	78-114	

MATRIX SPIKE SAMPLE: 1303337

Parameter	Units	60158889001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.8	44.8	108	78-114	

SAMPLE DUPLICATE: 1303339

Parameter	Units	60158792002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	60.6	61.4	1	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R
Pace Project No.: 60159206

QC Batch:	WET/45137	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 SGT-HEM, TPH
Associated Lab Samples:	60159206001		

METHOD BLANK: 1306202 Matrix: Water
Associated Lab Samples: 60159206001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/16/13 07:28	

LABORATORY CONTROL SAMPLE: 1306203

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.3	102	64-132	

MATRIX SPIKE SAMPLE: 1306207

Parameter	Units	60159090004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	22	24.2	104	64-132	

SAMPLE DUPLICATE: 1306212

Parameter	Units	60159090005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

QC Batch: WET/45051

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159206001

METHOD BLANK: 1303403

Matrix: Water

Associated Lab Samples: 60159206001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/11/13 14:51	

SAMPLE DUPLICATE: 1303404

Parameter	Units	60159167001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	3060	3200	4	25	

SAMPLE DUPLICATE: 1303607

Parameter	Units	60159168004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	740	710	4	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

QC Batch:	WET/45040	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60159206001		

SAMPLE DUPLICATE: 1303241

Parameter	Units	60159167001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.4	5.4	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

QC Batch: WET/45017

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159206001

METHOD BLANK: 1302681

Matrix: Water

Associated Lab Samples: 60159206001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/14/13 14:33	

LABORATORY CONTROL SAMPLE: 1302682

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	181	92	85-115	

SAMPLE DUPLICATE: 1302683

Parameter	Units	60159206001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	35200	32100	9	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

QC Batch: WETA/27468

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159206001

METHOD BLANK: 1304188

Matrix: Water

Associated Lab Samples: 60159206001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/12/13 13:49	

LABORATORY CONTROL SAMPLE: 1304189

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	1.9	97	90-110	

MATRIX SPIKE SAMPLE: 1304190

Parameter	Units	60159098001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	711	1000	1650	94	90-110	

SAMPLE DUPLICATE: 1304191

Parameter	Units	60159206001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	749	730	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R
Pace Project No.: 60159206

QC Batch: WETA/27481 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 60159206001

METHOD BLANK: 1304938 Matrix: Water
Associated Lab Samples: 60159206001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/16/13 11:49	

LABORATORY CONTROL SAMPLE: 1304939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.9	102	90-110	

MATRIX SPIKE SAMPLE: 1304940

Parameter	Units	60159167001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	104000	50000	146000	84	90-110	M1

MATRIX SPIKE SAMPLE: 1304941

Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	95700	50000	146000	101	90-110	

MATRIX SPIKE SAMPLE: 1304942

Parameter	Units	60159207001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	92200	50000	138000	92	90-110	

MATRIX SPIKE SAMPLE: 1304943

Parameter	Units	60159294001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	86500	50000	139000	104	90-110	

MATRIX SPIKE SAMPLE: 1304944

Parameter	Units	60159306001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	77000	50000	129000	104	90-110	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

MATRIX SPIKE SAMPLE: 1304945

Parameter	Units	60159390001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	75300	50000	128000	106	90-110	

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QUALIFIERS

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold TNI accreditation for this parameter.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-158R

Pace Project No.: 60159206

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159206001	316-158R	EPA 200.7	MPRP/25549	EPA 200.7	ICP/19627
60159206001	316-158R	EPA 200.7	MPRP/25536	EPA 200.7	ICP/19619
60159206001	316-158R	EPA 245.1	MERP/7988	EPA 245.1	MERC/7943
60159206001	316-158R	EPA 245.1	MERP/7989	EPA 245.1	MERC/7944
60159206001	316-158R	EPA 625	OEXT/41871	EPA 625	MSSV/13312
60159206001	316-158R	EPA 624 Low	MSV/58281		
60159206001	316-158R	EPA 624 Low	MSV/58303		
60159206002	TRIP BLANK	EPA 624 Low	MSV/58281		
60159206001	316-158R	EPA 624 Low	MSV/58684		
60159206002	TRIP BLANK	EPA 624 Low	MSV/58684		
60159206001	316-158R	EPA 1664A	WET/45045		
60159206001	316-158R	EPA 1664A	WET/45137		
60159206001	316-158R	SM 2540D	WET/45051		
60159206001	316-158R	SM 4500-H+B	WET/45040		
60159206001	316-158R	SM 5210B	WET/45017	SM 5210B	WET/45124
60159206001	316-158R	EPA 350.1	WETA/27468		
60159206001	316-158R	EPA 410.4	WETA/27481		

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Sample Condition Upon Receipt

WO#: 60159206



60159206

Client Name: Burr Eng.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☒ KR

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-239 T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: _____

Date and initials of person examining contents: 12/1/13 137

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>water</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16. <u>BPS + BPSN</u> <u>unable to be preserved.</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17. Initial when completed <u>JS</u> Lot # of added preservative
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☒ N/A	19.
Pace Trip Blank lot # (if purchased): <u>120613-3</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: AS Date: 12/1/13

December 31, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-159R
Pace Project No.: 60159207

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 09, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revised Report - Rev. 1, 12/31/13: This report has been revised to include Acetone in the 624 VOC scan.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Andy Brownfield for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159207001	316-159R	Water	12/08/13 09:46	12/09/13 13:40
60159207002	TRIP BLANK	Water	12/08/13 08:00	12/09/13 13:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159207001	316-159R	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 624 Low	EAK	5
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	NDL	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60159207002	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	5

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

Sample: 316-159R		Lab ID: 60159207001	Collected: 12/08/13 09:46	Received: 12/09/13 13:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	10300	ug/L	375	1	12/11/13 14:00	12/12/13 18:15	7429-90-5	
Antimony	62.5	ug/L	50.0	1	12/11/13 14:00	12/12/13 18:15	7440-36-0	
Arsenic	926	ug/L	50.0	1	12/11/13 14:00	12/12/13 18:15	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/11/13 14:00	12/12/13 18:15	7440-41-7	D3
Cadmium	ND	ug/L	25.0	1	12/11/13 14:00	12/12/13 18:15	7440-43-9	
Chromium	322	ug/L	25.0	1	12/11/13 14:00	12/12/13 18:15	7440-47-3	
Cobalt	27.6	ug/L	25.0	1	12/11/13 14:00	12/12/13 18:15	7440-48-4	
Copper	ND	ug/L	50.0	1	12/11/13 14:00	12/12/13 18:15	7440-50-8	
Iron	1070000	ug/L	250	1	12/11/13 14:00	12/12/13 18:15	7439-89-6	
Lead	249	ug/L	25.0	1	12/11/13 14:00	12/12/13 18:15	7439-92-1	
Nickel	85.8	ug/L	25.0	1	12/11/13 14:00	12/12/13 18:15	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/11/13 14:00	12/12/13 18:15	7782-49-2	
Silver	ND	ug/L	35.0	1	12/11/13 14:00	12/12/13 18:15	7440-22-4	
Thallium	ND	ug/L	100	1	12/11/13 14:00	12/12/13 18:15	7440-28-0	
Zinc	17000	ug/L	500	2	12/11/13 14:00	12/12/13 18:18	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3790	ug/L	375	1	12/10/13 16:00	12/11/13 19:47	7429-90-5	
Antimony, Dissolved	68.1	ug/L	50.0	1	12/10/13 16:00	12/11/13 19:47	7440-36-0	D9
Arsenic, Dissolved	696	ug/L	50.0	1	12/10/13 16:00	12/11/13 19:47	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/10/13 16:00	12/11/13 19:47	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	25.0	1	12/10/13 16:00	12/11/13 19:47	7440-43-9	
Chromium, Dissolved	223	ug/L	25.0	1	12/10/13 16:00	12/11/13 19:47	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/10/13 16:00	12/11/13 19:47	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/10/13 16:00	12/11/13 19:47	7440-50-8	
Iron, Dissolved	636000	ug/L	250	1	12/10/13 16:00	12/11/13 19:47	7439-89-6	
Lead, Dissolved	124	ug/L	25.0	1	12/10/13 16:00	12/11/13 19:47	7439-92-1	
Nickel, Dissolved	50.4	ug/L	25.0	1	12/10/13 16:00	12/11/13 19:47	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/10/13 16:00	12/11/13 19:47	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/10/13 16:00	12/11/13 19:47	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/10/13 16:00	12/11/13 19:47	7440-28-0	
Zinc, Dissolved	12700	ug/L	500	2	12/10/13 16:00	12/11/13 19:50	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	6.0	1	12/12/13 09:30	12/12/13 15:25	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/12/13 09:30	12/12/13 16:10	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/12/13 00:00	12/13/13 11:10	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 11:10	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 11:10	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 11:10	67-72-1	
Naphthalene	1150	ug/L	1000	2	12/12/13 00:00	12/13/13 11:10	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 11:10	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

Sample: 316-159R		Lab ID: 60159207001	Collected: 12/08/13 09:46	Received: 12/09/13 13:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/12/13 00:00	12/13/13 11:10	87-86-5	
Phenol	8510 ug/L		1000	2	12/12/13 00:00	12/13/13 11:10	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/12/13 00:00	12/13/13 11:10	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/12/13 00:00	12/13/13 11:10	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	122 %		33-120	2	12/12/13 00:00	12/13/13 11:10	4165-60-0	S0
2-Fluorobiphenyl (S)	86 %		39-120	2	12/12/13 00:00	12/13/13 11:10	321-60-8	
Terphenyl-d14 (S)	91 %		45-120	2	12/12/13 00:00	12/13/13 11:10	1718-51-0	
Phenol-d6 (S)	31 %		11-120	2	12/12/13 00:00	12/13/13 11:10	13127-88-3	
2-Fluorophenol (S)	45 %		17-120	2	12/12/13 00:00	12/13/13 11:10	367-12-4	
2,4,6-Tribromophenol (S)	99 %		39-120	2	12/12/13 00:00	12/13/13 11:10	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/11/13 19:22	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/11/13 19:22	75-27-4	
Bromoform	ND ug/L		200	200		12/11/13 19:22	75-25-2	
Bromomethane	ND ug/L		1000	200		12/11/13 19:22	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/11/13 19:22	56-23-5	
Chloroethane	ND ug/L		200	200		12/11/13 19:22	75-00-3	
Chloroform	ND ug/L		200	200		12/11/13 19:22	67-66-3	
1,4-Dichlorobenzene	1070 ug/L		200	200		12/11/13 19:22	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/11/13 19:22	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/11/13 19:22	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/11/13 19:22	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/11/13 19:22	100-41-4	
Methylene chloride	ND ug/L		200	200		12/12/13 17:18	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/11/13 19:22	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/11/13 19:22	127-18-4	
Toluene	ND ug/L		200	200		12/11/13 19:22	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/11/13 19:22	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/11/13 19:22	79-00-5	
Trichloroethene	ND ug/L		200	200		12/11/13 19:22	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/11/13 19:22	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/11/13 19:22	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		12/11/13 19:22	460-00-4	D3
Toluene-d8 (S)	99 %		80-120	200		12/11/13 19:22	2037-26-5	
1,2-Dichloroethane-d4 (S)	109 %		80-120	200		12/11/13 19:22	17060-07-0	
Preservation pH	6.0		1.0	200		12/11/13 19:22		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	218000 ug/L		2000	200		12/11/13 19:22	67-64-1	E,N2
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		12/11/13 19:22	460-00-4	
Toluene-d8 (S)	99 %		80-120	200		12/11/13 19:22	2037-26-5	
1,2-Dichloroethane-d4 (S)	109 %		80-120	200		12/11/13 19:22	17060-07-0	
Preservation pH	6.0		1.0	200		12/11/13 19:22		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

Sample: 316-159R		Lab ID: 60159207001	Collected: 12/08/13 09:46	Received: 12/09/13 13:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	905	mg/L	5.0	1		12/11/13 07:39		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	11.5	mg/L	5.0	1		12/16/13 07:29		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3420	mg/L	5.0	1		12/11/13 14:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		12/11/13 08:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	29300	mg/L	2.0	1	12/09/13 15:13	12/14/13 14:47		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	677	mg/L	20.0	200		12/12/13 13:57	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	92200	mg/L	10000	1000		12/16/13 11:53		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

Sample: TRIP BLANK		Lab ID: 60159207002	Collected: 12/08/13 08:00	Received: 12/09/13 13:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/11/13 19:37	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/11/13 19:37	75-27-4	
Bromoform	ND ug/L		1.0	1		12/11/13 19:37	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/11/13 19:37	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/11/13 19:37	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/11/13 19:37	75-00-3	
Chloroform	ND ug/L		1.0	1		12/11/13 19:37	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/11/13 19:37	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/11/13 19:37	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/11/13 19:37	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/11/13 19:37	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/11/13 19:37	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/11/13 19:37	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/11/13 19:37	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/11/13 19:37	127-18-4	
Toluene	ND ug/L		1.0	1		12/11/13 19:37	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/11/13 19:37	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/11/13 19:37	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/11/13 19:37	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/11/13 19:37	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/11/13 19:37	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	95 %		80-120	1		12/11/13 19:37	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		12/11/13 19:37	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	1		12/11/13 19:37	17060-07-0	
Preservation pH	6.0		1.0	1		12/11/13 19:37		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/11/13 19:37	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	95 %		80-120	1		12/11/13 19:37	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		12/11/13 19:37	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	1		12/11/13 19:37	17060-07-0	
Preservation pH	6.0		1.0	1		12/11/13 19:37		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

QC Batch: MERP/7988

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159207001

METHOD BLANK: 1303938

Matrix: Water

Associated Lab Samples: 60159207001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/12/13 14:52	

LABORATORY CONTROL SAMPLE: 1303939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	92	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303940 1303941

Parameter	Units	60159029001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	3.3	3.6	67	71	70-130	7	20	M1

MATRIX SPIKE SAMPLE: 1303942

Parameter	Units	60159255001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	4.6	93	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

QC Batch:	MERP/7989	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60159207001		

METHOD BLANK: 1303944 Matrix: Water

Associated Lab Samples: 60159207001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/12/13 15:58	

LABORATORY CONTROL SAMPLE: 1303945

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303946 1303947

Parameter	Units	60159206001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	130	128	87	85	70-130	2	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R
Pace Project No.: 60159207

QC Batch: MPRP/25549 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60159207001

METHOD BLANK: 1303625 Matrix: Water
Associated Lab Samples: 60159207001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/12/13 17:09	
Antimony	ug/L	ND	10.0	12/12/13 17:09	
Arsenic	ug/L	ND	10.0	12/12/13 17:09	
Beryllium	ug/L	ND	1.0	12/12/13 17:09	
Cadmium	ug/L	ND	5.0	12/12/13 17:09	
Chromium	ug/L	ND	5.0	12/12/13 17:09	
Cobalt	ug/L	ND	5.0	12/12/13 17:09	
Copper	ug/L	ND	10.0	12/12/13 17:09	
Iron	ug/L	ND	50.0	12/12/13 17:09	
Lead	ug/L	ND	5.0	12/12/13 17:09	
Nickel	ug/L	ND	5.0	12/12/13 17:09	
Selenium	ug/L	ND	15.0	12/12/13 17:09	
Silver	ug/L	ND	7.0	12/12/13 17:09	
Thallium	ug/L	ND	20.0	12/12/13 17:09	
Zinc	ug/L	ND	50.0	12/12/13 17:09	

LABORATORY CONTROL SAMPLE: 1303626

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10100	101	85-115	
Antimony	ug/L	1000	1030	103	85-115	
Arsenic	ug/L	1000	979	98	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1020	102	85-115	
Chromium	ug/L	1000	1010	101	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Copper	ug/L	1000	996	100	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1030	103	85-115	
Nickel	ug/L	1000	1050	105	85-115	
Selenium	ug/L	1000	1020	102	85-115	
Silver	ug/L	500	487	97	85-115	
Thallium	ug/L	1000	1030	103	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303627 1303628

Parameter	Units	4089124001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	291	10000	10000	9810	10300	95	100	70-130	5	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303627 1303628											
Parameter	Units	4089124001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	<20.0	1000	1000	981	1030	98	103	70-130	5	7
Arsenic	ug/L	187	1000	1000	1150	1180	96	99	70-130	3	10
Beryllium	ug/L	<2.0	1000	1000	941	998	94	100	70-130	6	7
Cadmium	ug/L	<10.0	1000	1000	957	1000	96	100	70-130	4	10
Chromium	ug/L	125	1000	1000	1060	1110	94	99	70-130	5	10
Cobalt	ug/L	16.3	1000	1000	940	1020	92	101	70-130	8	6 R1
Copper	ug/L	<20.0	1000	1000	971	1000	96	99	70-130	3	11
Iron	ug/L	5170	10000	10000	14800	15500	96	104	70-130	5	10
Lead	ug/L	<10.0	1000	1000	900	979	90	98	70-130	8	10
Nickel	ug/L	274	1000	1000	1190	1290	92	102	70-130	8	10
Selenium	ug/L	<30.0	1000	1000	972	1030	97	103	70-130	6	10
Silver	ug/L	<14.0	500	500	489	499	98	100	70-130	2	10
Thallium	ug/L	<40.0	1000	1000	804	908	80	91	70-130	12	6 R1
Zinc	ug/L	<100	1000	1000	1010	1090	94	102	70-130	8	11

MATRIX SPIKE SAMPLE: 1303629							
Parameter	Units	4089124002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	447	10000	10100	96	70-130	
Antimony	ug/L	<20.0	1000	998	98	70-130	
Arsenic	ug/L	233	1000	1200	96	70-130	
Beryllium	ug/L	<2.0	1000	967	97	70-130	
Cadmium	ug/L	<10.0	1000	970	97	70-130	
Chromium	ug/L	201	1000	1150	95	70-130	
Cobalt	ug/L	24.7	1000	986	96	70-130	
Copper	ug/L	<20.0	1000	970	96	70-130	
Iron	ug/L	5180	10000	14600	94	70-130	
Lead	ug/L	<10.0	1000	938	93	70-130	
Nickel	ug/L	332	1000	1280	95	70-130	
Selenium	ug/L	<30.0	1000	950	94	70-130	
Silver	ug/L	<14.0	500	491	98	70-130	
Thallium	ug/L	<40.0	1000	862	86	70-130	
Zinc	ug/L	<100	1000	1050	98	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R
Pace Project No.: 60159207

QC Batch: MPRP/25536 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60159207001

METHOD BLANK: 1303206 Matrix: Water
Associated Lab Samples: 60159207001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/11/13 19:27	
Antimony, Dissolved	ug/L	ND	10.0	12/11/13 19:27	
Arsenic, Dissolved	ug/L	ND	10.0	12/11/13 19:27	
Beryllium, Dissolved	ug/L	ND	1.0	12/11/13 19:27	
Cadmium, Dissolved	ug/L	ND	5.0	12/11/13 19:27	
Chromium, Dissolved	ug/L	ND	5.0	12/11/13 19:27	
Cobalt, Dissolved	ug/L	ND	5.0	12/11/13 19:27	
Copper, Dissolved	ug/L	ND	10.0	12/11/13 19:27	
Iron, Dissolved	ug/L	ND	50.0	12/11/13 19:27	
Lead, Dissolved	ug/L	ND	5.0	12/11/13 19:27	
Nickel, Dissolved	ug/L	ND	5.0	12/11/13 19:27	
Selenium, Dissolved	ug/L	ND	15.0	12/11/13 19:27	
Silver, Dissolved	ug/L	ND	7.0	12/11/13 19:27	
Thallium, Dissolved	ug/L	ND	20.0	12/11/13 19:27	
Zinc, Dissolved	ug/L	ND	50.0	12/11/13 19:27	

LABORATORY CONTROL SAMPLE: 1303207

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9880	99	85-115	
Antimony, Dissolved	ug/L	1000	990	99	85-115	
Arsenic, Dissolved	ug/L	1000	963	96	85-115	
Beryllium, Dissolved	ug/L	1000	966	97	85-115	
Cadmium, Dissolved	ug/L	1000	986	99	85-115	
Chromium, Dissolved	ug/L	1000	981	98	85-115	
Cobalt, Dissolved	ug/L	1000	976	98	85-115	
Copper, Dissolved	ug/L	1000	957	96	85-115	
Iron, Dissolved	ug/L	10000	9160	92	85-115	
Lead, Dissolved	ug/L	1000	992	99	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	966	97	85-115	
Silver, Dissolved	ug/L	500	486	97	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	965	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303208 1303209

Parameter	Units	4089195002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	<75.0	10000	10000	9530	9900	95	99	70-130	4	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303208 1303209											
Parameter	Units	4089195002		MS	MSD	1303209		MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD RPD Qual
Antimony, Dissolved	ug/L	<10.0	1000	1000	1000	994	1020	99	102	70-130	3 7
Arsenic, Dissolved	ug/L	<10.0	1000	1000	1000	989	1020	98	102	70-130	4 10
Beryllium, Dissolved	ug/L	<1.0	1000	1000	1000	947	981	95	98	70-130	4 7
Cadmium, Dissolved	ug/L	<5.0	1000	1000	1000	975	1010	97	101	70-130	3 10
Chromium, Dissolved	ug/L	<5.0	1000	1000	1000	955	992	95	99	70-130	4 10
Cobalt, Dissolved	ug/L	8.9	1000	1000	1000	950	982	94	97	70-130	3 6
Copper, Dissolved	ug/L	<10.0	1000	1000	1000	966	1000	96	100	70-130	4 11
Iron, Dissolved	ug/L	<50.0	10000	10000	10000	8940	9290	89	93	70-130	4 10
Lead, Dissolved	ug/L	<5.0	1000	1000	1000	923	954	92	95	70-130	3 10
Nickel, Dissolved	ug/L	38.4	1000	1000	1000	984	1020	95	98	70-130	3 10
Selenium, Dissolved	ug/L	<15.0	1000	1000	1000	966	1000	97	100	70-130	4 10
Silver, Dissolved	ug/L	<7.0	500	500	500	490	509	97	101	70-130	4 10
Thallium, Dissolved	ug/L	<20.0	1000	1000	1000	893	922	89	92	70-130	3 6
Zinc, Dissolved	ug/L	<50.0	1000	1000	1000	945	973	94	97	70-130	3 11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

QC Batch: MSV/58281 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60159207001, 60159207002

METHOD BLANK: 1303609

Matrix: Water

Associated Lab Samples: 60159207001, 60159207002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,2-Dichloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/11/13 18:22	
Benzene	ug/L	ND	1.0	12/11/13 18:22	
Bromodichloromethane	ug/L	ND	1.0	12/11/13 18:22	
Bromoform	ug/L	ND	1.0	12/11/13 18:22	
Bromomethane	ug/L	ND	5.0	12/11/13 18:22	
Carbon tetrachloride	ug/L	ND	1.0	12/11/13 18:22	
Chloroethane	ug/L	ND	1.0	12/11/13 18:22	
Chloroform	ug/L	ND	1.0	12/11/13 18:22	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/11/13 18:22	
Ethylbenzene	ug/L	ND	1.0	12/11/13 18:22	
Methylene chloride	ug/L	ND	1.0	12/11/13 18:22	
Tetrachloroethene	ug/L	ND	1.0	12/11/13 18:22	
Toluene	ug/L	ND	1.0	12/11/13 18:22	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/11/13 18:22	
Trichloroethene	ug/L	ND	1.0	12/11/13 18:22	
Vinyl chloride	ug/L	ND	1.0	12/11/13 18:22	
Xylene (Total)	ug/L	ND	3.0	12/11/13 18:22	
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/11/13 18:22	
4-Bromofluorobenzene (S)	%	98	80-120	12/11/13 18:22	
Toluene-d8 (S)	%	101	80-120	12/11/13 18:22	

LABORATORY CONTROL SAMPLE: 1303610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.5	87	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	18.9	95	59-138	
1,1,2-Trichloroethane	ug/L	20	17.7	88	69-127	
1,2-Dichloroethane	ug/L	20	17.0	85	71-129	
1,4-Dichlorobenzene	ug/L	20	18.7	94	68-124	
Benzene	ug/L	20	16.7	83	73-129	
Bromodichloromethane	ug/L	20	17.4	87	63-129	
Bromoform	ug/L	20	17.9	90	52-123	
Bromomethane	ug/L	20	12.7	63	10-160	
Carbon tetrachloride	ug/L	20	18.2	91	70-140	
Chloroethane	ug/L	20	11.0	55	42-160	
Chloroform	ug/L	20	16.1	80	60-120	
cis-1,2-Dichloroethene	ug/L	20	16.4	82	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

LABORATORY CONTROL SAMPLE: 1303610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.3	91	66-133	
Methylene chloride	ug/L	20	17.2	86	56-135	
Tetrachloroethene	ug/L	20	18.0	90	64-143	
Toluene	ug/L	20	17.9	90	70-130	
trans-1,2-Dichloroethene	ug/L	20	16.0	80	67-149	
Trichloroethene	ug/L	20	17.8	89	71-130	
Vinyl chloride	ug/L	20	9.4	47	41-160	
Xylene (Total)	ug/L	60	53.4	89	67-130	
1,2-Dichloroethane-d4 (S)	%			91	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			106	80-120	

MATRIX SPIKE SAMPLE: 1303611

Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4260	106	52-160	
1,1,2,2-Tetrachloroethane	ug/L	204	4000	3650	86	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	4000	100	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3710	93	49-155	
1,4-Dichlorobenzene	ug/L	960	4000	4630	92	18-147	
Benzene	ug/L	ND	4000	3720	92	37-151	
Bromodichloromethane	ug/L	ND	4000	3760	94	35-155	
Bromoform	ug/L	ND	4000	3630	91	45-133	
Bromomethane	ug/L	ND	4000	2670	67	10-160	
Carbon tetrachloride	ug/L	ND	4000	4360	109	70-140	
Chloroethane	ug/L	ND	4000	2680	67	14-160	
Chloroform	ug/L	ND	4000	3580	90	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3780	94	19-160	
Ethylbenzene	ug/L	ND	4000	4170	102	37-154	
Tetrachloroethene	ug/L	ND	4000	4170	104	64-148	
Toluene	ug/L	ND	4000	3880	96	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3780	95	54-156	
Trichloroethene	ug/L	ND	4000	4090	102	71-157	
Vinyl chloride	ug/L	ND	4000	2030	51	10-160	
Xylene (Total)	ug/L	ND	12000	11600	97	12-153	
1,2-Dichloroethane-d4 (S)	%				101	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			6.0		6.0		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R
Pace Project No.: 60159207

QC Batch:	MSV/58303	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60159207001		

METHOD BLANK: 1304331 Matrix: Water
Associated Lab Samples: 60159207001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methylene chloride	ug/L	ND	1.0	12/12/13 17:03	
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/12/13 17:03	
4-Bromofluorobenzene (S)	%	99	80-120	12/12/13 17:03	
Toluene-d8 (S)	%	98	80-120	12/12/13 17:03	

LABORATORY CONTROL SAMPLE: 1304332

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methylene chloride	ug/L	20	17.6	88	56-135	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			102	80-120	

MATRIX SPIKE SAMPLE: 1304333

Parameter	Units	60159390001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Methylene chloride	ug/L	ND	4000	3990	100	15-156	
1,2-Dichloroethane-d4 (S)	%				105	80-120	
4-Bromofluorobenzene (S)	%				103	80-120	
Toluene-d8 (S)	%				104	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

QC Batch:	MSV/58684	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples:	60159207001, 60159207002		

METHOD BLANK: 1313449 Matrix: Water

Associated Lab Samples: 60159207001, 60159207002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/11/13 18:22	N2
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/11/13 18:22	
4-Bromofluorobenzene (S)	%	98	80-120	12/11/13 18:22	
Toluene-d8 (S)	%	101	80-120	12/11/13 18:22	

LABORATORY CONTROL SAMPLE: 1313450

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	113	113	40-160	N2
1,2-Dichloroethane-d4 (S)	%			91	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			106	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R
Pace Project No.: 60159207

QC Batch:	OEXT/41871	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159207001		

METHOD BLANK: 1304024 Matrix: Water
Associated Lab Samples: 60159207001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/13/13 09:47	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/13/13 09:47	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/13/13 09:47	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/13/13 09:47	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/13/13 09:47	
Hexachloroethane	ug/L	ND	5.0	12/13/13 09:47	
Naphthalene	ug/L	ND	5.0	12/13/13 09:47	
Nitrobenzene	ug/L	ND	5.0	12/13/13 09:47	
Pentachlorophenol	ug/L	ND	5.0	12/13/13 09:47	
Phenol	ug/L	ND	5.0	12/13/13 09:47	
2,4,6-Tribromophenol (S)	%	80	39-120	12/13/13 09:47	
2-Fluorobiphenyl (S)	%	78	39-120	12/13/13 09:47	
2-Fluorophenol (S)	%	44	17-120	12/13/13 09:47	
Nitrobenzene-d5 (S)	%	73	33-120	12/13/13 09:47	
Phenol-d6 (S)	%	28	11-120	12/13/13 09:47	
Terphenyl-d14 (S)	%	83	45-120	12/13/13 09:47	

LABORATORY CONTROL SAMPLE: 1304025

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	42.9	86	46-120	
2,4,6-Trichlorophenol	ug/L	50	47.6	95	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	61.6	123	40-133	
Hexachloro-1,3-butadiene	ug/L	50	40.0	80	44-116	
Hexachlorocyclopentadiene	ug/L	100	72.6	73	24-120	
Hexachloroethane	ug/L	50	39.9	80	43-113	
Naphthalene	ug/L	50	44.0	88	48-120	
Nitrobenzene	ug/L	50	43.4	87	48-120	
Pentachlorophenol	ug/L	50	53.4	107	47-120	
Phenol	ug/L	50	15.8	32	16-112	
2,4,6-Tribromophenol (S)	%			102	39-120	
2-Fluorobiphenyl (S)	%			90	39-120	
2-Fluorophenol (S)	%			46	17-120	
Nitrobenzene-d5 (S)	%			83	33-120	
Phenol-d6 (S)	%			30	11-120	
Terphenyl-d14 (S)	%			97	45-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

MATRIX SPIKE SAMPLE:		1304026					
Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3960	79	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4640	93	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	5380	108	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3830	77	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	7160	72	11-120	
Hexachloroethane	ug/L	ND	5000	3820	76	40-113	
Naphthalene	ug/L	1240	5000	5400	83	45-120	
Nitrobenzene	ug/L	ND	5000	3920	78	38-120	
Pentachlorophenol	ug/L	ND	5000	5440	109	43-135	
Phenol	ug/L	12000	5000	13800	36	13-112	
2,4,6-Tribromophenol (S)	%				95	39-120	
2-Fluorobiphenyl (S)	%				83	39-120	
2-Fluorophenol (S)	%				46	17-120	
Nitrobenzene-d5 (S)	%				121	33-120	S0
Phenol-d6 (S)	%				32	11-120	
Terphenyl-d14 (S)	%				85	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

QC Batch: WET/45045

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60159207001

METHOD BLANK: 1303333

Matrix: Water

Associated Lab Samples: 60159207001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/11/13 07:38	

LABORATORY CONTROL SAMPLE: 1303334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	37.8	94	78-114	

MATRIX SPIKE SAMPLE: 1303337

Parameter	Units	60158889001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.8	44.8	108	78-114	

SAMPLE DUPLICATE: 1303339

Parameter	Units	60158792002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	60.6	61.4	1	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

QC Batch: WET/45137

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159207001

METHOD BLANK: 1306202

Matrix: Water

Associated Lab Samples: 60159207001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/16/13 07:28	

LABORATORY CONTROL SAMPLE: 1306203

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.3	102	64-132	

MATRIX SPIKE SAMPLE: 1306207

Parameter	Units	60159090004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	22	24.2	104	64-132	

SAMPLE DUPLICATE: 1306212

Parameter	Units	60159090005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

QC Batch: WET/45051

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159207001

METHOD BLANK: 1303403

Matrix: Water

Associated Lab Samples: 60159207001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/11/13 14:51	

SAMPLE DUPLICATE: 1303404

Parameter	Units	60159167001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	3060	3200	4	25	

SAMPLE DUPLICATE: 1303607

Parameter	Units	60159168004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	740	710	4	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

QC Batch: WET/45040 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60159207001

SAMPLE DUPLICATE: 1303241

Parameter	Units	60159167001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.4	5.4	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

QC Batch: WET/45017

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159207001

METHOD BLANK: 1302681

Matrix: Water

Associated Lab Samples: 60159207001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/14/13 14:33	

LABORATORY CONTROL SAMPLE: 1302682

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	181	92	85-115	

SAMPLE DUPLICATE: 1302683

Parameter	Units	60159206001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	35200	32100	9	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

QC Batch: WETA/27468

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159207001

METHOD BLANK: 1304188

Matrix: Water

Associated Lab Samples: 60159207001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/12/13 13:49	

LABORATORY CONTROL SAMPLE: 1304189

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	1.9	97	90-110	

MATRIX SPIKE SAMPLE: 1304190

Parameter	Units	60159098001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	711	1000	1650	94	90-110	

SAMPLE DUPLICATE: 1304191

Parameter	Units	60159206001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	749	730	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R
Pace Project No.: 60159207

QC Batch: WETA/27481 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 60159207001

METHOD BLANK: 1304938 Matrix: Water
Associated Lab Samples: 60159207001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/16/13 11:49	

LABORATORY CONTROL SAMPLE: 1304939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.9	102	90-110	

MATRIX SPIKE SAMPLE: 1304940

Parameter	Units	60159167001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	104000	50000	146000	84	90-110	M1

MATRIX SPIKE SAMPLE: 1304941

Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	95700	50000	146000	101	90-110	

MATRIX SPIKE SAMPLE: 1304942

Parameter	Units	60159207001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	92200	50000	138000	92	90-110	

MATRIX SPIKE SAMPLE: 1304943

Parameter	Units	60159294001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	86500	50000	139000	104	90-110	

MATRIX SPIKE SAMPLE: 1304944

Parameter	Units	60159306001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	77000	50000	129000	104	90-110	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

MATRIX SPIKE SAMPLE:		1304945					
Parameter	Units	60159390001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	75300	50000	128000	106	90-110	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D9 Dissolved result is greater than the total. Data is within laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

R1 RPD value was outside control limits.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-159R

Pace Project No.: 60159207

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159207001	316-159R	EPA 200.7	MPRP/25549	EPA 200.7	ICP/19627
60159207001	316-159R	EPA 200.7	MPRP/25536	EPA 200.7	ICP/19619
60159207001	316-159R	EPA 245.1	MERP/7988	EPA 245.1	MERC/7943
60159207001	316-159R	EPA 245.1	MERP/7989	EPA 245.1	MERC/7944
60159207001	316-159R	EPA 625	OEXT/41871	EPA 625	MSSV/13312
60159207001	316-159R	EPA 624 Low	MSV/58281		
60159207001	316-159R	EPA 624 Low	MSV/58303		
60159207002	TRIP BLANK	EPA 624 Low	MSV/58281		
60159207001	316-159R	EPA 624 Low	MSV/58684		
60159207002	TRIP BLANK	EPA 624 Low	MSV/58684		
60159207001	316-159R	EPA 1664A	WET/45045		
60159207001	316-159R	EPA 1664A	WET/45137		
60159207001	316-159R	SM 2540D	WET/45051		
60159207001	316-159R	SM 4500-H+B	WET/45040		
60159207001	316-159R	SM 5210B	WET/45017	SM 5210B	WET/45124
60159207001	316-159R	EPA 350.1	WETA/27468		
60159207001	316-159R	EPA 410.4	WETA/27481		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60159207



60159207

Client Name: Barr Eng.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☒ XR

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-239 T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: _____

Date and initials of person examining contents: 12/11/13 135

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>water</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>aps</u> Lot # of added preservative
Trip Blank present:	☒ Yes ☐ No ☒ N/A	18.
Pace Trip Blank lot # (if purchased): <u>100612-3</u>		19.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☒ N/A	20.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	21. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 12/11/13

December 31, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-160RR
Pace Project No.: 60159294

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 11, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revised Report - Rev. 1, 12/31/13: This report has been revised to include Acetone in the 624 VOC scan.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Andy Brownfield for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159294001	316-160RR	Water	12/09/13 09:30	12/11/13 03:15
60159294002	TRIP BLANK	Water	12/09/13 09:30	12/11/13 03:15

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159294001	316-160RR	EPA 200.7	SMW	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 624 Low	EAK	5
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	JMC1	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60159294002	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	5

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

Sample: 316-160RR		Lab ID: 60159294001	Collected: 12/09/13 09:30	Received: 12/11/13 03:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	8970	ug/L	375	1	12/13/13 13:30	12/16/13 11:41	7429-90-5	
Antimony	ND	ug/L	100	2	12/13/13 13:30	12/16/13 11:45	7440-36-0	D3
Arsenic	809	ug/L	50.0	1	12/13/13 13:30	12/16/13 11:41	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/13/13 13:30	12/16/13 11:41	7440-41-7	D3
Cadmium	ND	ug/L	25.0	1	12/13/13 13:30	12/16/13 11:41	7440-43-9	
Chromium	302	ug/L	25.0	1	12/13/13 13:30	12/16/13 11:41	7440-47-3	
Cobalt	ND	ug/L	25.0	1	12/13/13 13:30	12/16/13 11:41	7440-48-4	
Copper	ND	ug/L	50.0	1	12/13/13 13:30	12/16/13 11:41	7440-50-8	
Iron	920000	ug/L	500	2	12/13/13 13:30	12/16/13 11:45	7439-89-6	
Lead	221	ug/L	25.0	1	12/13/13 13:30	12/16/13 11:41	7439-92-1	
Nickel	128	ug/L	25.0	1	12/13/13 13:30	12/16/13 11:41	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/13/13 13:30	12/16/13 11:41	7782-49-2	
Silver	ND	ug/L	35.0	1	12/13/13 13:30	12/16/13 11:41	7440-22-4	
Thallium	ND	ug/L	100	1	12/13/13 13:30	12/16/13 11:41	7440-28-0	
Zinc	13400	ug/L	500	2	12/13/13 13:30	12/16/13 11:45	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3280	ug/L	375	1	12/16/13 13:30	12/17/13 10:23	7429-90-5	
Antimony, Dissolved	ND	ug/L	100	2	12/16/13 13:30	12/17/13 10:26	7440-36-0	D3
Arsenic, Dissolved	589	ug/L	50.0	1	12/16/13 13:30	12/17/13 10:23	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/16/13 13:30	12/17/13 10:23	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:23	7440-43-9	
Chromium, Dissolved	199	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:23	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:23	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/16/13 13:30	12/17/13 10:23	7440-50-8	
Iron, Dissolved	613000	ug/L	500	2	12/16/13 13:30	12/17/13 10:26	7439-89-6	
Lead, Dissolved	106	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:23	7439-92-1	
Nickel, Dissolved	82.4	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:23	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/16/13 13:30	12/17/13 10:23	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/16/13 13:30	12/17/13 10:23	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/16/13 13:30	12/17/13 10:23	7440-28-0	
Zinc, Dissolved	9870	ug/L	500	2	12/16/13 13:30	12/17/13 10:26	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	6.0	1	12/12/13 09:30	12/12/13 15:43	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/17/13 16:10	12/18/13 13:29	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/12/13 00:00	12/13/13 11:30	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 11:30	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 11:30	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 11:30	67-72-1	
Naphthalene	1350	ug/L	1000	2	12/12/13 00:00	12/13/13 11:30	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 11:30	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

Sample: 316-160RR		Lab ID: 60159294001	Collected: 12/09/13 09:30	Received: 12/11/13 03:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/12/13 00:00	12/13/13 11:30	87-86-5	
Phenol	9780 ug/L		1000	2	12/12/13 00:00	12/13/13 11:30	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/12/13 00:00	12/13/13 11:30	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/12/13 00:00	12/13/13 11:30	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	125 %		33-120	2	12/12/13 00:00	12/13/13 11:30	4165-60-0	S0
2-Fluorobiphenyl (S)	86 %		39-120	2	12/12/13 00:00	12/13/13 11:30	321-60-8	
Terphenyl-d14 (S)	91 %		45-120	2	12/12/13 00:00	12/13/13 11:30	1718-51-0	
Phenol-d6 (S)	31 %		11-120	2	12/12/13 00:00	12/13/13 11:30	13127-88-3	
2-Fluorophenol (S)	44 %		17-120	2	12/12/13 00:00	12/13/13 11:30	367-12-4	
2,4,6-Tribromophenol (S)	99 %		39-120	2	12/12/13 00:00	12/13/13 11:30	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/11/13 19:52	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/11/13 19:52	75-27-4	
Bromoform	ND ug/L		200	200		12/11/13 19:52	75-25-2	
Bromomethane	ND ug/L		1000	200		12/11/13 19:52	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/11/13 19:52	56-23-5	
Chloroethane	ND ug/L		200	200		12/11/13 19:52	75-00-3	
Chloroform	ND ug/L		200	200		12/11/13 19:52	67-66-3	
1,4-Dichlorobenzene	1630 ug/L		200	200		12/11/13 19:52	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/11/13 19:52	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/11/13 19:52	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/11/13 19:52	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/11/13 19:52	100-41-4	
Methylene chloride	ND ug/L		200	200		12/12/13 17:33	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/11/13 19:52	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/11/13 19:52	127-18-4	
Toluene	ND ug/L		200	200		12/11/13 19:52	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/11/13 19:52	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/11/13 19:52	79-00-5	
Trichloroethene	ND ug/L		200	200		12/11/13 19:52	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/11/13 19:52	75-01-4	
Xylene (Total)	685 ug/L		600	200		12/11/13 19:52	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	200		12/11/13 19:52	460-00-4	D3
Toluene-d8 (S)	100 %		80-120	200		12/11/13 19:52	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	200		12/11/13 19:52	17060-07-0	
Preservation pH	6.0		1.0	200		12/11/13 19:52		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	205000 ug/L		2000	200		12/11/13 19:52	67-64-1	E,N2
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	200		12/11/13 19:52	460-00-4	
Toluene-d8 (S)	100 %		80-120	200		12/11/13 19:52	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	200		12/11/13 19:52	17060-07-0	
Preservation pH	6.0		1.0	200		12/11/13 19:52		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

Sample: 316-160RR		Lab ID: 60159294001	Collected: 12/09/13 09:30	Received: 12/11/13 03:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	727	mg/L	5.0	1		12/12/13 10:43		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	8.0	mg/L	5.0	1		12/16/13 07:31		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3800	mg/L	5.0	1		12/13/13 09:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		12/14/13 08:45		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	37500	mg/L	2.0	1	12/11/13 09:24	12/16/13 14:05		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	677	mg/L	20.0	200		12/12/13 14:01	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	86500	mg/L	10000	1000		12/16/13 11:54		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

Sample: TRIP BLANK		Lab ID: 60159294002	Collected: 12/09/13 09:30	Received: 12/11/13 03:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/11/13 20:07	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/11/13 20:07	75-27-4	
Bromoform	ND ug/L		1.0	1		12/11/13 20:07	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/11/13 20:07	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/11/13 20:07	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/11/13 20:07	75-00-3	
Chloroform	ND ug/L		1.0	1		12/11/13 20:07	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/11/13 20:07	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/11/13 20:07	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/11/13 20:07	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/11/13 20:07	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/11/13 20:07	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/11/13 20:07	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/11/13 20:07	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/11/13 20:07	127-18-4	
Toluene	ND ug/L		1.0	1		12/11/13 20:07	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/11/13 20:07	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/11/13 20:07	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/11/13 20:07	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/11/13 20:07	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/11/13 20:07	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	97 %		80-120	1		12/11/13 20:07	460-00-4	
Toluene-d8 (S)	98 %		80-120	1		12/11/13 20:07	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	1		12/11/13 20:07	17060-07-0	
Preservation pH	6.0		1.0	1		12/11/13 20:07		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/11/13 20:07	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	97 %		80-120	1		12/11/13 20:07	460-00-4	
Toluene-d8 (S)	98 %		80-120	1		12/11/13 20:07	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	1		12/11/13 20:07	17060-07-0	
Preservation pH	6.0		1.0	1		12/11/13 20:07		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

QC Batch: MERP/7988

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159294001

METHOD BLANK: 1303938

Matrix: Water

Associated Lab Samples: 60159294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/12/13 14:52	

LABORATORY CONTROL SAMPLE: 1303939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	92	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303940 1303941

Parameter	Units	60159029001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	3.3	3.6	67	71	70-130	7	20	M1

MATRIX SPIKE SAMPLE: 1303942

Parameter	Units	60159255001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	4.6	93	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

QC Batch: MERP/8008

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60159294001

METHOD BLANK: 1307208

Matrix: Water

Associated Lab Samples: 60159294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/18/13 13:24	

LABORATORY CONTROL SAMPLE: 1307209

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	91	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307210 1307211

Parameter	Units	60159294001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	138	137	92	92	70-130	0	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR
Pace Project No.: 60159294

QC Batch: MPRP/25582 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60159294001

METHOD BLANK: 1305043 Matrix: Water
Associated Lab Samples: 60159294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/16/13 11:35	
Antimony	ug/L	ND	10.0	12/16/13 11:35	
Arsenic	ug/L	ND	10.0	12/16/13 11:35	
Beryllium	ug/L	ND	1.0	12/16/13 11:35	
Cadmium	ug/L	ND	5.0	12/16/13 11:35	
Chromium	ug/L	ND	5.0	12/16/13 11:35	
Cobalt	ug/L	ND	5.0	12/16/13 11:35	
Copper	ug/L	ND	10.0	12/16/13 11:35	
Iron	ug/L	ND	50.0	12/16/13 11:35	
Lead	ug/L	ND	5.0	12/16/13 11:35	
Nickel	ug/L	ND	5.0	12/16/13 11:35	
Selenium	ug/L	ND	15.0	12/16/13 11:35	
Silver	ug/L	ND	7.0	12/16/13 11:35	
Thallium	ug/L	ND	20.0	12/16/13 11:35	
Zinc	ug/L	ND	50.0	12/16/13 11:35	

LABORATORY CONTROL SAMPLE: 1305044

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9940	99	85-115	
Antimony	ug/L	1000	1000	100	85-115	
Arsenic	ug/L	1000	946	95	85-115	
Beryllium	ug/L	1000	974	97	85-115	
Cadmium	ug/L	1000	986	99	85-115	
Chromium	ug/L	1000	974	97	85-115	
Cobalt	ug/L	1000	994	99	85-115	
Copper	ug/L	1000	982	98	85-115	
Iron	ug/L	10000	9670	97	85-115	
Lead	ug/L	1000	1000	100	85-115	
Nickel	ug/L	1000	1000	100	85-115	
Selenium	ug/L	1000	975	98	85-115	
Silver	ug/L	500	476	95	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	971	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1305045 1305046

Parameter	Units	60159236001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	1140	10000	10000	11300	11400	101	103	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1305045 1305046											
Parameter	Units	60159236001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	991	1000	99	100	70-130	1	7
Arsenic	ug/L	ND	1000	1000	970	974	97	97	70-130	0	10
Beryllium	ug/L	ND	1000	1000	980	995	98	99	70-130	1	7
Cadmium	ug/L	ND	1000	1000	972	978	97	98	70-130	1	10
Chromium	ug/L	ND	1000	1000	996	976	99	97	70-130	2	10
Cobalt	ug/L	ND	1000	1000	974	980	97	98	70-130	1	6
Copper	ug/L	34.4	1000	1000	1020	1000	99	97	70-130	2	11
Iron	ug/L	2010	10000	10000	11600	11700	95	97	70-130	1	10
Lead	ug/L	10.0	1000	1000	966	972	96	96	70-130	1	10
Nickel	ug/L	6.1	1000	1000	989	996	98	99	70-130	1	10
Selenium	ug/L	ND	1000	1000	983	994	98	99	70-130	1	10
Silver	ug/L	ND	500	500	483	476	97	95	70-130	1	10
Thallium	ug/L	ND	1000	1000	928	935	93	93	70-130	1	6
Zinc	ug/L	106	1000	1000	1070	1080	97	97	70-130	0	11

MATRIX SPIKE SAMPLE: 1305047							
Parameter	Units	60159236002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L		ND	10000	10100	100	70-130
Antimony	ug/L		ND	1000	1020	101	70-130
Arsenic	ug/L		ND	1000	986	98	70-130
Beryllium	ug/L		ND	1000	990	99	70-130
Cadmium	ug/L		ND	1000	991	99	70-130
Chromium	ug/L		ND	1000	989	99	70-130
Cobalt	ug/L		ND	1000	990	99	70-130
Copper	ug/L		ND	1000	981	98	70-130
Iron	ug/L		99.5	10000	9780	97	70-130
Lead	ug/L		ND	1000	982	98	70-130
Nickel	ug/L		ND	1000	998	100	70-130
Selenium	ug/L		ND	1000	996	100	70-130
Silver	ug/L		ND	500	482	96	70-130
Thallium	ug/L		ND	1000	961	96	70-130
Zinc	ug/L		ND	1000	1010	98	70-130

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR
Pace Project No.: 60159294

QC Batch: MPRP/25618 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60159294001

METHOD BLANK: 1306471 Matrix: Water
Associated Lab Samples: 60159294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/17/13 10:16	
Antimony, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Arsenic, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Beryllium, Dissolved	ug/L	ND	1.0	12/17/13 10:16	
Cadmium, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Chromium, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Cobalt, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Copper, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Iron, Dissolved	ug/L	ND	50.0	12/17/13 10:16	
Lead, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Nickel, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Selenium, Dissolved	ug/L	ND	15.0	12/17/13 10:16	
Silver, Dissolved	ug/L	ND	7.0	12/17/13 10:16	
Thallium, Dissolved	ug/L	ND	20.0	12/17/13 10:16	
Zinc, Dissolved	ug/L	ND	50.0	12/17/13 10:16	

LABORATORY CONTROL SAMPLE: 1306472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10000	100	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	969	97	85-115	
Beryllium, Dissolved	ug/L	1000	1010	101	85-115	
Cadmium, Dissolved	ug/L	1000	1010	101	85-115	
Chromium, Dissolved	ug/L	1000	1000	100	85-115	
Cobalt, Dissolved	ug/L	1000	1010	101	85-115	
Copper, Dissolved	ug/L	1000	997	100	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	1020	102	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	999	100	85-115	
Silver, Dissolved	ug/L	500	522	104	85-115	
Thallium, Dissolved	ug/L	1000	1050	105	85-115	
Zinc, Dissolved	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1306473 1306474

Parameter	Units	6015925001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	46.7J	10000	10000	10000	10200	100	101	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1306473 1306474											
Parameter	Units	60159525001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						
				Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1000	1010	100	101	70-130	0	7
Arsenic, Dissolved	ug/L	ND	1000	1000	963	968	96	97	70-130	0	10
Beryllium, Dissolved	ug/L	ND	1000	1000	998	1010	100	101	70-130	1	7
Cadmium, Dissolved	ug/L	ND	1000	1000	988	992	99	99	70-130	0	10
Chromium, Dissolved	ug/L	0.83J	1000	1000	979	980	98	98	70-130	0	10
Cobalt, Dissolved	ug/L	ND	1000	1000	987	990	99	99	70-130	0	6
Copper, Dissolved	ug/L	ND	1000	1000	987	980	99	98	70-130	1	11
Iron, Dissolved	ug/L	23.5J	10000	10000	9730	9840	97	98	70-130	1	10
Lead, Dissolved	ug/L	2.9J	1000	1000	986	990	98	99	70-130	0	10
Nickel, Dissolved	ug/L	0.88J	1000	1000	989	994	99	99	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	978	982	98	98	70-130	0	10
Silver, Dissolved	ug/L	ND	500	500	517	516	103	103	70-130	0	10
Thallium, Dissolved	ug/L	ND	1000	1000	983	988	98	99	70-130	1	6
Zinc, Dissolved	ug/L	13.9J	1000	1000	979	984	97	97	70-130	0	11

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

QC Batch: MSV/58281 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60159294001, 60159294002

METHOD BLANK: 1303609

Matrix: Water

Associated Lab Samples: 60159294001, 60159294002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,2-Dichloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/11/13 18:22	
Benzene	ug/L	ND	1.0	12/11/13 18:22	
Bromodichloromethane	ug/L	ND	1.0	12/11/13 18:22	
Bromoform	ug/L	ND	1.0	12/11/13 18:22	
Bromomethane	ug/L	ND	5.0	12/11/13 18:22	
Carbon tetrachloride	ug/L	ND	1.0	12/11/13 18:22	
Chloroethane	ug/L	ND	1.0	12/11/13 18:22	
Chloroform	ug/L	ND	1.0	12/11/13 18:22	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/11/13 18:22	
Ethylbenzene	ug/L	ND	1.0	12/11/13 18:22	
Methylene chloride	ug/L	ND	1.0	12/11/13 18:22	
Tetrachloroethene	ug/L	ND	1.0	12/11/13 18:22	
Toluene	ug/L	ND	1.0	12/11/13 18:22	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/11/13 18:22	
Trichloroethene	ug/L	ND	1.0	12/11/13 18:22	
Vinyl chloride	ug/L	ND	1.0	12/11/13 18:22	
Xylene (Total)	ug/L	ND	3.0	12/11/13 18:22	
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/11/13 18:22	
4-Bromofluorobenzene (S)	%	98	80-120	12/11/13 18:22	
Toluene-d8 (S)	%	101	80-120	12/11/13 18:22	

LABORATORY CONTROL SAMPLE: 1303610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.5	87	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	18.9	95	59-138	
1,1,2-Trichloroethane	ug/L	20	17.7	88	69-127	
1,2-Dichloroethane	ug/L	20	17.0	85	71-129	
1,4-Dichlorobenzene	ug/L	20	18.7	94	68-124	
Benzene	ug/L	20	16.7	83	73-129	
Bromodichloromethane	ug/L	20	17.4	87	63-129	
Bromoform	ug/L	20	17.9	90	52-123	
Bromomethane	ug/L	20	12.7	63	10-160	
Carbon tetrachloride	ug/L	20	18.2	91	70-140	
Chloroethane	ug/L	20	11.0	55	42-160	
Chloroform	ug/L	20	16.1	80	60-120	
cis-1,2-Dichloroethene	ug/L	20	16.4	82	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

LABORATORY CONTROL SAMPLE: 1303610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.3	91	66-133	
Methylene chloride	ug/L	20	17.2	86	56-135	
Tetrachloroethene	ug/L	20	18.0	90	64-143	
Toluene	ug/L	20	17.9	90	70-130	
trans-1,2-Dichloroethene	ug/L	20	16.0	80	67-149	
Trichloroethene	ug/L	20	17.8	89	71-130	
Vinyl chloride	ug/L	20	9.4	47	41-160	
Xylene (Total)	ug/L	60	53.4	89	67-130	
1,2-Dichloroethane-d4 (S)	%			91	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			106	80-120	

MATRIX SPIKE SAMPLE: 1303611

Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4260	106	52-160	
1,1,2,2-Tetrachloroethane	ug/L	204	4000	3650	86	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	4000	100	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3710	93	49-155	
1,4-Dichlorobenzene	ug/L	960	4000	4630	92	18-147	
Benzene	ug/L	ND	4000	3720	92	37-151	
Bromodichloromethane	ug/L	ND	4000	3760	94	35-155	
Bromoform	ug/L	ND	4000	3630	91	45-133	
Bromomethane	ug/L	ND	4000	2670	67	10-160	
Carbon tetrachloride	ug/L	ND	4000	4360	109	70-140	
Chloroethane	ug/L	ND	4000	2680	67	14-160	
Chloroform	ug/L	ND	4000	3580	90	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3780	94	19-160	
Ethylbenzene	ug/L	ND	4000	4170	102	37-154	
Tetrachloroethene	ug/L	ND	4000	4170	104	64-148	
Toluene	ug/L	ND	4000	3880	96	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3780	95	54-156	
Trichloroethene	ug/L	ND	4000	4090	102	71-157	
Vinyl chloride	ug/L	ND	4000	2030	51	10-160	
Xylene (Total)	ug/L	ND	12000	11600	97	12-153	
1,2-Dichloroethane-d4 (S)	%				101	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			6.0		6.0		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

QC Batch:	MSV/58303	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60159294001		

METHOD BLANK: 1304331 Matrix: Water

Associated Lab Samples: 60159294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methylene chloride	ug/L	ND	1.0	12/12/13 17:03	
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/12/13 17:03	
4-Bromofluorobenzene (S)	%	99	80-120	12/12/13 17:03	
Toluene-d8 (S)	%	98	80-120	12/12/13 17:03	

LABORATORY CONTROL SAMPLE: 1304332

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methylene chloride	ug/L	20	17.6	88	56-135	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			102	80-120	

MATRIX SPIKE SAMPLE: 1304333

Parameter	Units	60159390001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Methylene chloride	ug/L	ND	4000	3990	100	15-156	
1,2-Dichloroethane-d4 (S)	%				105	80-120	
4-Bromofluorobenzene (S)	%				103	80-120	
Toluene-d8 (S)	%				104	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

QC Batch:	MSV/58684	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples: 60159294001, 60159294002			

METHOD BLANK: 1313449 Matrix: Water

Associated Lab Samples: 60159294001, 60159294002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/11/13 18:22	N2
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/11/13 18:22	
4-Bromofluorobenzene (S)	%	98	80-120	12/11/13 18:22	
Toluene-d8 (S)	%	101	80-120	12/11/13 18:22	

LABORATORY CONTROL SAMPLE: 1313450

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	113	113	40-160	N2
1,2-Dichloroethane-d4 (S)	%			91	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			106	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR
Pace Project No.: 60159294

QC Batch:	OEXT/41871	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159294001		

METHOD BLANK: 1304024 Matrix: Water
Associated Lab Samples: 60159294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/13/13 09:47	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/13/13 09:47	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/13/13 09:47	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/13/13 09:47	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/13/13 09:47	
Hexachloroethane	ug/L	ND	5.0	12/13/13 09:47	
Naphthalene	ug/L	ND	5.0	12/13/13 09:47	
Nitrobenzene	ug/L	ND	5.0	12/13/13 09:47	
Pentachlorophenol	ug/L	ND	5.0	12/13/13 09:47	
Phenol	ug/L	ND	5.0	12/13/13 09:47	
2,4,6-Tribromophenol (S)	%	80	39-120	12/13/13 09:47	
2-Fluorobiphenyl (S)	%	78	39-120	12/13/13 09:47	
2-Fluorophenol (S)	%	44	17-120	12/13/13 09:47	
Nitrobenzene-d5 (S)	%	73	33-120	12/13/13 09:47	
Phenol-d6 (S)	%	28	11-120	12/13/13 09:47	
Terphenyl-d14 (S)	%	83	45-120	12/13/13 09:47	

LABORATORY CONTROL SAMPLE: 1304025

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	42.9	86	46-120	
2,4,6-Trichlorophenol	ug/L	50	47.6	95	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	61.6	123	40-133	
Hexachloro-1,3-butadiene	ug/L	50	40.0	80	44-116	
Hexachlorocyclopentadiene	ug/L	100	72.6	73	24-120	
Hexachloroethane	ug/L	50	39.9	80	43-113	
Naphthalene	ug/L	50	44.0	88	48-120	
Nitrobenzene	ug/L	50	43.4	87	48-120	
Pentachlorophenol	ug/L	50	53.4	107	47-120	
Phenol	ug/L	50	15.8	32	16-112	
2,4,6-Tribromophenol (S)	%			102	39-120	
2-Fluorobiphenyl (S)	%			90	39-120	
2-Fluorophenol (S)	%			46	17-120	
Nitrobenzene-d5 (S)	%			83	33-120	
Phenol-d6 (S)	%			30	11-120	
Terphenyl-d14 (S)	%			97	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

MATRIX SPIKE SAMPLE:		1304026					
Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3960	79	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4640	93	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	5380	108	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3830	77	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	7160	72	11-120	
Hexachloroethane	ug/L	ND	5000	3820	76	40-113	
Naphthalene	ug/L	1240	5000	5400	83	45-120	
Nitrobenzene	ug/L	ND	5000	3920	78	38-120	
Pentachlorophenol	ug/L	ND	5000	5440	109	43-135	
Phenol	ug/L	12000	5000	13800	36	13-112	
2,4,6-Tribromophenol (S)	%				95	39-120	
2-Fluorobiphenyl (S)	%				83	39-120	
2-Fluorophenol (S)	%				46	17-120	
Nitrobenzene-d5 (S)	%				121	33-120	S0
Phenol-d6 (S)	%				32	11-120	
Terphenyl-d14 (S)	%				85	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

QC Batch:	WET/45076	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60159294001		

METHOD BLANK: 1304013 Matrix: Water

Associated Lab Samples: 60159294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/12/13 10:37	

LABORATORY CONTROL SAMPLE: 1304014

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	38.3	96	78-114	

MATRIX SPIKE SAMPLE: 1304017

Parameter	Units	60159097002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.4	38.8	91	78-114	

SAMPLE DUPLICATE: 1304018

Parameter	Units	60159124002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	2.8J		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

QC Batch: WET/45137

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159294001

METHOD BLANK: 1306202

Matrix: Water

Associated Lab Samples: 60159294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/16/13 07:28	

LABORATORY CONTROL SAMPLE: 1306203

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.3	102	64-132	

MATRIX SPIKE SAMPLE: 1306207

Parameter	Units	60159090004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	22	24.2	104	64-132	

SAMPLE DUPLICATE: 1306212

Parameter	Units	60159090005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

QC Batch: WET/45100

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159294001

METHOD BLANK: 1304819

Matrix: Water

Associated Lab Samples: 60159294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/13/13 09:12	

SAMPLE DUPLICATE: 1304820

Parameter	Units	60159363001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	7.0	6.0	15	25	

SAMPLE DUPLICATE: 1304821

Parameter	Units	60159266001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	70.0	71.0	1	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

QC Batch:	WET/45117	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60159294001		

SAMPLE DUPLICATE: 1305784

Parameter	Units	60159294001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.5	5.5	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

QC Batch: WET/45053

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159294001

METHOD BLANK: 1303431

Matrix: Water

Associated Lab Samples: 60159294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/16/13 14:03	

LABORATORY CONTROL SAMPLE: 1303432

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	189	96	85-115	

SAMPLE DUPLICATE: 1303433

Parameter	Units	60159294001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	37500	37100	1	17	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

QC Batch: WETA/27468

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159294001

METHOD BLANK: 1304188

Matrix: Water

Associated Lab Samples: 60159294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/12/13 13:49	

LABORATORY CONTROL SAMPLE: 1304189

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	1.9	97	90-110	

MATRIX SPIKE SAMPLE: 1304190

Parameter	Units	60159098001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	711	1000	1650	94	90-110	

SAMPLE DUPLICATE: 1304191

Parameter	Units	60159206001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	749	730	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR
Pace Project No.: 60159294

QC Batch:	WETA/27481	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60159294001		

METHOD BLANK: 1304938 Matrix: Water
Associated Lab Samples: 60159294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/16/13 11:49	

LABORATORY CONTROL SAMPLE: 1304939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.9	102	90-110	

MATRIX SPIKE SAMPLE: 1304940

Parameter	Units	60159167001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	104000	50000	146000	84	90-110	M1

MATRIX SPIKE SAMPLE: 1304941

Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	95700	50000	146000	101	90-110	

MATRIX SPIKE SAMPLE: 1304942

Parameter	Units	60159207001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	92200	50000	138000	92	90-110	

MATRIX SPIKE SAMPLE: 1304943

Parameter	Units	60159294001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	86500	50000	139000	104	90-110	

MATRIX SPIKE SAMPLE: 1304944

Parameter	Units	60159306001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	77000	50000	129000	104	90-110	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

MATRIX SPIKE SAMPLE:		1304945					
Parameter	Units	60159390001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	75300	50000	128000	106	90-110	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-160RR
Pace Project No.: 60159294

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold TNI accreditation for this parameter.
S0	Surrogate recovery outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-160RR

Pace Project No.: 60159294

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159294001	316-160RR	EPA 200.7	MPRP/25582	EPA 200.7	ICP/19646
60159294001	316-160RR	EPA 200.7	MPRP/25618	EPA 200.7	ICP/19673
60159294001	316-160RR	EPA 245.1	MERP/7988	EPA 245.1	MERC/7943
60159294001	316-160RR	EPA 245.1	MERP/8008	EPA 245.1	MERC/7964
60159294001	316-160RR	EPA 625	OEXT/41871	EPA 625	MSSV/13312
60159294001	316-160RR	EPA 624 Low	MSV/58281		
60159294001	316-160RR	EPA 624 Low	MSV/58303		
60159294002	TRIP BLANK	EPA 624 Low	MSV/58281		
60159294001	316-160RR	EPA 624 Low	MSV/58684		
60159294002	TRIP BLANK	EPA 624 Low	MSV/58684		
60159294001	316-160RR	EPA 1664A	WET/45076		
60159294001	316-160RR	EPA 1664A	WET/45137		
60159294001	316-160RR	SM 2540D	WET/45100		
60159294001	316-160RR	SM 4500-H+B	WET/45117		
60159294001	316-160RR	SM 5210B	WET/45053	SM 5210B	WET/45161
60159294001	316-160RR	EPA 350.1	WETA/27468		
60159294001	316-160RR	EPA 410.4	WETA/27481		

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Sample Condition Upon Receipt

WO#: 60159294



Client Name: Barr

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ Xroad

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☐ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ 2 PIC

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.2

Date and initials of person examining contents: PV 2/11/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Boo PH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix:	<u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☐ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>PV</u> Lot # of added preservative <u>12513/12520</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	18.
Pace Trip Blank lot # (if purchased): <u>093013-2</u>		19.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	20.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	21. List State: <u>MO</u>

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 2/11/13

December 31, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-161
Pace Project No.: 60159306

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 11, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revised Report - Rev. 1, 12/31/13: This report has been revised to include Acetone in the 624 VOC scan.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Andy Brownfield for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159306001	316-161	Water	12/10/13 10:15	12/11/13 03:15
60159306002	TRIP BLANK	Water	12/10/13 10:15	12/11/13 03:15

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159306001	316-161	EPA 200.7	SMW	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 624 Low	EAK	5
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	JMC1	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60159306002	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	5

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

Sample: 316-161		Lab ID: 60159306001	Collected: 12/10/13 10:15	Received: 12/11/13 03:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	5930	ug/L	375	1	12/13/13 13:30	12/16/13 11:48	7429-90-5	
Antimony	ND	ug/L	100	2	12/13/13 13:30	12/16/13 11:52	7440-36-0	D3
Arsenic	812	ug/L	50.0	1	12/13/13 13:30	12/16/13 11:48	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/13/13 13:30	12/16/13 11:48	7440-41-7	D3
Cadmium	ND	ug/L	25.0	1	12/13/13 13:30	12/16/13 11:48	7440-43-9	
Chromium	268	ug/L	25.0	1	12/13/13 13:30	12/16/13 11:48	7440-47-3	
Cobalt	ND	ug/L	25.0	1	12/13/13 13:30	12/16/13 11:48	7440-48-4	
Copper	ND	ug/L	50.0	1	12/13/13 13:30	12/16/13 11:48	7440-50-8	
Iron	680000	ug/L	500	2	12/13/13 13:30	12/16/13 11:52	7439-89-6	
Lead	160	ug/L	25.0	1	12/13/13 13:30	12/16/13 11:48	7439-92-1	
Nickel	103	ug/L	25.0	1	12/13/13 13:30	12/16/13 11:48	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/13/13 13:30	12/16/13 11:48	7782-49-2	
Silver	ND	ug/L	35.0	1	12/13/13 13:30	12/16/13 11:48	7440-22-4	
Thallium	ND	ug/L	100	1	12/13/13 13:30	12/16/13 11:48	7440-28-0	
Zinc	11700	ug/L	500	2	12/13/13 13:30	12/16/13 11:52	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3280	ug/L	375	1	12/16/13 13:30	12/17/13 10:30	7429-90-5	
Antimony, Dissolved	ND	ug/L	100	2	12/16/13 13:30	12/17/13 10:33	7440-36-0	D3
Arsenic, Dissolved	596	ug/L	50.0	1	12/16/13 13:30	12/17/13 10:30	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/16/13 13:30	12/17/13 10:30	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:30	7440-43-9	
Chromium, Dissolved	186	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:30	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:30	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/16/13 13:30	12/17/13 10:30	7440-50-8	
Iron, Dissolved	577000	ug/L	500	2	12/16/13 13:30	12/17/13 10:33	7439-89-6	
Lead, Dissolved	105	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:30	7439-92-1	
Nickel, Dissolved	77.5	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:30	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/16/13 13:30	12/17/13 10:30	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/16/13 13:30	12/17/13 10:30	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/16/13 13:30	12/17/13 10:30	7440-28-0	
Zinc, Dissolved	8680	ug/L	500	2	12/16/13 13:30	12/17/13 10:33	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	16.9	ug/L	6.0	1	12/12/13 09:30	12/12/13 15:45	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/17/13 16:10	12/18/13 13:35	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/12/13 00:00	12/13/13 11:51	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 11:51	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 11:51	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 11:51	67-72-1	
Naphthalene	1270	ug/L	1000	2	12/12/13 00:00	12/13/13 11:51	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 11:51	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

Sample: 316-161		Lab ID: 60159306001	Collected: 12/10/13 10:15	Received: 12/11/13 03:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/12/13 00:00	12/13/13 11:51	87-86-5	
Phenol	10700 ug/L		1000	2	12/12/13 00:00	12/13/13 11:51	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/12/13 00:00	12/13/13 11:51	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/12/13 00:00	12/13/13 11:51	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	134 %		33-120	2	12/12/13 00:00	12/13/13 11:51	4165-60-0	S0
2-Fluorobiphenyl (S)	94 %		39-120	2	12/12/13 00:00	12/13/13 11:51	321-60-8	
Terphenyl-d14 (S)	101 %		45-120	2	12/12/13 00:00	12/13/13 11:51	1718-51-0	
Phenol-d6 (S)	32 %		11-120	2	12/12/13 00:00	12/13/13 11:51	13127-88-3	
2-Fluorophenol (S)	47 %		17-120	2	12/12/13 00:00	12/13/13 11:51	367-12-4	
2,4,6-Tribromophenol (S)	109 %		39-120	2	12/12/13 00:00	12/13/13 11:51	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/11/13 20:22	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/11/13 20:22	75-27-4	
Bromoform	ND ug/L		200	200		12/11/13 20:22	75-25-2	
Bromomethane	ND ug/L		1000	200		12/11/13 20:22	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/11/13 20:22	56-23-5	
Chloroethane	ND ug/L		200	200		12/11/13 20:22	75-00-3	
Chloroform	ND ug/L		200	200		12/11/13 20:22	67-66-3	
1,4-Dichlorobenzene	891 ug/L		200	200		12/11/13 20:22	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/11/13 20:22	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/11/13 20:22	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/11/13 20:22	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/11/13 20:22	100-41-4	
Methylene chloride	ND ug/L		200	200		12/12/13 17:48	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/11/13 20:22	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/11/13 20:22	127-18-4	
Toluene	ND ug/L		200	200		12/11/13 20:22	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/11/13 20:22	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/11/13 20:22	79-00-5	
Trichloroethene	ND ug/L		200	200		12/11/13 20:22	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/11/13 20:22	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/11/13 20:22	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	200		12/11/13 20:22	460-00-4	D3
Toluene-d8 (S)	100 %		80-120	200		12/11/13 20:22	2037-26-5	
1,2-Dichloroethane-d4 (S)	106 %		80-120	200		12/11/13 20:22	17060-07-0	
Preservation pH	6.0		1.0	200		12/11/13 20:22		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	202000 ug/L		2000	200		12/11/13 20:22	67-64-1	E,N2
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	200		12/11/13 20:22	460-00-4	
Toluene-d8 (S)	100 %		80-120	200		12/11/13 20:22	2037-26-5	
1,2-Dichloroethane-d4 (S)	106 %		80-120	200		12/11/13 20:22	17060-07-0	
Preservation pH	6.0		1.0	200		12/11/13 20:22		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

Sample: 316-161		Lab ID: 60159306001	Collected: 12/10/13 10:15	Received: 12/11/13 03:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	1130	mg/L	5.0	1		12/13/13 07:41		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	10.8	mg/L	5.0	1		12/16/13 07:32		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2780	mg/L	5.0	1		12/13/13 09:15		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		12/14/13 08:45		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	31800	mg/L	2.0	1	12/11/13 14:14	12/16/13 13:52		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	691	mg/L	20.0	200		12/12/13 14:02	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	77000	mg/L	10000	1000		12/16/13 11:54		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

Sample: TRIP BLANK		Lab ID: 60159306002	Collected: 12/10/13 10:15	Received: 12/11/13 03:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/11/13 20:38	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/11/13 20:38	75-27-4	
Bromoform	ND ug/L		1.0	1		12/11/13 20:38	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/11/13 20:38	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/11/13 20:38	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/11/13 20:38	75-00-3	
Chloroform	ND ug/L		1.0	1		12/11/13 20:38	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/11/13 20:38	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/11/13 20:38	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/11/13 20:38	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/11/13 20:38	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/11/13 20:38	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/11/13 20:38	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/11/13 20:38	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/11/13 20:38	127-18-4	
Toluene	ND ug/L		1.0	1		12/11/13 20:38	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/11/13 20:38	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/11/13 20:38	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/11/13 20:38	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/11/13 20:38	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/11/13 20:38	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	104 %		80-120	1		12/11/13 20:38	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		12/11/13 20:38	2037-26-5	
1,2-Dichloroethane-d4 (S)	95 %		80-120	1		12/11/13 20:38	17060-07-0	
Preservation pH	6.0		1.0	1		12/11/13 20:38		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/11/13 20:38	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	104 %		80-120	1		12/11/13 20:38	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		12/11/13 20:38	2037-26-5	
1,2-Dichloroethane-d4 (S)	95 %		80-120	1		12/11/13 20:38	17060-07-0	
Preservation pH	6.0		1.0	1		12/11/13 20:38		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

QC Batch: MERP/7988

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159306001

METHOD BLANK: 1303938

Matrix: Water

Associated Lab Samples: 60159306001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/12/13 14:52	

LABORATORY CONTROL SAMPLE: 1303939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	92	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303940 1303941

Parameter	Units	60159029001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	3.3	3.6	67	71	70-130	7	20	M1

MATRIX SPIKE SAMPLE: 1303942

Parameter	Units	60159255001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	4.6	93	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

QC Batch:	MERP/8008	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60159306001		

METHOD BLANK: 1307208 Matrix: Water

Associated Lab Samples: 60159306001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/18/13 13:24	

LABORATORY CONTROL SAMPLE: 1307209

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	91	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307210 1307211

Parameter	Units	60159294001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	138	137	92	92	70-130	0	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161
Pace Project No.: 60159306

QC Batch:	MPRP/25582	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
Associated Lab Samples:	60159306001		

METHOD BLANK: 1305043 Matrix: Water
Associated Lab Samples: 60159306001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/16/13 11:35	
Antimony	ug/L	ND	10.0	12/16/13 11:35	
Arsenic	ug/L	ND	10.0	12/16/13 11:35	
Beryllium	ug/L	ND	1.0	12/16/13 11:35	
Cadmium	ug/L	ND	5.0	12/16/13 11:35	
Chromium	ug/L	ND	5.0	12/16/13 11:35	
Cobalt	ug/L	ND	5.0	12/16/13 11:35	
Copper	ug/L	ND	10.0	12/16/13 11:35	
Iron	ug/L	ND	50.0	12/16/13 11:35	
Lead	ug/L	ND	5.0	12/16/13 11:35	
Nickel	ug/L	ND	5.0	12/16/13 11:35	
Selenium	ug/L	ND	15.0	12/16/13 11:35	
Silver	ug/L	ND	7.0	12/16/13 11:35	
Thallium	ug/L	ND	20.0	12/16/13 11:35	
Zinc	ug/L	ND	50.0	12/16/13 11:35	

LABORATORY CONTROL SAMPLE: 1305044

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9940	99	85-115	
Antimony	ug/L	1000	1000	100	85-115	
Arsenic	ug/L	1000	946	95	85-115	
Beryllium	ug/L	1000	974	97	85-115	
Cadmium	ug/L	1000	986	99	85-115	
Chromium	ug/L	1000	974	97	85-115	
Cobalt	ug/L	1000	994	99	85-115	
Copper	ug/L	1000	982	98	85-115	
Iron	ug/L	10000	9670	97	85-115	
Lead	ug/L	1000	1000	100	85-115	
Nickel	ug/L	1000	1000	100	85-115	
Selenium	ug/L	1000	975	98	85-115	
Silver	ug/L	500	476	95	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	971	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1305045 1305046

Parameter	Units	60159236001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	1140	10000	10000	11300	11400	101	103	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1305045 1305046											
Parameter	Units	60159236001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	991	1000	99	100	70-130	1	7
Arsenic	ug/L	ND	1000	1000	970	974	97	97	70-130	0	10
Beryllium	ug/L	ND	1000	1000	980	995	98	99	70-130	1	7
Cadmium	ug/L	ND	1000	1000	972	978	97	98	70-130	1	10
Chromium	ug/L	ND	1000	1000	996	976	99	97	70-130	2	10
Cobalt	ug/L	ND	1000	1000	974	980	97	98	70-130	1	6
Copper	ug/L	34.4	1000	1000	1020	1000	99	97	70-130	2	11
Iron	ug/L	2010	10000	10000	11600	11700	95	97	70-130	1	10
Lead	ug/L	10.0	1000	1000	966	972	96	96	70-130	1	10
Nickel	ug/L	6.1	1000	1000	989	996	98	99	70-130	1	10
Selenium	ug/L	ND	1000	1000	983	994	98	99	70-130	1	10
Silver	ug/L	ND	500	500	483	476	97	95	70-130	1	10
Thallium	ug/L	ND	1000	1000	928	935	93	93	70-130	1	6
Zinc	ug/L	106	1000	1000	1070	1080	97	97	70-130	0	11

MATRIX SPIKE SAMPLE: 1305047							
Parameter	Units	60159236002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L		ND	10000	10100	100	70-130
Antimony	ug/L		ND	1000	1020	101	70-130
Arsenic	ug/L		ND	1000	986	98	70-130
Beryllium	ug/L		ND	1000	990	99	70-130
Cadmium	ug/L		ND	1000	991	99	70-130
Chromium	ug/L		ND	1000	989	99	70-130
Cobalt	ug/L		ND	1000	990	99	70-130
Copper	ug/L		ND	1000	981	98	70-130
Iron	ug/L		99.5	10000	9780	97	70-130
Lead	ug/L		ND	1000	982	98	70-130
Nickel	ug/L		ND	1000	998	100	70-130
Selenium	ug/L		ND	1000	996	100	70-130
Silver	ug/L		ND	500	482	96	70-130
Thallium	ug/L		ND	1000	961	96	70-130
Zinc	ug/L		ND	1000	1010	98	70-130

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161
Pace Project No.: 60159306

QC Batch: MPRP/25618 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60159306001

METHOD BLANK: 1306471 Matrix: Water
Associated Lab Samples: 60159306001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/17/13 10:16	
Antimony, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Arsenic, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Beryllium, Dissolved	ug/L	ND	1.0	12/17/13 10:16	
Cadmium, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Chromium, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Cobalt, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Copper, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Iron, Dissolved	ug/L	ND	50.0	12/17/13 10:16	
Lead, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Nickel, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Selenium, Dissolved	ug/L	ND	15.0	12/17/13 10:16	
Silver, Dissolved	ug/L	ND	7.0	12/17/13 10:16	
Thallium, Dissolved	ug/L	ND	20.0	12/17/13 10:16	
Zinc, Dissolved	ug/L	ND	50.0	12/17/13 10:16	

LABORATORY CONTROL SAMPLE: 1306472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10000	100	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	969	97	85-115	
Beryllium, Dissolved	ug/L	1000	1010	101	85-115	
Cadmium, Dissolved	ug/L	1000	1010	101	85-115	
Chromium, Dissolved	ug/L	1000	1000	100	85-115	
Cobalt, Dissolved	ug/L	1000	1010	101	85-115	
Copper, Dissolved	ug/L	1000	997	100	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	1020	102	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	999	100	85-115	
Silver, Dissolved	ug/L	500	522	104	85-115	
Thallium, Dissolved	ug/L	1000	1050	105	85-115	
Zinc, Dissolved	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1306473 1306474

Parameter	Units	60159525001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	46.7J	10000	10000	10000	10200	100	101	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1306473 1306474											
Parameter	Units	60159525001		MS	MSD	MSD		MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1000	1010	100	101	70-130	0	7
Arsenic, Dissolved	ug/L	ND	1000	1000	963	968	96	97	70-130	0	10
Beryllium, Dissolved	ug/L	ND	1000	1000	998	1010	100	101	70-130	1	7
Cadmium, Dissolved	ug/L	ND	1000	1000	988	992	99	99	70-130	0	10
Chromium, Dissolved	ug/L	0.83J	1000	1000	979	980	98	98	70-130	0	10
Cobalt, Dissolved	ug/L	ND	1000	1000	987	990	99	99	70-130	0	6
Copper, Dissolved	ug/L	ND	1000	1000	987	980	99	98	70-130	1	11
Iron, Dissolved	ug/L	23.5J	10000	10000	9730	9840	97	98	70-130	1	10
Lead, Dissolved	ug/L	2.9J	1000	1000	986	990	98	99	70-130	0	10
Nickel, Dissolved	ug/L	0.88J	1000	1000	989	994	99	99	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	978	982	98	98	70-130	0	10
Silver, Dissolved	ug/L	ND	500	500	517	516	103	103	70-130	0	10
Thallium, Dissolved	ug/L	ND	1000	1000	983	988	98	99	70-130	1	6
Zinc, Dissolved	ug/L	13.9J	1000	1000	979	984	97	97	70-130	0	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

QC Batch:	MSV/58281	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples: 60159306001, 60159306002			

METHOD BLANK: 1303609 Matrix: Water

Associated Lab Samples: 60159306001, 60159306002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,2-Dichloroethane	ug/L	ND	1.0	12/11/13 18:22	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/11/13 18:22	
Benzene	ug/L	ND	1.0	12/11/13 18:22	
Bromodichloromethane	ug/L	ND	1.0	12/11/13 18:22	
Bromoform	ug/L	ND	1.0	12/11/13 18:22	
Bromomethane	ug/L	ND	5.0	12/11/13 18:22	
Carbon tetrachloride	ug/L	ND	1.0	12/11/13 18:22	
Chloroethane	ug/L	ND	1.0	12/11/13 18:22	
Chloroform	ug/L	ND	1.0	12/11/13 18:22	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/11/13 18:22	
Ethylbenzene	ug/L	ND	1.0	12/11/13 18:22	
Methylene chloride	ug/L	ND	1.0	12/11/13 18:22	
Tetrachloroethene	ug/L	ND	1.0	12/11/13 18:22	
Toluene	ug/L	ND	1.0	12/11/13 18:22	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/11/13 18:22	
Trichloroethene	ug/L	ND	1.0	12/11/13 18:22	
Vinyl chloride	ug/L	ND	1.0	12/11/13 18:22	
Xylene (Total)	ug/L	ND	3.0	12/11/13 18:22	
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/11/13 18:22	
4-Bromofluorobenzene (S)	%	98	80-120	12/11/13 18:22	
Toluene-d8 (S)	%	101	80-120	12/11/13 18:22	

LABORATORY CONTROL SAMPLE: 1303610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.5	87	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	18.9	95	59-138	
1,1,2-Trichloroethane	ug/L	20	17.7	88	69-127	
1,2-Dichloroethane	ug/L	20	17.0	85	71-129	
1,4-Dichlorobenzene	ug/L	20	18.7	94	68-124	
Benzene	ug/L	20	16.7	83	73-129	
Bromodichloromethane	ug/L	20	17.4	87	63-129	
Bromoform	ug/L	20	17.9	90	52-123	
Bromomethane	ug/L	20	12.7	63	10-160	
Carbon tetrachloride	ug/L	20	18.2	91	70-140	
Chloroethane	ug/L	20	11.0	55	42-160	
Chloroform	ug/L	20	16.1	80	60-120	
cis-1,2-Dichloroethene	ug/L	20	16.4	82	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

LABORATORY CONTROL SAMPLE: 1303610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.3	91	66-133	
Methylene chloride	ug/L	20	17.2	86	56-135	
Tetrachloroethene	ug/L	20	18.0	90	64-143	
Toluene	ug/L	20	17.9	90	70-130	
trans-1,2-Dichloroethene	ug/L	20	16.0	80	67-149	
Trichloroethene	ug/L	20	17.8	89	71-130	
Vinyl chloride	ug/L	20	9.4	47	41-160	
Xylene (Total)	ug/L	60	53.4	89	67-130	
1,2-Dichloroethane-d4 (S)	%			91	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			106	80-120	

MATRIX SPIKE SAMPLE: 1303611

Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4260	106	52-160	
1,1,2,2-Tetrachloroethane	ug/L	204	4000	3650	86	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	4000	100	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3710	93	49-155	
1,4-Dichlorobenzene	ug/L	960	4000	4630	92	18-147	
Benzene	ug/L	ND	4000	3720	92	37-151	
Bromodichloromethane	ug/L	ND	4000	3760	94	35-155	
Bromoform	ug/L	ND	4000	3630	91	45-133	
Bromomethane	ug/L	ND	4000	2670	67	10-160	
Carbon tetrachloride	ug/L	ND	4000	4360	109	70-140	
Chloroethane	ug/L	ND	4000	2680	67	14-160	
Chloroform	ug/L	ND	4000	3580	90	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3780	94	19-160	
Ethylbenzene	ug/L	ND	4000	4170	102	37-154	
Tetrachloroethene	ug/L	ND	4000	4170	104	64-148	
Toluene	ug/L	ND	4000	3880	96	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3780	95	54-156	
Trichloroethene	ug/L	ND	4000	4090	102	71-157	
Vinyl chloride	ug/L	ND	4000	2030	51	10-160	
Xylene (Total)	ug/L	ND	12000	11600	97	12-153	
1,2-Dichloroethane-d4 (S)	%				101	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			6.0		6.0		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

QC Batch:	MSV/58303	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60159306001		

METHOD BLANK: 1304331 Matrix: Water
Associated Lab Samples: 60159306001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methylene chloride	ug/L	ND	1.0	12/12/13 17:03	
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/12/13 17:03	
4-Bromofluorobenzene (S)	%	99	80-120	12/12/13 17:03	
Toluene-d8 (S)	%	98	80-120	12/12/13 17:03	

LABORATORY CONTROL SAMPLE: 1304332

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methylene chloride	ug/L	20	17.6	88	56-135	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			102	80-120	

MATRIX SPIKE SAMPLE: 1304333

Parameter	Units	60159390001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Methylene chloride	ug/L	ND	4000	3990	100	15-156	
1,2-Dichloroethane-d4 (S)	%				105	80-120	
4-Bromofluorobenzene (S)	%				103	80-120	
Toluene-d8 (S)	%				104	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

QC Batch:	MSV/58684	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples: 60159306001, 60159306002			

METHOD BLANK: 1313449 Matrix: Water

Associated Lab Samples: 60159306001, 60159306002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/11/13 18:22	N2
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/11/13 18:22	
4-Bromofluorobenzene (S)	%	98	80-120	12/11/13 18:22	
Toluene-d8 (S)	%	101	80-120	12/11/13 18:22	

LABORATORY CONTROL SAMPLE: 1313450

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	113	113	40-160	N2
1,2-Dichloroethane-d4 (S)	%			91	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			106	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

QC Batch: OEXT/41871

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60159306001

METHOD BLANK: 1304024

Matrix: Water

Associated Lab Samples: 60159306001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/13/13 09:47	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/13/13 09:47	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/13/13 09:47	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/13/13 09:47	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/13/13 09:47	
Hexachloroethane	ug/L	ND	5.0	12/13/13 09:47	
Naphthalene	ug/L	ND	5.0	12/13/13 09:47	
Nitrobenzene	ug/L	ND	5.0	12/13/13 09:47	
Pentachlorophenol	ug/L	ND	5.0	12/13/13 09:47	
Phenol	ug/L	ND	5.0	12/13/13 09:47	
2,4,6-Tribromophenol (S)	%	80	39-120	12/13/13 09:47	
2-Fluorobiphenyl (S)	%	78	39-120	12/13/13 09:47	
2-Fluorophenol (S)	%	44	17-120	12/13/13 09:47	
Nitrobenzene-d5 (S)	%	73	33-120	12/13/13 09:47	
Phenol-d6 (S)	%	28	11-120	12/13/13 09:47	
Terphenyl-d14 (S)	%	83	45-120	12/13/13 09:47	

LABORATORY CONTROL SAMPLE: 1304025

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	42.9	86	46-120	
2,4,6-Trichlorophenol	ug/L	50	47.6	95	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	61.6	123	40-133	
Hexachloro-1,3-butadiene	ug/L	50	40.0	80	44-116	
Hexachlorocyclopentadiene	ug/L	100	72.6	73	24-120	
Hexachloroethane	ug/L	50	39.9	80	43-113	
Naphthalene	ug/L	50	44.0	88	48-120	
Nitrobenzene	ug/L	50	43.4	87	48-120	
Pentachlorophenol	ug/L	50	53.4	107	47-120	
Phenol	ug/L	50	15.8	32	16-112	
2,4,6-Tribromophenol (S)	%			102	39-120	
2-Fluorobiphenyl (S)	%			90	39-120	
2-Fluorophenol (S)	%			46	17-120	
Nitrobenzene-d5 (S)	%			83	33-120	
Phenol-d6 (S)	%			30	11-120	
Terphenyl-d14 (S)	%			97	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

MATRIX SPIKE SAMPLE:		1304026					
Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3960	79	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4640	93	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	5380	108	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3830	77	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	7160	72	11-120	
Hexachloroethane	ug/L	ND	5000	3820	76	40-113	
Naphthalene	ug/L	1240	5000	5400	83	45-120	
Nitrobenzene	ug/L	ND	5000	3920	78	38-120	
Pentachlorophenol	ug/L	ND	5000	5440	109	43-135	
Phenol	ug/L	12000	5000	13800	36	13-112	
2,4,6-Tribromophenol (S)	%				95	39-120	
2-Fluorobiphenyl (S)	%				83	39-120	
2-Fluorophenol (S)	%				46	17-120	
Nitrobenzene-d5 (S)	%				121	33-120	S0
Phenol-d6 (S)	%				32	11-120	
Terphenyl-d14 (S)	%				85	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

QC Batch: WET/45077

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60159306001

METHOD BLANK: 1304019

Matrix: Water

Associated Lab Samples: 60159306001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/13/13 07:41	

LABORATORY CONTROL SAMPLE: 1304020

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.0	100	78-114	

MATRIX SPIKE SAMPLE: 1304023

Parameter	Units	60159089001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.4	40.6	97	78-114	

SAMPLE DUPLICATE: 1304022

Parameter	Units	60158982002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

QC Batch: WET/45137

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159306001

METHOD BLANK: 1306202

Matrix: Water

Associated Lab Samples: 60159306001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/16/13 07:28	

LABORATORY CONTROL SAMPLE: 1306203

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.3	102	64-132	

MATRIX SPIKE SAMPLE: 1306207

Parameter	Units	60159090004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	22	24.2	104	64-132	

SAMPLE DUPLICATE: 1306212

Parameter	Units	60159090005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

QC Batch: WET/45100

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159306001

METHOD BLANK: 1304819

Matrix: Water

Associated Lab Samples: 60159306001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/13/13 09:12	

SAMPLE DUPLICATE: 1304820

Parameter	Units	60159363001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	7.0	6.0	15	25	

SAMPLE DUPLICATE: 1304821

Parameter	Units	60159266001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	70.0	71.0	1	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

QC Batch: WET/45117 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60159306001

SAMPLE DUPLICATE: 1305784

Parameter	Units	60159294001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.5	5.5	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

QC Batch: WET/45061

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159306001

METHOD BLANK: 1303568

Matrix: Water

Associated Lab Samples: 60159306001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/16/13 12:42	

LABORATORY CONTROL SAMPLE: 1303569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	169	85	85-115	

SAMPLE DUPLICATE: 1303570

Parameter	Units	60159289001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	317	336	6	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

QC Batch: WETA/27468

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159306001

METHOD BLANK: 1304188

Matrix: Water

Associated Lab Samples: 60159306001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/12/13 13:49	

LABORATORY CONTROL SAMPLE: 1304189

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	1.9	97	90-110	

MATRIX SPIKE SAMPLE: 1304190

Parameter	Units	60159098001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	711	1000	1650	94	90-110	

SAMPLE DUPLICATE: 1304191

Parameter	Units	60159206001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	749	730	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161
Pace Project No.: 60159306

QC Batch: WETA/27481 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 60159306001

METHOD BLANK: 1304938 Matrix: Water
Associated Lab Samples: 60159306001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/16/13 11:49	

LABORATORY CONTROL SAMPLE: 1304939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.9	102	90-110	

MATRIX SPIKE SAMPLE: 1304940

Parameter	Units	60159167001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	104000	50000	146000	84	90-110	M1

MATRIX SPIKE SAMPLE: 1304941

Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	95700	50000	146000	101	90-110	

MATRIX SPIKE SAMPLE: 1304942

Parameter	Units	60159207001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	92200	50000	138000	92	90-110	

MATRIX SPIKE SAMPLE: 1304943

Parameter	Units	60159294001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	86500	50000	139000	104	90-110	

MATRIX SPIKE SAMPLE: 1304944

Parameter	Units	60159306001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	77000	50000	129000	104	90-110	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

MATRIX SPIKE SAMPLE:		1304945					
Parameter	Units	60159390001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	75300	50000	128000	106	90-110	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-161

Pace Project No.: 60159306

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159306001	316-161	EPA 200.7	MPRP/25582	EPA 200.7	ICP/19646
60159306001	316-161	EPA 200.7	MPRP/25618	EPA 200.7	ICP/19673
60159306001	316-161	EPA 245.1	MERP/7988	EPA 245.1	MERC/7943
60159306001	316-161	EPA 245.1	MERP/8008	EPA 245.1	MERC/7964
60159306001	316-161	EPA 625	OEXT/41871	EPA 625	MSSV/13312
60159306001	316-161	EPA 624 Low	MSV/58281		
60159306001	316-161	EPA 624 Low	MSV/58303		
60159306002	TRIP BLANK	EPA 624 Low	MSV/58281		
60159306001	316-161	EPA 624 Low	MSV/58684		
60159306002	TRIP BLANK	EPA 624 Low	MSV/58684		
60159306001	316-161	EPA 1664A	WET/45077		
60159306001	316-161	EPA 1664A	WET/45137		
60159306001	316-161	SM 2540D	WET/45100		
60159306001	316-161	SM 4500-H+B	WET/45117		
60159306001	316-161	SM 5210B	WET/45061	SM 5210B	WET/45159
60159306001	316-161	EPA 350.1	WETA/27468		
60159306001	316-161	EPA 410.4	WETA/27481		

REPORT OF LABORATORY ANALYSIS

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WO#: 60159306



60159306



Sample Condition Upon Receipt

Client Name: Barr Eng

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ RR

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☒ Ziploc

Thermometer Used: T-239 / T-194

Type of Ice: Yes Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 5.4

Date and initials of person examining contents: 12/11/13 BA

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Boo pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>WT</u>		metals initial pH 6.0, added 2.5ml final pH 3.5 sulfuric initial pH 5.0, added 2.0ml final pH 2.5
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	Initial when completed <u>BA</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	Lot # of added HNO ₃ <u>12513</u> preservative H ₂ SO ₄ <u>12520</u>
Exceptions: <u>VOA</u> coliform, TOC <u>O&G</u> WI-DRO (water), Phenolics	☒ Yes ☐ No	
Trip Blank present:	☒ Yes ☐ No ☐ N/A	15.
Pace Trip Blank lot # (if purchased): <u>093013-38E2</u>		16. <u>3015</u>
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State: <u>MO</u>

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 12/11/13

December 18, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: WEEKLY UNTREATED COMMINGLED
Pace Project No.: 60159335

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 11, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159335001	TCLP 12-10	Water	12/10/13 12:04	12/11/13 03:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159335001	TCLP 12-10	EPA 8260	JKL	13
		EPA 5030B/8260	PRG	25
		EPA 1664A	JMC1	1
		SM 2540B	RAH	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

Sample: TCLP 12-10		Lab ID: 60159335001		Collected: 12/10/13 12:04		Received: 12/11/13 03:15		Matrix: Water	
Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV TCLP Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 12/14/13 00:00									
Benzene	726	ug/L	250	500	5		12/17/13 17:15	71-43-2	
2-Butanone (MEK)	52500	ug/L	5000	200000	5		12/17/13 17:15	78-93-3	
Carbon tetrachloride	ND	ug/L	250	500	5		12/17/13 17:15	56-23-5	
Chlorobenzene	ND	ug/L	250	100000	5		12/17/13 17:15	108-90-7	
Chloroform	ND	ug/L	1000	6000	5		12/17/13 17:15	67-66-3	
1,2-Dichloroethane	ND	ug/L	250	500	5		12/17/13 17:15	107-06-2	
1,1-Dichloroethene	ND	ug/L	250	700	5		12/17/13 17:15	75-35-4	
Tetrachloroethene	ND	ug/L	250	700	5		12/17/13 17:15	127-18-4	
Trichloroethene	ND	ug/L	250	500	5		12/17/13 17:15	79-01-6	
Vinyl chloride	ND	ug/L	100	200	5		12/17/13 17:15	75-01-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	99 %		80-120		5		12/17/13 17:15	17060-07-0	
Toluene-d8 (S)	102 %		80-120		5		12/17/13 17:15	2037-26-5	
4-Bromofluorobenzene (S)	102 %		80-120		5		12/17/13 17:15	460-00-4	
8260 MSV Analytical Method: EPA 5030B/8260									
Benzene	966	ug/L	200		200		12/13/13 10:24	71-43-2	
Bromodichloromethane	ND	ug/L	200		200		12/13/13 10:24	75-27-4	
Bromoform	ND	ug/L	200		200		12/13/13 10:24	75-25-2	
Bromomethane	ND	ug/L	1000		200		12/13/13 10:24	74-83-9	
Carbon tetrachloride	ND	ug/L	200		200		12/13/13 10:24	56-23-5	
Chloroethane	ND	ug/L	200		200		12/13/13 10:24	75-00-3	
Chloroform	ND	ug/L	200		200		12/13/13 10:24	67-66-3	
1,4-Dichlorobenzene	416	ug/L	200		200		12/13/13 10:24	106-46-7	
1,2-Dichloroethane	ND	ug/L	200		200		12/13/13 10:24	107-06-2	
cis-1,2-Dichloroethene	ND	ug/L	200		200		12/13/13 10:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	200		200		12/13/13 10:24	156-60-5	
Ethylbenzene	ND	ug/L	200		200		12/13/13 10:24	100-41-4	
Methylene chloride	ND	ug/L	200		200		12/13/13 10:24	75-09-2	
1,1,1,2-Tetrachloroethane	ND	ug/L	200		200		12/13/13 10:24	79-34-5	
Tetrachloroethene	ND	ug/L	200		200		12/13/13 10:24	127-18-4	
Toluene	ND	ug/L	200		200		12/13/13 10:24	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	200		200		12/13/13 10:24	71-55-6	
1,1,2-Trichloroethane	217	ug/L	200		200		12/13/13 10:24	79-00-5	
Trichloroethene	ND	ug/L	200		200		12/13/13 10:24	79-01-6	
Vinyl chloride	ND	ug/L	200		200		12/13/13 10:24	75-01-4	
Xylene (Total)	ND	ug/L	600		200		12/13/13 10:24	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99 %		80-120		200		12/13/13 10:24	460-00-4	
1,2-Dichloroethane-d4 (S)	99 %		80-120		200		12/13/13 10:24	17060-07-0	
Toluene-d8 (S)	104 %		80-120		200		12/13/13 10:24	2037-26-5	
Preservation pH	1.0		0.10		200		12/13/13 10:24		
HEM, Oil and Grease Analytical Method: EPA 1664A									
Oil and Grease	553	mg/L	5.0		1		12/13/13 07:41		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

Sample: TCLP 12-10		Lab ID: 60159335001		Collected: 12/10/13 12:04	Received: 12/11/13 03:15	Matrix: Water			
Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540B Total Solids		Analytical Method: SM 2540B							
Total Solids	47300	mg/L	5.0		1		12/17/13 16:51		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

QC Batch: MSV/58402

Analysis Method: EPA 8260

QC Batch Method: EPA 8260

Analysis Description: 8260 MSV TCLP

Associated Lab Samples: 60159335001

METHOD BLANK: 1307012

Matrix: Water

Associated Lab Samples: 60159335001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	12/17/13 15:58	
1,2-Dichloroethane	ug/L	ND	50.0	12/17/13 15:58	
2-Butanone (MEK)	ug/L	ND	1000	12/17/13 15:58	
Benzene	ug/L	ND	50.0	12/17/13 15:58	
Carbon tetrachloride	ug/L	ND	50.0	12/17/13 15:58	
Chlorobenzene	ug/L	ND	50.0	12/17/13 15:58	
Chloroform	ug/L	ND	200	12/17/13 15:58	
Tetrachloroethene	ug/L	ND	50.0	12/17/13 15:58	
Trichloroethene	ug/L	ND	50.0	12/17/13 15:58	
Vinyl chloride	ug/L	ND	20.0	12/17/13 15:58	
1,2-Dichloroethane-d4 (S)	%	100	80-120	12/17/13 15:58	
4-Bromofluorobenzene (S)	%	97	80-120	12/17/13 15:58	
Toluene-d8 (S)	%	101	80-120	12/17/13 15:58	

LABORATORY CONTROL SAMPLE: 1307013

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	1000	990	99	70-127	
1,2-Dichloroethane	ug/L	1000	936	94	72-122	
2-Butanone (MEK)	ug/L	5000	5380	108	69-124	
Benzene	ug/L	1000	989	99	73-122	
Carbon tetrachloride	ug/L	1000	1030	103	73-125	
Chlorobenzene	ug/L	1000	965	96	80-120	
Chloroform	ug/L	1000	932	93	76-120	
Tetrachloroethene	ug/L	1000	986	99	79-122	
Trichloroethene	ug/L	1000	1040	104	76-120	
Vinyl chloride	ug/L	1000	965	97	57-140	
1,2-Dichloroethane-d4 (S)	%			96	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1307014

Parameter	Units	60158880001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	ND	1000	938	94	66-142	
1,2-Dichloroethane	ug/L	ND	1000	915	92	53-144	
2-Butanone (MEK)	ug/L	ND	5000	4150	83	54-127	
Benzene	ug/L	ND	1000	969	97	48-150	
Carbon tetrachloride	ug/L	ND	1000	939	94	68-145	
Chlorobenzene	ug/L	ND	1000	972	97	68-131	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

MATRIX SPIKE SAMPLE:		1307014					
Parameter	Units	60158880001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	ND	1000	913	91	69-126	
Tetrachloroethene	ug/L	ND	1000	922	92	66-139	
Trichloroethene	ug/L	ND	1000	976	98	67-130	
Vinyl chloride	ug/L	ND	1000	860	86	47-159	
1,2-Dichloroethane-d4 (S)	%				96	80-120	
4-Bromofluorobenzene (S)	%				100	80-120	
Toluene-d8 (S)	%				101	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

QC Batch:	MSV/58335	Analysis Method:	EPA 5030B/8260
QC Batch Method:	EPA 5030B/8260	Analysis Description:	8260 MSV Water 10 mL Purge
Associated Lab Samples:	60159335001		

METHOD BLANK: 1304927 Matrix: Water

Associated Lab Samples: 60159335001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/13/13 09:42	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/13/13 09:42	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/13/13 09:42	
1,2-Dichloroethane	ug/L	ND	1.0	12/13/13 09:42	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/13/13 09:42	
Benzene	ug/L	ND	1.0	12/13/13 09:42	
Bromodichloromethane	ug/L	ND	1.0	12/13/13 09:42	
Bromoform	ug/L	ND	1.0	12/13/13 09:42	
Bromomethane	ug/L	ND	5.0	12/13/13 09:42	
Carbon tetrachloride	ug/L	ND	1.0	12/13/13 09:42	
Chloroethane	ug/L	ND	1.0	12/13/13 09:42	
Chloroform	ug/L	ND	1.0	12/13/13 09:42	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/13/13 09:42	
Ethylbenzene	ug/L	ND	1.0	12/13/13 09:42	
Methylene chloride	ug/L	ND	1.0	12/13/13 09:42	
Tetrachloroethene	ug/L	ND	1.0	12/13/13 09:42	
Toluene	ug/L	ND	1.0	12/13/13 09:42	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/13/13 09:42	
Trichloroethene	ug/L	ND	1.0	12/13/13 09:42	
Vinyl chloride	ug/L	ND	1.0	12/13/13 09:42	
Xylene (Total)	ug/L	ND	3.0	12/13/13 09:42	
1,2-Dichloroethane-d4 (S)	%	97	80-120	12/13/13 09:42	
4-Bromofluorobenzene (S)	%	96	80-120	12/13/13 09:42	
Toluene-d8 (S)	%	105	80-120	12/13/13 09:42	

LABORATORY CONTROL SAMPLE: 1304928

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.4	97	75-124	
1,1,2,2-Tetrachloroethane	ug/L	20	19.9	99	73-120	
1,1,2-Trichloroethane	ug/L	20	17.7	89	76-120	
1,2-Dichloroethane	ug/L	20	18.9	95	72-122	
1,4-Dichlorobenzene	ug/L	20	19.5	97	80-120	
Benzene	ug/L	20	19.6	98	73-122	
Bromodichloromethane	ug/L	20	18.0	90	73-120	
Bromoform	ug/L	20	18.9	95	74-120	
Bromomethane	ug/L	20	17.2	86	40-146	
Carbon tetrachloride	ug/L	20	19.1	96	73-125	
Chloroethane	ug/L	20	16.3	82	56-159	
Chloroform	ug/L	20	18.5	92	76-120	
cis-1,2-Dichloroethene	ug/L	20	19.5	98	69-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

LABORATORY CONTROL SAMPLE: 1304928

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	20.0	100	76-123	
Methylene chloride	ug/L	20	18.2	91	71-123	
Tetrachloroethene	ug/L	20	20.0	100	79-122	
Toluene	ug/L	20	21.2	106	76-122	
trans-1,2-Dichloroethene	ug/L	20	18.7	93	78-126	
Trichloroethene	ug/L	20	18.6	93	76-120	
Vinyl chloride	ug/L	20	13.2	66	57-140	
Xylene (Total)	ug/L	60	62.6	104	76-122	
1,2-Dichloroethane-d4 (S)	%			96	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			102	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

QC Batch: WET/45077

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60159335001

METHOD BLANK: 1304019

Matrix: Water

Associated Lab Samples: 60159335001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/13/13 07:41	

LABORATORY CONTROL SAMPLE: 1304020

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.0	100	78-114	

MATRIX SPIKE SAMPLE: 1304023

Parameter	Units	60159089001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.4	40.6	97	78-114	

SAMPLE DUPLICATE: 1304022

Parameter	Units	60158982002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

QC Batch: WET/45169

Analysis Method: SM 2540B

QC Batch Method: SM 2540B

Analysis Description: 2540B Total Solids

Associated Lab Samples: 60159335001

METHOD BLANK: 1306780

Matrix: Water

Associated Lab Samples: 60159335001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	mg/L	ND	5.0	12/17/13 16:49	

LABORATORY CONTROL SAMPLE: 1306781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 1306782

Parameter	Units	60159271001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	mg/L	17400	17700	2	10	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSV/58335

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WEEKLY UNTREATED COMMINGLED

Pace Project No.: 60159335

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159335001	TCLP 12-10	EPA 8260	MSV/58402		
60159335001	TCLP 12-10	EPA 5030B/8260	MSV/58335		
60159335001	TCLP 12-10	EPA 1664A	WET/45077		
60159335001	TCLP 12-10	SM 2540B	WET/45169		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60159335



Client Name: Barr Eng.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☒ XR

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 2.2

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 12/11/13 925

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☒ No ☐ N/A	6.
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☒ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>Sledge</u>	13.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>NA</u>
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):	<u>NA</u>	15.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: me for ARR

Date: 12/11/13

(Only if sample is liquid or semi-liquid. Skip if sample is obviously 100% solid.)

Reviewed by: Henry M. Boy 12/18/13

NOTE: If Wet Solids are ≥ 0.5 and $< 5\%$ and a small amount of liquid is entrapped in the filter, then determine Percent Dry Solids. If the entrapped liquid is oily (non-aqueous) do not determine Percent Dry Solids. If Solids are $< 0.5\%$, tumbling is not required because the filtrate is considered to be the TCLP/SPLP extract.

- (1) Dry Weight #1 and Dry Weight #2 must be within 1% of each other. If the weights are within 1% of each other, use Dry Weight #2 in further calculations. If not within 1%, continue drying and weighing until two successive weighings are within 1%.
- (2) If compatible, combine the filtered liquid resulting from extraction with the initial liquid phase of sample. If the initial liquid phase is not compatible with the filtered liquid resulting from extraction, do not combine. Analyze liquids separately and combine the results mathematically.

F-KS-128-rev.0
October 21, 2013

December 31, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-162
Pace Project No.: 60159390

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 12, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revised Report - Rev. 1, 12/31/13: This report has been revised to include Acetone in the 624 VOC scan.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Andy Brownfield for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159390001	316-162	Water	12/11/13 09:10	12/12/13 01:00
60159390002	TRIP BLANK	Water	12/11/13 09:10	12/12/13 01:00

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159390001	316-162	EPA 200.7	SMW	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 624 Low	EAK	5
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	JMC1	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60159390002	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	5

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

Sample: 316-162		Lab ID: 60159390001	Collected: 12/11/13 09:10	Received: 12/12/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	6120	ug/L	375	1	12/13/13 13:30	12/16/13 12:17	7429-90-5	
Antimony	ND	ug/L	100	2	12/13/13 13:30	12/16/13 12:21	7440-36-0	D3
Arsenic	1020	ug/L	50.0	1	12/13/13 13:30	12/16/13 12:17	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/13/13 13:30	12/16/13 12:17	7440-41-7	D3
Cadmium	ND	ug/L	25.0	1	12/13/13 13:30	12/16/13 12:17	7440-43-9	
Chromium	332	ug/L	25.0	1	12/13/13 13:30	12/16/13 12:17	7440-47-3	
Cobalt	ND	ug/L	25.0	1	12/13/13 13:30	12/16/13 12:17	7440-48-4	
Copper	ND	ug/L	50.0	1	12/13/13 13:30	12/16/13 12:17	7440-50-8	
Iron	839000	ug/L	500	2	12/13/13 13:30	12/16/13 12:21	7439-89-6	
Lead	156	ug/L	25.0	1	12/13/13 13:30	12/16/13 12:17	7439-92-1	
Nickel	122	ug/L	25.0	1	12/13/13 13:30	12/16/13 12:17	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/13/13 13:30	12/16/13 12:17	7782-49-2	
Silver	ND	ug/L	35.0	1	12/13/13 13:30	12/16/13 12:17	7440-22-4	
Thallium	ND	ug/L	100	1	12/13/13 13:30	12/16/13 12:17	7440-28-0	
Zinc	13600	ug/L	500	2	12/13/13 13:30	12/16/13 12:21	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3000	ug/L	375	1	12/16/13 13:30	12/17/13 10:36	7429-90-5	
Antimony, Dissolved	ND	ug/L	100	2	12/16/13 13:30	12/17/13 10:40	7440-36-0	D3
Arsenic, Dissolved	549	ug/L	50.0	1	12/16/13 13:30	12/17/13 10:36	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/16/13 13:30	12/17/13 10:36	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:36	7440-43-9	
Chromium, Dissolved	177	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:36	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:36	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/16/13 13:30	12/17/13 10:36	7440-50-8	
Iron, Dissolved	542000	ug/L	500	2	12/16/13 13:30	12/17/13 10:40	7439-89-6	
Lead, Dissolved	93.6	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:36	7439-92-1	
Nickel, Dissolved	75.9	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:36	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/16/13 13:30	12/17/13 10:36	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/16/13 13:30	12/17/13 10:36	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/16/13 13:30	12/17/13 10:36	7440-28-0	
Zinc, Dissolved	7580	ug/L	500	2	12/16/13 13:30	12/17/13 10:40	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.42	ug/L	0.20	1	12/13/13 16:00	12/14/13 12:59	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/17/13 16:10	12/18/13 13:43	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/12/13 00:00	12/13/13 12:12	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 12:12	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 12:12	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 12:12	67-72-1	
Naphthalene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 12:12	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/12/13 00:00	12/13/13 12:12	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

Sample: 316-162		Lab ID: 60159390001	Collected: 12/11/13 09:10	Received: 12/12/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/12/13 00:00	12/13/13 12:12	87-86-5	
Phenol	9430 ug/L		1000	2	12/12/13 00:00	12/13/13 12:12	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/12/13 00:00	12/13/13 12:12	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/12/13 00:00	12/13/13 12:12	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	124 %		33-120	2	12/12/13 00:00	12/13/13 12:12	4165-60-0	S0
2-Fluorobiphenyl (S)	92 %		39-120	2	12/12/13 00:00	12/13/13 12:12	321-60-8	
Terphenyl-d14 (S)	101 %		45-120	2	12/12/13 00:00	12/13/13 12:12	1718-51-0	
Phenol-d6 (S)	32 %		11-120	2	12/12/13 00:00	12/13/13 12:12	13127-88-3	
2-Fluorophenol (S)	48 %		17-120	2	12/12/13 00:00	12/13/13 12:12	367-12-4	
2,4,6-Tribromophenol (S)	103 %		39-120	2	12/12/13 00:00	12/13/13 12:12	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/12/13 18:03	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/12/13 18:03	75-27-4	
Bromoform	ND ug/L		200	200		12/12/13 18:03	75-25-2	
Bromomethane	ND ug/L		1000	200		12/12/13 18:03	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/12/13 18:03	56-23-5	
Chloroethane	ND ug/L		200	200		12/12/13 18:03	75-00-3	
Chloroform	ND ug/L		200	200		12/12/13 18:03	67-66-3	
1,4-Dichlorobenzene	738 ug/L		200	200		12/12/13 18:03	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/12/13 18:03	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/12/13 18:03	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/12/13 18:03	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/12/13 18:03	100-41-4	
Methylene chloride	ND ug/L		200	200		12/12/13 18:03	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/12/13 18:03	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/12/13 18:03	127-18-4	
Toluene	ND ug/L		200	200		12/12/13 18:03	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/12/13 18:03	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/12/13 18:03	79-00-5	
Trichloroethene	ND ug/L		200	200		12/12/13 18:03	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/12/13 18:03	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/12/13 18:03	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	200		12/12/13 18:03	460-00-4	D3
Toluene-d8 (S)	99 %		80-120	200		12/12/13 18:03	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	200		12/12/13 18:03	17060-07-0	
Preservation pH	6.0		1.0	200		12/12/13 18:03		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	199000 ug/L		2000	200		12/12/13 18:03	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	200		12/12/13 18:03	460-00-4	
Toluene-d8 (S)	99 %		80-120	200		12/12/13 18:03	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	200		12/12/13 18:03	17060-07-0	
Preservation pH	6.0		1.0	200		12/12/13 18:03		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

Sample: 316-162		Lab ID: 60159390001	Collected: 12/11/13 09:10	Received: 12/12/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	863	mg/L	5.0	1		12/13/13 07:49		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	8.1	mg/L	5.0	1		12/17/13 14:53		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3180	mg/L	5.0	1		12/16/13 10:17		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		12/14/13 08:45		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	34300	mg/L	2.0	1	12/13/13 08:20	12/18/13 08:25		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	676	mg/L	20.0	200		12/12/13 14:03	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	75300	mg/L	10000	1000		12/16/13 11:55		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

Sample: TRIP BLANK		Lab ID: 60159390002	Collected: 12/11/13 09:10	Received: 12/12/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/12/13 18:33	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/12/13 18:33	75-27-4	
Bromoform	ND ug/L		1.0	1		12/12/13 18:33	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/12/13 18:33	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/12/13 18:33	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/12/13 18:33	75-00-3	
Chloroform	ND ug/L		1.0	1		12/12/13 18:33	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/12/13 18:33	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/12/13 18:33	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/12/13 18:33	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/12/13 18:33	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/12/13 18:33	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/12/13 18:33	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/12/13 18:33	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/12/13 18:33	127-18-4	
Toluene	ND ug/L		1.0	1		12/12/13 18:33	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/12/13 18:33	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/12/13 18:33	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/12/13 18:33	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/12/13 18:33	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/12/13 18:33	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	103 %		80-120	1		12/12/13 18:33	460-00-4	
Toluene-d8 (S)	103 %		80-120	1		12/12/13 18:33	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	1		12/12/13 18:33	17060-07-0	
Preservation pH	6.0		1.0	1		12/12/13 18:33		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/12/13 18:33	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	103 %		80-120	1		12/12/13 18:33	460-00-4	
Toluene-d8 (S)	103 %		80-120	1		12/12/13 18:33	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	1		12/12/13 18:33	17060-07-0	
Preservation pH	6.0		1.0	1		12/12/13 18:33		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

QC Batch: MERP/7998

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159390001

METHOD BLANK: 1305556

Matrix: Water

Associated Lab Samples: 60159390001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/14/13 12:48	

LABORATORY CONTROL SAMPLE: 1305557

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.3	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1305558 1305559

Parameter	Units	60159387001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.2	4.3	85	86	70-130	1	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

QC Batch:	MERP/8008	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60159390001		

METHOD BLANK: 1307208 Matrix: Water

Associated Lab Samples: 60159390001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/18/13 13:24	

LABORATORY CONTROL SAMPLE: 1307209

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	91	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307210 1307211

Parameter	Units	60159294001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	138	137	92	92	70-130	0	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162
Pace Project No.: 60159390

QC Batch: MPRP/25582 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60159390001

METHOD BLANK: 1305043 Matrix: Water
Associated Lab Samples: 60159390001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/16/13 11:35	
Antimony	ug/L	ND	10.0	12/16/13 11:35	
Arsenic	ug/L	ND	10.0	12/16/13 11:35	
Beryllium	ug/L	ND	1.0	12/16/13 11:35	
Cadmium	ug/L	ND	5.0	12/16/13 11:35	
Chromium	ug/L	ND	5.0	12/16/13 11:35	
Cobalt	ug/L	ND	5.0	12/16/13 11:35	
Copper	ug/L	ND	10.0	12/16/13 11:35	
Iron	ug/L	ND	50.0	12/16/13 11:35	
Lead	ug/L	ND	5.0	12/16/13 11:35	
Nickel	ug/L	ND	5.0	12/16/13 11:35	
Selenium	ug/L	ND	15.0	12/16/13 11:35	
Silver	ug/L	ND	7.0	12/16/13 11:35	
Thallium	ug/L	ND	20.0	12/16/13 11:35	
Zinc	ug/L	ND	50.0	12/16/13 11:35	

LABORATORY CONTROL SAMPLE: 1305044

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9940	99	85-115	
Antimony	ug/L	1000	1000	100	85-115	
Arsenic	ug/L	1000	946	95	85-115	
Beryllium	ug/L	1000	974	97	85-115	
Cadmium	ug/L	1000	986	99	85-115	
Chromium	ug/L	1000	974	97	85-115	
Cobalt	ug/L	1000	994	99	85-115	
Copper	ug/L	1000	982	98	85-115	
Iron	ug/L	10000	9670	97	85-115	
Lead	ug/L	1000	1000	100	85-115	
Nickel	ug/L	1000	1000	100	85-115	
Selenium	ug/L	1000	975	98	85-115	
Silver	ug/L	500	476	95	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	971	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1305045 1305046

Parameter	Units	60159236001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	1140	10000	10000	11300	11400	101	103	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1305045 1305046											
Parameter	Units	60159236001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	991	1000	99	100	70-130	1	7
Arsenic	ug/L	ND	1000	1000	970	974	97	97	70-130	0	10
Beryllium	ug/L	ND	1000	1000	980	995	98	99	70-130	1	7
Cadmium	ug/L	ND	1000	1000	972	978	97	98	70-130	1	10
Chromium	ug/L	ND	1000	1000	996	976	99	97	70-130	2	10
Cobalt	ug/L	ND	1000	1000	974	980	97	98	70-130	1	6
Copper	ug/L	34.4	1000	1000	1020	1000	99	97	70-130	2	11
Iron	ug/L	2010	10000	10000	11600	11700	95	97	70-130	1	10
Lead	ug/L	10.0	1000	1000	966	972	96	96	70-130	1	10
Nickel	ug/L	6.1	1000	1000	989	996	98	99	70-130	1	10
Selenium	ug/L	ND	1000	1000	983	994	98	99	70-130	1	10
Silver	ug/L	ND	500	500	483	476	97	95	70-130	1	10
Thallium	ug/L	ND	1000	1000	928	935	93	93	70-130	1	6
Zinc	ug/L	106	1000	1000	1070	1080	97	97	70-130	0	11

MATRIX SPIKE SAMPLE: 1305047							
Parameter	Units	60159236002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L		ND	10000	10100	100	70-130
Antimony	ug/L		ND	1000	1020	101	70-130
Arsenic	ug/L		ND	1000	986	98	70-130
Beryllium	ug/L		ND	1000	990	99	70-130
Cadmium	ug/L		ND	1000	991	99	70-130
Chromium	ug/L		ND	1000	989	99	70-130
Cobalt	ug/L		ND	1000	990	99	70-130
Copper	ug/L		ND	1000	981	98	70-130
Iron	ug/L		99.5	10000	9780	97	70-130
Lead	ug/L		ND	1000	982	98	70-130
Nickel	ug/L		ND	1000	998	100	70-130
Selenium	ug/L		ND	1000	996	100	70-130
Silver	ug/L		ND	500	482	96	70-130
Thallium	ug/L		ND	1000	961	96	70-130
Zinc	ug/L		ND	1000	1010	98	70-130

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162
Pace Project No.: 60159390

QC Batch:	MPRP/25618	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60159390001		

METHOD BLANK: 1306471 Matrix: Water
Associated Lab Samples: 60159390001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/17/13 10:16	
Antimony, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Arsenic, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Beryllium, Dissolved	ug/L	ND	1.0	12/17/13 10:16	
Cadmium, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Chromium, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Cobalt, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Copper, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Iron, Dissolved	ug/L	ND	50.0	12/17/13 10:16	
Lead, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Nickel, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Selenium, Dissolved	ug/L	ND	15.0	12/17/13 10:16	
Silver, Dissolved	ug/L	ND	7.0	12/17/13 10:16	
Thallium, Dissolved	ug/L	ND	20.0	12/17/13 10:16	
Zinc, Dissolved	ug/L	ND	50.0	12/17/13 10:16	

LABORATORY CONTROL SAMPLE: 1306472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10000	100	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	969	97	85-115	
Beryllium, Dissolved	ug/L	1000	1010	101	85-115	
Cadmium, Dissolved	ug/L	1000	1010	101	85-115	
Chromium, Dissolved	ug/L	1000	1000	100	85-115	
Cobalt, Dissolved	ug/L	1000	1010	101	85-115	
Copper, Dissolved	ug/L	1000	997	100	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	1020	102	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	999	100	85-115	
Silver, Dissolved	ug/L	500	522	104	85-115	
Thallium, Dissolved	ug/L	1000	1050	105	85-115	
Zinc, Dissolved	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1306473 1306474

Parameter	Units	60159525001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	46.7J	10000	10000	10000	10200	100	101	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1306473 1306474													
Parameter	Units	60159525001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max		Qual
		Result	Conc.	Spike	Spike					Result	Result	% Rec	
Antimony, Dissolved	ug/L	ND	1000	1000	1000	1010	100	101	70-130	0	7		
Arsenic, Dissolved	ug/L	ND	1000	1000	963	968	96	97	70-130	0	10		
Beryllium, Dissolved	ug/L	ND	1000	1000	998	1010	100	101	70-130	1	7		
Cadmium, Dissolved	ug/L	ND	1000	1000	988	992	99	99	70-130	0	10		
Chromium, Dissolved	ug/L	0.83J	1000	1000	979	980	98	98	70-130	0	10		
Cobalt, Dissolved	ug/L	ND	1000	1000	987	990	99	99	70-130	0	6		
Copper, Dissolved	ug/L	ND	1000	1000	987	980	99	98	70-130	1	11		
Iron, Dissolved	ug/L	23.5J	10000	10000	9730	9840	97	98	70-130	1	10		
Lead, Dissolved	ug/L	2.9J	1000	1000	986	990	98	99	70-130	0	10		
Nickel, Dissolved	ug/L	0.88J	1000	1000	989	994	99	99	70-130	1	10		
Selenium, Dissolved	ug/L	ND	1000	1000	978	982	98	98	70-130	0	10		
Silver, Dissolved	ug/L	ND	500	500	517	516	103	103	70-130	0	10		
Thallium, Dissolved	ug/L	ND	1000	1000	983	988	98	99	70-130	1	6		
Zinc, Dissolved	ug/L	13.9J	1000	1000	979	984	97	97	70-130	0	11		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

QC Batch: MSV/58303 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60159390001, 60159390002

METHOD BLANK: 1304331 Matrix: Water

Associated Lab Samples: 60159390001, 60159390002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/12/13 17:03	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/12/13 17:03	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/12/13 17:03	
1,2-Dichloroethane	ug/L	ND	1.0	12/12/13 17:03	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/12/13 17:03	
Benzene	ug/L	ND	1.0	12/12/13 17:03	
Bromodichloromethane	ug/L	ND	1.0	12/12/13 17:03	
Bromoform	ug/L	ND	1.0	12/12/13 17:03	
Bromomethane	ug/L	ND	5.0	12/12/13 17:03	
Carbon tetrachloride	ug/L	ND	1.0	12/12/13 17:03	
Chloroethane	ug/L	ND	1.0	12/12/13 17:03	
Chloroform	ug/L	ND	1.0	12/12/13 17:03	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/12/13 17:03	
Ethylbenzene	ug/L	ND	1.0	12/12/13 17:03	
Methylene chloride	ug/L	ND	1.0	12/12/13 17:03	
Tetrachloroethene	ug/L	ND	1.0	12/12/13 17:03	
Toluene	ug/L	ND	1.0	12/12/13 17:03	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/12/13 17:03	
Trichloroethene	ug/L	ND	1.0	12/12/13 17:03	
Vinyl chloride	ug/L	ND	1.0	12/12/13 17:03	
Xylene (Total)	ug/L	ND	3.0	12/12/13 17:03	
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/12/13 17:03	
4-Bromofluorobenzene (S)	%	99	80-120	12/12/13 17:03	
Toluene-d8 (S)	%	98	80-120	12/12/13 17:03	

LABORATORY CONTROL SAMPLE: 1304332

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.0	100	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	21.1	105	59-138	
1,1,2-Trichloroethane	ug/L	20	19.8	99	69-127	
1,2-Dichloroethane	ug/L	20	19.2	96	71-129	
1,4-Dichlorobenzene	ug/L	20	19.5	97	68-124	
Benzene	ug/L	20	19.3	96	73-129	
Bromodichloromethane	ug/L	20	19.2	96	63-129	
Bromoform	ug/L	20	20.2	101	52-123	
Bromomethane	ug/L	20	13.0	65	10-160	
Carbon tetrachloride	ug/L	20	19.5	97	70-140	
Chloroethane	ug/L	20	10.7	53	42-160	
Chloroform	ug/L	20	18.0	90	60-120	
cis-1,2-Dichloroethene	ug/L	20	19.2	96	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

LABORATORY CONTROL SAMPLE: 1304332

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	20.3	102	66-133	
Methylene chloride	ug/L	20	17.6	88	56-135	
Tetrachloroethene	ug/L	20	19.9	99	64-143	
Toluene	ug/L	20	19.8	99	70-130	
trans-1,2-Dichloroethene	ug/L	20	17.7	88	67-149	
Trichloroethene	ug/L	20	19.1	95	71-130	
Vinyl chloride	ug/L	20	9.3	47	41-160	
Xylene (Total)	ug/L	60	59.7	99	67-130	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			102	80-120	

MATRIX SPIKE SAMPLE: 1304333

Parameter	Units	60159390001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4750	119	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4200	105	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	4220	106	52-150	
1,2-Dichloroethane	ug/L	ND	4000	4200	105	49-155	
1,4-Dichlorobenzene	ug/L	738	4000	4600	97	18-147	
Benzene	ug/L	ND	4000	4380	108	37-151	
Bromodichloromethane	ug/L	ND	4000	4410	110	35-155	
Bromoform	ug/L	ND	4000	4180	105	45-133	
Bromomethane	ug/L	ND	4000	2780	69	10-160	
Carbon tetrachloride	ug/L	ND	4000	5010	125	70-140	
Chloroethane	ug/L	ND	4000	2930	73	14-160	
Chloroform	ug/L	ND	4000	4190	105	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	4360	109	19-160	
Ethylbenzene	ug/L	ND	4000	4390	109	37-154	
Methylene chloride	ug/L	ND	4000	3990	100	15-156	
Tetrachloroethene	ug/L	ND	4000	4440	111	64-148	
Toluene	ug/L	ND	4000	4320	108	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	4470	112	54-156	
Trichloroethene	ug/L	ND	4000	4440	111	71-157	
Vinyl chloride	ug/L	ND	4000	2270	57	10-160	
1,2-Dichloroethane-d4 (S)	%				105	80-120	
4-Bromofluorobenzene (S)	%				103	80-120	
Toluene-d8 (S)	%				104	80-120	
Preservation pH			6.0		6.0		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

QC Batch:	MSV/58685	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples: 60159390001, 60159390002			

METHOD BLANK: 1313451 Matrix: Water

Associated Lab Samples: 60159390001, 60159390002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/12/13 17:03	N2
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/12/13 17:03	
4-Bromofluorobenzene (S)	%	99	80-120	12/12/13 17:03	
Toluene-d8 (S)	%	98	80-120	12/12/13 17:03	

LABORATORY CONTROL SAMPLE: 1313452

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	109	109	40-160	N2
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			102	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162
Pace Project No.: 60159390

QC Batch:	OEXT/41871	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159390001		

METHOD BLANK: 1304024 Matrix: Water
Associated Lab Samples: 60159390001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/13/13 09:47	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/13/13 09:47	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/13/13 09:47	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/13/13 09:47	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/13/13 09:47	
Hexachloroethane	ug/L	ND	5.0	12/13/13 09:47	
Naphthalene	ug/L	ND	5.0	12/13/13 09:47	
Nitrobenzene	ug/L	ND	5.0	12/13/13 09:47	
Pentachlorophenol	ug/L	ND	5.0	12/13/13 09:47	
Phenol	ug/L	ND	5.0	12/13/13 09:47	
2,4,6-Tribromophenol (S)	%	80	39-120	12/13/13 09:47	
2-Fluorobiphenyl (S)	%	78	39-120	12/13/13 09:47	
2-Fluorophenol (S)	%	44	17-120	12/13/13 09:47	
Nitrobenzene-d5 (S)	%	73	33-120	12/13/13 09:47	
Phenol-d6 (S)	%	28	11-120	12/13/13 09:47	
Terphenyl-d14 (S)	%	83	45-120	12/13/13 09:47	

LABORATORY CONTROL SAMPLE: 1304025

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	42.9	86	46-120	
2,4,6-Trichlorophenol	ug/L	50	47.6	95	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	61.6	123	40-133	
Hexachloro-1,3-butadiene	ug/L	50	40.0	80	44-116	
Hexachlorocyclopentadiene	ug/L	100	72.6	73	24-120	
Hexachloroethane	ug/L	50	39.9	80	43-113	
Naphthalene	ug/L	50	44.0	88	48-120	
Nitrobenzene	ug/L	50	43.4	87	48-120	
Pentachlorophenol	ug/L	50	53.4	107	47-120	
Phenol	ug/L	50	15.8	32	16-112	
2,4,6-Tribromophenol (S)	%			102	39-120	
2-Fluorobiphenyl (S)	%			90	39-120	
2-Fluorophenol (S)	%			46	17-120	
Nitrobenzene-d5 (S)	%			83	33-120	
Phenol-d6 (S)	%			30	11-120	
Terphenyl-d14 (S)	%			97	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

MATRIX SPIKE SAMPLE:		1304026					
Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3960	79	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4640	93	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	5380	108	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3830	77	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	7160	72	11-120	
Hexachloroethane	ug/L	ND	5000	3820	76	40-113	
Naphthalene	ug/L	1240	5000	5400	83	45-120	
Nitrobenzene	ug/L	ND	5000	3920	78	38-120	
Pentachlorophenol	ug/L	ND	5000	5440	109	43-135	
Phenol	ug/L	12000	5000	13800	36	13-112	
2,4,6-Tribromophenol (S)	%				95	39-120	
2-Fluorobiphenyl (S)	%				83	39-120	
2-Fluorophenol (S)	%				46	17-120	
Nitrobenzene-d5 (S)	%				121	33-120	S0
Phenol-d6 (S)	%				32	11-120	
Terphenyl-d14 (S)	%				85	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

QC Batch:	WET/45097	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60159390001		

METHOD BLANK: 1304769 Matrix: Water

Associated Lab Samples: 60159390001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/13/13 07:47	

LABORATORY CONTROL SAMPLE: 1304770

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.4	104	78-114	

MATRIX SPIKE SAMPLE: 1304771

Parameter	Units	60159100001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	43	41.9	91	78-114	

SAMPLE DUPLICATE: 1304773

Parameter	Units	60159300001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	2.2J		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

QC Batch: WET/45185

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159390001

METHOD BLANK: 1307320

Matrix: Water

Associated Lab Samples: 60159390001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/17/13 14:51	

LABORATORY CONTROL SAMPLE: 1307321

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	22.2	111	64-132	

MATRIX SPIKE SAMPLE: 1307322

Parameter	Units	60159090006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	22.5	24.9	103	64-132	

SAMPLE DUPLICATE: 1307324

Parameter	Units	60159090007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	1.6J		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

QC Batch: WET/45138

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159390001

METHOD BLANK: 1306234

Matrix: Water

Associated Lab Samples: 60159390001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/16/13 10:16	

SAMPLE DUPLICATE: 1306235

Parameter	Units	60159549001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	6.0	7.0	15	25	

SAMPLE DUPLICATE: 1306236

Parameter	Units	60159376001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	7.0	7.0	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

QC Batch:	WET/45117	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60159390001		

SAMPLE DUPLICATE: 1305784

Parameter	Units	60159294001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.5	5.5	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

QC Batch: WET/45096

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159390001

METHOD BLANK: 1304756

Matrix: Water

Associated Lab Samples: 60159390001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/18/13 07:30	

LABORATORY CONTROL SAMPLE: 1304757

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	185	94	85-115	

SAMPLE DUPLICATE: 1304758

Parameter	Units	60159377001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	1010	1080	7	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

QC Batch: WETA/27468

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159390001

METHOD BLANK: 1304188

Matrix: Water

Associated Lab Samples: 60159390001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/12/13 13:49	

LABORATORY CONTROL SAMPLE: 1304189

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	1.9	97	90-110	

MATRIX SPIKE SAMPLE: 1304190

Parameter	Units	60159098001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	711	1000	1650	94	90-110	

SAMPLE DUPLICATE: 1304191

Parameter	Units	60159206001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	749	730	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162
Pace Project No.: 60159390

QC Batch: WETA/27481 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 60159390001

METHOD BLANK: 1304938 Matrix: Water
Associated Lab Samples: 60159390001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/16/13 11:49	

LABORATORY CONTROL SAMPLE: 1304939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.9	102	90-110	

MATRIX SPIKE SAMPLE: 1304940

Parameter	Units	60159167001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	104000	50000	146000	84	90-110	M1

MATRIX SPIKE SAMPLE: 1304941

Parameter	Units	60159206001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	95700	50000	146000	101	90-110	

MATRIX SPIKE SAMPLE: 1304942

Parameter	Units	60159207001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	92200	50000	138000	92	90-110	

MATRIX SPIKE SAMPLE: 1304943

Parameter	Units	60159294001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	86500	50000	139000	104	90-110	

MATRIX SPIKE SAMPLE: 1304944

Parameter	Units	60159306001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	77000	50000	129000	104	90-110	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

MATRIX SPIKE SAMPLE:		1304945					
Parameter	Units	60159390001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	75300	50000	128000	106	90-110	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-162

Pace Project No.: 60159390

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159390001	316-162	EPA 200.7	MPRP/25582	EPA 200.7	ICP/19646
60159390001	316-162	EPA 200.7	MPRP/25618	EPA 200.7	ICP/19673
60159390001	316-162	EPA 245.1	MERP/7998	EPA 245.1	MERC/7953
60159390001	316-162	EPA 245.1	MERP/8008	EPA 245.1	MERC/7964
60159390001	316-162	EPA 625	OEXT/41871	EPA 625	MSSV/13312
60159390001	316-162	EPA 624 Low	MSV/58303		
60159390002	TRIP BLANK	EPA 624 Low	MSV/58303		
60159390001	316-162	EPA 624 Low	MSV/58685		
60159390002	TRIP BLANK	EPA 624 Low	MSV/58685		
60159390001	316-162	EPA 1664A	WET/45097		
60159390001	316-162	EPA 1664A	WET/45185		
60159390001	316-162	SM 2540D	WET/45138		
60159390001	316-162	SM 4500-H+B	WET/45117		
60159390001	316-162	SM 5210B	WET/45096	SM 5210B	WET/45198
60159390001	316-162	EPA 350.1	WETA/27468		
60159390001	316-162	EPA 410.4	WETA/27481		

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Sample Condition Upon Receipt

WO#: 60159390



Client Name: Barv

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ Xroad

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ 2 P/L

Thermometer Used: T-239 T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 4.2

Date and initials of person examining contents: 12/12/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Bad pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses Matrix:	<u>WT</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	<u>Added 2.5 ml of HNO3 w/ BPSN. pH 6.0/4.0</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☒ No ☐ N/A	<u>Added 2.0 ml of H2SO4 to BPSN pH 6.0/2.0</u>
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No ☐ N/A	Initial when completed <u>12/12/13</u> Lot # of added preservative <u>12513</u>
Trip Blank present:	☐ Yes ☒ No ☐ N/A	
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	16. <u>12/12/13</u>
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 12/12/13

Page : 1 Of 1

Invoice Information:

Missouriand Mercury

SAMPLE CONDITIONS

TEMP in C

December 26, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-163
Pace Project No.: 60159508

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 13, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report revised to include Acetone on 12/26/13.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159508001	316-163	Water	12/12/13 10:15	12/13/13 00:50
60159508002	TRIP BLANK	Water	12/12/13 10:15	12/13/13 00:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159508001	316-163	EPA 200.7	SMW	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	JMC1	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JML	1
60159508002	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

Sample: 316-163		Lab ID: 60159508001	Collected: 12/12/13 10:15	Received: 12/13/13 00:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	7830	ug/L	375	1	12/13/13 13:30	12/16/13 12:24	7429-90-5	
Antimony	ND	ug/L	100	2	12/13/13 13:30	12/16/13 12:28	7440-36-0	D3
Arsenic	840	ug/L	50.0	1	12/13/13 13:30	12/16/13 12:24	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/13/13 13:30	12/16/13 12:24	7440-41-7	D3
Cadmium	ND	ug/L	25.0	1	12/13/13 13:30	12/16/13 12:24	7440-43-9	
Chromium	279	ug/L	25.0	1	12/13/13 13:30	12/16/13 12:24	7440-47-3	
Cobalt	ND	ug/L	25.0	1	12/13/13 13:30	12/16/13 12:24	7440-48-4	
Copper	ND	ug/L	50.0	1	12/13/13 13:30	12/16/13 12:24	7440-50-8	
Iron	842000	ug/L	500	2	12/13/13 13:30	12/16/13 12:28	7439-89-6	
Lead	179	ug/L	25.0	1	12/13/13 13:30	12/16/13 12:24	7439-92-1	
Nickel	127	ug/L	25.0	1	12/13/13 13:30	12/16/13 12:24	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/13/13 13:30	12/16/13 12:24	7782-49-2	
Silver	ND	ug/L	35.0	1	12/13/13 13:30	12/16/13 12:24	7440-22-4	
Thallium	ND	ug/L	100	1	12/13/13 13:30	12/16/13 12:24	7440-28-0	
Zinc	11000	ug/L	500	2	12/13/13 13:30	12/16/13 12:28	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3680	ug/L	375	1	12/16/13 13:30	12/17/13 10:46	7429-90-5	
Antimony, Dissolved	ND	ug/L	100	2	12/16/13 13:30	12/17/13 10:56	7440-36-0	D3
Arsenic, Dissolved	666	ug/L	50.0	1	12/16/13 13:30	12/17/13 10:46	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/16/13 13:30	12/17/13 10:46	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:46	7440-43-9	
Chromium, Dissolved	210	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:46	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:46	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/16/13 13:30	12/17/13 10:46	7440-50-8	
Iron, Dissolved	646000	ug/L	500	2	12/16/13 13:30	12/17/13 10:56	7439-89-6	
Lead, Dissolved	102	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:46	7439-92-1	
Nickel, Dissolved	96.7	ug/L	25.0	1	12/16/13 13:30	12/17/13 10:46	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/16/13 13:30	12/17/13 10:46	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/16/13 13:30	12/17/13 10:46	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/16/13 13:30	12/17/13 10:46	7440-28-0	
Zinc, Dissolved	9490	ug/L	500	2	12/16/13 13:30	12/17/13 10:56	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	6.0	1	12/17/13 16:10	12/18/13 12:57	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/17/13 16:10	12/18/13 13:45	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/16/13 00:00	12/18/13 10:01	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/16/13 00:00	12/18/13 10:01	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/16/13 00:00	12/18/13 10:01	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/16/13 00:00	12/18/13 10:01	67-72-1	
Naphthalene	ND	ug/L	1000	2	12/16/13 00:00	12/18/13 10:01	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/16/13 00:00	12/18/13 10:01	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

Sample: 316-163		Lab ID: 60159508001	Collected: 12/12/13 10:15	Received: 12/13/13 00:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/16/13 00:00	12/18/13 10:01	87-86-5	M1
Phenol	9980 ug/L		1000	2	12/16/13 00:00	12/18/13 10:01	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/16/13 00:00	12/18/13 10:01	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/16/13 00:00	12/18/13 10:01	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	111 %		33-120	2	12/16/13 00:00	12/18/13 10:01	4165-60-0	
2-Fluorobiphenyl (S)	72 %		39-120	2	12/16/13 00:00	12/18/13 10:01	321-60-8	
Terphenyl-d14 (S)	81 %		45-120	2	12/16/13 00:00	12/18/13 10:01	1718-51-0	
Phenol-d6 (S)	30 %		11-120	2	12/16/13 00:00	12/18/13 10:01	13127-88-3	
2-Fluorophenol (S)	40 %		17-120	2	12/16/13 00:00	12/18/13 10:01	367-12-4	
2,4,6-Tribromophenol (S)	84 %		39-120	2	12/16/13 00:00	12/18/13 10:01	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/16/13 19:31	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/16/13 19:31	75-27-4	
Bromoform	ND ug/L		200	200		12/16/13 19:31	75-25-2	
Bromomethane	ND ug/L		1000	200		12/16/13 19:31	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/16/13 19:31	56-23-5	
Chloroethane	ND ug/L		200	200		12/16/13 19:31	75-00-3	
Chloroform	ND ug/L		200	200		12/16/13 19:31	67-66-3	
1,4-Dichlorobenzene	628 ug/L		200	200		12/16/13 19:31	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/16/13 19:31	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/16/13 19:31	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/16/13 19:31	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/16/13 19:31	100-41-4	
Methylene chloride	ND ug/L		200	200		12/16/13 19:31	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/16/13 19:31	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/16/13 19:31	127-18-4	
Toluene	ND ug/L		200	200		12/16/13 19:31	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/16/13 19:31	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/16/13 19:31	79-00-5	
Trichloroethene	ND ug/L		200	200		12/16/13 19:31	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/16/13 19:31	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/16/13 19:31	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	200		12/16/13 19:31	460-00-4	D3
Toluene-d8 (S)	98 %		80-120	200		12/16/13 19:31	2037-26-5	
1,2-Dichloroethane-d4 (S)	103 %		80-120	200		12/16/13 19:31	17060-07-0	
Preservation pH	6.0		1.0	200		12/16/13 19:31		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	194000 ug/L		2000	200		12/16/13 19:31	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	200		12/16/13 19:31	460-00-4	
Toluene-d8 (S)	98 %		80-120	200		12/16/13 19:31	2037-26-5	
1,2-Dichloroethane-d4 (S)	103 %		80-120	200		12/16/13 19:31	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

Sample: 316-163		Lab ID: 60159508001	Collected: 12/12/13 10:15	Received: 12/13/13 00:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	752	mg/L	5.0	1		12/16/13 11:06		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	8.8	mg/L	5.0	1		12/20/13 09:09		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2180	mg/L	5.0	1		12/17/13 09:39		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		12/14/13 09:30		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	28300	mg/L	2.0	1	12/13/13 15:19	12/18/13 13:12		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	846	mg/L	50.0	500		12/19/13 14:28	7664-41-7	M1
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	55300	mg/L	5000	500		12/20/13 15:04		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

Sample: TRIP BLANK		Lab ID: 60159508002	Collected: 12/12/13 10:15	Received: 12/13/13 00:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/16/13 20:01	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/16/13 20:01	75-27-4	
Bromoform	ND ug/L		1.0	1		12/16/13 20:01	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/16/13 20:01	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/16/13 20:01	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/16/13 20:01	75-00-3	
Chloroform	ND ug/L		1.0	1		12/16/13 20:01	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/16/13 20:01	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/16/13 20:01	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/16/13 20:01	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/16/13 20:01	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/16/13 20:01	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/16/13 20:01	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/16/13 20:01	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/16/13 20:01	127-18-4	
Toluene	ND ug/L		1.0	1		12/16/13 20:01	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/16/13 20:01	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/16/13 20:01	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/16/13 20:01	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/16/13 20:01	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/16/13 20:01	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	1		12/16/13 20:01	460-00-4	
Toluene-d8 (S)	92 %		80-120	1		12/16/13 20:01	2037-26-5	
1,2-Dichloroethane-d4 (S)	95 %		80-120	1		12/16/13 20:01	17060-07-0	
Preservation pH	6.0		1.0	1		12/16/13 20:01		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/16/13 20:01	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	1		12/16/13 20:01	460-00-4	
Toluene-d8 (S)	92 %		80-120	1		12/16/13 20:01	2037-26-5	
1,2-Dichloroethane-d4 (S)	95 %		80-120	1		12/16/13 20:01	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

QC Batch: MERP/8009

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159508001

METHOD BLANK: 1307231

Matrix: Water

Associated Lab Samples: 60159508001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/18/13 12:49	

LABORATORY CONTROL SAMPLE: 1307232

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307233 1307234

Parameter	Units	60159515001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.7	4.3	93	86	70-130	8	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

QC Batch: MERP/8008

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60159508001

METHOD BLANK: 1307208

Matrix: Water

Associated Lab Samples: 60159508001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/18/13 13:24	

LABORATORY CONTROL SAMPLE: 1307209

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	91	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307210 1307211

Parameter	Units	60159294001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	138	137	92	92	70-130	0	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163
Pace Project No.: 60159508

QC Batch:	MPRP/25582	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
Associated Lab Samples:	60159508001		

METHOD BLANK: 1305043 Matrix: Water
Associated Lab Samples: 60159508001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/16/13 11:35	
Antimony	ug/L	ND	10.0	12/16/13 11:35	
Arsenic	ug/L	ND	10.0	12/16/13 11:35	
Beryllium	ug/L	ND	1.0	12/16/13 11:35	
Cadmium	ug/L	ND	5.0	12/16/13 11:35	
Chromium	ug/L	ND	5.0	12/16/13 11:35	
Cobalt	ug/L	ND	5.0	12/16/13 11:35	
Copper	ug/L	ND	10.0	12/16/13 11:35	
Iron	ug/L	ND	50.0	12/16/13 11:35	
Lead	ug/L	ND	5.0	12/16/13 11:35	
Nickel	ug/L	ND	5.0	12/16/13 11:35	
Selenium	ug/L	ND	15.0	12/16/13 11:35	
Silver	ug/L	ND	7.0	12/16/13 11:35	
Thallium	ug/L	ND	20.0	12/16/13 11:35	
Zinc	ug/L	ND	50.0	12/16/13 11:35	

LABORATORY CONTROL SAMPLE: 1305044

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9940	99	85-115	
Antimony	ug/L	1000	1000	100	85-115	
Arsenic	ug/L	1000	946	95	85-115	
Beryllium	ug/L	1000	974	97	85-115	
Cadmium	ug/L	1000	986	99	85-115	
Chromium	ug/L	1000	974	97	85-115	
Cobalt	ug/L	1000	994	99	85-115	
Copper	ug/L	1000	982	98	85-115	
Iron	ug/L	10000	9670	97	85-115	
Lead	ug/L	1000	1000	100	85-115	
Nickel	ug/L	1000	1000	100	85-115	
Selenium	ug/L	1000	975	98	85-115	
Silver	ug/L	500	476	95	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	971	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1305045 1305046

Parameter	Units	60159236001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	1140	10000	10000	11300	11400	101	103	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1305045 1305046											
Parameter	Units	60159236001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	991	1000	99	100	70-130	1	7
Arsenic	ug/L	ND	1000	1000	970	974	97	97	70-130	0	10
Beryllium	ug/L	ND	1000	1000	980	995	98	99	70-130	1	7
Cadmium	ug/L	ND	1000	1000	972	978	97	98	70-130	1	10
Chromium	ug/L	ND	1000	1000	996	976	99	97	70-130	2	10
Cobalt	ug/L	ND	1000	1000	974	980	97	98	70-130	1	6
Copper	ug/L	34.4	1000	1000	1020	1000	99	97	70-130	2	11
Iron	ug/L	2010	10000	10000	11600	11700	95	97	70-130	1	10
Lead	ug/L	10.0	1000	1000	966	972	96	96	70-130	1	10
Nickel	ug/L	6.1	1000	1000	989	996	98	99	70-130	1	10
Selenium	ug/L	ND	1000	1000	983	994	98	99	70-130	1	10
Silver	ug/L	ND	500	500	483	476	97	95	70-130	1	10
Thallium	ug/L	ND	1000	1000	928	935	93	93	70-130	1	6
Zinc	ug/L	106	1000	1000	1070	1080	97	97	70-130	0	11

MATRIX SPIKE SAMPLE: 1305047							
Parameter	Units	60159236002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L		ND	10000	10100	100	70-130
Antimony	ug/L		ND	1000	1020	101	70-130
Arsenic	ug/L		ND	1000	986	98	70-130
Beryllium	ug/L		ND	1000	990	99	70-130
Cadmium	ug/L		ND	1000	991	99	70-130
Chromium	ug/L		ND	1000	989	99	70-130
Cobalt	ug/L		ND	1000	990	99	70-130
Copper	ug/L		ND	1000	981	98	70-130
Iron	ug/L		99.5	10000	9780	97	70-130
Lead	ug/L		ND	1000	982	98	70-130
Nickel	ug/L		ND	1000	998	100	70-130
Selenium	ug/L		ND	1000	996	100	70-130
Silver	ug/L		ND	500	482	96	70-130
Thallium	ug/L		ND	1000	961	96	70-130
Zinc	ug/L		ND	1000	1010	98	70-130

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163
Pace Project No.: 60159508

QC Batch:	MPRP/25618	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60159508001		

METHOD BLANK: 1306471 Matrix: Water
Associated Lab Samples: 60159508001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/17/13 10:16	
Antimony, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Arsenic, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Beryllium, Dissolved	ug/L	ND	1.0	12/17/13 10:16	
Cadmium, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Chromium, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Cobalt, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Copper, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Iron, Dissolved	ug/L	ND	50.0	12/17/13 10:16	
Lead, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Nickel, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Selenium, Dissolved	ug/L	ND	15.0	12/17/13 10:16	
Silver, Dissolved	ug/L	ND	7.0	12/17/13 10:16	
Thallium, Dissolved	ug/L	ND	20.0	12/17/13 10:16	
Zinc, Dissolved	ug/L	ND	50.0	12/17/13 10:16	

LABORATORY CONTROL SAMPLE: 1306472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10000	100	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	969	97	85-115	
Beryllium, Dissolved	ug/L	1000	1010	101	85-115	
Cadmium, Dissolved	ug/L	1000	1010	101	85-115	
Chromium, Dissolved	ug/L	1000	1000	100	85-115	
Cobalt, Dissolved	ug/L	1000	1010	101	85-115	
Copper, Dissolved	ug/L	1000	997	100	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	1020	102	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	999	100	85-115	
Silver, Dissolved	ug/L	500	522	104	85-115	
Thallium, Dissolved	ug/L	1000	1050	105	85-115	
Zinc, Dissolved	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1306473 1306474

Parameter	Units	60159525001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	46.7J	10000	10000	10000	10200	100	101	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1306473 1306474											
Parameter	Units	60159525001		MS	MSD	MSD		MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1000	1010	100	101	70-130	0	7
Arsenic, Dissolved	ug/L	ND	1000	1000	963	968	96	97	70-130	0	10
Beryllium, Dissolved	ug/L	ND	1000	1000	998	1010	100	101	70-130	1	7
Cadmium, Dissolved	ug/L	ND	1000	1000	988	992	99	99	70-130	0	10
Chromium, Dissolved	ug/L	0.83J	1000	1000	979	980	98	98	70-130	0	10
Cobalt, Dissolved	ug/L	ND	1000	1000	987	990	99	99	70-130	0	6
Copper, Dissolved	ug/L	ND	1000	1000	987	980	99	98	70-130	1	11
Iron, Dissolved	ug/L	23.5J	10000	10000	9730	9840	97	98	70-130	1	10
Lead, Dissolved	ug/L	2.9J	1000	1000	986	990	98	99	70-130	0	10
Nickel, Dissolved	ug/L	0.88J	1000	1000	989	994	99	99	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	978	982	98	98	70-130	0	10
Silver, Dissolved	ug/L	ND	500	500	517	516	103	103	70-130	0	10
Thallium, Dissolved	ug/L	ND	1000	1000	983	988	98	99	70-130	1	6
Zinc, Dissolved	ug/L	13.9J	1000	1000	979	984	97	97	70-130	0	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

QC Batch:	MSV/58371	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples: 60159508001, 60159508002			

METHOD BLANK: 1306333 Matrix: Water

Associated Lab Samples: 60159508001, 60159508002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/16/13 16:45	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/16/13 16:45	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/16/13 16:45	
1,2-Dichloroethane	ug/L	ND	1.0	12/16/13 16:45	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/16/13 16:45	
Benzene	ug/L	ND	1.0	12/16/13 16:45	
Bromodichloromethane	ug/L	ND	1.0	12/16/13 16:45	
Bromoform	ug/L	ND	1.0	12/16/13 16:45	
Bromomethane	ug/L	ND	5.0	12/16/13 16:45	
Carbon tetrachloride	ug/L	ND	1.0	12/16/13 16:45	
Chloroethane	ug/L	ND	1.0	12/16/13 16:45	
Chloroform	ug/L	ND	1.0	12/16/13 16:45	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/16/13 16:45	
Ethylbenzene	ug/L	ND	1.0	12/16/13 16:45	
Methylene chloride	ug/L	ND	1.0	12/16/13 16:45	
Tetrachloroethene	ug/L	ND	1.0	12/16/13 16:45	
Toluene	ug/L	ND	1.0	12/16/13 16:45	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/16/13 16:45	
Trichloroethene	ug/L	ND	1.0	12/16/13 16:45	
Vinyl chloride	ug/L	ND	1.0	12/16/13 16:45	
Xylene (Total)	ug/L	ND	3.0	12/16/13 16:45	
1,2-Dichloroethane-d4 (S)	%	98	80-120	12/16/13 16:45	
4-Bromofluorobenzene (S)	%	100	80-120	12/16/13 16:45	
Toluene-d8 (S)	%	93	80-120	12/16/13 16:45	

LABORATORY CONTROL SAMPLE: 1306334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.6	93	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	20.0	100	59-138	
1,1,2-Trichloroethane	ug/L	20	21.0	105	69-127	
1,2-Dichloroethane	ug/L	20	18.0	90	71-129	
1,4-Dichlorobenzene	ug/L	20	19.0	95	68-124	
Benzene	ug/L	20	18.0	90	73-129	
Bromodichloromethane	ug/L	20	18.5	93	63-129	
Bromoform	ug/L	20	20.2	101	52-123	
Bromomethane	ug/L	20	14.2	71	10-160	
Carbon tetrachloride	ug/L	20	19.5	98	70-140	
Chloroethane	ug/L	20	17.7	89	42-160	
Chloroform	ug/L	20	17.2	86	60-120	
cis-1,2-Dichloroethene	ug/L	20	17.7	89	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

LABORATORY CONTROL SAMPLE: 1306334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.8	94	66-133	
Methylene chloride	ug/L	20	16.7	84	56-135	
Tetrachloroethene	ug/L	20	19.5	97	64-143	
Toluene	ug/L	20	17.2	86	70-130	
trans-1,2-Dichloroethene	ug/L	20	17.6	88	67-149	
Trichloroethene	ug/L	20	20.0	100	71-130	
Vinyl chloride	ug/L	20	17.4	87	41-160	
Xylene (Total)	ug/L	60	57.5	96	67-130	
1,2-Dichloroethane-d4 (S)	%			98	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			92	80-120	

MATRIX SPIKE SAMPLE: 1306336

Parameter	Units	60159508001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3870	97	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4110	103	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3920	98	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3650	91	49-155	
1,4-Dichlorobenzene	ug/L	628	4000	4430	95	18-147	
Benzene	ug/L	ND	4000	3690	91	37-151	
Bromodichloromethane	ug/L	ND	4000	3670	92	35-155	
Bromoform	ug/L	ND	4000	3780	94	45-133	
Bromomethane	ug/L	ND	4000	3810	95	10-160	
Carbon tetrachloride	ug/L	ND	4000	4030	101	70-140	
Chloroethane	ug/L	ND	4000	3630	91	14-160	
Chloroform	ug/L	ND	4000	3420	86	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3580	90	19-160	
Ethylbenzene	ug/L	ND	4000	3760	94	37-154	
Methylene chloride	ug/L	ND	4000	3370	84	15-156	
Tetrachloroethene	ug/L	ND	4000	3630	91	64-148	
Toluene	ug/L	ND	4000	3600	89	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3660	91	54-156	
Trichloroethene	ug/L	ND	4000	3930	98	71-157	
Vinyl chloride	ug/L	ND	4000	4150	104	10-160	
Xylene (Total)	ug/L	ND	12000	11000	92	12-153	
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				104	80-120	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			6.0	6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

QC Batch:	MSV/58599	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples: 60159508001, 60159508002			

METHOD BLANK: 1311778 Matrix: Water

Associated Lab Samples: 60159508001, 60159508002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/16/13 16:45	N2
1,2-Dichloroethane-d4 (S)	%	98	80-120	12/16/13 16:45	
4-Bromofluorobenzene (S)	%	100	80-120	12/16/13 16:45	
Toluene-d8 (S)	%	93	80-120	12/16/13 16:45	

LABORATORY CONTROL SAMPLE: 1311779

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	94.5	94	40-160	N2
1,2-Dichloroethane-d4 (S)	%			98	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			92	80-120	

MATRIX SPIKE SAMPLE: 1311780

Parameter	Units	60159508001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	194000	20000	214000	99	40-160	E,N2
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				104	80-120	
Toluene-d8 (S)	%				99	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163
Pace Project No.: 60159508

QC Batch:	OEXT/41938	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159508001		

METHOD BLANK: 1306446 Matrix: Water
Associated Lab Samples: 60159508001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/18/13 08:59	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/18/13 08:59	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/18/13 08:59	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/18/13 08:59	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/18/13 08:59	
Hexachloroethane	ug/L	ND	5.0	12/18/13 08:59	
Naphthalene	ug/L	ND	5.0	12/18/13 08:59	
Nitrobenzene	ug/L	ND	5.0	12/18/13 08:59	
Pentachlorophenol	ug/L	ND	5.0	12/18/13 08:59	
Phenol	ug/L	ND	5.0	12/18/13 08:59	
2,4,6-Tribromophenol (S)	%	77	39-120	12/18/13 08:59	
2-Fluorobiphenyl (S)	%	77	39-120	12/18/13 08:59	
2-Fluorophenol (S)	%	43	17-120	12/18/13 08:59	
Nitrobenzene-d5 (S)	%	74	33-120	12/18/13 08:59	
Phenol-d6 (S)	%	31	11-120	12/18/13 08:59	
Terphenyl-d14 (S)	%	89	45-120	12/18/13 08:59	

LABORATORY CONTROL SAMPLE: 1306447

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	35.9	72	46-120	
2,4,6-Trichlorophenol	ug/L	50	38.8	78	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	44.8	90	40-133	
Hexachloro-1,3-butadiene	ug/L	50	35.7	71	44-116	
Hexachlorocyclopentadiene	ug/L	100	65.4	65	24-120	
Hexachloroethane	ug/L	50	35.7	71	43-113	
Naphthalene	ug/L	50	37.8	76	48-120	
Nitrobenzene	ug/L	50	38.5	77	48-120	
Pentachlorophenol	ug/L	50	35.3	71	47-120	
Phenol	ug/L	50	14.6	29	16-112	
2,4,6-Tribromophenol (S)	%			86	39-120	
2-Fluorobiphenyl (S)	%			79	39-120	
2-Fluorophenol (S)	%			41	17-120	
Nitrobenzene-d5 (S)	%			74	33-120	
Phenol-d6 (S)	%			29	11-120	
Terphenyl-d14 (S)	%			85	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

MATRIX SPIKE SAMPLE:		1306448					
Parameter	Units	60159508001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3090	62	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	3690	74	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3730J	75	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	2940	59	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	5640	56	11-120	
Hexachloroethane	ug/L	ND	5000	2980	60	40-113	
Naphthalene	ug/L	ND	5000	3990	63	45-120	
Nitrobenzene	ug/L	ND	5000	3250	65	38-120	
Pentachlorophenol	ug/L	ND	5000	3750	75	43-135	
Phenol	ug/L	9980	5000	10000	1	13-112	M1
2,4,6-Tribromophenol (S)	%				81	39-120	
2-Fluorobiphenyl (S)	%				68	39-120	
2-Fluorophenol (S)	%				37	17-120	
Nitrobenzene-d5 (S)	%				94	33-120	
Phenol-d6 (S)	%				27	11-120	
Terphenyl-d14 (S)	%				74	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

QC Batch: WET/45133

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60159508001

METHOD BLANK: 1306143

Matrix: Water

Associated Lab Samples: 60159508001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/16/13 11:04	

LABORATORY CONTROL SAMPLE: 1306144

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.7	102	78-114	

MATRIX SPIKE SAMPLE: 1306148

Parameter	Units	60159456001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	13.7	40.8	42.7	71	78-114	M1

SAMPLE DUPLICATE: 1306147

Parameter	Units	60159313002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	15.7	13.8	13	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

QC Batch:	WET/45272	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 SGT-HEM, TPH
Associated Lab Samples:	60159508001		

METHOD BLANK: 1309351 Matrix: Water

Associated Lab Samples: 60159508001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/20/13 09:08	

LABORATORY CONTROL SAMPLE: 1309352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.5	108	64-132	

MATRIX SPIKE SAMPLE: 1309353

Parameter	Units	60159161004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.7	24.6	105	64-132	

SAMPLE DUPLICATE: 1309355

Parameter	Units	60159161005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	1.9J		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

QC Batch: WET/45170

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159508001

METHOD BLANK: 1306788

Matrix: Water

Associated Lab Samples: 60159508001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/17/13 09:37	

SAMPLE DUPLICATE: 1306789

Parameter	Units	60159506001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	172	164	5	25	

SAMPLE DUPLICATE: 1306790

Parameter	Units	60159525001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

QC Batch:	WET/45118	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60159508001		

SAMPLE DUPLICATE: 1305787

Parameter	Units	60159403001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

QC Batch: WET/45113

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159508001

METHOD BLANK: 1305315

Matrix: Water

Associated Lab Samples: 60159508001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/18/13 12:48	

LABORATORY CONTROL SAMPLE: 1305316

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	173	87	85-115	

SAMPLE DUPLICATE: 1305317

Parameter	Units	60159541001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	1770	1810	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

QC Batch: WETA/27587

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159508001

METHOD BLANK: 1308714

Matrix: Water

Associated Lab Samples: 60159508001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/19/13 14:25	

LABORATORY CONTROL SAMPLE: 1308715

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	109	90-110	

MATRIX SPIKE SAMPLE: 1308716

Parameter	Units	60159508001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	846	1000	2220	138	90-110	M1

SAMPLE DUPLICATE: 1308717

Parameter	Units	60159688001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	870	944	8	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

QC Batch:	WETA/27591	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60159508001		

METHOD BLANK: 1309179 Matrix: Water

Associated Lab Samples: 60159508001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/20/13 14:35	

LABORATORY CONTROL SAMPLE: 1309180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	47.4	95	90-110	

MATRIX SPIKE SAMPLE: 1309181

Parameter	Units	60159214001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	6320	5000	12100	116	90-110	M1

MATRIX SPIKE SAMPLE: 1309183

Parameter	Units	60159342001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	13.6	50	47.1	67	90-110	M1

SAMPLE DUPLICATE: 1309182

Parameter	Units	60159214003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	1550	1530	1	25	

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QUALIFIERS

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-163

Pace Project No.: 60159508

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159508001	316-163	EPA 200.7	MPRP/25582	EPA 200.7	ICP/19646
60159508001	316-163	EPA 200.7	MPRP/25618	EPA 200.7	ICP/19673
60159508001	316-163	EPA 245.1	MERP/8009	EPA 245.1	MERC/7963
60159508001	316-163	EPA 245.1	MERP/8008	EPA 245.1	MERC/7964
60159508001	316-163	EPA 625	OEXT/41938	EPA 625	MSSV/13338
60159508001	316-163	EPA 624 Low	MSV/58371		
60159508002	TRIP BLANK	EPA 624 Low	MSV/58371		
60159508001	316-163	EPA 624 Low	MSV/58599		
60159508002	TRIP BLANK	EPA 624 Low	MSV/58599		
60159508001	316-163	EPA 1664A	WET/45133		
60159508001	316-163	EPA 1664A	WET/45272		
60159508001	316-163	SM 2540D	WET/45170		
60159508001	316-163	SM 4500-H+B	WET/45118		
60159508001	316-163	SM 5210B	WET/45113	SM 5210B	WET/45218
60159508001	316-163	EPA 350.1	WETA/27587		
60159508001	316-163	EPA 410.4	WETA/27591		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60159508



60159508

Client Name: BALL

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ Road

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ Zip

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.6

Date and initials of person examining contents: 8/2/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☐ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. BOD, PL
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>W3</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	14.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased): <u>Dec. 03</u>		15.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	16. No headspace
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 12/1/13

December 26, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-164R
Pace Project No.: 60159632

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 14, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report, revised to include acetone on 12/26/13.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159632001	316-164R	Water	12/13/13 09:10	12/14/13 01:15
60159632002	TRIP BLANK	Water	12/13/13 09:10	12/14/13 01:15

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159632001	316-164R	EPA 200.7	TDS	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JML	1
60159632002	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-164R
Pace Project No.: 60159632

Sample: 316-164R		Lab ID: 60159632001	Collected: 12/13/13 09:10	Received: 12/14/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	4110	ug/L	375	1	12/18/13 13:30	12/19/13 17:42	7429-90-5	
Antimony	ND	ug/L	50.0	1	12/18/13 13:30	12/19/13 17:42	7440-36-0	
Arsenic	810	ug/L	50.0	1	12/18/13 13:30	12/19/13 17:42	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/18/13 13:30	12/19/13 17:42	7440-41-7	
Cadmium	ND	ug/L	25.0	1	12/18/13 13:30	12/19/13 17:42	7440-43-9	
Chromium	209	ug/L	25.0	1	12/18/13 13:30	12/19/13 17:42	7440-47-3	
Cobalt	ND	ug/L	25.0	1	12/18/13 13:30	12/19/13 17:42	7440-48-4	
Copper	ND	ug/L	50.0	1	12/18/13 13:30	12/19/13 17:42	7440-50-8	
Iron	481000	ug/L	250	1	12/18/13 13:30	12/19/13 17:42	7439-89-6	
Lead	89.2	ug/L	25.0	1	12/18/13 13:30	12/19/13 17:42	7439-92-1	
Nickel	59.8	ug/L	25.0	1	12/18/13 13:30	12/19/13 17:42	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/18/13 13:30	12/19/13 17:42	7782-49-2	
Silver	ND	ug/L	35.0	1	12/18/13 13:30	12/19/13 17:42	7440-22-4	
Thallium	ND	ug/L	100	1	12/18/13 13:30	12/19/13 17:42	7440-28-0	
Zinc	10700	ug/L	500	2	12/18/13 13:30	12/19/13 17:44	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2880	ug/L	375	1	12/16/13 13:30	12/17/13 11:19	7429-90-5	
Antimony, Dissolved	ND	ug/L	100	2	12/16/13 13:30	12/17/13 11:22	7440-36-0	D3
Arsenic, Dissolved	562	ug/L	50.0	1	12/16/13 13:30	12/17/13 11:19	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/16/13 13:30	12/17/13 11:19	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	25.0	1	12/16/13 13:30	12/17/13 11:19	7440-43-9	
Chromium, Dissolved	179	ug/L	25.0	1	12/16/13 13:30	12/17/13 11:19	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/16/13 13:30	12/17/13 11:19	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/16/13 13:30	12/17/13 11:19	7440-50-8	
Iron, Dissolved	550000	ug/L	500	2	12/16/13 13:30	12/17/13 11:22	7439-89-6	
Lead, Dissolved	81.6	ug/L	25.0	1	12/16/13 13:30	12/17/13 11:19	7439-92-1	
Nickel, Dissolved	80.4	ug/L	25.0	1	12/16/13 13:30	12/17/13 11:19	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/16/13 13:30	12/17/13 11:19	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/16/13 13:30	12/17/13 11:19	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/16/13 13:30	12/17/13 11:19	7440-28-0	
Zinc, Dissolved	7690	ug/L	500	2	12/16/13 13:30	12/17/13 11:22	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	8.2	ug/L	6.0	1	12/17/13 16:10	12/18/13 13:00	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/17/13 16:10	12/18/13 13:48	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/16/13 00:00	12/18/13 17:59	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/16/13 00:00	12/18/13 17:59	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/16/13 00:00	12/18/13 17:59	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/16/13 00:00	12/18/13 17:59	67-72-1	
Naphthalene	1370	ug/L	1000	2	12/16/13 00:00	12/18/13 17:59	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/16/13 00:00	12/18/13 17:59	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

Sample: 316-164R		Lab ID: 60159632001	Collected: 12/13/13 09:10	Received: 12/14/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/16/13 00:00	12/18/13 17:59	87-86-5	
Phenol	11300 ug/L		1000	2	12/16/13 00:00	12/18/13 17:59	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/16/13 00:00	12/18/13 17:59	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/16/13 00:00	12/18/13 17:59	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	112 %		33-120	2	12/16/13 00:00	12/18/13 17:59	4165-60-0	
2-Fluorobiphenyl (S)	72 %		39-120	2	12/16/13 00:00	12/18/13 17:59	321-60-8	
Terphenyl-d14 (S)	83 %		45-120	2	12/16/13 00:00	12/18/13 17:59	1718-51-0	
Phenol-d6 (S)	33 %		11-120	2	12/16/13 00:00	12/18/13 17:59	13127-88-3	
2-Fluorophenol (S)	45 %		17-120	2	12/16/13 00:00	12/18/13 17:59	367-12-4	
2,4,6-Tribromophenol (S)	79 %		39-120	2	12/16/13 00:00	12/18/13 17:59	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/16/13 21:01	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/16/13 21:01	75-27-4	
Bromoform	ND ug/L		200	200		12/16/13 21:01	75-25-2	
Bromomethane	ND ug/L		1000	200		12/16/13 21:01	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/16/13 21:01	56-23-5	
Chloroethane	ND ug/L		200	200		12/16/13 21:01	75-00-3	
Chloroform	ND ug/L		200	200		12/16/13 21:01	67-66-3	
1,4-Dichlorobenzene	895 ug/L		200	200		12/16/13 21:01	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/16/13 21:01	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/16/13 21:01	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/16/13 21:01	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/16/13 21:01	100-41-4	
Methylene chloride	ND ug/L		200	200		12/16/13 21:01	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/16/13 21:01	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/16/13 21:01	127-18-4	
Toluene	ND ug/L		200	200		12/16/13 21:01	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/16/13 21:01	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/16/13 21:01	79-00-5	
Trichloroethene	ND ug/L		200	200		12/16/13 21:01	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/16/13 21:01	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/16/13 21:01	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		12/16/13 21:01	460-00-4	D3
Toluene-d8 (S)	93 %		80-120	200		12/16/13 21:01	2037-26-5	
1,2-Dichloroethane-d4 (S)	107 %		80-120	200		12/16/13 21:01	17060-07-0	
Preservation pH	6.0		1.0	200		12/16/13 21:01		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	183000 ug/L		2000	200		12/16/13 21:01	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		12/16/13 21:01	460-00-4	
Toluene-d8 (S)	93 %		80-120	200		12/16/13 21:01	2037-26-5	
1,2-Dichloroethane-d4 (S)	107 %		80-120	200		12/16/13 21:01	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

Sample: 316-164R		Lab ID: 60159632001	Collected: 12/13/13 09:10	Received: 12/14/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	1110	mg/L	5.0	1		12/16/13 11:06		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	8.8	mg/L	5.0	1		12/20/13 09:10		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	4280	mg/L	5.0	1		12/18/13 14:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		12/18/13 06:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	29800	mg/L	2.0	1	12/14/13 11:27	12/19/13 09:02		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	942	mg/L	50.0	500		12/19/13 14:30	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	54200	mg/L	5000	500		12/23/13 14:59		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

Sample: TRIP BLANK		Lab ID: 60159632002	Collected: 12/13/13 09:10	Received: 12/14/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/16/13 21:17	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/16/13 21:17	75-27-4	
Bromoform	ND ug/L		1.0	1		12/16/13 21:17	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/16/13 21:17	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/16/13 21:17	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/16/13 21:17	75-00-3	
Chloroform	ND ug/L		1.0	1		12/16/13 21:17	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/16/13 21:17	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/16/13 21:17	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/16/13 21:17	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/16/13 21:17	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/16/13 21:17	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/16/13 21:17	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/16/13 21:17	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/16/13 21:17	127-18-4	
Toluene	ND ug/L		1.0	1		12/16/13 21:17	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/16/13 21:17	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/16/13 21:17	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/16/13 21:17	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/16/13 21:17	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/16/13 21:17	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	1		12/16/13 21:17	460-00-4	
Toluene-d8 (S)	97 %		80-120	1		12/16/13 21:17	2037-26-5	
1,2-Dichloroethane-d4 (S)	107 %		80-120	1		12/16/13 21:17	17060-07-0	
Preservation pH	6.0		1.0	1		12/16/13 21:17		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/16/13 21:17	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	1		12/16/13 21:17	460-00-4	
Toluene-d8 (S)	97 %		80-120	1		12/16/13 21:17	2037-26-5	
1,2-Dichloroethane-d4 (S)	107 %		80-120	1		12/16/13 21:17	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

QC Batch: MERP/8009

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159632001

METHOD BLANK: 1307231

Matrix: Water

Associated Lab Samples: 60159632001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/18/13 12:49	

LABORATORY CONTROL SAMPLE: 1307232

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307233 1307234

Parameter	Units	60159515001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.7	4.3	93	86	70-130	8	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

QC Batch: MERP/8008

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60159632001

METHOD BLANK: 1307208

Matrix: Water

Associated Lab Samples: 60159632001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/18/13 13:24	

LABORATORY CONTROL SAMPLE: 1307209

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	91	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307210 1307211

Parameter	Units	60159294001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	138	137	92	92	70-130	0	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R
Pace Project No.: 60159632

QC Batch: MPRP/25646 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60159632001

METHOD BLANK: 1307859 Matrix: Water
Associated Lab Samples: 60159632001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/19/13 17:22	
Antimony	ug/L	ND	10.0	12/19/13 17:22	
Arsenic	ug/L	ND	10.0	12/19/13 17:22	
Beryllium	ug/L	ND	1.0	12/19/13 17:22	
Cadmium	ug/L	ND	5.0	12/19/13 17:22	
Chromium	ug/L	ND	5.0	12/19/13 17:22	
Cobalt	ug/L	ND	5.0	12/19/13 17:22	
Copper	ug/L	ND	10.0	12/19/13 17:22	
Iron	ug/L	ND	50.0	12/19/13 17:22	
Lead	ug/L	ND	5.0	12/19/13 17:22	
Nickel	ug/L	ND	5.0	12/19/13 17:22	
Selenium	ug/L	ND	15.0	12/19/13 17:22	
Silver	ug/L	ND	7.0	12/19/13 17:22	
Thallium	ug/L	ND	20.0	12/19/13 17:22	
Zinc	ug/L	ND	50.0	12/19/13 17:22	

LABORATORY CONTROL SAMPLE: 1307860

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9500	95	85-115	
Antimony	ug/L	1000	1020	102	85-115	
Arsenic	ug/L	1000	957	96	85-115	
Beryllium	ug/L	1000	954	95	85-115	
Cadmium	ug/L	1000	989	99	85-115	
Chromium	ug/L	1000	932	93	85-115	
Cobalt	ug/L	1000	996	100	85-115	
Copper	ug/L	1000	938	94	85-115	
Iron	ug/L	10000	9660	97	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1010	101	85-115	
Selenium	ug/L	1000	999	100	85-115	
Silver	ug/L	500	478	96	85-115	
Thallium	ug/L	1000	1030	103	85-115	
Zinc	ug/L	1000	980	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307861 1307862

Parameter	Units	60159228002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	9590	9550	95	95	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307861 1307862											
Parameter	Units	60159228002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1010	1010	101	101	70-130	0	7
Arsenic	ug/L	ND	1000	1000	977	972	97	97	70-130	0	10
Beryllium	ug/L	ND	1000	1000	965	959	96	96	70-130	1	7
Cadmium	ug/L	ND	1000	1000	988	984	99	98	70-130	0	10
Chromium	ug/L	ND	1000	1000	923	921	92	92	70-130	0	10
Cobalt	ug/L	ND	1000	1000	971	966	97	97	70-130	0	6
Copper	ug/L	40.3	1000	1000	965	963	93	92	70-130	0	11
Iron	ug/L	111	10000	10000	9670	9620	96	95	70-130	1	10
Lead	ug/L	ND	1000	1000	969	963	97	96	70-130	1	10
Nickel	ug/L	ND	1000	1000	972	969	97	97	70-130	0	10
Selenium	ug/L	ND	1000	1000	993	985	99	98	70-130	1	10
Silver	ug/L	ND	500	500	478	478	96	96	70-130	0	10
Thallium	ug/L	ND	1000	1000	955	956	96	96	70-130	0	6
Zinc	ug/L	ND	1000	1000	1010	1010	96	96	70-130	0	11

MATRIX SPIKE SAMPLE: 1307863							
Parameter	Units	60159516001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L		339	10000	9950	96	70-130
Antimony	ug/L		ND	1000	1030	103	70-130
Arsenic	ug/L		ND	1000	987	98	70-130
Beryllium	ug/L		ND	1000	962	96	70-130
Cadmium	ug/L		ND	1000	1010	101	70-130
Chromium	ug/L		ND	1000	922	92	70-130
Cobalt	ug/L		ND	1000	1000	100	70-130
Copper	ug/L		193	1000	1130	94	70-130
Iron	ug/L		1640	10000	11200	96	70-130
Lead	ug/L		13.2	1000	1020	101	70-130
Nickel	ug/L		10.0	1000	1010	100	70-130
Selenium	ug/L		ND	1000	1020	101	70-130
Silver	ug/L		ND	500	479	96	70-130
Thallium	ug/L		ND	1000	1020	102	70-130
Zinc	ug/L		361	1000	1370	101	70-130

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R
Pace Project No.: 60159632

QC Batch: MPRP/25618 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60159632001

METHOD BLANK: 1306471 Matrix: Water
Associated Lab Samples: 60159632001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/17/13 10:16	
Antimony, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Arsenic, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Beryllium, Dissolved	ug/L	ND	1.0	12/17/13 10:16	
Cadmium, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Chromium, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Cobalt, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Copper, Dissolved	ug/L	ND	10.0	12/17/13 10:16	
Iron, Dissolved	ug/L	ND	50.0	12/17/13 10:16	
Lead, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Nickel, Dissolved	ug/L	ND	5.0	12/17/13 10:16	
Selenium, Dissolved	ug/L	ND	15.0	12/17/13 10:16	
Silver, Dissolved	ug/L	ND	7.0	12/17/13 10:16	
Thallium, Dissolved	ug/L	ND	20.0	12/17/13 10:16	
Zinc, Dissolved	ug/L	ND	50.0	12/17/13 10:16	

LABORATORY CONTROL SAMPLE: 1306472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10000	100	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	969	97	85-115	
Beryllium, Dissolved	ug/L	1000	1010	101	85-115	
Cadmium, Dissolved	ug/L	1000	1010	101	85-115	
Chromium, Dissolved	ug/L	1000	1000	100	85-115	
Cobalt, Dissolved	ug/L	1000	1010	101	85-115	
Copper, Dissolved	ug/L	1000	997	100	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	1020	102	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	999	100	85-115	
Silver, Dissolved	ug/L	500	522	104	85-115	
Thallium, Dissolved	ug/L	1000	1050	105	85-115	
Zinc, Dissolved	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1306473 1306474

Parameter	Units	60159525001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	46.7J	10000	10000	10000	10200	100	101	70-130	2	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1306473 1306474											
Parameter	Units	60159525001		MS	MSD	MSD		MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1000	1010	100	101	70-130	0	7
Arsenic, Dissolved	ug/L	ND	1000	1000	963	968	96	97	70-130	0	10
Beryllium, Dissolved	ug/L	ND	1000	1000	998	1010	100	101	70-130	1	7
Cadmium, Dissolved	ug/L	ND	1000	1000	988	992	99	99	70-130	0	10
Chromium, Dissolved	ug/L	0.83J	1000	1000	979	980	98	98	70-130	0	10
Cobalt, Dissolved	ug/L	ND	1000	1000	987	990	99	99	70-130	0	6
Copper, Dissolved	ug/L	ND	1000	1000	987	980	99	98	70-130	1	11
Iron, Dissolved	ug/L	23.5J	10000	10000	9730	9840	97	98	70-130	1	10
Lead, Dissolved	ug/L	2.9J	1000	1000	986	990	98	99	70-130	0	10
Nickel, Dissolved	ug/L	0.88J	1000	1000	989	994	99	99	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	978	982	98	98	70-130	0	10
Silver, Dissolved	ug/L	ND	500	500	517	516	103	103	70-130	0	10
Thallium, Dissolved	ug/L	ND	1000	1000	983	988	98	99	70-130	1	6
Zinc, Dissolved	ug/L	13.9J	1000	1000	979	984	97	97	70-130	0	11

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

QC Batch: MSV/58371 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60159632001, 60159632002

METHOD BLANK: 1306333

Matrix: Water

Associated Lab Samples: 60159632001, 60159632002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/16/13 16:45	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/16/13 16:45	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/16/13 16:45	
1,2-Dichloroethane	ug/L	ND	1.0	12/16/13 16:45	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/16/13 16:45	
Benzene	ug/L	ND	1.0	12/16/13 16:45	
Bromodichloromethane	ug/L	ND	1.0	12/16/13 16:45	
Bromoform	ug/L	ND	1.0	12/16/13 16:45	
Bromomethane	ug/L	ND	5.0	12/16/13 16:45	
Carbon tetrachloride	ug/L	ND	1.0	12/16/13 16:45	
Chloroethane	ug/L	ND	1.0	12/16/13 16:45	
Chloroform	ug/L	ND	1.0	12/16/13 16:45	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/16/13 16:45	
Ethylbenzene	ug/L	ND	1.0	12/16/13 16:45	
Methylene chloride	ug/L	ND	1.0	12/16/13 16:45	
Tetrachloroethene	ug/L	ND	1.0	12/16/13 16:45	
Toluene	ug/L	ND	1.0	12/16/13 16:45	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/16/13 16:45	
Trichloroethene	ug/L	ND	1.0	12/16/13 16:45	
Vinyl chloride	ug/L	ND	1.0	12/16/13 16:45	
Xylene (Total)	ug/L	ND	3.0	12/16/13 16:45	
1,2-Dichloroethane-d4 (S)	%	98	80-120	12/16/13 16:45	
4-Bromofluorobenzene (S)	%	100	80-120	12/16/13 16:45	
Toluene-d8 (S)	%	93	80-120	12/16/13 16:45	

LABORATORY CONTROL SAMPLE: 1306334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.6	93	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	20.0	100	59-138	
1,1,2-Trichloroethane	ug/L	20	21.0	105	69-127	
1,2-Dichloroethane	ug/L	20	18.0	90	71-129	
1,4-Dichlorobenzene	ug/L	20	19.0	95	68-124	
Benzene	ug/L	20	18.0	90	73-129	
Bromodichloromethane	ug/L	20	18.5	93	63-129	
Bromoform	ug/L	20	20.2	101	52-123	
Bromomethane	ug/L	20	14.2	71	10-160	
Carbon tetrachloride	ug/L	20	19.5	98	70-140	
Chloroethane	ug/L	20	17.7	89	42-160	
Chloroform	ug/L	20	17.2	86	60-120	
cis-1,2-Dichloroethene	ug/L	20	17.7	89	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

LABORATORY CONTROL SAMPLE: 1306334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.8	94	66-133	
Methylene chloride	ug/L	20	16.7	84	56-135	
Tetrachloroethene	ug/L	20	19.5	97	64-143	
Toluene	ug/L	20	17.2	86	70-130	
trans-1,2-Dichloroethene	ug/L	20	17.6	88	67-149	
Trichloroethene	ug/L	20	20.0	100	71-130	
Vinyl chloride	ug/L	20	17.4	87	41-160	
Xylene (Total)	ug/L	60	57.5	96	67-130	
1,2-Dichloroethane-d4 (S)	%			98	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			92	80-120	

MATRIX SPIKE SAMPLE: 1306336

Parameter	Units	60159508001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3870	97	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4110	103	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3920	98	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3650	91	49-155	
1,4-Dichlorobenzene	ug/L	628	4000	4430	95	18-147	
Benzene	ug/L	ND	4000	3690	91	37-151	
Bromodichloromethane	ug/L	ND	4000	3670	92	35-155	
Bromoform	ug/L	ND	4000	3780	94	45-133	
Bromomethane	ug/L	ND	4000	3810	95	10-160	
Carbon tetrachloride	ug/L	ND	4000	4030	101	70-140	
Chloroethane	ug/L	ND	4000	3630	91	14-160	
Chloroform	ug/L	ND	4000	3420	86	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3580	90	19-160	
Ethylbenzene	ug/L	ND	4000	3760	94	37-154	
Methylene chloride	ug/L	ND	4000	3370	84	15-156	
Tetrachloroethene	ug/L	ND	4000	3630	91	64-148	
Toluene	ug/L	ND	4000	3600	89	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3660	91	54-156	
Trichloroethene	ug/L	ND	4000	3930	98	71-157	
Vinyl chloride	ug/L	ND	4000	4150	104	10-160	
Xylene (Total)	ug/L	ND	12000	11000	92	12-153	
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				104	80-120	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			6.0	6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

QC Batch:	MSV/58599	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples: 60159632001, 60159632002			

METHOD BLANK: 1311778 Matrix: Water

Associated Lab Samples: 60159632001, 60159632002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/16/13 16:45	N2
1,2-Dichloroethane-d4 (S)	%	98	80-120	12/16/13 16:45	
4-Bromofluorobenzene (S)	%	100	80-120	12/16/13 16:45	
Toluene-d8 (S)	%	93	80-120	12/16/13 16:45	

LABORATORY CONTROL SAMPLE: 1311779

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	94.5	94	40-160	N2
1,2-Dichloroethane-d4 (S)	%			98	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			92	80-120	

MATRIX SPIKE SAMPLE: 1311780

Parameter	Units	60159508001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	194000	20000	214000	99	40-160	E,N2
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				104	80-120	
Toluene-d8 (S)	%				99	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R
Pace Project No.: 60159632

QC Batch:	OEXT/41938	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159632001		

METHOD BLANK: 1306446 Matrix: Water
Associated Lab Samples: 60159632001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/18/13 08:59	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/18/13 08:59	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/18/13 08:59	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/18/13 08:59	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/18/13 08:59	
Hexachloroethane	ug/L	ND	5.0	12/18/13 08:59	
Naphthalene	ug/L	ND	5.0	12/18/13 08:59	
Nitrobenzene	ug/L	ND	5.0	12/18/13 08:59	
Pentachlorophenol	ug/L	ND	5.0	12/18/13 08:59	
Phenol	ug/L	ND	5.0	12/18/13 08:59	
2,4,6-Tribromophenol (S)	%	77	39-120	12/18/13 08:59	
2-Fluorobiphenyl (S)	%	77	39-120	12/18/13 08:59	
2-Fluorophenol (S)	%	43	17-120	12/18/13 08:59	
Nitrobenzene-d5 (S)	%	74	33-120	12/18/13 08:59	
Phenol-d6 (S)	%	31	11-120	12/18/13 08:59	
Terphenyl-d14 (S)	%	89	45-120	12/18/13 08:59	

LABORATORY CONTROL SAMPLE: 1306447

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	35.9	72	46-120	
2,4,6-Trichlorophenol	ug/L	50	38.8	78	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	44.8	90	40-133	
Hexachloro-1,3-butadiene	ug/L	50	35.7	71	44-116	
Hexachlorocyclopentadiene	ug/L	100	65.4	65	24-120	
Hexachloroethane	ug/L	50	35.7	71	43-113	
Naphthalene	ug/L	50	37.8	76	48-120	
Nitrobenzene	ug/L	50	38.5	77	48-120	
Pentachlorophenol	ug/L	50	35.3	71	47-120	
Phenol	ug/L	50	14.6	29	16-112	
2,4,6-Tribromophenol (S)	%			86	39-120	
2-Fluorobiphenyl (S)	%			79	39-120	
2-Fluorophenol (S)	%			41	17-120	
Nitrobenzene-d5 (S)	%			74	33-120	
Phenol-d6 (S)	%			29	11-120	
Terphenyl-d14 (S)	%			85	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

MATRIX SPIKE SAMPLE:		1306448					
Parameter	Units	60159508001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3090	62	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	3690	74	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3730J	75	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	2940	59	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	5640	56	11-120	
Hexachloroethane	ug/L	ND	5000	2980	60	40-113	
Naphthalene	ug/L	ND	5000	3990	63	45-120	
Nitrobenzene	ug/L	ND	5000	3250	65	38-120	
Pentachlorophenol	ug/L	ND	5000	3750	75	43-135	
Phenol	ug/L	9980	5000	10000	1	13-112	M1
2,4,6-Tribromophenol (S)	%				81	39-120	
2-Fluorobiphenyl (S)	%				68	39-120	
2-Fluorophenol (S)	%				37	17-120	
Nitrobenzene-d5 (S)	%				94	33-120	
Phenol-d6 (S)	%				27	11-120	
Terphenyl-d14 (S)	%				74	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

QC Batch: WET/45133

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60159632001

METHOD BLANK: 1306143

Matrix: Water

Associated Lab Samples: 60159632001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/16/13 11:04	

LABORATORY CONTROL SAMPLE: 1306144

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.7	102	78-114	

MATRIX SPIKE SAMPLE: 1306148

Parameter	Units	60159456001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	13.7	40.8	42.7	71	78-114	M1

SAMPLE DUPLICATE: 1306147

Parameter	Units	60159313002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	15.7	13.8	13	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

QC Batch: WET/45272

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159632001

METHOD BLANK: 1309351

Matrix: Water

Associated Lab Samples: 60159632001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/20/13 09:08	

LABORATORY CONTROL SAMPLE: 1309352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.5	108	64-132	

MATRIX SPIKE SAMPLE: 1309353

Parameter	Units	60159161004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.7	24.6	105	64-132	

SAMPLE DUPLICATE: 1309355

Parameter	Units	60159161005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	1.9J		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

QC Batch: WET/45202

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159632001

METHOD BLANK: 1307717

Matrix: Water

Associated Lab Samples: 60159632001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/18/13 14:45	

SAMPLE DUPLICATE: 1307718

Parameter	Units	60159518001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	1510	1470	3	25	

SAMPLE DUPLICATE: 1307719

Parameter	Units	60159621003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	9.0	8.0	12	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

QC Batch: WET/45163

Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B

Analysis Description: 4500H+B pH

Associated Lab Samples: 60159632001

SAMPLE DUPLICATE: 1306621

Parameter	Units	60159517001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.4	8.4	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

QC Batch: WET/45120

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159632001

METHOD BLANK: 1305789

Matrix: Water

Associated Lab Samples: 60159632001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/19/13 07:00	

LABORATORY CONTROL SAMPLE: 1305790

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	184	93	85-115	

SAMPLE DUPLICATE: 1305791

Parameter	Units	60159602002 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	948	878	8	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

QC Batch: WETA/27587

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159632001

METHOD BLANK: 1308714

Matrix: Water

Associated Lab Samples: 60159632001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/19/13 14:25	

LABORATORY CONTROL SAMPLE: 1308715

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	109	90-110	

MATRIX SPIKE SAMPLE: 1308716

Parameter	Units	60159508001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	846	1000	2220	138	90-110	M1

SAMPLE DUPLICATE: 1308717

Parameter	Units	60159688001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	870	944	8	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

QC Batch:	WETA/27623	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60159632001		

METHOD BLANK: 1310547 Matrix: Water

Associated Lab Samples: 60159632001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/23/13 14:43	

LABORATORY CONTROL SAMPLE: 1310548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	51.1	102	90-110	

MATRIX SPIKE SAMPLE: 1310549

Parameter	Units	60159229001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	137	100	237	100	90-110	

SAMPLE DUPLICATE: 1310550

Parameter	Units	60159295001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	ND	4.6J		25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-164R
Pace Project No.: 60159632

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold TNI accreditation for this parameter.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-164R

Pace Project No.: 60159632

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159632001	316-164R	EPA 200.7	MPRP/25646	EPA 200.7	ICP/19686
60159632001	316-164R	EPA 200.7	MPRP/25618	EPA 200.7	ICP/19673
60159632001	316-164R	EPA 245.1	MERP/8009	EPA 245.1	MERC/7963
60159632001	316-164R	EPA 245.1	MERP/8008	EPA 245.1	MERC/7964
60159632001	316-164R	EPA 625	OEXT/41938	EPA 625	MSSV/13338
60159632001	316-164R	EPA 624 Low	MSV/58371		
60159632002	TRIP BLANK	EPA 624 Low	MSV/58371		
60159632001	316-164R	EPA 624 Low	MSV/58599		
60159632002	TRIP BLANK	EPA 624 Low	MSV/58599		
60159632001	316-164R	EPA 1664A	WET/45133		
60159632001	316-164R	EPA 1664A	WET/45272		
60159632001	316-164R	SM 2540D	WET/45202		
60159632001	316-164R	SM 4500-H+B	WET/45163		
60159632001	316-164R	SM 5210B	WET/45120	SM 5210B	WET/45239
60159632001	316-164R	EPA 350.1	WETA/27587		
60159632001	316-164R	EPA 410.4	WETA/27623		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60159632



Client Name: Barr Eng

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ Express Road

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ 2 PIC

Thermometer Used: T-239 / T-194

Type of Ice: Wet ☒ Blue ☐ None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 3.2

Date and initials of person examining contents: PV 12/4/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>PH Bod</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix:	<u>WT</u>	15.
All containers needing preservation have been checked:	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation:	☒ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>PV</u> Lot # of added preservative <u>12513</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	<u>2512540</u> <u>PV 12/14</u>
Pace Trip Blank lot # (if purchased): <u>093013-2</u>		18.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☐ N ☒

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 12/16/13

December 30, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-165
Pace Project No.: 60159688

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 16, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report, revised for the addition of Acetone on 12/26/13.

Amended report to remove extra compound on 12/30/13.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159688001	316-165	Water	12/14/13 16:00	12/16/13 13:00
60159688002	TRIP BLANK	Water	12/14/13 16:00	12/16/13 13:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159688001	316-165	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 624 Low	EAK	4
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JML	1
60159688002	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

Sample: 316-165		Lab ID: 60159688001	Collected: 12/14/13 16:00	Received: 12/16/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	8680	ug/L	375	1	12/18/13 13:30	12/19/13 17:47	7429-90-5	
Antimony	ND	ug/L	50.0	1	12/18/13 13:30	12/19/13 17:47	7440-36-0	
Arsenic	902	ug/L	50.0	1	12/18/13 13:30	12/19/13 17:47	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/18/13 13:30	12/19/13 17:47	7440-41-7	
Cadmium	ND	ug/L	25.0	1	12/18/13 13:30	12/19/13 17:47	7440-43-9	
Chromium	242	ug/L	25.0	1	12/18/13 13:30	12/19/13 17:47	7440-47-3	
Cobalt	39.7	ug/L	25.0	1	12/18/13 13:30	12/19/13 17:47	7440-48-4	
Copper	ND	ug/L	50.0	1	12/18/13 13:30	12/19/13 17:47	7440-50-8	
Iron	766000	ug/L	250	1	12/18/13 13:30	12/19/13 17:47	7439-89-6	
Lead	135	ug/L	25.0	1	12/18/13 13:30	12/19/13 17:47	7439-92-1	
Nickel	81.0	ug/L	25.0	1	12/18/13 13:30	12/19/13 17:47	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/18/13 13:30	12/19/13 17:47	7782-49-2	
Silver	ND	ug/L	35.0	1	12/18/13 13:30	12/19/13 17:47	7440-22-4	
Thallium	ND	ug/L	100	1	12/18/13 13:30	12/19/13 17:47	7440-28-0	
Zinc	10500	ug/L	500	2	12/18/13 13:30	12/19/13 17:49	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3000	ug/L	375	1	12/23/13 10:10	12/23/13 16:00	7429-90-5	
Antimony, Dissolved	ND	ug/L	50.0	1	12/23/13 10:10	12/23/13 16:00	7440-36-0	
Arsenic, Dissolved	621	ug/L	50.0	1	12/23/13 10:10	12/23/13 16:00	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/23/13 10:10	12/23/13 16:00	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	12/23/13 10:10	12/23/13 16:00	7440-43-9	
Chromium, Dissolved	192	ug/L	25.0	1	12/23/13 10:10	12/23/13 16:00	7440-47-3	
Cobalt, Dissolved	25.5	ug/L	25.0	1	12/23/13 10:10	12/23/13 16:00	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/23/13 10:10	12/23/13 16:00	7440-50-8	
Iron, Dissolved	563000	ug/L	250	1	12/23/13 10:10	12/23/13 16:00	7439-89-6	M1
Lead, Dissolved	77.9	ug/L	25.0	1	12/23/13 10:10	12/23/13 16:00	7439-92-1	
Nickel, Dissolved	51.2	ug/L	25.0	1	12/23/13 10:10	12/23/13 16:00	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/23/13 10:10	12/23/13 16:00	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/23/13 10:10	12/23/13 16:00	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/23/13 10:10	12/23/13 16:00	7440-28-0	
Zinc, Dissolved	7620	ug/L	500	2	12/23/13 10:10	12/23/13 16:02	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	6.0	1	12/17/13 16:10	12/18/13 13:02	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/23/13 11:05	12/23/13 14:15	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/18/13 00:00	12/19/13 12:16	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/18/13 00:00	12/19/13 12:16	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/18/13 00:00	12/19/13 12:16	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/18/13 00:00	12/19/13 12:16	67-72-1	
Naphthalene	1100	ug/L	1000	2	12/18/13 00:00	12/19/13 12:16	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/18/13 00:00	12/19/13 12:16	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

Sample: 316-165		Lab ID: 60159688001	Collected: 12/14/13 16:00	Received: 12/16/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/18/13 00:00	12/19/13 12:16	87-86-5	
Phenol	9810 ug/L		1000	2	12/18/13 00:00	12/19/13 12:16	108-95-2	M1
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/18/13 00:00	12/19/13 12:16	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/18/13 00:00	12/19/13 12:16	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	125 %		33-120	2	12/18/13 00:00	12/19/13 12:16	4165-60-0	S0
2-Fluorobiphenyl (S)	83 %		39-120	2	12/18/13 00:00	12/19/13 12:16	321-60-8	
Terphenyl-d14 (S)	95 %		45-120	2	12/18/13 00:00	12/19/13 12:16	1718-51-0	
Phenol-d6 (S)	31 %		11-120	2	12/18/13 00:00	12/19/13 12:16	13127-88-3	
2-Fluorophenol (S)	42 %		17-120	2	12/18/13 00:00	12/19/13 12:16	367-12-4	
2,4,6-Tribromophenol (S)	89 %		39-120	2	12/18/13 00:00	12/19/13 12:16	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/18/13 01:51	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/18/13 01:51	75-27-4	
Bromoform	ND ug/L		200	200		12/18/13 01:51	75-25-2	
Bromomethane	ND ug/L		1000	200		12/18/13 01:51	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/18/13 01:51	56-23-5	
Chloroethane	ND ug/L		200	200		12/18/13 01:51	75-00-3	
Chloroform	ND ug/L		200	200		12/18/13 01:51	67-66-3	
1,3-Dichlorobenzene	ND ug/L		200	200		12/18/13 01:51	541-73-1	
1,4-Dichlorobenzene	784 ug/L		200	200		12/18/13 01:51	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/18/13 01:51	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/18/13 01:51	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/18/13 01:51	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/18/13 01:51	100-41-4	
Methylene chloride	ND ug/L		200	200		12/19/13 14:40	75-09-2	D3
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/18/13 01:51	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/18/13 01:51	127-18-4	
Toluene	ND ug/L		200	200		12/18/13 01:51	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/18/13 01:51	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/18/13 01:51	79-00-5	
Trichloroethene	ND ug/L		200	200		12/18/13 01:51	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/18/13 01:51	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/18/13 01:51	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	96 %		80-120	200		12/18/13 01:51	460-00-4	D3
Toluene-d8 (S)	95 %		80-120	200		12/18/13 01:51	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	200		12/18/13 01:51	17060-07-0	
Preservation pH	6.0		1.0	200		12/18/13 01:51		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	93500 ug/L		2000	200		12/18/13 01:51	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	96 %		80-120	200		12/18/13 01:51	460-00-4	
Toluene-d8 (S)	95 %		80-120	200		12/18/13 01:51	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	200		12/18/13 01:51	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

Sample: 316-165		Lab ID: 60159688001	Collected: 12/14/13 16:00	Received: 12/16/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	1430	mg/L	5.0	1		12/18/13 08:05		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	7.3	mg/L	5.0	1		12/20/13 09:12		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2340	mg/L	5.0	1		12/18/13 14:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		12/18/13 06:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	25900	mg/L	2.0	1	12/16/13 15:19	12/21/13 08:46		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	870	mg/L	50.0	500		12/19/13 14:31	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	52900	mg/L	5000	500		12/23/13 15:00		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

Sample: TRIP BLANK		Lab ID: 60159688002	Collected: 12/14/13 16:00	Received: 12/16/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/18/13 02:22	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/18/13 02:22	75-27-4	
Bromoform	ND ug/L		1.0	1		12/18/13 02:22	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/18/13 02:22	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/18/13 02:22	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/18/13 02:22	75-00-3	
Chloroform	ND ug/L		1.0	1		12/18/13 02:22	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/18/13 02:22	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/18/13 02:22	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/18/13 02:22	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/18/13 02:22	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/18/13 02:22	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/18/13 02:22	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/18/13 02:22	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/18/13 02:22	127-18-4	
Toluene	ND ug/L		1.0	1		12/18/13 02:22	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/18/13 02:22	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/18/13 02:22	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/18/13 02:22	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/18/13 02:22	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/18/13 02:22	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	1		12/18/13 02:22	460-00-4	
Toluene-d8 (S)	104 %		80-120	1		12/18/13 02:22	2037-26-5	
1,2-Dichloroethane-d4 (S)	100 %		80-120	1		12/18/13 02:22	17060-07-0	
Preservation pH	6.0		1.0	1		12/18/13 02:22		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/18/13 02:22	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	1		12/18/13 02:22	460-00-4	
Toluene-d8 (S)	104 %		80-120	1		12/18/13 02:22	2037-26-5	
1,2-Dichloroethane-d4 (S)	100 %		80-120	1		12/18/13 02:22	17060-07-0	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

QC Batch: MERP/8009

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159688001

METHOD BLANK: 1307231

Matrix: Water

Associated Lab Samples: 60159688001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/18/13 12:49	

LABORATORY CONTROL SAMPLE: 1307232

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307233 1307234

Parameter	Units	60159515001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.7	4.3	93	86	70-130	8	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

QC Batch: MERP/8021

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60159688001

METHOD BLANK: 1310732

Matrix: Water

Associated Lab Samples: 60159688001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/23/13 14:11	

LABORATORY CONTROL SAMPLE: 1310733

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310734 1310735

Parameter	Units	60159689001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	101	111	67	74	70-130	10	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165
Pace Project No.: 60159688

QC Batch:	MPRP/25646	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
Associated Lab Samples:	60159688001		

METHOD BLANK: 1307859 Matrix: Water
Associated Lab Samples: 60159688001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/19/13 17:22	
Antimony	ug/L	ND	10.0	12/19/13 17:22	
Arsenic	ug/L	ND	10.0	12/19/13 17:22	
Beryllium	ug/L	ND	1.0	12/19/13 17:22	
Cadmium	ug/L	ND	5.0	12/19/13 17:22	
Chromium	ug/L	ND	5.0	12/19/13 17:22	
Cobalt	ug/L	ND	5.0	12/19/13 17:22	
Copper	ug/L	ND	10.0	12/19/13 17:22	
Iron	ug/L	ND	50.0	12/19/13 17:22	
Lead	ug/L	ND	5.0	12/19/13 17:22	
Nickel	ug/L	ND	5.0	12/19/13 17:22	
Selenium	ug/L	ND	15.0	12/19/13 17:22	
Silver	ug/L	ND	7.0	12/19/13 17:22	
Thallium	ug/L	ND	20.0	12/19/13 17:22	
Zinc	ug/L	ND	50.0	12/19/13 17:22	

LABORATORY CONTROL SAMPLE: 1307860

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9500	95	85-115	
Antimony	ug/L	1000	1020	102	85-115	
Arsenic	ug/L	1000	957	96	85-115	
Beryllium	ug/L	1000	954	95	85-115	
Cadmium	ug/L	1000	989	99	85-115	
Chromium	ug/L	1000	932	93	85-115	
Cobalt	ug/L	1000	996	100	85-115	
Copper	ug/L	1000	938	94	85-115	
Iron	ug/L	10000	9660	97	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1010	101	85-115	
Selenium	ug/L	1000	999	100	85-115	
Silver	ug/L	500	478	96	85-115	
Thallium	ug/L	1000	1030	103	85-115	
Zinc	ug/L	1000	980	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307861 1307862

Parameter	Units	60159228002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	9590	9550	95	95	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307861 1307862											
Parameter	Units	60159228002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1010	1010	101	101	70-130	0	7
Arsenic	ug/L	ND	1000	1000	977	972	97	97	70-130	0	10
Beryllium	ug/L	ND	1000	1000	965	959	96	96	70-130	1	7
Cadmium	ug/L	ND	1000	1000	988	984	99	98	70-130	0	10
Chromium	ug/L	ND	1000	1000	923	921	92	92	70-130	0	10
Cobalt	ug/L	ND	1000	1000	971	966	97	97	70-130	0	6
Copper	ug/L	40.3	1000	1000	965	963	93	92	70-130	0	11
Iron	ug/L	111	10000	10000	9670	9620	96	95	70-130	1	10
Lead	ug/L	ND	1000	1000	969	963	97	96	70-130	1	10
Nickel	ug/L	ND	1000	1000	972	969	97	97	70-130	0	10
Selenium	ug/L	ND	1000	1000	993	985	99	98	70-130	1	10
Silver	ug/L	ND	500	500	478	478	96	96	70-130	0	10
Thallium	ug/L	ND	1000	1000	955	956	96	96	70-130	0	6
Zinc	ug/L	ND	1000	1000	1010	1010	96	96	70-130	0	11

MATRIX SPIKE SAMPLE: 1307863							
Parameter	Units	60159516001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	339	10000	9950	96	70-130	
Antimony	ug/L	ND	1000	1030	103	70-130	
Arsenic	ug/L	ND	1000	987	98	70-130	
Beryllium	ug/L	ND	1000	962	96	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	922	92	70-130	
Cobalt	ug/L	ND	1000	1000	100	70-130	
Copper	ug/L	193	1000	1130	94	70-130	
Iron	ug/L	1640	10000	11200	96	70-130	
Lead	ug/L	13.2	1000	1020	101	70-130	
Nickel	ug/L	10.0	1000	1010	100	70-130	
Selenium	ug/L	ND	1000	1020	101	70-130	
Silver	ug/L	ND	500	479	96	70-130	
Thallium	ug/L	ND	1000	1020	102	70-130	
Zinc	ug/L	361	1000	1370	101	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165
Pace Project No.: 60159688

QC Batch:	MPRP/25698	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60159688001		

METHOD BLANK: 1310716 Matrix: Water
Associated Lab Samples: 60159688001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/23/13 15:55	
Antimony, Dissolved	ug/L	ND	10.0	12/23/13 15:55	
Arsenic, Dissolved	ug/L	ND	10.0	12/23/13 15:55	
Beryllium, Dissolved	ug/L	ND	1.0	12/23/13 15:55	
Cadmium, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Chromium, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Cobalt, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Copper, Dissolved	ug/L	ND	10.0	12/23/13 15:55	
Iron, Dissolved	ug/L	ND	50.0	12/23/13 15:55	
Lead, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Nickel, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Selenium, Dissolved	ug/L	ND	15.0	12/23/13 15:55	
Silver, Dissolved	ug/L	ND	7.0	12/23/13 15:55	
Thallium, Dissolved	ug/L	ND	20.0	12/23/13 15:55	
Zinc, Dissolved	ug/L	ND	50.0	12/23/13 15:55	

LABORATORY CONTROL SAMPLE: 1310717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9830	98	85-115	
Antimony, Dissolved	ug/L	1000	1020	102	85-115	
Arsenic, Dissolved	ug/L	1000	973	97	85-115	
Beryllium, Dissolved	ug/L	1000	994	99	85-115	
Cadmium, Dissolved	ug/L	1000	1000	100	85-115	
Chromium, Dissolved	ug/L	1000	981	98	85-115	
Cobalt, Dissolved	ug/L	1000	1010	101	85-115	
Copper, Dissolved	ug/L	1000	993	99	85-115	
Iron, Dissolved	ug/L	10000	9980	100	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	1010	101	85-115	
Silver, Dissolved	ug/L	500	498	100	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	978	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310718 1310719

Parameter	Units	60159688001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	3000	50000	50000	52500	52400	99	99	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310718 1310719											
Parameter	Units	60159688001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5170	5120	103	102	70-130	1	7
Arsenic, Dissolved	ug/L	621	5000	5000	5800	5690	103	101	70-130	2	10
Beryllium, Dissolved	ug/L	ND	5000	5000	4860	4830	97	97	70-130	1	7
Cadmium, Dissolved	ug/L	ND	5000	5000	5080	5040	102	101	70-130	1	10
Chromium, Dissolved	ug/L	192	5000	5000	5010	4990	96	96	70-130	0	10
Cobalt, Dissolved	ug/L	25.5	5000	5000	4780	4730	95	94	70-130	1	6
Copper, Dissolved	ug/L	ND	5000	5000	5120	5120	102	102	70-130	0	11
Iron, Dissolved	ug/L	563000	50000	50000	566000	570000	7	14	70-130	1	10 M1
Lead, Dissolved	ug/L	77.9	5000	5000	4590	4510	90	89	70-130	2	10
Nickel, Dissolved	ug/L	51.2	5000	5000	4790	4730	95	94	70-130	1	10
Selenium, Dissolved	ug/L	ND	5000	5000	5480	5380	110	108	70-130	2	10
Silver, Dissolved	ug/L	ND	2500	2500	2590	2580	104	103	70-130	0	10
Thallium, Dissolved	ug/L	ND	5000	5000	4240	4180	85	84	70-130	1	6
Zinc, Dissolved	ug/L	7620	5000	5000	11600	11600	81	80	70-130	0	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

QC Batch: MSV/58418 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60159688001, 60159688002

METHOD BLANK: 1307296

Matrix: Water

Associated Lab Samples: 60159688001, 60159688002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/18/13 01:21	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/18/13 01:21	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/18/13 01:21	
1,2-Dichloroethane	ug/L	ND	1.0	12/18/13 01:21	
1,3-Dichlorobenzene	ug/L	ND	1.0	12/18/13 01:21	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/18/13 01:21	
Benzene	ug/L	ND	1.0	12/18/13 01:21	
Bromodichloromethane	ug/L	ND	1.0	12/18/13 01:21	
Bromoform	ug/L	ND	1.0	12/18/13 01:21	
Bromomethane	ug/L	ND	5.0	12/18/13 01:21	
Carbon tetrachloride	ug/L	ND	1.0	12/18/13 01:21	
Chloroethane	ug/L	ND	1.0	12/18/13 01:21	
Chloroform	ug/L	ND	1.0	12/18/13 01:21	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/18/13 01:21	
Ethylbenzene	ug/L	ND	1.0	12/18/13 01:21	
Methylene chloride	ug/L	ND	1.0	12/18/13 01:21	
Tetrachloroethene	ug/L	ND	1.0	12/18/13 01:21	
Toluene	ug/L	ND	1.0	12/18/13 01:21	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/18/13 01:21	
Trichloroethene	ug/L	ND	1.0	12/18/13 01:21	
Vinyl chloride	ug/L	ND	1.0	12/18/13 01:21	
Xylene (Total)	ug/L	ND	3.0	12/18/13 01:21	
1,2-Dichloroethane-d4 (S)	%	104	80-120	12/18/13 01:21	
4-Bromofluorobenzene (S)	%	101	80-120	12/18/13 01:21	
Toluene-d8 (S)	%	96	80-120	12/18/13 01:21	

LABORATORY CONTROL SAMPLE: 1307297

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.8	89	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	19.4	97	59-138	
1,1,2-Trichloroethane	ug/L	20	20.7	103	69-127	
1,2-Dichloroethane	ug/L	20	19.1	95	71-129	
1,3-Dichlorobenzene	ug/L	20	18.1	91	63-127	
1,4-Dichlorobenzene	ug/L	20	19.3	97	68-124	
Benzene	ug/L	20	18.7	94	73-129	
Bromodichloromethane	ug/L	20	19.2	96	63-129	
Bromoform	ug/L	20	20.9	105	52-123	
Bromomethane	ug/L	20	15.3	77	10-160	
Carbon tetrachloride	ug/L	20	19.1	96	70-140	
Chloroethane	ug/L	20	18.7	93	42-160	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

LABORATORY CONTROL SAMPLE: 1307297

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	20	19.8	99	60-120	
cis-1,2-Dichloroethene	ug/L	20	17.6	88	70-125	
Ethylbenzene	ug/L	20	19.1	95	66-133	
Methylene chloride	ug/L	20	19.1	95	56-135	
Tetrachloroethene	ug/L	20	18.6	93	64-143	
Toluene	ug/L	20	17.8	89	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.1	90	67-149	
Trichloroethene	ug/L	20	19.3	97	71-130	
Vinyl chloride	ug/L	20	17.1	85	41-160	
Xylene (Total)	ug/L	60	55.7	93	67-130	
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			96	80-120	

MATRIX SPIKE SAMPLE: 1307298

Parameter	Units	60159688001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3860	97	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4260	107	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	4280	107	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3730	93	49-155	
1,3-Dichlorobenzene	ug/L	ND	4000	3400	85	59-146	
1,4-Dichlorobenzene	ug/L	784	4000	4430	91	18-147	
Benzene	ug/L	ND	4000	3820	94	37-151	
Bromodichloromethane	ug/L	ND	4000	4140	104	35-155	
Bromoform	ug/L	ND	4000	3610	90	45-133	
Bromomethane	ug/L	ND	4000	3050	76	10-160	
Carbon tetrachloride	ug/L	ND	4000	4250	106	70-140	
Chloroethane	ug/L	ND	4000	3830	96	14-160	
Chloroform	ug/L	ND	4000	4120	103	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3680	92	19-160	
Ethylbenzene	ug/L	ND	4000	3790	93	37-154	
Tetrachloroethene	ug/L	ND	4000	3970	99	64-148	
Toluene	ug/L	ND	4000	3790	94	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3680	92	54-156	
Trichloroethene	ug/L	ND	4000	4110	103	71-157	
Vinyl chloride	ug/L	ND	4000	3830	96	10-160	
Xylene (Total)	ug/L	ND	12000	11500	96	12-153	
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				96	80-120	
Preservation pH			6.0		6.0		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165
Pace Project No.: 60159688

QC Batch:	MSV/58469	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60159688001		

METHOD BLANK: 1308464 Matrix: Water
Associated Lab Samples: 60159688001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methylene chloride	ug/L	ND	1.0	12/19/13 14:25	
1,2-Dichloroethane-d4 (S)	%	96	80-120	12/19/13 14:25	
4-Bromofluorobenzene (S)	%	99	80-120	12/19/13 14:25	
Toluene-d8 (S)	%	99	80-120	12/19/13 14:25	

LABORATORY CONTROL SAMPLE: 1308465

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methylene chloride	ug/L	20	20.7	104	56-135	
1,2-Dichloroethane-d4 (S)	%			97	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			102	80-120	

MATRIX SPIKE SAMPLE: 1308466

Parameter	Units	60159815001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Methylene chloride	ug/L	ND	4000	4130	103	15-156	
1,2-Dichloroethane-d4 (S)	%				92	80-120	
4-Bromofluorobenzene (S)	%				96	80-120	
Toluene-d8 (S)	%				103	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

QC Batch:	MSV/58602	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples: 60159688001, 60159688002			

METHOD BLANK: 1311801 Matrix: Water

Associated Lab Samples: 60159688001, 60159688002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/18/13 01:21	N2
1,2-Dichloroethane-d4 (S)	%	104	80-120	12/18/13 01:21	
4-Bromofluorobenzene (S)	%	101	80-120	12/18/13 01:21	
Toluene-d8 (S)	%	96	80-120	12/18/13 01:21	

LABORATORY CONTROL SAMPLE: 1311802

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	80.8	81	40-160	N2
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			96	80-120	

MATRIX SPIKE SAMPLE: 1311803

Parameter	Units	60159688001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	93500	20000	108000	74	40-160	N2
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				96	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165
Pace Project No.: 60159688

QC Batch:	OEXT/41986	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159688001		

METHOD BLANK: 1307583 Matrix: Water
Associated Lab Samples: 60159688001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/19/13 11:13	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/19/13 11:13	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/19/13 11:13	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/19/13 11:13	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/19/13 11:13	
Hexachloroethane	ug/L	ND	5.0	12/19/13 11:13	
Naphthalene	ug/L	ND	5.0	12/19/13 11:13	
Nitrobenzene	ug/L	ND	5.0	12/19/13 11:13	
Pentachlorophenol	ug/L	ND	5.0	12/19/13 11:13	
Phenol	ug/L	ND	5.0	12/19/13 11:13	
2,4,6-Tribromophenol (S)	%	68	39-120	12/19/13 11:13	
2-Fluorobiphenyl (S)	%	76	39-120	12/19/13 11:13	
2-Fluorophenol (S)	%	37	17-120	12/19/13 11:13	
Nitrobenzene-d5 (S)	%	75	33-120	12/19/13 11:13	
Phenol-d6 (S)	%	23	11-120	12/19/13 11:13	
Terphenyl-d14 (S)	%	91	45-120	12/19/13 11:13	

LABORATORY CONTROL SAMPLE: 1307584

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	43.1	86	46-120	
2,4,6-Trichlorophenol	ug/L	50	44.2	88	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	47.2	94	40-133	
Hexachloro-1,3-butadiene	ug/L	50	42.7	85	44-116	
Hexachlorocyclopentadiene	ug/L	100	73.8	74	24-120	
Hexachloroethane	ug/L	50	43.4	87	43-113	
Naphthalene	ug/L	50	43.1	86	48-120	
Nitrobenzene	ug/L	50	44.1	88	48-120	
Pentachlorophenol	ug/L	50	31.4	63	47-120	
Phenol	ug/L	50	17.2	34	16-112	
2,4,6-Tribromophenol (S)	%			90	39-120	
2-Fluorobiphenyl (S)	%			88	39-120	
2-Fluorophenol (S)	%			41	17-120	
Nitrobenzene-d5 (S)	%			83	33-120	
Phenol-d6 (S)	%			28	11-120	
Terphenyl-d14 (S)	%			90	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

MATRIX SPIKE SAMPLE:		1307585					
Parameter	Units	60159688001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	4140	83	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4390	88	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	4380J	88	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	4250	85	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	7110	71	11-120	
Hexachloroethane	ug/L	ND	5000	4370	87	40-113	
Naphthalene	ug/L	1100	5000	5000	78	45-120	
Nitrobenzene	ug/L	ND	5000	4430	89	38-120	
Pentachlorophenol	ug/L	ND	5000	4100	82	43-135	
Phenol	ug/L	9810	5000	8090	-34	13-112	M1
2,4,6-Tribromophenol (S)	%				87	39-120	
2-Fluorobiphenyl (S)	%				82	39-120	
2-Fluorophenol (S)	%				41	17-120	
Nitrobenzene-d5 (S)	%				114	33-120	
Phenol-d6 (S)	%				28	11-120	
Terphenyl-d14 (S)	%				89	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

QC Batch: WET/45196

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60159688001

METHOD BLANK: 1307530

Matrix: Water

Associated Lab Samples: 60159688001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/18/13 08:04	

LABORATORY CONTROL SAMPLE: 1307531

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.3	103	78-114	

MATRIX SPIKE SAMPLE: 1307534

Parameter	Units	60159556002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	41.2	44.9	102	78-114	

SAMPLE DUPLICATE: 1307535

Parameter	Units	60159521003 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	6.1	5.5	10	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

QC Batch: WET/45272

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159688001

METHOD BLANK: 1309351

Matrix: Water

Associated Lab Samples: 60159688001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/20/13 09:08	

LABORATORY CONTROL SAMPLE: 1309352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.5	108	64-132	

MATRIX SPIKE SAMPLE: 1309353

Parameter	Units	60159161004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.7	24.6	105	64-132	

SAMPLE DUPLICATE: 1309355

Parameter	Units	60159161005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	1.9J		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

QC Batch: WET/45202

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159688001

METHOD BLANK: 1307717

Matrix: Water

Associated Lab Samples: 60159688001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/18/13 14:45	

SAMPLE DUPLICATE: 1307718

Parameter	Units	5091934001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	1510	1470	3	25	

SAMPLE DUPLICATE: 1307719

Parameter	Units	60159621003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	9.0	8.0	12	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

QC Batch: WET/45163 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60159688001

SAMPLE DUPLICATE: 1306621

Parameter	Units	60159517001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.4	8.4	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

QC Batch: WET/45162

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159688001

METHOD BLANK: 1306591

Matrix: Water

Associated Lab Samples: 60159688001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/21/13 08:41	

LABORATORY CONTROL SAMPLE: 1306592

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	196	99	85-115	

SAMPLE DUPLICATE: 1306593

Parameter	Units	60159688001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	25900	25100	3	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

QC Batch: WETA/27587

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159688001

METHOD BLANK: 1308714

Matrix: Water

Associated Lab Samples: 60159688001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/19/13 14:25	

LABORATORY CONTROL SAMPLE: 1308715

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	109	90-110	

MATRIX SPIKE SAMPLE: 1308716

Parameter	Units	60159508001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	846	1000	2220	138	90-110	M1

SAMPLE DUPLICATE: 1308717

Parameter	Units	60159688001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	870	944	8	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

QC Batch:	WETA/27623	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60159688001		

METHOD BLANK: 1310547 Matrix: Water

Associated Lab Samples: 60159688001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/23/13 14:43	

LABORATORY CONTROL SAMPLE: 1310548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	51.1	102	90-110	

MATRIX SPIKE SAMPLE: 1310549

Parameter	Units	60159229001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	137	100	237	100	90-110	

SAMPLE DUPLICATE: 1310550

Parameter	Units	60159295001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	ND	4.6J		25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-165

Pace Project No.: 60159688

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159688001	316-165	EPA 200.7	MPRP/25646	EPA 200.7	ICP/19686
60159688001	316-165	EPA 200.7	MPRP/25698	EPA 200.7	ICP/19713
60159688001	316-165	EPA 245.1	MERP/8009	EPA 245.1	MERC/7963
60159688001	316-165	EPA 245.1	MERP/8021	EPA 245.1	MERC/7977
60159688001	316-165	EPA 625	OEXT/41986	EPA 625	MSSV/13339
60159688001	316-165	EPA 624 Low	MSV/58418		
60159688001	316-165	EPA 624 Low	MSV/58469		
60159688002	TRIP BLANK	EPA 624 Low	MSV/58418		
60159688001	316-165	EPA 624 Low	MSV/58602		
60159688002	TRIP BLANK	EPA 624 Low	MSV/58602		
60159688001	316-165	EPA 1664A	WET/45196		
60159688001	316-165	EPA 1664A	WET/45272		
60159688001	316-165	SM 2540D	WET/45202		
60159688001	316-165	SM 4500-H+B	WET/45163		
60159688001	316-165	SM 5210B	WET/45162	SM 5210B	WET/45284
60159688001	316-165	EPA 350.1	WETA/27587		
60159688001	316-165	EPA 410.4	WETA/27623		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO# : 60159688



60159688

Client Name: Barr

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ VLA

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-239 / T-194

Type of Ice: Not Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.4

Date and initials of person examining contents: 12/16/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Soil pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked:	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation:	☐ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform; TOC, <u>DOC</u> , WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased):		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒ Field Data Required? Y ☐ N ☒

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 12/19/13

Sample	Intact	Y/N
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December 26, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-167R
Pace Project No.: 60159815

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 18, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159815001	316-167R	Water	12/16/13 10:15	12/18/13 02:30
60159815002	TRIP BLANK	Water	12/16/13 10:15	12/18/13 02:30

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159815001	316-167R	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JML	1
		EPA 624 Low	EAK	26
60159815002	TRIP BLANK			

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-167R
Pace Project No.: 60159815

Sample: 316-167R		Lab ID: 60159815001	Collected: 12/16/13 10:15	Received: 12/18/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	3920 ug/L		375	1	12/18/13 13:30	12/19/13 18:28	7429-90-5	
Antimony	ND ug/L		50.0	1	12/18/13 13:30	12/19/13 18:28	7440-36-0	
Arsenic	590 ug/L		50.0	1	12/18/13 13:30	12/19/13 18:28	7440-38-2	
Beryllium	ND ug/L		5.0	1	12/18/13 13:30	12/19/13 18:28	7440-41-7	
Cadmium	ND ug/L		25.0	1	12/18/13 13:30	12/19/13 18:28	7440-43-9	
Chromium	161 ug/L		25.0	1	12/18/13 13:30	12/19/13 18:28	7440-47-3	
Cobalt	ND ug/L		25.0	1	12/18/13 13:30	12/19/13 18:28	7440-48-4	
Copper	ND ug/L		50.0	1	12/18/13 13:30	12/19/13 18:28	7440-50-8	
Iron	469000 ug/L		250	1	12/18/13 13:30	12/19/13 18:28	7439-89-6	
Lead	71.6 ug/L		25.0	1	12/18/13 13:30	12/19/13 18:28	7439-92-1	
Nickel	58.0 ug/L		25.0	1	12/18/13 13:30	12/19/13 18:28	7440-02-0	
Selenium	ND ug/L		75.0	1	12/18/13 13:30	12/19/13 18:28	7782-49-2	
Silver	ND ug/L		35.0	1	12/18/13 13:30	12/19/13 18:28	7440-22-4	
Thallium	ND ug/L		100	1	12/18/13 13:30	12/19/13 18:28	7440-28-0	
Zinc	8510 ug/L		500	2	12/18/13 13:30	12/19/13 18:30	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2840 ug/L		375	1	12/23/13 10:10	12/23/13 16:27	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	1	12/23/13 10:10	12/23/13 16:27	7440-36-0	
Arsenic, Dissolved	538 ug/L		50.0	1	12/23/13 10:10	12/23/13 16:27	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	1	12/23/13 10:10	12/23/13 16:27	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	1	12/23/13 10:10	12/23/13 16:27	7440-43-9	
Chromium, Dissolved	165 ug/L		25.0	1	12/23/13 10:10	12/23/13 16:27	7440-47-3	
Cobalt, Dissolved	ND ug/L		25.0	1	12/23/13 10:10	12/23/13 16:27	7440-48-4	
Copper, Dissolved	ND ug/L		50.0	1	12/23/13 10:10	12/23/13 16:27	7440-50-8	
Iron, Dissolved	534000 ug/L		250	1	12/23/13 10:10	12/23/13 16:27	7439-89-6	
Lead, Dissolved	67.4 ug/L		25.0	1	12/23/13 10:10	12/23/13 16:27	7439-92-1	
Nickel, Dissolved	41.9 ug/L		25.0	1	12/23/13 10:10	12/23/13 16:27	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	1	12/23/13 10:10	12/23/13 16:27	7782-49-2	
Silver, Dissolved	ND ug/L		35.0	1	12/23/13 10:10	12/23/13 16:27	7440-22-4	
Thallium, Dissolved	ND ug/L		100	1	12/23/13 10:10	12/23/13 16:27	7440-28-0	
Zinc, Dissolved	7280 ug/L		500	2	12/23/13 10:10	12/23/13 16:30	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	1.3 ug/L		0.20	1	12/19/13 13:00	12/19/13 14:52	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		6.0	1	12/23/13 11:05	12/23/13 14:26	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	2	12/19/13 00:00	12/19/13 16:44	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:44	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:44	77-47-4	
Hexachloroethane	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:44	67-72-1	
Naphthalene	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:44	91-20-3	
Nitrobenzene	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:44	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

Sample: 316-167R		Lab ID: 60159815001	Collected: 12/16/13 10:15	Received: 12/18/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:44	87-86-5	
Phenol	8900 ug/L		1000	2	12/19/13 00:00	12/19/13 16:44	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:44	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:44	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	103 %		33-120	2	12/19/13 00:00	12/19/13 16:44	4165-60-0	
2-Fluorobiphenyl (S)	69 %		39-120	2	12/19/13 00:00	12/19/13 16:44	321-60-8	
Terphenyl-d14 (S)	82 %		45-120	2	12/19/13 00:00	12/19/13 16:44	1718-51-0	
Phenol-d6 (S)	33 %		11-120	2	12/19/13 00:00	12/19/13 16:44	13127-88-3	
2-Fluorophenol (S)	44 %		17-120	2	12/19/13 00:00	12/19/13 16:44	367-12-4	
2,4,6-Tribromophenol (S)	77 %		39-120	2	12/19/13 00:00	12/19/13 16:44	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	93600 ug/L		2000	200		12/19/13 15:10	67-64-1	N2
Benzene	ND ug/L		200	200		12/19/13 15:10	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/19/13 15:10	75-27-4	
Bromoform	ND ug/L		200	200		12/19/13 15:10	75-25-2	
Bromomethane	ND ug/L		1000	200		12/19/13 15:10	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/19/13 15:10	56-23-5	
Chloroethane	ND ug/L		200	200		12/19/13 15:10	75-00-3	
Chloroform	ND ug/L		200	200		12/19/13 15:10	67-66-3	
1,4-Dichlorobenzene	665 ug/L		200	200		12/19/13 15:10	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/19/13 15:10	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/19/13 15:10	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/19/13 15:10	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/19/13 15:10	100-41-4	
Methylene chloride	ND ug/L		200	200		12/19/13 15:10	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/19/13 15:10	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/19/13 15:10	127-18-4	
Toluene	ND ug/L		200	200		12/19/13 15:10	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/19/13 15:10	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/19/13 15:10	79-00-5	
Trichloroethene	ND ug/L		200	200		12/19/13 15:10	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/19/13 15:10	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/19/13 15:10	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		12/19/13 15:10	460-00-4	D3
4-Bromofluorobenzene (S)	99 %		80-120	200		12/19/13 15:10	460-00-4	
Toluene-d8 (S)	102 %		80-120	200		12/19/13 15:10	2037-26-5	
Toluene-d8 (S)	102 %		80-120	200		12/19/13 15:10	2037-26-5	
1,2-Dichloroethane-d4 (S)	97 %		80-120	200		12/19/13 15:10	17060-07-0	
1,2-Dichloroethane-d4 (S)	97 %		80-120	200		12/19/13 15:10	17060-07-0	
Preservation pH	6.0		1.0	200		12/19/13 15:10		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	501 mg/L		5.0	1		12/19/13 07:56		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

Sample: 316-167R		Lab ID: 60159815001	Collected: 12/16/13 10:15	Received: 12/18/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	ND	mg/L	5.0	1		12/20/13 09:13		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2500	mg/L	5.0	1		12/19/13 14:48		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		12/19/13 06:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	24000	mg/L	2.0	1	12/18/13 10:08	12/23/13 08:59		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	583	mg/L	20.0	200		12/23/13 15:57	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	38600	mg/L	5000	500		12/26/13 13:26		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

Sample: TRIP BLANK		Lab ID: 60159815002	Collected: 12/16/13 10:15	Received: 12/18/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/19/13 15:40	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/19/13 15:40	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/19/13 15:40	75-27-4	
Bromoform	ND ug/L		1.0	1		12/19/13 15:40	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/19/13 15:40	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/19/13 15:40	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/19/13 15:40	75-00-3	
Chloroform	ND ug/L		1.0	1		12/19/13 15:40	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/19/13 15:40	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/19/13 15:40	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/19/13 15:40	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/19/13 15:40	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/19/13 15:40	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/19/13 15:40	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/19/13 15:40	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/19/13 15:40	127-18-4	
Toluene	ND ug/L		1.0	1		12/19/13 15:40	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/19/13 15:40	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/19/13 15:40	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/19/13 15:40	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/19/13 15:40	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/19/13 15:40	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	1		12/19/13 15:40	460-00-4	
4-Bromofluorobenzene (S)	101 %		80-120	1		12/19/13 15:40	460-00-4	
Toluene-d8 (S)	101 %		80-120	1		12/19/13 15:40	2037-26-5	
Toluene-d8 (S)	101 %		80-120	1		12/19/13 15:40	2037-26-5	
1,2-Dichloroethane-d4 (S)	94 %		80-120	1		12/19/13 15:40	17060-07-0	
1,2-Dichloroethane-d4 (S)	94 %		80-120	1		12/19/13 15:40	17060-07-0	
Preservation pH	6.0		1.0	1		12/19/13 15:40		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

QC Batch: MERP/8011

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159815001

METHOD BLANK: 1308534

Matrix: Water

Associated Lab Samples: 60159815001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/19/13 14:41	

LABORATORY CONTROL SAMPLE: 1308535

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1308536 1308537

Parameter	Units	60159791001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	1.7	2.7	34	54	70-130	44	20	M1, R1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

QC Batch: MERP/8021

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60159815001

METHOD BLANK: 1310732

Matrix: Water

Associated Lab Samples: 60159815001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/23/13 14:11	

LABORATORY CONTROL SAMPLE: 1310733

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310734 1310735

Parameter	Units	60159689001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	101	111	67	74	70-130	10	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R
Pace Project No.: 60159815

QC Batch: MPRP/25646 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60159815001

METHOD BLANK: 1307859 Matrix: Water
Associated Lab Samples: 60159815001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/19/13 17:22	
Antimony	ug/L	ND	10.0	12/19/13 17:22	
Arsenic	ug/L	ND	10.0	12/19/13 17:22	
Beryllium	ug/L	ND	1.0	12/19/13 17:22	
Cadmium	ug/L	ND	5.0	12/19/13 17:22	
Chromium	ug/L	ND	5.0	12/19/13 17:22	
Cobalt	ug/L	ND	5.0	12/19/13 17:22	
Copper	ug/L	ND	10.0	12/19/13 17:22	
Iron	ug/L	ND	50.0	12/19/13 17:22	
Lead	ug/L	ND	5.0	12/19/13 17:22	
Nickel	ug/L	ND	5.0	12/19/13 17:22	
Selenium	ug/L	ND	15.0	12/19/13 17:22	
Silver	ug/L	ND	7.0	12/19/13 17:22	
Thallium	ug/L	ND	20.0	12/19/13 17:22	
Zinc	ug/L	ND	50.0	12/19/13 17:22	

LABORATORY CONTROL SAMPLE: 1307860

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9500	95	85-115	
Antimony	ug/L	1000	1020	102	85-115	
Arsenic	ug/L	1000	957	96	85-115	
Beryllium	ug/L	1000	954	95	85-115	
Cadmium	ug/L	1000	989	99	85-115	
Chromium	ug/L	1000	932	93	85-115	
Cobalt	ug/L	1000	996	100	85-115	
Copper	ug/L	1000	938	94	85-115	
Iron	ug/L	10000	9660	97	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1010	101	85-115	
Selenium	ug/L	1000	999	100	85-115	
Silver	ug/L	500	478	96	85-115	
Thallium	ug/L	1000	1030	103	85-115	
Zinc	ug/L	1000	980	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307861 1307862

Parameter	Units	60159228002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	9590	9550	95	95	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307861 1307862											
Parameter	Units	60159228002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1010	1010	101	101	70-130	0	7
Arsenic	ug/L	ND	1000	1000	977	972	97	97	70-130	0	10
Beryllium	ug/L	ND	1000	1000	965	959	96	96	70-130	1	7
Cadmium	ug/L	ND	1000	1000	988	984	99	98	70-130	0	10
Chromium	ug/L	ND	1000	1000	923	921	92	92	70-130	0	10
Cobalt	ug/L	ND	1000	1000	971	966	97	97	70-130	0	6
Copper	ug/L	40.3	1000	1000	965	963	93	92	70-130	0	11
Iron	ug/L	111	10000	10000	9670	9620	96	95	70-130	1	10
Lead	ug/L	ND	1000	1000	969	963	97	96	70-130	1	10
Nickel	ug/L	ND	1000	1000	972	969	97	97	70-130	0	10
Selenium	ug/L	ND	1000	1000	993	985	99	98	70-130	1	10
Silver	ug/L	ND	500	500	478	478	96	96	70-130	0	10
Thallium	ug/L	ND	1000	1000	955	956	96	96	70-130	0	6
Zinc	ug/L	ND	1000	1000	1010	1010	96	96	70-130	0	11

MATRIX SPIKE SAMPLE: 1307863							
Parameter	Units	60159516001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	339	10000	9950	96	70-130	
Antimony	ug/L	ND	1000	1030	103	70-130	
Arsenic	ug/L	ND	1000	987	98	70-130	
Beryllium	ug/L	ND	1000	962	96	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	922	92	70-130	
Cobalt	ug/L	ND	1000	1000	100	70-130	
Copper	ug/L	193	1000	1130	94	70-130	
Iron	ug/L	1640	10000	11200	96	70-130	
Lead	ug/L	13.2	1000	1020	101	70-130	
Nickel	ug/L	10.0	1000	1010	100	70-130	
Selenium	ug/L	ND	1000	1020	101	70-130	
Silver	ug/L	ND	500	479	96	70-130	
Thallium	ug/L	ND	1000	1020	102	70-130	
Zinc	ug/L	361	1000	1370	101	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R
Pace Project No.: 60159815

QC Batch: MPRP/25698 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60159815001

METHOD BLANK: 1310716 Matrix: Water
Associated Lab Samples: 60159815001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/23/13 15:55	
Antimony, Dissolved	ug/L	ND	10.0	12/23/13 15:55	
Arsenic, Dissolved	ug/L	ND	10.0	12/23/13 15:55	
Beryllium, Dissolved	ug/L	ND	1.0	12/23/13 15:55	
Cadmium, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Chromium, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Cobalt, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Copper, Dissolved	ug/L	ND	10.0	12/23/13 15:55	
Iron, Dissolved	ug/L	ND	50.0	12/23/13 15:55	
Lead, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Nickel, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Selenium, Dissolved	ug/L	ND	15.0	12/23/13 15:55	
Silver, Dissolved	ug/L	ND	7.0	12/23/13 15:55	
Thallium, Dissolved	ug/L	ND	20.0	12/23/13 15:55	
Zinc, Dissolved	ug/L	ND	50.0	12/23/13 15:55	

LABORATORY CONTROL SAMPLE: 1310717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9830	98	85-115	
Antimony, Dissolved	ug/L	1000	1020	102	85-115	
Arsenic, Dissolved	ug/L	1000	973	97	85-115	
Beryllium, Dissolved	ug/L	1000	994	99	85-115	
Cadmium, Dissolved	ug/L	1000	1000	100	85-115	
Chromium, Dissolved	ug/L	1000	981	98	85-115	
Cobalt, Dissolved	ug/L	1000	1010	101	85-115	
Copper, Dissolved	ug/L	1000	993	99	85-115	
Iron, Dissolved	ug/L	10000	9980	100	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	1010	101	85-115	
Silver, Dissolved	ug/L	500	498	100	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	978	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310718 1310719

Parameter	Units	6015988001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	3000	50000	50000	52500	52400	99	99	70-130	0	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310718 1310719												
Parameter	Units	60159688001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Antimony, Dissolved	ug/L	ND	5000	5000	5170	5120	103	102	70-130	1	7	
Arsenic, Dissolved	ug/L	621	5000	5000	5800	5690	103	101	70-130	2	10	
Beryllium, Dissolved	ug/L	ND	5000	5000	4860	4830	97	97	70-130	1	7	
Cadmium, Dissolved	ug/L	ND	5000	5000	5080	5040	102	101	70-130	1	10	
Chromium, Dissolved	ug/L	192	5000	5000	5010	4990	96	96	70-130	0	10	
Cobalt, Dissolved	ug/L	25.5	5000	5000	4780	4730	95	94	70-130	1	6	
Copper, Dissolved	ug/L	ND	5000	5000	5120	5120	102	102	70-130	0	11	
Iron, Dissolved	ug/L	563000	50000	50000	566000	570000	7	14	70-130	1	10	M1
Lead, Dissolved	ug/L	77.9	5000	5000	4590	4510	90	89	70-130	2	10	
Nickel, Dissolved	ug/L	51.2	5000	5000	4790	4730	95	94	70-130	1	10	
Selenium, Dissolved	ug/L	ND	5000	5000	5480	5380	110	108	70-130	2	10	
Silver, Dissolved	ug/L	ND	2500	2500	2590	2580	104	103	70-130	0	10	
Thallium, Dissolved	ug/L	ND	5000	5000	4240	4180	85	84	70-130	1	6	
Zinc, Dissolved	ug/L	7620	5000	5000	11600	11600	81	80	70-130	0	11	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

QC Batch: MSV/58469 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60159815001, 60159815002

METHOD BLANK: 1308464

Matrix: Water

Associated Lab Samples: 60159815001, 60159815002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/19/13 14:25	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/19/13 14:25	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/19/13 14:25	
1,2-Dichloroethane	ug/L	ND	1.0	12/19/13 14:25	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/19/13 14:25	
Benzene	ug/L	ND	1.0	12/19/13 14:25	
Bromodichloromethane	ug/L	ND	1.0	12/19/13 14:25	
Bromoform	ug/L	ND	1.0	12/19/13 14:25	
Bromomethane	ug/L	ND	5.0	12/19/13 14:25	
Carbon tetrachloride	ug/L	ND	1.0	12/19/13 14:25	
Chloroethane	ug/L	ND	1.0	12/19/13 14:25	
Chloroform	ug/L	ND	1.0	12/19/13 14:25	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/19/13 14:25	
Ethylbenzene	ug/L	ND	1.0	12/19/13 14:25	
Methylene chloride	ug/L	ND	1.0	12/19/13 14:25	
Tetrachloroethene	ug/L	ND	1.0	12/19/13 14:25	
Toluene	ug/L	ND	1.0	12/19/13 14:25	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/19/13 14:25	
Trichloroethene	ug/L	ND	1.0	12/19/13 14:25	
Vinyl chloride	ug/L	ND	1.0	12/19/13 14:25	
Xylene (Total)	ug/L	ND	3.0	12/19/13 14:25	
1,2-Dichloroethane-d4 (S)	%	96	80-120	12/19/13 14:25	
4-Bromofluorobenzene (S)	%	99	80-120	12/19/13 14:25	
Toluene-d8 (S)	%	99	80-120	12/19/13 14:25	

LABORATORY CONTROL SAMPLE: 1308465

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.4	92	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	19.1	95	59-138	
1,1,2-Trichloroethane	ug/L	20	18.8	94	69-127	
1,2-Dichloroethane	ug/L	20	18.1	91	71-129	
1,4-Dichlorobenzene	ug/L	20	16.4	82	68-124	
Benzene	ug/L	20	18.2	91	73-129	
Bromodichloromethane	ug/L	20	19.6	98	63-129	
Bromoform	ug/L	20	18.8	94	52-123	
Bromomethane	ug/L	20	15.7	78	10-160	
Carbon tetrachloride	ug/L	20	19.7	98	70-140	
Chloroethane	ug/L	20	18.9	95	42-160	
Chloroform	ug/L	20	18.4	92	60-120	
cis-1,2-Dichloroethene	ug/L	20	17.8	89	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

LABORATORY CONTROL SAMPLE: 1308465

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.1	91	66-133	
Methylene chloride	ug/L	20	20.7	104	56-135	
Tetrachloroethene	ug/L	20	18.3	91	64-143	
Toluene	ug/L	20	18.9	95	70-130	
trans-1,2-Dichloroethene	ug/L	20	19.8	99	67-149	
Trichloroethene	ug/L	20	19.0	95	71-130	
Vinyl chloride	ug/L	20	18.3	92	41-160	
Xylene (Total)	ug/L	60	55.6	93	67-130	
1,2-Dichloroethane-d4 (S)	%			97	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			102	80-120	

MATRIX SPIKE SAMPLE: 1308466

Parameter	Units	60159815001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3620	90	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3680	92	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3860	96	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3380	85	49-155	
1,4-Dichlorobenzene	ug/L	665	4000	4240	89	18-147	
Benzene	ug/L	ND	4000	3670	90	37-151	
Bromodichloromethane	ug/L	ND	4000	3630	91	35-155	
Bromoform	ug/L	ND	4000	3720	93	45-133	
Bromomethane	ug/L	ND	4000	3530	88	10-160	
Carbon tetrachloride	ug/L	ND	4000	3900	97	70-140	
Chloroethane	ug/L	ND	4000	3290	82	14-160	
Chloroform	ug/L	ND	4000	3430	86	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3330	83	19-160	
Ethylbenzene	ug/L	ND	4000	3880	95	37-154	
Methylene chloride	ug/L	ND	4000	4130	103	15-156	
Tetrachloroethene	ug/L	ND	4000	3700	92	64-148	
Toluene	ug/L	ND	4000	3730	92	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3900	97	54-156	
Trichloroethene	ug/L	ND	4000	3770	94	71-157	
Vinyl chloride	ug/L	ND	4000	3790	95	10-160	
Xylene (Total)	ug/L	ND	12000	11800	99	12-153	
1,2-Dichloroethane-d4 (S)	%				92	80-120	
4-Bromofluorobenzene (S)	%				96	80-120	
Toluene-d8 (S)	%				103	80-120	
Preservation pH			6.0	6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

QC Batch:	MSV/58590	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples: 60159815001, 60159815002			

METHOD BLANK: 1311740 Matrix: Water

Associated Lab Samples: 60159815001, 60159815002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/19/13 14:25	N2
1,2-Dichloroethane-d4 (S)	%	96	80-120	12/19/13 14:25	
4-Bromofluorobenzene (S)	%	99	80-120	12/19/13 14:25	
Toluene-d8 (S)	%	99	80-120	12/19/13 14:25	

LABORATORY CONTROL SAMPLE: 1311741

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	74.6	75	40-160	N2
1,2-Dichloroethane-d4 (S)	%			97	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			102	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R
Pace Project No.: 60159815

QC Batch:	OEXT/42002	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159815001		

METHOD BLANK: 1308405 Matrix: Water
Associated Lab Samples: 60159815001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/19/13 15:21	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/19/13 15:21	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/19/13 15:21	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/19/13 15:21	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/19/13 15:21	
Hexachloroethane	ug/L	ND	5.0	12/19/13 15:21	
Naphthalene	ug/L	ND	5.0	12/19/13 15:21	
Nitrobenzene	ug/L	ND	5.0	12/19/13 15:21	
Pentachlorophenol	ug/L	ND	5.0	12/19/13 15:21	
Phenol	ug/L	ND	5.0	12/19/13 15:21	
2,4,6-Tribromophenol (S)	%	63	39-120	12/19/13 15:21	
2-Fluorobiphenyl (S)	%	69	39-120	12/19/13 15:21	
2-Fluorophenol (S)	%	39	17-120	12/19/13 15:21	
Nitrobenzene-d5 (S)	%	69	33-120	12/19/13 15:21	
Phenol-d6 (S)	%	26	11-120	12/19/13 15:21	
Terphenyl-d14 (S)	%	75	45-120	12/19/13 15:21	

LABORATORY CONTROL SAMPLE: 1308406

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	33.6	67	46-120	
2,4,6-Trichlorophenol	ug/L	50	35.4	71	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	37.5	75	40-133	
Hexachloro-1,3-butadiene	ug/L	50	30.7	61	44-116	
Hexachlorocyclopentadiene	ug/L	100	54.5	54	24-120	
Hexachloroethane	ug/L	50	33.2	66	43-113	
Naphthalene	ug/L	50	35.2	70	48-120	
Nitrobenzene	ug/L	50	36.2	72	48-120	
Pentachlorophenol	ug/L	50	26.3	53	47-120	
Phenol	ug/L	50	17.7	35	16-112	
2,4,6-Tribromophenol (S)	%			69	39-120	
2-Fluorobiphenyl (S)	%			70	39-120	
2-Fluorophenol (S)	%			41	17-120	
Nitrobenzene-d5 (S)	%			69	33-120	
Phenol-d6 (S)	%			28	11-120	
Terphenyl-d14 (S)	%			73	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

MATRIX SPIKE SAMPLE:		1308407					
Parameter	Units	60159814001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	2960	59	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	3160	63	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3030J	61	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	2870	57	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	4770	48	11-120	
Hexachloroethane	ug/L	ND	5000	3000	60	40-113	
Naphthalene	ug/L	ND	5000	3590	59	45-120	
Nitrobenzene	ug/L	ND	5000	3110	62	38-120	
Pentachlorophenol	ug/L	ND	5000	2880	58	43-135	
Phenol	ug/L	8780	5000	10000	24	13-112	
2,4,6-Tribromophenol (S)	%				65	39-120	
2-Fluorobiphenyl (S)	%				59	39-120	
2-Fluorophenol (S)	%				38	17-120	
Nitrobenzene-d5 (S)	%				90	33-120	
Phenol-d6 (S)	%				30	11-120	
Terphenyl-d14 (S)	%				63	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

QC Batch:	WET/45230	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60159815001		

METHOD BLANK: 1308381 Matrix: Water

Associated Lab Samples: 60159815001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/19/13 07:55	

LABORATORY CONTROL SAMPLE: 1308382

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.6	102	78-114	

MATRIX SPIKE SAMPLE: 1308383

Parameter	Units	60159826001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	42.1	39.9	88	78-114	

SAMPLE DUPLICATE: 1308389

Parameter	Units	60159579002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

QC Batch: WET/45272

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159815001

METHOD BLANK: 1309351

Matrix: Water

Associated Lab Samples: 60159815001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/20/13 09:08	

LABORATORY CONTROL SAMPLE: 1309352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.5	108	64-132	

MATRIX SPIKE SAMPLE: 1309353

Parameter	Units	60159161004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.7	24.6	105	64-132	

SAMPLE DUPLICATE: 1309355

Parameter	Units	60159161005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	1.9J		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

QC Batch: WET/45235

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159815001

METHOD BLANK: 1308448

Matrix: Water

Associated Lab Samples: 60159815001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/19/13 14:46	

SAMPLE DUPLICATE: 1308449

Parameter	Units	60159804001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1308450

Parameter	Units	60159745001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	6000	5960	1	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

QC Batch:	WET/45226	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60159815001		

SAMPLE DUPLICATE: 1308343

Parameter	Units	60159815001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.4	5.5	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

QC Batch: WET/45212

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159815001

METHOD BLANK: 1307771

Matrix: Water

Associated Lab Samples: 60159815001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/23/13 08:56	

LABORATORY CONTROL SAMPLE: 1307772

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	189	96	85-115	

SAMPLE DUPLICATE: 1307773

Parameter	Units	60159815001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	24000	24000	0	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

QC Batch: WETA/27629

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159815001

METHOD BLANK: 1310641

Matrix: Water

Associated Lab Samples: 60159815001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/23/13 15:50	

LABORATORY CONTROL SAMPLE: 1310642

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	104	90-110	

MATRIX SPIKE SAMPLE: 1310643

Parameter	Units	60159814001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	528	400	888	90	90-110	

SAMPLE DUPLICATE: 1310644

Parameter	Units	60159520001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

QC Batch:	WETA/27652	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60159815001		

METHOD BLANK: 1311667 Matrix: Water

Associated Lab Samples: 60159815001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/26/13 13:49	

LABORATORY CONTROL SAMPLE: 1311668

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	52.6	105	90-110	

MATRIX SPIKE SAMPLE: 1311669

Parameter	Units	60159376001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	63.6	110	90-110	

SAMPLE DUPLICATE: 1311670

Parameter	Units	60159385002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	605	555	9	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-167R

Pace Project No.: 60159815

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159815001	316-167R	EPA 200.7	MPRP/25646	EPA 200.7	ICP/19686
60159815001	316-167R	EPA 200.7	MPRP/25698	EPA 200.7	ICP/19713
60159815001	316-167R	EPA 245.1	MERP/8011	EPA 245.1	MERC/7967
60159815001	316-167R	EPA 245.1	MERP/8021	EPA 245.1	MERC/7977
60159815001	316-167R	EPA 625	OEXT/42002	EPA 625	MSSV/13346
60159815001	316-167R	EPA 624 Low	MSV/58469		
60159815001	316-167R	EPA 624 Low	MSV/58590		
60159815002	TRIP BLANK	EPA 624 Low	MSV/58469		
60159815002	TRIP BLANK	EPA 624 Low	MSV/58590		
60159815001	316-167R	EPA 1664A	WET/45230		
60159815001	316-167R	EPA 1664A	WET/45272		
60159815001	316-167R	SM 2540D	WET/45235		
60159815001	316-167R	SM 4500-H+B	WET/45226		
60159815001	316-167R	SM 5210B	WET/45212	SM 5210B	WET/45303
60159815001	316-167R	EPA 350.1	WETA/27629		
60159815001	316-167R	EPA 410.4	WETA/27652		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60159815



Client Name: BARR

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ YR

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ zip

Thermometer Used: T-239 T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.2

Date and initials of person examining contents: 8/12/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, PH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>Dec. 04</u>		20.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 12/19/13

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:					
SIGNATURE of SAMPLER:	DATE Signed:				
 John Powell					
					
					
					
					
					
					
					
					
					
					

December 26, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-166RR
Pace Project No.: 60159689

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 16, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report, revised for the addition of Acetone on 12/26/13.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159689001	316-166RR	Water	12/15/13 10:25	12/16/13 13:00
60159689002	316-166RR [O&G]	Water	12/15/13 10:25	12/16/13 13:00
60159689003	TRIP BLANK	Water	12/15/13 10:25	12/16/13 13:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159689001	316-166RR	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JML	1
60159689002	316-166RR [O&G]	EPA 1664A	JMC1	1
60159689003	TRIP BLANK	EPA 624 Low	EAK	25
		EPA 624 Low	EAK	4

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

Sample: 316-166RR		Lab ID: 60159689001	Collected: 12/15/13 10:25	Received: 12/16/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	8440 ug/L		375	1	12/18/13 13:30	12/19/13 17:56	7429-90-5	
Antimony	ND ug/L		50.0	1	12/18/13 13:30	12/19/13 17:56	7440-36-0	
Arsenic	670 ug/L		50.0	1	12/18/13 13:30	12/19/13 17:56	7440-38-2	
Beryllium	ND ug/L		5.0	1	12/18/13 13:30	12/19/13 17:56	7440-41-7	
Cadmium	ND ug/L		25.0	1	12/18/13 13:30	12/19/13 17:56	7440-43-9	
Chromium	206 ug/L		25.0	1	12/18/13 13:30	12/19/13 17:56	7440-47-3	
Cobalt	32.2 ug/L		25.0	1	12/18/13 13:30	12/19/13 17:56	7440-48-4	
Copper	ND ug/L		50.0	1	12/18/13 13:30	12/19/13 17:56	7440-50-8	
Iron	726000 ug/L		250	1	12/18/13 13:30	12/19/13 17:56	7439-89-6	
Lead	132 ug/L		25.0	1	12/18/13 13:30	12/19/13 17:56	7439-92-1	
Nickel	65.7 ug/L		25.0	1	12/18/13 13:30	12/19/13 17:56	7440-02-0	
Selenium	ND ug/L		75.0	1	12/18/13 13:30	12/19/13 17:56	7782-49-2	
Silver	ND ug/L		35.0	1	12/18/13 13:30	12/19/13 17:56	7440-22-4	
Thallium	ND ug/L		100	1	12/18/13 13:30	12/19/13 17:56	7440-28-0	
Zinc	8780 ug/L		500	2	12/18/13 13:30	12/19/13 17:58	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3080 ug/L		375	1	12/23/13 10:10	12/23/13 16:13	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	1	12/23/13 10:10	12/23/13 16:13	7440-36-0	
Arsenic, Dissolved	601 ug/L		50.0	1	12/23/13 10:10	12/23/13 16:13	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	1	12/23/13 10:10	12/23/13 16:13	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	1	12/23/13 10:10	12/23/13 16:13	7440-43-9	
Chromium, Dissolved	192 ug/L		25.0	1	12/23/13 10:10	12/23/13 16:13	7440-47-3	
Cobalt, Dissolved	ND ug/L		25.0	1	12/23/13 10:10	12/23/13 16:13	7440-48-4	
Copper, Dissolved	ND ug/L		50.0	1	12/23/13 10:10	12/23/13 16:13	7440-50-8	
Iron, Dissolved	623000 ug/L		250	1	12/23/13 10:10	12/23/13 16:13	7439-89-6	
Lead, Dissolved	71.8 ug/L		25.0	1	12/23/13 10:10	12/23/13 16:13	7439-92-1	
Nickel, Dissolved	46.2 ug/L		25.0	1	12/23/13 10:10	12/23/13 16:13	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	1	12/23/13 10:10	12/23/13 16:13	7782-49-2	
Silver, Dissolved	ND ug/L		35.0	1	12/23/13 10:10	12/23/13 16:13	7440-22-4	
Thallium, Dissolved	ND ug/L		100	1	12/23/13 10:10	12/23/13 16:13	7440-28-0	
Zinc, Dissolved	8180 ug/L		500	2	12/23/13 10:10	12/23/13 16:16	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	23.3 ug/L		6.0	1	12/17/13 16:10	12/18/13 13:04	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		6.0	1	12/23/13 11:05	12/23/13 14:17	7439-97-6	M1
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	2	12/18/13 00:00	12/19/13 12:36	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	2	12/18/13 00:00	12/19/13 12:36	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	2	12/18/13 00:00	12/19/13 12:36	77-47-4	
Hexachloroethane	ND ug/L		1000	2	12/18/13 00:00	12/19/13 12:36	67-72-1	
Naphthalene	ND ug/L		1000	2	12/18/13 00:00	12/19/13 12:36	91-20-3	
Nitrobenzene	ND ug/L		1000	2	12/18/13 00:00	12/19/13 12:36	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

Sample: 316-166RR		Lab ID: 60159689001	Collected: 12/15/13 10:25	Received: 12/16/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/18/13 00:00	12/19/13 12:36	87-86-5	
Phenol	7080 ug/L		1000	2	12/18/13 00:00	12/19/13 12:36	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/18/13 00:00	12/19/13 12:36	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/18/13 00:00	12/19/13 12:36	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	114 %		33-120	2	12/18/13 00:00	12/19/13 12:36	4165-60-0	
2-Fluorobiphenyl (S)	82 %		39-120	2	12/18/13 00:00	12/19/13 12:36	321-60-8	
Terphenyl-d14 (S)	91 %		45-120	2	12/18/13 00:00	12/19/13 12:36	1718-51-0	
Phenol-d6 (S)	27 %		11-120	2	12/18/13 00:00	12/19/13 12:36	13127-88-3	
2-Fluorophenol (S)	38 %		17-120	2	12/18/13 00:00	12/19/13 12:36	367-12-4	
2,4,6-Tribromophenol (S)	85 %		39-120	2	12/18/13 00:00	12/19/13 12:36	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		12/18/13 02:36	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/18/13 02:36	75-27-4	
Bromoform	ND ug/L		200	200		12/18/13 02:36	75-25-2	
Bromomethane	ND ug/L		1000	200		12/18/13 02:36	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/18/13 02:36	56-23-5	
Chloroethane	ND ug/L		200	200		12/18/13 02:36	75-00-3	
Chloroform	ND ug/L		200	200		12/18/13 02:36	67-66-3	
1,4-Dichlorobenzene	793 ug/L		200	200		12/18/13 02:36	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/18/13 02:36	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/18/13 02:36	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/18/13 02:36	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/18/13 02:36	100-41-4	
Methylene chloride	ND ug/L		200	200		12/19/13 14:55	75-09-2	D3
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/18/13 02:36	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/18/13 02:36	127-18-4	
Toluene	ND ug/L		200	200		12/18/13 02:36	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/18/13 02:36	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/18/13 02:36	79-00-5	
Trichloroethene	ND ug/L		200	200		12/18/13 02:36	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/18/13 02:36	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/18/13 02:36	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	104 %		80-120	200		12/18/13 02:36	460-00-4	D3
Toluene-d8 (S)	102 %		80-120	200		12/18/13 02:36	2037-26-5	
1,2-Dichloroethane-d4 (S)	96 %		80-120	200		12/18/13 02:36	17060-07-0	
Preservation pH	6.0		1.0	200		12/18/13 02:36		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	89100 ug/L		2000	200		12/18/13 02:36	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	104 %		80-120	200		12/18/13 02:36	460-00-4	
Toluene-d8 (S)	102 %		80-120	200		12/18/13 02:36	2037-26-5	
1,2-Dichloroethane-d4 (S)	96 %		80-120	200		12/18/13 02:36	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

Sample: 316-166RR		Lab ID: 60159689001	Collected: 12/15/13 10:25	Received: 12/16/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	8.8	mg/L	5.0	1		12/20/13 09:12		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2300	mg/L	5.0	1		12/18/13 14:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		12/18/13 06:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	23600	mg/L	2.0	1	12/16/13 15:21	12/21/13 08:53		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	822	mg/L	50.0	500		12/19/13 14:33	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	44500	mg/L	5000	500		12/23/13 15:01		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

Sample: 316-166RR [O&G]		Lab ID: 60159689002	Collected: 12/15/13 10:25	Received: 12/16/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	1010	mg/L	5.0	1		12/16/13 14:02		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

Sample: TRIP BLANK		Lab ID: 60159689003	Collected: 12/15/13 10:25	Received: 12/16/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		12/18/13 02:51	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/18/13 02:51	75-27-4	
Bromoform	ND ug/L		1.0	1		12/18/13 02:51	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/18/13 02:51	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/18/13 02:51	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/18/13 02:51	75-00-3	
Chloroform	ND ug/L		1.0	1		12/18/13 02:51	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/18/13 02:51	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/18/13 02:51	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/18/13 02:51	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/18/13 02:51	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/18/13 02:51	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/18/13 02:51	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/18/13 02:51	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/18/13 02:51	127-18-4	
Toluene	ND ug/L		1.0	1		12/18/13 02:51	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/18/13 02:51	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/18/13 02:51	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/18/13 02:51	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/18/13 02:51	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/18/13 02:51	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	1		12/18/13 02:51	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		12/18/13 02:51	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	1		12/18/13 02:51	17060-07-0	
Preservation pH	6.0		1.0	1		12/18/13 02:51		
624 Volatile Organics LowLevel		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/18/13 02:51	67-64-1	N2
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	1		12/18/13 02:51	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		12/18/13 02:51	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	1		12/18/13 02:51	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch: MERP/8009

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159689001

METHOD BLANK: 1307231

Matrix: Water

Associated Lab Samples: 60159689001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/18/13 12:49	

LABORATORY CONTROL SAMPLE: 1307232

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307233 1307234

Parameter	Units	60159515001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.7	4.3	93	86	70-130	8	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch: MERP/8021

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60159689001

METHOD BLANK: 1310732

Matrix: Water

Associated Lab Samples: 60159689001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/23/13 14:11	

LABORATORY CONTROL SAMPLE: 1310733

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310734 1310735

Parameter	Units	60159689001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	101	111	67	74	70-130	10	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR
Pace Project No.: 60159689

QC Batch: MPRP/25646 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60159689001

METHOD BLANK: 1307859 Matrix: Water
Associated Lab Samples: 60159689001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/19/13 17:22	
Antimony	ug/L	ND	10.0	12/19/13 17:22	
Arsenic	ug/L	ND	10.0	12/19/13 17:22	
Beryllium	ug/L	ND	1.0	12/19/13 17:22	
Cadmium	ug/L	ND	5.0	12/19/13 17:22	
Chromium	ug/L	ND	5.0	12/19/13 17:22	
Cobalt	ug/L	ND	5.0	12/19/13 17:22	
Copper	ug/L	ND	10.0	12/19/13 17:22	
Iron	ug/L	ND	50.0	12/19/13 17:22	
Lead	ug/L	ND	5.0	12/19/13 17:22	
Nickel	ug/L	ND	5.0	12/19/13 17:22	
Selenium	ug/L	ND	15.0	12/19/13 17:22	
Silver	ug/L	ND	7.0	12/19/13 17:22	
Thallium	ug/L	ND	20.0	12/19/13 17:22	
Zinc	ug/L	ND	50.0	12/19/13 17:22	

LABORATORY CONTROL SAMPLE: 1307860

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9500	95	85-115	
Antimony	ug/L	1000	1020	102	85-115	
Arsenic	ug/L	1000	957	96	85-115	
Beryllium	ug/L	1000	954	95	85-115	
Cadmium	ug/L	1000	989	99	85-115	
Chromium	ug/L	1000	932	93	85-115	
Cobalt	ug/L	1000	996	100	85-115	
Copper	ug/L	1000	938	94	85-115	
Iron	ug/L	10000	9660	97	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1010	101	85-115	
Selenium	ug/L	1000	999	100	85-115	
Silver	ug/L	500	478	96	85-115	
Thallium	ug/L	1000	1030	103	85-115	
Zinc	ug/L	1000	980	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307861 1307862

Parameter	Units	60159228002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	9590	9550	95	95	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307861 1307862											
Parameter	Units	60159228002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1010	1010	101	101	70-130	0	7
Arsenic	ug/L	ND	1000	1000	977	972	97	97	70-130	0	10
Beryllium	ug/L	ND	1000	1000	965	959	96	96	70-130	1	7
Cadmium	ug/L	ND	1000	1000	988	984	99	98	70-130	0	10
Chromium	ug/L	ND	1000	1000	923	921	92	92	70-130	0	10
Cobalt	ug/L	ND	1000	1000	971	966	97	97	70-130	0	6
Copper	ug/L	40.3	1000	1000	965	963	93	92	70-130	0	11
Iron	ug/L	111	10000	10000	9670	9620	96	95	70-130	1	10
Lead	ug/L	ND	1000	1000	969	963	97	96	70-130	1	10
Nickel	ug/L	ND	1000	1000	972	969	97	97	70-130	0	10
Selenium	ug/L	ND	1000	1000	993	985	99	98	70-130	1	10
Silver	ug/L	ND	500	500	478	478	96	96	70-130	0	10
Thallium	ug/L	ND	1000	1000	955	956	96	96	70-130	0	6
Zinc	ug/L	ND	1000	1000	1010	1010	96	96	70-130	0	11

MATRIX SPIKE SAMPLE: 1307863							
Parameter	Units	60159516001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	339	10000	9950	96	70-130	
Antimony	ug/L	ND	1000	1030	103	70-130	
Arsenic	ug/L	ND	1000	987	98	70-130	
Beryllium	ug/L	ND	1000	962	96	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	922	92	70-130	
Cobalt	ug/L	ND	1000	1000	100	70-130	
Copper	ug/L	193	1000	1130	94	70-130	
Iron	ug/L	1640	10000	11200	96	70-130	
Lead	ug/L	13.2	1000	1020	101	70-130	
Nickel	ug/L	10.0	1000	1010	100	70-130	
Selenium	ug/L	ND	1000	1020	101	70-130	
Silver	ug/L	ND	500	479	96	70-130	
Thallium	ug/L	ND	1000	1020	102	70-130	
Zinc	ug/L	361	1000	1370	101	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR
Pace Project No.: 60159689

QC Batch:	MPRP/25698	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60159689001		

METHOD BLANK: 1310716 Matrix: Water
Associated Lab Samples: 60159689001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/23/13 15:55	
Antimony, Dissolved	ug/L	ND	10.0	12/23/13 15:55	
Arsenic, Dissolved	ug/L	ND	10.0	12/23/13 15:55	
Beryllium, Dissolved	ug/L	ND	1.0	12/23/13 15:55	
Cadmium, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Chromium, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Cobalt, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Copper, Dissolved	ug/L	ND	10.0	12/23/13 15:55	
Iron, Dissolved	ug/L	ND	50.0	12/23/13 15:55	
Lead, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Nickel, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Selenium, Dissolved	ug/L	ND	15.0	12/23/13 15:55	
Silver, Dissolved	ug/L	ND	7.0	12/23/13 15:55	
Thallium, Dissolved	ug/L	ND	20.0	12/23/13 15:55	
Zinc, Dissolved	ug/L	ND	50.0	12/23/13 15:55	

LABORATORY CONTROL SAMPLE: 1310717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9830	98	85-115	
Antimony, Dissolved	ug/L	1000	1020	102	85-115	
Arsenic, Dissolved	ug/L	1000	973	97	85-115	
Beryllium, Dissolved	ug/L	1000	994	99	85-115	
Cadmium, Dissolved	ug/L	1000	1000	100	85-115	
Chromium, Dissolved	ug/L	1000	981	98	85-115	
Cobalt, Dissolved	ug/L	1000	1010	101	85-115	
Copper, Dissolved	ug/L	1000	993	99	85-115	
Iron, Dissolved	ug/L	10000	9980	100	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	1010	101	85-115	
Silver, Dissolved	ug/L	500	498	100	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	978	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310718 1310719

Parameter	Units	60159688001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	3000	50000	50000	52500	52400	99	99	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310718 1310719											
Parameter	Units	60159688001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5170	5120	103	102	70-130	1	7
Arsenic, Dissolved	ug/L	621	5000	5000	5800	5690	103	101	70-130	2	10
Beryllium, Dissolved	ug/L	ND	5000	5000	4860	4830	97	97	70-130	1	7
Cadmium, Dissolved	ug/L	ND	5000	5000	5080	5040	102	101	70-130	1	10
Chromium, Dissolved	ug/L	192	5000	5000	5010	4990	96	96	70-130	0	10
Cobalt, Dissolved	ug/L	25.5	5000	5000	4780	4730	95	94	70-130	1	6
Copper, Dissolved	ug/L	ND	5000	5000	5120	5120	102	102	70-130	0	11
Iron, Dissolved	ug/L	563000	50000	50000	566000	570000	7	14	70-130	1	10 M1
Lead, Dissolved	ug/L	77.9	5000	5000	4590	4510	90	89	70-130	2	10
Nickel, Dissolved	ug/L	51.2	5000	5000	4790	4730	95	94	70-130	1	10
Selenium, Dissolved	ug/L	ND	5000	5000	5480	5380	110	108	70-130	2	10
Silver, Dissolved	ug/L	ND	2500	2500	2590	2580	104	103	70-130	0	10
Thallium, Dissolved	ug/L	ND	5000	5000	4240	4180	85	84	70-130	1	6
Zinc, Dissolved	ug/L	7620	5000	5000	11600	11600	81	80	70-130	0	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch: MSV/58418 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60159689001, 60159689003

METHOD BLANK: 1307296

Matrix: Water

Associated Lab Samples: 60159689001, 60159689003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/18/13 01:21	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/18/13 01:21	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/18/13 01:21	
1,2-Dichloroethane	ug/L	ND	1.0	12/18/13 01:21	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/18/13 01:21	
Benzene	ug/L	ND	1.0	12/18/13 01:21	
Bromodichloromethane	ug/L	ND	1.0	12/18/13 01:21	
Bromoform	ug/L	ND	1.0	12/18/13 01:21	
Bromomethane	ug/L	ND	5.0	12/18/13 01:21	
Carbon tetrachloride	ug/L	ND	1.0	12/18/13 01:21	
Chloroethane	ug/L	ND	1.0	12/18/13 01:21	
Chloroform	ug/L	ND	1.0	12/18/13 01:21	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/18/13 01:21	
Ethylbenzene	ug/L	ND	1.0	12/18/13 01:21	
Methylene chloride	ug/L	ND	1.0	12/18/13 01:21	
Tetrachloroethene	ug/L	ND	1.0	12/18/13 01:21	
Toluene	ug/L	ND	1.0	12/18/13 01:21	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/18/13 01:21	
Trichloroethene	ug/L	ND	1.0	12/18/13 01:21	
Vinyl chloride	ug/L	ND	1.0	12/18/13 01:21	
Xylene (Total)	ug/L	ND	3.0	12/18/13 01:21	
1,2-Dichloroethane-d4 (S)	%	104	80-120	12/18/13 01:21	
4-Bromofluorobenzene (S)	%	101	80-120	12/18/13 01:21	
Toluene-d8 (S)	%	96	80-120	12/18/13 01:21	

LABORATORY CONTROL SAMPLE: 1307297

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.8	89	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	19.4	97	59-138	
1,1,2-Trichloroethane	ug/L	20	20.7	103	69-127	
1,2-Dichloroethane	ug/L	20	19.1	95	71-129	
1,4-Dichlorobenzene	ug/L	20	19.3	97	68-124	
Benzene	ug/L	20	18.7	94	73-129	
Bromodichloromethane	ug/L	20	19.2	96	63-129	
Bromoform	ug/L	20	20.9	105	52-123	
Bromomethane	ug/L	20	15.3	77	10-160	
Carbon tetrachloride	ug/L	20	19.1	96	70-140	
Chloroethane	ug/L	20	18.7	93	42-160	
Chloroform	ug/L	20	19.8	99	60-120	
cis-1,2-Dichloroethene	ug/L	20	17.6	88	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

LABORATORY CONTROL SAMPLE: 1307297

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.1	95	66-133	
Methylene chloride	ug/L	20	19.1	95	56-135	
Tetrachloroethene	ug/L	20	18.6	93	64-143	
Toluene	ug/L	20	17.8	89	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.1	90	67-149	
Trichloroethene	ug/L	20	19.3	97	71-130	
Vinyl chloride	ug/L	20	17.1	85	41-160	
Xylene (Total)	ug/L	60	55.7	93	67-130	
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			96	80-120	

MATRIX SPIKE SAMPLE: 1307298

Parameter	Units	60159688001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3860	97	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4260	107	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	4280	107	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3730	93	49-155	
1,4-Dichlorobenzene	ug/L	784	4000	4430	91	18-147	
Benzene	ug/L	ND	4000	3820	94	37-151	
Bromodichloromethane	ug/L	ND	4000	4140	104	35-155	
Bromoform	ug/L	ND	4000	3610	90	45-133	
Bromomethane	ug/L	ND	4000	3050	76	10-160	
Carbon tetrachloride	ug/L	ND	4000	4250	106	70-140	
Chloroethane	ug/L	ND	4000	3830	96	14-160	
Chloroform	ug/L	ND	4000	4120	103	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3680	92	19-160	
Ethylbenzene	ug/L	ND	4000	3790	93	37-154	
Tetrachloroethene	ug/L	ND	4000	3970	99	64-148	
Toluene	ug/L	ND	4000	3790	94	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3680	92	54-156	
Trichloroethene	ug/L	ND	4000	4110	103	71-157	
Vinyl chloride	ug/L	ND	4000	3830	96	10-160	
Xylene (Total)	ug/L	ND	12000	11500	96	12-153	
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				96	80-120	
Preservation pH			6.0		6.0		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch:	MSV/58469	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60159689001		

METHOD BLANK: 1308464 Matrix: Water

Associated Lab Samples: 60159689001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methylene chloride	ug/L	ND	1.0	12/19/13 14:25	
1,2-Dichloroethane-d4 (S)	%	96	80-120	12/19/13 14:25	
4-Bromofluorobenzene (S)	%	99	80-120	12/19/13 14:25	
Toluene-d8 (S)	%	99	80-120	12/19/13 14:25	

LABORATORY CONTROL SAMPLE: 1308465

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methylene chloride	ug/L	20	20.7	104	56-135	
1,2-Dichloroethane-d4 (S)	%			97	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			102	80-120	

MATRIX SPIKE SAMPLE: 1308466

Parameter	Units	60159815001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Methylene chloride	ug/L	ND	4000	4130	103	15-156	
1,2-Dichloroethane-d4 (S)	%				92	80-120	
4-Bromofluorobenzene (S)	%				96	80-120	
Toluene-d8 (S)	%				103	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch:	MSV/58602	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV Low Level
Associated Lab Samples: 60159689001, 60159689003			

METHOD BLANK: 1311801 Matrix: Water

Associated Lab Samples: 60159689001, 60159689003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/18/13 01:21	N2
1,2-Dichloroethane-d4 (S)	%	104	80-120	12/18/13 01:21	
4-Bromofluorobenzene (S)	%	101	80-120	12/18/13 01:21	
Toluene-d8 (S)	%	96	80-120	12/18/13 01:21	

LABORATORY CONTROL SAMPLE: 1311802

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	80.8	81	40-160	N2
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			96	80-120	

MATRIX SPIKE SAMPLE: 1311803

Parameter	Units	60159688001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	93500	20000	108000	74	40-160	N2
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				96	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch: OEXT/41986

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60159689001

METHOD BLANK: 1307583

Matrix: Water

Associated Lab Samples: 60159689001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/19/13 11:13	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/19/13 11:13	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/19/13 11:13	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/19/13 11:13	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/19/13 11:13	
Hexachloroethane	ug/L	ND	5.0	12/19/13 11:13	
Naphthalene	ug/L	ND	5.0	12/19/13 11:13	
Nitrobenzene	ug/L	ND	5.0	12/19/13 11:13	
Pentachlorophenol	ug/L	ND	5.0	12/19/13 11:13	
Phenol	ug/L	ND	5.0	12/19/13 11:13	
2,4,6-Tribromophenol (S)	%	68	39-120	12/19/13 11:13	
2-Fluorobiphenyl (S)	%	76	39-120	12/19/13 11:13	
2-Fluorophenol (S)	%	37	17-120	12/19/13 11:13	
Nitrobenzene-d5 (S)	%	75	33-120	12/19/13 11:13	
Phenol-d6 (S)	%	23	11-120	12/19/13 11:13	
Terphenyl-d14 (S)	%	91	45-120	12/19/13 11:13	

LABORATORY CONTROL SAMPLE: 1307584

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	43.1	86	46-120	
2,4,6-Trichlorophenol	ug/L	50	44.2	88	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	47.2	94	40-133	
Hexachloro-1,3-butadiene	ug/L	50	42.7	85	44-116	
Hexachlorocyclopentadiene	ug/L	100	73.8	74	24-120	
Hexachloroethane	ug/L	50	43.4	87	43-113	
Naphthalene	ug/L	50	43.1	86	48-120	
Nitrobenzene	ug/L	50	44.1	88	48-120	
Pentachlorophenol	ug/L	50	31.4	63	47-120	
Phenol	ug/L	50	17.2	34	16-112	
2,4,6-Tribromophenol (S)	%			90	39-120	
2-Fluorobiphenyl (S)	%			88	39-120	
2-Fluorophenol (S)	%			41	17-120	
Nitrobenzene-d5 (S)	%			83	33-120	
Phenol-d6 (S)	%			28	11-120	
Terphenyl-d14 (S)	%			90	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

MATRIX SPIKE SAMPLE:		1307585					
Parameter	Units	60159688001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	4140	83	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4390	88	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	4380J	88	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	4250	85	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	7110	71	11-120	
Hexachloroethane	ug/L	ND	5000	4370	87	40-113	
Naphthalene	ug/L	1100	5000	5000	78	45-120	
Nitrobenzene	ug/L	ND	5000	4430	89	38-120	
Pentachlorophenol	ug/L	ND	5000	4100	82	43-135	
Phenol	ug/L	9810	5000	8090	-34	13-112	M1
2,4,6-Tribromophenol (S)	%				87	39-120	
2-Fluorobiphenyl (S)	%				82	39-120	
2-Fluorophenol (S)	%				41	17-120	
Nitrobenzene-d5 (S)	%				114	33-120	
Phenol-d6 (S)	%				28	11-120	
Terphenyl-d14 (S)	%				89	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch:	WET/45160	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60159689002		

METHOD BLANK: 1306552 Matrix: Water

Associated Lab Samples: 60159689002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/16/13 14:01	

LABORATORY CONTROL SAMPLE: 1306553

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.4	101	78-114	

MATRIX SPIKE SAMPLE: 1306556

Parameter	Units	60159391001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	41.2	42.2	96	78-114	

SAMPLE DUPLICATE: 1306557

Parameter	Units	60159457001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	1.9J		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch: WET/45272

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159689001

METHOD BLANK: 1309351

Matrix: Water

Associated Lab Samples: 60159689001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/20/13 09:08	

LABORATORY CONTROL SAMPLE: 1309352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.5	108	64-132	

MATRIX SPIKE SAMPLE: 1309353

Parameter	Units	60159161004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.7	24.6	105	64-132	

SAMPLE DUPLICATE: 1309355

Parameter	Units	60159161005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	1.9J		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch: WET/45202

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159689001

METHOD BLANK: 1307717

Matrix: Water

Associated Lab Samples: 60159689001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/18/13 14:45	

SAMPLE DUPLICATE: 1307718

Parameter	Units	60159518001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	1510	1470	3	25	

SAMPLE DUPLICATE: 1307719

Parameter	Units	60159621003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	9.0	8.0	12	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch: WET/45163 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60159689001

SAMPLE DUPLICATE: 1306621

Parameter	Units	60159517001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.4	8.4	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch: WET/45162

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159689001

METHOD BLANK: 1306591

Matrix: Water

Associated Lab Samples: 60159689001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/21/13 08:41	

LABORATORY CONTROL SAMPLE: 1306592

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	196	99	85-115	

SAMPLE DUPLICATE: 1306593

Parameter	Units	60159688001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	25900	25100	3	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch: WETA/27587

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159689001

METHOD BLANK: 1308714

Matrix: Water

Associated Lab Samples: 60159689001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/19/13 14:25	

LABORATORY CONTROL SAMPLE: 1308715

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	109	90-110	

MATRIX SPIKE SAMPLE: 1308716

Parameter	Units	60159508001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	846	1000	2220	138	90-110	M1

SAMPLE DUPLICATE: 1308717

Parameter	Units	60159688001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	870	944	8	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

QC Batch:	WETA/27623	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60159689001		

METHOD BLANK: 1310547 Matrix: Water

Associated Lab Samples: 60159689001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/23/13 14:43	

LABORATORY CONTROL SAMPLE: 1310548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	51.1	102	90-110	

MATRIX SPIKE SAMPLE: 1310549

Parameter	Units	60159229001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	137	100	237	100	90-110	

SAMPLE DUPLICATE: 1310550

Parameter	Units	60159295001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	ND	4.6J		25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-166RR

Pace Project No.: 60159689

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159689001	316-166RR	EPA 200.7	MPRP/25646	EPA 200.7	ICP/19686
60159689001	316-166RR	EPA 200.7	MPRP/25698	EPA 200.7	ICP/19713
60159689001	316-166RR	EPA 245.1	MERP/8009	EPA 245.1	MERC/7963
60159689001	316-166RR	EPA 245.1	MERP/8021	EPA 245.1	MERC/7977
60159689001	316-166RR	EPA 625	OEXT/41986	EPA 625	MSSV/13339
60159689001	316-166RR	EPA 624 Low	MSV/58418		
60159689001	316-166RR	EPA 624 Low	MSV/58469		
60159689003	TRIP BLANK	EPA 624 Low	MSV/58418		
60159689001	316-166RR	EPA 624 Low	MSV/58602		
60159689003	TRIP BLANK	EPA 624 Low	MSV/58602		
60159689002	316-166RR [O&G]	EPA 1664A	WET/45160		
60159689001	316-166RR	EPA 1664A	WET/45272		
60159689001	316-166RR	SM 2540D	WET/45202		
60159689001	316-166RR	SM 4500-H+B	WET/45163		
60159689001	316-166RR	SM 5210B	WET/45162	SM 5210B	WET/45284
60159689001	316-166RR	EPA 350.1	WETA/27587		
60159689001	316-166RR	EPA 410.4	WETA/27623		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60159689



60159689

Client Name: Barr

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ VIA

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-239 / T-194

Type of Ice: Ice Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.7

Date and initials of person examining contents: 12/16/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Barr PH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses Matrix:	<u>WT</u>	13.
All containers needing preservation have been checked	☒ Yes ☐ No ☐ N/A	<u>HNO₃ initial pH ~6.0; added 2.5 mL HNO₃; final ~4.0</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	<u>H₂SO₄ initial pH ~6.0; added 2 mL H₂SO₄; final pH ~2.5</u>
Exceptions: VOA, coliform; TOC, <u>DOC</u> , WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>km</u> Lot # of added preservative <u>12513</u> <u>12520</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	
		16. <u>No headspace in my VOA vial</u>
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: 12/16 - SAME DAY OTC REPORTED - 3X

Project Manager Review: [Signature]

Date: 12/17/13

December 26, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-168R
Pace Project No.: 60159814

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 18, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159814001	316-168R	Water	12/17/13 09:30	12/18/13 02:30
60159814002	TRIP BLANK	Water	12/17/13 09:30	12/18/13 02:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159814001	316-168R	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JML	1
		EPA 624 Low	EAK	26
60159814002	TRIP BLANK			

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

Sample: 316-168R		Lab ID: 60159814001	Collected: 12/17/13 09:30	Received: 12/18/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	4350 ug/L		375	1	12/18/13 13:30	12/19/13 18:23	7429-90-5	
Antimony	ND ug/L		50.0	1	12/18/13 13:30	12/19/13 18:23	7440-36-0	
Arsenic	551 ug/L		50.0	1	12/18/13 13:30	12/19/13 18:23	7440-38-2	
Beryllium	ND ug/L		5.0	1	12/18/13 13:30	12/19/13 18:23	7440-41-7	
Cadmium	ND ug/L		25.0	1	12/18/13 13:30	12/19/13 18:23	7440-43-9	
Chromium	158 ug/L		25.0	1	12/18/13 13:30	12/19/13 18:23	7440-47-3	
Cobalt	28.0 ug/L		25.0	1	12/18/13 13:30	12/19/13 18:23	7440-48-4	
Copper	ND ug/L		50.0	1	12/18/13 13:30	12/19/13 18:23	7440-50-8	
Iron	533000 ug/L		250	1	12/18/13 13:30	12/19/13 18:23	7439-89-6	
Lead	77.8 ug/L		25.0	1	12/18/13 13:30	12/19/13 18:23	7439-92-1	
Nickel	59.5 ug/L		25.0	1	12/18/13 13:30	12/19/13 18:23	7440-02-0	
Selenium	ND ug/L		75.0	1	12/18/13 13:30	12/19/13 18:23	7782-49-2	
Silver	ND ug/L		35.0	1	12/18/13 13:30	12/19/13 18:23	7440-22-4	
Thallium	ND ug/L		100	1	12/18/13 13:30	12/19/13 18:23	7440-28-0	
Zinc	7780 ug/L		500	2	12/18/13 13:30	12/19/13 18:26	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3210 ug/L		375	1	12/23/13 10:10	12/23/13 16:23	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	1	12/23/13 10:10	12/23/13 16:23	7440-36-0	
Arsenic, Dissolved	564 ug/L		50.0	1	12/23/13 10:10	12/23/13 16:23	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	1	12/23/13 10:10	12/23/13 16:23	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	1	12/23/13 10:10	12/23/13 16:23	7440-43-9	
Chromium, Dissolved	185 ug/L		25.0	1	12/23/13 10:10	12/23/13 16:23	7440-47-3	
Cobalt, Dissolved	ND ug/L		25.0	1	12/23/13 10:10	12/23/13 16:23	7440-48-4	
Copper, Dissolved	ND ug/L		50.0	1	12/23/13 10:10	12/23/13 16:23	7440-50-8	
Iron, Dissolved	610000 ug/L		250	1	12/23/13 10:10	12/23/13 16:23	7439-89-6	
Lead, Dissolved	82.6 ug/L		25.0	1	12/23/13 10:10	12/23/13 16:23	7439-92-1	
Nickel, Dissolved	46.6 ug/L		25.0	1	12/23/13 10:10	12/23/13 16:23	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	1	12/23/13 10:10	12/23/13 16:23	7782-49-2	
Silver, Dissolved	ND ug/L		35.0	1	12/23/13 10:10	12/23/13 16:23	7440-22-4	
Thallium, Dissolved	ND ug/L		100	1	12/23/13 10:10	12/23/13 16:23	7440-28-0	
Zinc, Dissolved	8040 ug/L		500	2	12/23/13 10:10	12/23/13 16:25	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.62 ug/L		0.20	1	12/19/13 13:00	12/19/13 14:50	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		6.0	1	12/23/13 11:05	12/23/13 14:24	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	2	12/19/13 00:00	12/19/13 16:23	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:23	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:23	77-47-4	
Hexachloroethane	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:23	67-72-1	
Naphthalene	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:23	91-20-3	
Nitrobenzene	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:23	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-168R
Pace Project No.: 60159814

Sample: 316-168R		Lab ID: 60159814001	Collected: 12/17/13 09:30	Received: 12/18/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:23	87-86-5	
Phenol	8780 ug/L		1000	2	12/19/13 00:00	12/19/13 16:23	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:23	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/19/13 00:00	12/19/13 16:23	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	97 %		33-120	2	12/19/13 00:00	12/19/13 16:23	4165-60-0	
2-Fluorobiphenyl (S)	63 %		39-120	2	12/19/13 00:00	12/19/13 16:23	321-60-8	
Terphenyl-d14 (S)	73 %		45-120	2	12/19/13 00:00	12/19/13 16:23	1718-51-0	
Phenol-d6 (S)	31 %		11-120	2	12/19/13 00:00	12/19/13 16:23	13127-88-3	
2-Fluorophenol (S)	41 %		17-120	2	12/19/13 00:00	12/19/13 16:23	367-12-4	
2,4,6-Tribromophenol (S)	69 %		39-120	2	12/19/13 00:00	12/19/13 16:23	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	109000 ug/L		2000	200		12/19/13 17:11	67-64-1	N2
Benzene	ND ug/L		200	200		12/19/13 17:11	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/19/13 17:11	75-27-4	
Bromoform	ND ug/L		200	200		12/19/13 17:11	75-25-2	
Bromomethane	ND ug/L		1000	200		12/19/13 17:11	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/19/13 17:11	56-23-5	
Chloroethane	ND ug/L		200	200		12/19/13 17:11	75-00-3	
Chloroform	ND ug/L		200	200		12/19/13 17:11	67-66-3	
1,4-Dichlorobenzene	759 ug/L		200	200		12/19/13 17:11	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/19/13 17:11	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/19/13 17:11	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/19/13 17:11	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/19/13 17:11	100-41-4	
Methylene chloride	ND ug/L		200	200		12/19/13 17:11	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/19/13 17:11	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/19/13 17:11	127-18-4	
Toluene	ND ug/L		200	200		12/19/13 17:11	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/19/13 17:11	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/19/13 17:11	79-00-5	
Trichloroethene	ND ug/L		200	200		12/19/13 17:11	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/19/13 17:11	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/19/13 17:11	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	104 %		80-120	200		12/19/13 17:11	460-00-4	
4-Bromofluorobenzene (S)	104 %		80-120	200		12/19/13 17:11	460-00-4	D3
Toluene-d8 (S)	105 %		80-120	200		12/19/13 17:11	2037-26-5	
Toluene-d8 (S)	105 %		80-120	200		12/19/13 17:11	2037-26-5	
1,2-Dichloroethane-d4 (S)	93 %		80-120	200		12/19/13 17:11	17060-07-0	
1,2-Dichloroethane-d4 (S)	93 %		80-120	200		12/19/13 17:11	17060-07-0	
Preservation pH	6.0		1.0	200		12/19/13 17:11		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	530 mg/L		5.0	1		12/19/13 07:56		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

Sample: 316-168R		Lab ID: 60159814001	Collected: 12/17/13 09:30	Received: 12/18/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	5.2	mg/L	5.0	1		12/20/13 09:13		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2160	mg/L	5.0	1		12/19/13 14:48		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		12/19/13 06:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	24700	mg/L	2.0	1	12/18/13 14:09	12/23/13 10:00		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	528	mg/L	20.0	200		12/23/13 15:53	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	46900	mg/L	5000	500		12/26/13 13:25		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

Sample: TRIP BLANK		Lab ID: 60159814002	Collected: 12/17/13 09:30	Received: 12/18/13 02:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/19/13 17:26	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/19/13 17:26	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/19/13 17:26	75-27-4	
Bromoform	ND ug/L		1.0	1		12/19/13 17:26	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/19/13 17:26	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/19/13 17:26	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/19/13 17:26	75-00-3	
Chloroform	ND ug/L		1.0	1		12/19/13 17:26	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/19/13 17:26	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/19/13 17:26	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/19/13 17:26	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/19/13 17:26	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/19/13 17:26	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/19/13 17:26	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/19/13 17:26	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/19/13 17:26	127-18-4	
Toluene	ND ug/L		1.0	1		12/19/13 17:26	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/19/13 17:26	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/19/13 17:26	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/19/13 17:26	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/19/13 17:26	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/19/13 17:26	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	97 %		80-120	1		12/19/13 17:26	460-00-4	
4-Bromofluorobenzene (S)	97 %		80-120	1		12/19/13 17:26	460-00-4	
Toluene-d8 (S)	94 %		80-120	1		12/19/13 17:26	2037-26-5	
Toluene-d8 (S)	94 %		80-120	1		12/19/13 17:26	2037-26-5	
1,2-Dichloroethane-d4 (S)	93 %		80-120	1		12/19/13 17:26	17060-07-0	
1,2-Dichloroethane-d4 (S)	93 %		80-120	1		12/19/13 17:26	17060-07-0	
Preservation pH	6.0		1.0	1		12/19/13 17:26		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

QC Batch: MERP/8011

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159814001

METHOD BLANK: 1308534

Matrix: Water

Associated Lab Samples: 60159814001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/19/13 14:41	

LABORATORY CONTROL SAMPLE: 1308535

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1308536 1308537

Parameter	Units	60159791001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	1.7	2.7	34	54	70-130	44	20	M1, R1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

QC Batch: MERP/8021

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60159814001

METHOD BLANK: 1310732

Matrix: Water

Associated Lab Samples: 60159814001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/23/13 14:11	

LABORATORY CONTROL SAMPLE: 1310733

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310734 1310735

Parameter	Units	60159689001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	101	111	67	74	70-130	10	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R
Pace Project No.: 60159814

QC Batch: MPRP/25646 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60159814001

METHOD BLANK: 1307859 Matrix: Water
Associated Lab Samples: 60159814001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/19/13 17:22	
Antimony	ug/L	ND	10.0	12/19/13 17:22	
Arsenic	ug/L	ND	10.0	12/19/13 17:22	
Beryllium	ug/L	ND	1.0	12/19/13 17:22	
Cadmium	ug/L	ND	5.0	12/19/13 17:22	
Chromium	ug/L	ND	5.0	12/19/13 17:22	
Cobalt	ug/L	ND	5.0	12/19/13 17:22	
Copper	ug/L	ND	10.0	12/19/13 17:22	
Iron	ug/L	ND	50.0	12/19/13 17:22	
Lead	ug/L	ND	5.0	12/19/13 17:22	
Nickel	ug/L	ND	5.0	12/19/13 17:22	
Selenium	ug/L	ND	15.0	12/19/13 17:22	
Silver	ug/L	ND	7.0	12/19/13 17:22	
Thallium	ug/L	ND	20.0	12/19/13 17:22	
Zinc	ug/L	ND	50.0	12/19/13 17:22	

LABORATORY CONTROL SAMPLE: 1307860

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9500	95	85-115	
Antimony	ug/L	1000	1020	102	85-115	
Arsenic	ug/L	1000	957	96	85-115	
Beryllium	ug/L	1000	954	95	85-115	
Cadmium	ug/L	1000	989	99	85-115	
Chromium	ug/L	1000	932	93	85-115	
Cobalt	ug/L	1000	996	100	85-115	
Copper	ug/L	1000	938	94	85-115	
Iron	ug/L	10000	9660	97	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1010	101	85-115	
Selenium	ug/L	1000	999	100	85-115	
Silver	ug/L	500	478	96	85-115	
Thallium	ug/L	1000	1030	103	85-115	
Zinc	ug/L	1000	980	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307861 1307862

Parameter	Units	60159228002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	9590	9550	95	95	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307861 1307862											
Parameter	Units	60159228002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1010	1010	101	101	70-130	0	7
Arsenic	ug/L	ND	1000	1000	977	972	97	97	70-130	0	10
Beryllium	ug/L	ND	1000	1000	965	959	96	96	70-130	1	7
Cadmium	ug/L	ND	1000	1000	988	984	99	98	70-130	0	10
Chromium	ug/L	ND	1000	1000	923	921	92	92	70-130	0	10
Cobalt	ug/L	ND	1000	1000	971	966	97	97	70-130	0	6
Copper	ug/L	40.3	1000	1000	965	963	93	92	70-130	0	11
Iron	ug/L	111	10000	10000	9670	9620	96	95	70-130	1	10
Lead	ug/L	ND	1000	1000	969	963	97	96	70-130	1	10
Nickel	ug/L	ND	1000	1000	972	969	97	97	70-130	0	10
Selenium	ug/L	ND	1000	1000	993	985	99	98	70-130	1	10
Silver	ug/L	ND	500	500	478	478	96	96	70-130	0	10
Thallium	ug/L	ND	1000	1000	955	956	96	96	70-130	0	6
Zinc	ug/L	ND	1000	1000	1010	1010	96	96	70-130	0	11

MATRIX SPIKE SAMPLE: 1307863							
Parameter	Units	60159516001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	339	10000	9950	96	70-130	
Antimony	ug/L	ND	1000	1030	103	70-130	
Arsenic	ug/L	ND	1000	987	98	70-130	
Beryllium	ug/L	ND	1000	962	96	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	922	92	70-130	
Cobalt	ug/L	ND	1000	1000	100	70-130	
Copper	ug/L	193	1000	1130	94	70-130	
Iron	ug/L	1640	10000	11200	96	70-130	
Lead	ug/L	13.2	1000	1020	101	70-130	
Nickel	ug/L	10.0	1000	1010	100	70-130	
Selenium	ug/L	ND	1000	1020	101	70-130	
Silver	ug/L	ND	500	479	96	70-130	
Thallium	ug/L	ND	1000	1020	102	70-130	
Zinc	ug/L	361	1000	1370	101	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R
Pace Project No.: 60159814

QC Batch:	MPRP/25698	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60159814001		

METHOD BLANK: 1310716 Matrix: Water
Associated Lab Samples: 60159814001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/23/13 15:55	
Antimony, Dissolved	ug/L	ND	10.0	12/23/13 15:55	
Arsenic, Dissolved	ug/L	ND	10.0	12/23/13 15:55	
Beryllium, Dissolved	ug/L	ND	1.0	12/23/13 15:55	
Cadmium, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Chromium, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Cobalt, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Copper, Dissolved	ug/L	ND	10.0	12/23/13 15:55	
Iron, Dissolved	ug/L	ND	50.0	12/23/13 15:55	
Lead, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Nickel, Dissolved	ug/L	ND	5.0	12/23/13 15:55	
Selenium, Dissolved	ug/L	ND	15.0	12/23/13 15:55	
Silver, Dissolved	ug/L	ND	7.0	12/23/13 15:55	
Thallium, Dissolved	ug/L	ND	20.0	12/23/13 15:55	
Zinc, Dissolved	ug/L	ND	50.0	12/23/13 15:55	

LABORATORY CONTROL SAMPLE: 1310717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9830	98	85-115	
Antimony, Dissolved	ug/L	1000	1020	102	85-115	
Arsenic, Dissolved	ug/L	1000	973	97	85-115	
Beryllium, Dissolved	ug/L	1000	994	99	85-115	
Cadmium, Dissolved	ug/L	1000	1000	100	85-115	
Chromium, Dissolved	ug/L	1000	981	98	85-115	
Cobalt, Dissolved	ug/L	1000	1010	101	85-115	
Copper, Dissolved	ug/L	1000	993	99	85-115	
Iron, Dissolved	ug/L	10000	9980	100	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	1010	101	85-115	
Silver, Dissolved	ug/L	500	498	100	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	978	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310718 1310719

Parameter	Units	6015988001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	3000	50000	50000	52500	52400	99	99	70-130	0	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310718 1310719											
Parameter	Units	60159688001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony, Dissolved	ug/L	ND	5000	5000	5170	5120	103	102	70-130	1	7
Arsenic, Dissolved	ug/L	621	5000	5000	5800	5690	103	101	70-130	2	10
Beryllium, Dissolved	ug/L	ND	5000	5000	4860	4830	97	97	70-130	1	7
Cadmium, Dissolved	ug/L	ND	5000	5000	5080	5040	102	101	70-130	1	10
Chromium, Dissolved	ug/L	192	5000	5000	5010	4990	96	96	70-130	0	10
Cobalt, Dissolved	ug/L	25.5	5000	5000	4780	4730	95	94	70-130	1	6
Copper, Dissolved	ug/L	ND	5000	5000	5120	5120	102	102	70-130	0	11
Iron, Dissolved	ug/L	563000	50000	50000	566000	570000	7	14	70-130	1	10 M1
Lead, Dissolved	ug/L	77.9	5000	5000	4590	4510	90	89	70-130	2	10
Nickel, Dissolved	ug/L	51.2	5000	5000	4790	4730	95	94	70-130	1	10
Selenium, Dissolved	ug/L	ND	5000	5000	5480	5380	110	108	70-130	2	10
Silver, Dissolved	ug/L	ND	2500	2500	2590	2580	104	103	70-130	0	10
Thallium, Dissolved	ug/L	ND	5000	5000	4240	4180	85	84	70-130	1	6
Zinc, Dissolved	ug/L	7620	5000	5000	11600	11600	81	80	70-130	0	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

QC Batch: MSV/58469 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60159814001, 60159814002

METHOD BLANK: 1308464

Matrix: Water

Associated Lab Samples: 60159814001, 60159814002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/19/13 14:25	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/19/13 14:25	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/19/13 14:25	
1,2-Dichloroethane	ug/L	ND	1.0	12/19/13 14:25	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/19/13 14:25	
Benzene	ug/L	ND	1.0	12/19/13 14:25	
Bromodichloromethane	ug/L	ND	1.0	12/19/13 14:25	
Bromoform	ug/L	ND	1.0	12/19/13 14:25	
Bromomethane	ug/L	ND	5.0	12/19/13 14:25	
Carbon tetrachloride	ug/L	ND	1.0	12/19/13 14:25	
Chloroethane	ug/L	ND	1.0	12/19/13 14:25	
Chloroform	ug/L	ND	1.0	12/19/13 14:25	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/19/13 14:25	
Ethylbenzene	ug/L	ND	1.0	12/19/13 14:25	
Methylene chloride	ug/L	ND	1.0	12/19/13 14:25	
Tetrachloroethene	ug/L	ND	1.0	12/19/13 14:25	
Toluene	ug/L	ND	1.0	12/19/13 14:25	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/19/13 14:25	
Trichloroethene	ug/L	ND	1.0	12/19/13 14:25	
Vinyl chloride	ug/L	ND	1.0	12/19/13 14:25	
Xylene (Total)	ug/L	ND	3.0	12/19/13 14:25	
1,2-Dichloroethane-d4 (S)	%	96	80-120	12/19/13 14:25	
4-Bromofluorobenzene (S)	%	99	80-120	12/19/13 14:25	
Toluene-d8 (S)	%	99	80-120	12/19/13 14:25	

LABORATORY CONTROL SAMPLE: 1308465

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.4	92	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	19.1	95	59-138	
1,1,2-Trichloroethane	ug/L	20	18.8	94	69-127	
1,2-Dichloroethane	ug/L	20	18.1	91	71-129	
1,4-Dichlorobenzene	ug/L	20	16.4	82	68-124	
Benzene	ug/L	20	18.2	91	73-129	
Bromodichloromethane	ug/L	20	19.6	98	63-129	
Bromoform	ug/L	20	18.8	94	52-123	
Bromomethane	ug/L	20	15.7	78	10-160	
Carbon tetrachloride	ug/L	20	19.7	98	70-140	
Chloroethane	ug/L	20	18.9	95	42-160	
Chloroform	ug/L	20	18.4	92	60-120	
cis-1,2-Dichloroethene	ug/L	20	17.8	89	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

LABORATORY CONTROL SAMPLE: 1308465

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.1	91	66-133	
Methylene chloride	ug/L	20	20.7	104	56-135	
Tetrachloroethene	ug/L	20	18.3	91	64-143	
Toluene	ug/L	20	18.9	95	70-130	
trans-1,2-Dichloroethene	ug/L	20	19.8	99	67-149	
Trichloroethene	ug/L	20	19.0	95	71-130	
Vinyl chloride	ug/L	20	18.3	92	41-160	
Xylene (Total)	ug/L	60	55.6	93	67-130	
1,2-Dichloroethane-d4 (S)	%			97	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			102	80-120	

MATRIX SPIKE SAMPLE: 1308466

Parameter	Units	60159815001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3620	90	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3680	92	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3860	96	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3380	85	49-155	
1,4-Dichlorobenzene	ug/L	665	4000	4240	89	18-147	
Benzene	ug/L	ND	4000	3670	90	37-151	
Bromodichloromethane	ug/L	ND	4000	3630	91	35-155	
Bromoform	ug/L	ND	4000	3720	93	45-133	
Bromomethane	ug/L	ND	4000	3530	88	10-160	
Carbon tetrachloride	ug/L	ND	4000	3900	97	70-140	
Chloroethane	ug/L	ND	4000	3290	82	14-160	
Chloroform	ug/L	ND	4000	3430	86	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3330	83	19-160	
Ethylbenzene	ug/L	ND	4000	3880	95	37-154	
Methylene chloride	ug/L	ND	4000	4130	103	15-156	
Tetrachloroethene	ug/L	ND	4000	3700	92	64-148	
Toluene	ug/L	ND	4000	3730	92	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3900	97	54-156	
Trichloroethene	ug/L	ND	4000	3770	94	71-157	
Vinyl chloride	ug/L	ND	4000	3790	95	10-160	
Xylene (Total)	ug/L	ND	12000	11800	99	12-153	
1,2-Dichloroethane-d4 (S)	%				92	80-120	
4-Bromofluorobenzene (S)	%				96	80-120	
Toluene-d8 (S)	%				103	80-120	
Preservation pH			6.0	6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

QC Batch:	MSV/58590	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples: 60159814001, 60159814002			

METHOD BLANK: 1311740 Matrix: Water

Associated Lab Samples: 60159814001, 60159814002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/19/13 14:25	N2
1,2-Dichloroethane-d4 (S)	%	96	80-120	12/19/13 14:25	
4-Bromofluorobenzene (S)	%	99	80-120	12/19/13 14:25	
Toluene-d8 (S)	%	99	80-120	12/19/13 14:25	

LABORATORY CONTROL SAMPLE: 1311741

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	74.6	75	40-160	N2
1,2-Dichloroethane-d4 (S)	%			97	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			102	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R
Pace Project No.: 60159814

QC Batch:	OEXT/42002	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159814001		

METHOD BLANK: 1308405 Matrix: Water
Associated Lab Samples: 60159814001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/19/13 15:21	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/19/13 15:21	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/19/13 15:21	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/19/13 15:21	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/19/13 15:21	
Hexachloroethane	ug/L	ND	5.0	12/19/13 15:21	
Naphthalene	ug/L	ND	5.0	12/19/13 15:21	
Nitrobenzene	ug/L	ND	5.0	12/19/13 15:21	
Pentachlorophenol	ug/L	ND	5.0	12/19/13 15:21	
Phenol	ug/L	ND	5.0	12/19/13 15:21	
2,4,6-Tribromophenol (S)	%	63	39-120	12/19/13 15:21	
2-Fluorobiphenyl (S)	%	69	39-120	12/19/13 15:21	
2-Fluorophenol (S)	%	39	17-120	12/19/13 15:21	
Nitrobenzene-d5 (S)	%	69	33-120	12/19/13 15:21	
Phenol-d6 (S)	%	26	11-120	12/19/13 15:21	
Terphenyl-d14 (S)	%	75	45-120	12/19/13 15:21	

LABORATORY CONTROL SAMPLE: 1308406

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	33.6	67	46-120	
2,4,6-Trichlorophenol	ug/L	50	35.4	71	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	37.5	75	40-133	
Hexachloro-1,3-butadiene	ug/L	50	30.7	61	44-116	
Hexachlorocyclopentadiene	ug/L	100	54.5	54	24-120	
Hexachloroethane	ug/L	50	33.2	66	43-113	
Naphthalene	ug/L	50	35.2	70	48-120	
Nitrobenzene	ug/L	50	36.2	72	48-120	
Pentachlorophenol	ug/L	50	26.3	53	47-120	
Phenol	ug/L	50	17.7	35	16-112	
2,4,6-Tribromophenol (S)	%			69	39-120	
2-Fluorobiphenyl (S)	%			70	39-120	
2-Fluorophenol (S)	%			41	17-120	
Nitrobenzene-d5 (S)	%			69	33-120	
Phenol-d6 (S)	%			28	11-120	
Terphenyl-d14 (S)	%			73	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

MATRIX SPIKE SAMPLE:		1308407					
Parameter	Units	60159814001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	2960	59	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	3160	63	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3030J	61	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	2870	57	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	4770	48	11-120	
Hexachloroethane	ug/L	ND	5000	3000	60	40-113	
Naphthalene	ug/L	ND	5000	3590	59	45-120	
Nitrobenzene	ug/L	ND	5000	3110	62	38-120	
Pentachlorophenol	ug/L	ND	5000	2880	58	43-135	
Phenol	ug/L	8780	5000	10000	24	13-112	
2,4,6-Tribromophenol (S)	%				65	39-120	
2-Fluorobiphenyl (S)	%				59	39-120	
2-Fluorophenol (S)	%				38	17-120	
Nitrobenzene-d5 (S)	%				90	33-120	
Phenol-d6 (S)	%				30	11-120	
Terphenyl-d14 (S)	%				63	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

QC Batch: WET/45230

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60159814001

METHOD BLANK: 1308381

Matrix: Water

Associated Lab Samples: 60159814001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/19/13 07:55	

LABORATORY CONTROL SAMPLE: 1308382

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.6	102	78-114	

MATRIX SPIKE SAMPLE: 1308383

Parameter	Units	60159826001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	42.1	39.9	88	78-114	

SAMPLE DUPLICATE: 1308389

Parameter	Units	60159579002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

QC Batch: WET/45272

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159814001

METHOD BLANK: 1309351

Matrix: Water

Associated Lab Samples: 60159814001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/20/13 09:08	

LABORATORY CONTROL SAMPLE: 1309352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.5	108	64-132	

MATRIX SPIKE SAMPLE: 1309353

Parameter	Units	60159161004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.7	24.6	105	64-132	

SAMPLE DUPLICATE: 1309355

Parameter	Units	60159161005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	1.9J		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

QC Batch: WET/45235

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159814001

METHOD BLANK: 1308448

Matrix: Water

Associated Lab Samples: 60159814001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/19/13 14:46	

SAMPLE DUPLICATE: 1308449

Parameter	Units	60159804001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1308450

Parameter	Units	60159745001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	6000	5960	1	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

QC Batch:	WET/45226	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60159814001		

SAMPLE DUPLICATE: 1308343

Parameter	Units	60159815001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.4	5.5	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

QC Batch: WET/45212

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159814001

METHOD BLANK: 1307771

Matrix: Water

Associated Lab Samples: 60159814001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/23/13 08:56	

LABORATORY CONTROL SAMPLE: 1307772

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	189	96	85-115	

SAMPLE DUPLICATE: 1307773

Parameter	Units	60159815001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	24000	24000	0	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

QC Batch: WETA/27629

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159814001

METHOD BLANK: 1310641

Matrix: Water

Associated Lab Samples: 60159814001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/23/13 15:50	

LABORATORY CONTROL SAMPLE: 1310642

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	104	90-110	

MATRIX SPIKE SAMPLE: 1310643

Parameter	Units	60159814001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	528	400	888	90	90-110	

SAMPLE DUPLICATE: 1310644

Parameter	Units	60159520001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

QC Batch:	WETA/27652	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60159814001		

METHOD BLANK: 1311667 Matrix: Water

Associated Lab Samples: 60159814001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/26/13 13:49	

LABORATORY CONTROL SAMPLE: 1311668

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	52.6	105	90-110	

MATRIX SPIKE SAMPLE: 1311669

Parameter	Units	60159376001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	63.6	110	90-110	

SAMPLE DUPLICATE: 1311670

Parameter	Units	60159385002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	605	555	9	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-168R

Pace Project No.: 60159814

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159814001	316-168R	EPA 200.7	MPRP/25646	EPA 200.7	ICP/19686
60159814001	316-168R	EPA 200.7	MPRP/25698	EPA 200.7	ICP/19713
60159814001	316-168R	EPA 245.1	MERP/8011	EPA 245.1	MERC/7967
60159814001	316-168R	EPA 245.1	MERP/8021	EPA 245.1	MERC/7977
60159814001	316-168R	EPA 625	OEXT/42002	EPA 625	MSSV/13346
60159814001	316-168R	EPA 624 Low	MSV/58469		
60159814001	316-168R	EPA 624 Low	MSV/58590		
60159814002	TRIP BLANK	EPA 624 Low	MSV/58469		
60159814002	TRIP BLANK	EPA 624 Low	MSV/58590		
60159814001	316-168R	EPA 1664A	WET/45230		
60159814001	316-168R	EPA 1664A	WET/45272		
60159814001	316-168R	SM 2540D	WET/45235		
60159814001	316-168R	SM 4500-H+B	WET/45226		
60159814001	316-168R	SM 5210B	WET/45212	SM 5210B	WET/45303
60159814001	316-168R	EPA 350.1	WETA/27629		
60159814001	316-168R	EPA 410.4	WETA/27652		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60159814



Client Name: BARR

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ XL

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☐ No ☐ Seals intact: Yes ☐ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ Zipk

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.0

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 8/12/13

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, PH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>W</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>DEC 16</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: Andrew Roberts					
SIGNATURE of SAMPLER: 	DATE Signed: 12/17/13				

December 27, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-169RRR
Pace Project No.: 60159955

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 19, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159955001	316-169RRR	Water	12/18/13 12:35	12/19/13 01:45
60159955002	TRIP BLANK	Water	12/18/13 12:35	12/19/13 01:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159955001	316-169RRR	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JML	1
		EPA 624 Low	EAK	26
60159955002	TRIP BLANK			

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

Sample: 316-169RRR		Lab ID: 60159955001	Collected: 12/18/13 12:35	Received: 12/19/13 01:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	8920	ug/L	375	1	12/24/13 09:00	12/24/13 16:58	7429-90-5	
Antimony	ND	ug/L	50.0	1	12/24/13 09:00	12/24/13 16:58	7440-36-0	
Arsenic	834	ug/L	50.0	1	12/24/13 09:00	12/24/13 16:58	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/24/13 09:00	12/24/13 16:58	7440-41-7	
Cadmium	ND	ug/L	25.0	1	12/24/13 09:00	12/24/13 16:58	7440-43-9	
Chromium	240	ug/L	25.0	1	12/24/13 09:00	12/24/13 16:58	7440-47-3	
Cobalt	35.8	ug/L	25.0	1	12/24/13 09:00	12/24/13 16:58	7440-48-4	
Copper	ND	ug/L	50.0	1	12/24/13 09:00	12/24/13 16:58	7440-50-8	
Iron	820000	ug/L	250	1	12/24/13 09:00	12/24/13 16:58	7439-89-6	
Lead	174	ug/L	25.0	1	12/24/13 09:00	12/24/13 16:58	7439-92-1	
Nickel	77.8	ug/L	25.0	1	12/24/13 09:00	12/24/13 16:58	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/24/13 09:00	12/24/13 16:58	7782-49-2	
Silver	ND	ug/L	35.0	1	12/24/13 09:00	12/24/13 16:58	7440-22-4	
Thallium	ND	ug/L	100	1	12/24/13 09:00	12/24/13 16:58	7440-28-0	
Zinc	11400	ug/L	500	2	12/24/13 09:00	12/24/13 17:00	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	1350	ug/L	375	1	12/24/13 13:30	12/27/13 10:47	7429-90-5	
Antimony, Dissolved	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 10:47	7440-36-0	
Arsenic, Dissolved	239	ug/L	50.0	1	12/24/13 13:30	12/27/13 10:47	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/24/13 13:30	12/27/13 10:47	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 10:47	7440-43-9	
Chromium, Dissolved	75.8	ug/L	25.0	1	12/24/13 13:30	12/27/13 10:47	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 10:47	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 10:47	7440-50-8	
Iron, Dissolved	248000	ug/L	250	1	12/24/13 13:30	12/27/13 10:47	7439-89-6	
Lead, Dissolved	28.9	ug/L	25.0	1	12/24/13 13:30	12/27/13 10:47	7439-92-1	
Nickel, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 10:47	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/24/13 13:30	12/27/13 10:47	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/24/13 13:30	12/27/13 10:47	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/24/13 13:30	12/27/13 10:47	7440-28-0	
Zinc, Dissolved	3220	ug/L	250	1	12/24/13 13:30	12/27/13 10:47	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.74	ug/L	0.20	1	12/20/13 10:05	12/20/13 14:31	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/26/13 11:05	12/27/13 10:51	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/20/13 00:00	12/26/13 16:04	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:04	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:04	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:04	67-72-1	
Naphthalene	1100	ug/L	1000	2	12/20/13 00:00	12/26/13 16:04	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:04	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

Sample: 316-169RRR		Lab ID: 60159955001	Collected: 12/18/13 12:35	Received: 12/19/13 01:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/20/13 00:00	12/26/13 16:04	87-86-5	
Phenol	11500 ug/L		1000	2	12/20/13 00:00	12/26/13 16:04	108-95-2	M1
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/20/13 00:00	12/26/13 16:04	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/20/13 00:00	12/26/13 16:04	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	124 %		33-120	2	12/20/13 00:00	12/26/13 16:04	4165-60-0	S0
2-Fluorobiphenyl (S)	87 %		39-120	2	12/20/13 00:00	12/26/13 16:04	321-60-8	
Terphenyl-d14 (S)	92 %		45-120	2	12/20/13 00:00	12/26/13 16:04	1718-51-0	
Phenol-d6 (S)	36 %		11-120	2	12/20/13 00:00	12/26/13 16:04	13127-88-3	
2-Fluorophenol (S)	50 %		17-120	2	12/20/13 00:00	12/26/13 16:04	367-12-4	
2,4,6-Tribromophenol (S)	101 %		39-120	2	12/20/13 00:00	12/26/13 16:04	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	138000 ug/L		2000	200		12/20/13 14:21	67-64-1	N2
Benzene	ND ug/L		200	200		12/20/13 14:21	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/20/13 14:21	75-27-4	
Bromoform	ND ug/L		200	200		12/20/13 14:21	75-25-2	
Bromomethane	ND ug/L		1000	200		12/20/13 14:21	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/20/13 14:21	56-23-5	
Chloroethane	ND ug/L		200	200		12/20/13 14:21	75-00-3	L3
Chloroform	ND ug/L		200	200		12/20/13 14:21	67-66-3	
1,4-Dichlorobenzene	862 ug/L		200	200		12/20/13 14:21	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/20/13 14:21	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/20/13 14:21	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/20/13 14:21	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/20/13 14:21	100-41-4	
Methylene chloride	204 ug/L		200	200		12/20/13 14:21	75-09-2	C9
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/20/13 14:21	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/20/13 14:21	127-18-4	
Toluene	ND ug/L		200	200		12/20/13 14:21	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/20/13 14:21	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/20/13 14:21	79-00-5	
Trichloroethene	ND ug/L		200	200		12/20/13 14:21	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/20/13 14:21	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/20/13 14:21	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	95 %		80-120	200		12/20/13 14:21	460-00-4	
Toluene-d8 (S)	106 %		80-120	200		12/20/13 14:21	2037-26-5	
1,2-Dichloroethane-d4 (S)	97 %		80-120	200		12/20/13 14:21	17060-07-0	
Preservation pH	6.0		1.0	200		12/20/13 14:21		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	789 mg/L		5.0	1		12/20/13 07:36		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	7.2 mg/L		5.0	1		12/27/13 08:48		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

Sample: 316-169RRR		Lab ID: 60159955001	Collected: 12/18/13 12:35	Received: 12/19/13 01:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2760	mg/L	5.0	1		12/23/13 10:02		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.3	Std. Units	0.10	1		12/20/13 07:45		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	29900	mg/L	2.0	1	12/19/13 16:04	12/24/13 09:24		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	572	mg/L	20.0	200		12/23/13 16:02	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	58100	mg/L	5000	500		12/27/13 10:27		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

Sample: TRIP BLANK		Lab ID: 60159955002	Collected: 12/18/13 12:35	Received: 12/19/13 01:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/20/13 14:51	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/20/13 14:51	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/20/13 14:51	75-27-4	
Bromoform	ND ug/L		1.0	1		12/20/13 14:51	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/20/13 14:51	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/20/13 14:51	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/20/13 14:51	75-00-3	L3
Chloroform	ND ug/L		1.0	1		12/20/13 14:51	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/20/13 14:51	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/20/13 14:51	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/20/13 14:51	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/20/13 14:51	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/20/13 14:51	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/20/13 14:51	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/20/13 14:51	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/20/13 14:51	127-18-4	
Toluene	ND ug/L		1.0	1		12/20/13 14:51	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/20/13 14:51	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/20/13 14:51	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/20/13 14:51	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/20/13 14:51	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/20/13 14:51	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	1		12/20/13 14:51	460-00-4	
Toluene-d8 (S)	108 %		80-120	1		12/20/13 14:51	2037-26-5	
1,2-Dichloroethane-d4 (S)	93 %		80-120	1		12/20/13 14:51	17060-07-0	
Preservation pH	6.0		1.0	1		12/20/13 14:51		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

QC Batch: MERP/8017

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60159955001

METHOD BLANK: 1309344

Matrix: Water

Associated Lab Samples: 60159955001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/20/13 14:17	

LABORATORY CONTROL SAMPLE: 1309345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.8	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1309346 1309347

Parameter	Units	60159987001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.6	4.6	93	92	70-130	1	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

QC Batch: MERP/8028

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60159955001

METHOD BLANK: 1311671

Matrix: Water

Associated Lab Samples: 60159955001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/26/13 16:50	

LABORATORY CONTROL SAMPLE: 1311672

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311673 1311674

Parameter	Units	60159525003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	4.6	4.6	92	92	70-130	0	20	

MATRIX SPIKE SAMPLE: 1311675

Parameter	Units	60160244001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	ND	150	149	99	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR
Pace Project No.: 60159955

QC Batch: MPRP/25703 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60159955001

METHOD BLANK: 1310952 Matrix: Water
Associated Lab Samples: 60159955001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/24/13 16:56	
Antimony	ug/L	ND	10.0	12/24/13 16:56	
Arsenic	ug/L	ND	10.0	12/24/13 16:56	
Beryllium	ug/L	ND	1.0	12/24/13 16:56	
Cadmium	ug/L	ND	5.0	12/24/13 16:56	
Chromium	ug/L	ND	5.0	12/24/13 16:56	
Cobalt	ug/L	ND	5.0	12/24/13 16:56	
Copper	ug/L	ND	10.0	12/24/13 16:56	
Iron	ug/L	ND	50.0	12/24/13 16:56	
Lead	ug/L	ND	5.0	12/24/13 16:56	
Nickel	ug/L	ND	5.0	12/24/13 16:56	
Selenium	ug/L	ND	15.0	12/24/13 16:56	
Silver	ug/L	ND	7.0	12/24/13 16:56	
Thallium	ug/L	ND	20.0	12/24/13 16:56	
Zinc	ug/L	ND	50.0	12/24/13 16:56	

LABORATORY CONTROL SAMPLE: 1310953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10300	103	85-115	
Antimony	ug/L	1000	1060	106	85-115	
Arsenic	ug/L	1000	993	99	85-115	
Beryllium	ug/L	1000	1030	103	85-115	
Cadmium	ug/L	1000	1030	103	85-115	
Chromium	ug/L	1000	1030	103	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Copper	ug/L	1000	998	100	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1070	107	85-115	
Nickel	ug/L	1000	1070	107	85-115	
Selenium	ug/L	1000	1030	103	85-115	
Silver	ug/L	500	504	101	85-115	
Thallium	ug/L	1000	1060	106	85-115	
Zinc	ug/L	1000	1040	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310954 1310955

Parameter	Units	60159867001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	10200	10300	102	102	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310954 1310955											
Parameter	Units	60159867001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						
				Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD
Antimony	ug/L	ND	1000	1000	1000	1090	1110	109	111	70-130	2
Arsenic	ug/L	ND	1000	1000	1000	1040	1050	104	104	70-130	0
Beryllium	ug/L	ND	1000	1000	1000	1040	1050	104	105	70-130	1
Cadmium	ug/L	ND	1000	1000	1000	1050	1050	105	105	70-130	0
Chromium	ug/L	ND	1000	1000	1000	989	993	99	99	70-130	0
Cobalt	ug/L	ND	1000	1000	1000	997	992	100	99	70-130	1
Copper	ug/L	0.017 mg/L	1000	1000	1000	1040	1040	103	103	70-130	0
Iron	ug/L	2930	10000	10000	10000	12700	12600	98	96	70-130	1
Lead	ug/L	ND	1000	1000	1000	1080	1080	107	108	70-130	1
Nickel	ug/L	0.010 mg/L	1000	1000	1000	1080	1090	107	108	70-130	1
Selenium	ug/L	ND	1000	1000	1000	1070	1080	107	108	70-130	1
Silver	ug/L	ND	500	500	500	502	504	100	101	70-130	0
Thallium	ug/L	ND	1000	1000	1000	1060	1060	106	106	70-130	1
Zinc	ug/L	0.051 mg/L	1000	1000	1000	1080	1080	102	103	70-130	0

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR
Pace Project No.: 60159955

QC Batch: MPRP/25718 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60159955001

METHOD BLANK: 1311272 Matrix: Water
Associated Lab Samples: 60159955001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/27/13 10:42	
Antimony, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Arsenic, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Beryllium, Dissolved	ug/L	ND	1.0	12/27/13 10:42	
Cadmium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Chromium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Cobalt, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Copper, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Iron, Dissolved	ug/L	ND	50.0	12/27/13 10:42	
Lead, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Nickel, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Selenium, Dissolved	ug/L	ND	15.0	12/27/13 10:42	
Silver, Dissolved	ug/L	ND	7.0	12/27/13 10:42	
Thallium, Dissolved	ug/L	ND	20.0	12/27/13 10:42	
Zinc, Dissolved	ug/L	ND	50.0	12/27/13 10:42	

LABORATORY CONTROL SAMPLE: 1311273

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9670	97	85-115	
Antimony, Dissolved	ug/L	1000	976	98	85-115	
Arsenic, Dissolved	ug/L	1000	953	95	85-115	
Beryllium, Dissolved	ug/L	1000	984	98	85-115	
Cadmium, Dissolved	ug/L	1000	975	97	85-115	
Chromium, Dissolved	ug/L	1000	993	99	85-115	
Cobalt, Dissolved	ug/L	1000	950	95	85-115	
Copper, Dissolved	ug/L	1000	969	97	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	979	98	85-115	
Nickel, Dissolved	ug/L	1000	988	99	85-115	
Selenium, Dissolved	ug/L	1000	972	97	85-115	
Silver, Dissolved	ug/L	500	491	98	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	974	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275

Parameter	Units	60159955001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	1350	50000	50000	49600	49500	97	96	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275											
Parameter	Units	60159955001		MS	MSD	MSD		MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5000	4940	4920	99	98	70-130	1
Arsenic, Dissolved	ug/L	239	5000	5000	5000	5200	5150	99	98	70-130	1
Beryllium, Dissolved	ug/L	ND	5000	5000	5000	4880	4870	97	97	70-130	0
Cadmium, Dissolved	ug/L	ND	5000	5000	5000	4920	4880	98	98	70-130	1
Chromium, Dissolved	ug/L	75.8	5000	5000	5000	4920	4910	97	97	70-130	0
Cobalt, Dissolved	ug/L	ND	5000	5000	5000	4590	4580	92	91	70-130	0
Copper, Dissolved	ug/L	ND	5000	5000	5000	5000	4970	99	99	70-130	1
Iron, Dissolved	ug/L	248000	50000	50000	50000	308000	290000	120	83	70-130	6
Lead, Dissolved	ug/L	28.9	5000	5000	5000	4610	4600	92	91	70-130	0
Nickel, Dissolved	ug/L	ND	5000	5000	5000	4730	4710	94	94	70-130	0
Selenium, Dissolved	ug/L	ND	5000	5000	5000	5050	4980	101	100	70-130	1
Silver, Dissolved	ug/L	ND	2500	2500	2500	2500	2470	100	99	70-130	1
Thallium, Dissolved	ug/L	ND	5000	5000	5000	4480	4480	90	90	70-130	0
Zinc, Dissolved	ug/L	3220	5000	5000	5000	7980	7720	95	90	70-130	3

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

QC Batch: MSV/58505 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60159955001, 60159955002

METHOD BLANK: 1309491

Matrix: Water

Associated Lab Samples: 60159955001, 60159955002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/20/13 13:51	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/20/13 13:51	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/20/13 13:51	
1,2-Dichloroethane	ug/L	ND	1.0	12/20/13 13:51	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/20/13 13:51	
Benzene	ug/L	ND	1.0	12/20/13 13:51	
Bromodichloromethane	ug/L	ND	1.0	12/20/13 13:51	
Bromoform	ug/L	ND	1.0	12/20/13 13:51	
Bromomethane	ug/L	ND	5.0	12/20/13 13:51	
Carbon tetrachloride	ug/L	ND	1.0	12/20/13 13:51	
Chloroethane	ug/L	ND	1.0	12/20/13 13:51	
Chloroform	ug/L	ND	1.0	12/20/13 13:51	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/20/13 13:51	
Ethylbenzene	ug/L	ND	1.0	12/20/13 13:51	
Methylene chloride	ug/L	ND	1.0	12/20/13 13:51	
Tetrachloroethene	ug/L	ND	1.0	12/20/13 13:51	
Toluene	ug/L	ND	1.0	12/20/13 13:51	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/20/13 13:51	
Trichloroethene	ug/L	ND	1.0	12/20/13 13:51	
Vinyl chloride	ug/L	ND	1.0	12/20/13 13:51	
Xylene (Total)	ug/L	ND	3.0	12/20/13 13:51	
1,2-Dichloroethane-d4 (S)	%	100	80-120	12/20/13 13:51	
4-Bromofluorobenzene (S)	%	98	80-120	12/20/13 13:51	
Toluene-d8 (S)	%	100	80-120	12/20/13 13:51	

LABORATORY CONTROL SAMPLE: 1309492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.7	99	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	18.3	92	59-138	
1,1,2-Trichloroethane	ug/L	20	18.9	94	69-127	
1,2-Dichloroethane	ug/L	20	18.2	91	71-129	
1,4-Dichlorobenzene	ug/L	20	18.9	95	68-124	
Benzene	ug/L	20	18.4	92	73-129	
Bromodichloromethane	ug/L	20	20.2	101	63-129	
Bromoform	ug/L	20	20.1	100	52-123	
Bromomethane	ug/L	20	16.9	85	10-160	
Carbon tetrachloride	ug/L	20	21.1	106	70-140	
Chloroethane	ug/L	20	38.3	191	42-160	
Chloroform	ug/L	20	19.4	97	60-120	
cis-1,2-Dichloroethene	ug/L	20	19.2	96	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

LABORATORY CONTROL SAMPLE: 1309492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.6	98	66-133	
Methylene chloride	ug/L	20	21.5	108	56-135	
Tetrachloroethene	ug/L	20	19.2	96	64-143	
Toluene	ug/L	20	19.6	98	70-130	
trans-1,2-Dichloroethene	ug/L	20	20.9	105	67-149	
Trichloroethene	ug/L	20	19.7	99	71-130	
Vinyl chloride	ug/L	20	17.8	89	41-160	
Xylene (Total)	ug/L	60	57.2	95	67-130	
1,2-Dichloroethane-d4 (S)	%			95	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			103	80-120	

MATRIX SPIKE SAMPLE: 1309493

Parameter	Units	60159955001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3090	77	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3270	82	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3420	86	52-150	
1,2-Dichloroethane	ug/L	ND	4000	2960	74	49-155	
1,4-Dichlorobenzene	ug/L	862	4000	3660	70	18-147	
Benzene	ug/L	ND	4000	3130	77	37-151	
Bromodichloromethane	ug/L	ND	4000	3060	77	35-155	
Bromoform	ug/L	ND	4000	3150	79	45-133	
Bromomethane	ug/L	ND	4000	1760	44	10-160	
Carbon tetrachloride	ug/L	ND	4000	3490	87	70-140	
Chloroethane	ug/L	ND	4000	4080	102	14-160	
Chloroform	ug/L	ND	4000	3010	75	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	2930	73	19-160	
Ethylbenzene	ug/L	ND	4000	3330	80	37-154	
Methylene chloride	ug/L	204	4000	3460	81	15-156	
Tetrachloroethene	ug/L	ND	4000	3220	81	64-148	
Toluene	ug/L	ND	4000	3110	74	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3310	83	54-156	
Trichloroethene	ug/L	ND	4000	3030	76	71-157	
Vinyl chloride	ug/L	ND	4000	2710	68	10-160	
Xylene (Total)	ug/L	ND	12000	9550	77	12-153	
1,2-Dichloroethane-d4 (S)	%				103	80-120	
4-Bromofluorobenzene (S)	%				100	80-120	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			6.0	6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

QC Batch: MSV/58592 Analysis Method: EPA 624 Low
QC Batch Method: EPA 624 Low Analysis Description: 624 MSV
Associated Lab Samples: 60159955001, 60159955002

METHOD BLANK: 1311753 Matrix: Water

Associated Lab Samples: 60159955001, 60159955002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/20/13 13:51	N2
1,2-Dichloroethane-d4 (S)	%	100	80-120	12/20/13 13:51	
4-Bromofluorobenzene (S)	%	98	80-120	12/20/13 13:51	
Toluene-d8 (S)	%	100	80-120	12/20/13 13:51	

LABORATORY CONTROL SAMPLE: 1311754

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	89.6	90	40-160	N2
1,2-Dichloroethane-d4 (S)	%			95	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			103	80-120	

MATRIX SPIKE SAMPLE: 1311755

Parameter	Units	60159955001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	138000	20000	156000	91	40-160	N2
1,2-Dichloroethane-d4 (S)	%				103	80-120	
4-Bromofluorobenzene (S)	%				100	80-120	
Toluene-d8 (S)	%				99	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

QC Batch:	OEXT/42042	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159955001		

METHOD BLANK: 1309339 Matrix: Water

Associated Lab Samples: 60159955001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/26/13 12:13	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/26/13 12:13	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/26/13 12:13	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/26/13 12:13	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/26/13 12:13	
Hexachloroethane	ug/L	ND	5.0	12/26/13 12:13	
Naphthalene	ug/L	ND	5.0	12/26/13 12:13	
Nitrobenzene	ug/L	ND	5.0	12/26/13 12:13	
Pentachlorophenol	ug/L	ND	5.0	12/26/13 12:13	
Phenol	ug/L	ND	5.0	12/26/13 12:13	
2,4,6-Tribromophenol (S)	%	67	39-120	12/26/13 12:13	
2-Fluorobiphenyl (S)	%	86	39-120	12/26/13 12:13	
2-Fluorophenol (S)	%	47	17-120	12/26/13 12:13	
Nitrobenzene-d5 (S)	%	84	33-120	12/26/13 12:13	
Phenol-d6 (S)	%	29	11-120	12/26/13 12:13	
Terphenyl-d14 (S)	%	94	45-120	12/26/13 12:13	

LABORATORY CONTROL SAMPLE: 1309340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	37.3	75	46-120	
2,4,6-Trichlorophenol	ug/L	50	40.0	80	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	33.9	68	40-133	
Hexachloro-1,3-butadiene	ug/L	50	37.6	75	44-116	
Hexachlorocyclopentadiene	ug/L	100	59.2	59	24-120	
Hexachloroethane	ug/L	50	37.3	75	43-113	
Naphthalene	ug/L	50	38.7	77	48-120	
Nitrobenzene	ug/L	50	38.8	78	48-120	
Pentachlorophenol	ug/L	50	38.8	78	47-120	
Phenol	ug/L	50	15.6	31	16-112	
2,4,6-Tribromophenol (S)	%			85	39-120	
2-Fluorobiphenyl (S)	%			87	39-120	
2-Fluorophenol (S)	%			47	17-120	
Nitrobenzene-d5 (S)	%			80	33-120	
Phenol-d6 (S)	%			30	11-120	
Terphenyl-d14 (S)	%			92	45-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

MATRIX SPIKE SAMPLE:		1309341					
Parameter	Units	60159955001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3420	68	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4070	81	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3570J	71	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3470	69	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	6370	64	11-120	
Hexachloroethane	ug/L	ND	5000	3450	69	40-113	
Naphthalene	ug/L	1100	5000	4340	65	45-120	
Nitrobenzene	ug/L	ND	5000	3570	71	38-120	
Pentachlorophenol	ug/L	ND	5000	4520	90	43-135	
Phenol	ug/L	11500	5000	11500	-1	13-112	M1
2,4,6-Tribromophenol (S)	%				89	39-120	
2-Fluorobiphenyl (S)	%				80	39-120	
2-Fluorophenol (S)	%				47	17-120	
Nitrobenzene-d5 (S)	%				112	33-120	
Phenol-d6 (S)	%				31	11-120	
Terphenyl-d14 (S)	%				81	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

QC Batch:	WET/45257	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60159955001		

METHOD BLANK: 1309209 Matrix: Water

Associated Lab Samples: 60159955001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/20/13 07:36	

LABORATORY CONTROL SAMPLE: 1309210

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.3	101	78-114	

MATRIX SPIKE SAMPLE: 1309213

Parameter	Units	60159672001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.4	40.6	98	78-114	

SAMPLE DUPLICATE: 1309214

Parameter	Units	60159855001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	1.5J		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

QC Batch: WET/45376

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159955001

METHOD BLANK: 1312020

Matrix: Water

Associated Lab Samples: 60159955001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/27/13 08:45	

LABORATORY CONTROL SAMPLE: 1312021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.6	103	64-132	

MATRIX SPIKE SAMPLE: 1312022

Parameter	Units	60159625001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	20	22.3	109	64-132	

SAMPLE DUPLICATE: 1312024

Parameter	Units	60159625001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

QC Batch: WET/45294

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159955001

METHOD BLANK: 1310525

Matrix: Water

Associated Lab Samples: 60159955001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/23/13 09:59	

SAMPLE DUPLICATE: 1310526

Parameter	Units	60159948001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	131	129	2	25	

SAMPLE DUPLICATE: 1310527

Parameter	Units	60159964001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	840	845	1	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

QC Batch: WET/45259 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60159955001

SAMPLE DUPLICATE: 1309228

Parameter	Units	60159968001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.2	8.2	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

QC Batch: WET/45250

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159955001

METHOD BLANK: 1308899

Matrix: Water

Associated Lab Samples: 60159955001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/24/13 08:44	

LABORATORY CONTROL SAMPLE: 1308900

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	176	89	85-115	

SAMPLE DUPLICATE: 1308901

Parameter	Units	60159987001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	4.0	4.5	12	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

QC Batch: WETA/27629

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159955001

METHOD BLANK: 1310641

Matrix: Water

Associated Lab Samples: 60159955001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/23/13 15:50	

LABORATORY CONTROL SAMPLE: 1310642

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	104	90-110	

MATRIX SPIKE SAMPLE: 1310643

Parameter	Units	60159814001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	528	400	888	90	90-110	

SAMPLE DUPLICATE: 1310644

Parameter	Units	60159520001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

QC Batch:	WETA/27655	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60159955001		

METHOD BLANK: 1311828 Matrix: Water
Associated Lab Samples: 60159955001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/27/13 09:49	

LABORATORY CONTROL SAMPLE: 1311829

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	53.3	107	90-110	

MATRIX SPIKE SAMPLE: 1311830

Parameter	Units	60159430001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	901	500	1360	92	90-110	

MATRIX SPIKE SAMPLE: 1311832

Parameter	Units	60159745001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	4080	2500	6600	101	90-110	

SAMPLE DUPLICATE: 1311831

Parameter	Units	60159489001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	779	840	8	25	

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QUALIFIERS

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

C9 Common Laboratory Contaminant.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-169RRR

Pace Project No.: 60159955

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159955001	316-169RRR	EPA 200.7	MPRP/25703	EPA 200.7	ICP/19726
60159955001	316-169RRR	EPA 200.7	MPRP/25718	EPA 200.7	ICP/19731
60159955001	316-169RRR	EPA 245.1	MERP/8017	EPA 245.1	MERC/7971
60159955001	316-169RRR	EPA 245.1	MERP/8028	EPA 245.1	MERC/7982
60159955001	316-169RRR	EPA 625	OEXT/42042	EPA 625	MSSV/13374
60159955001	316-169RRR	EPA 624 Low	MSV/58505		
60159955001	316-169RRR	EPA 624 Low	MSV/58592		
60159955002	TRIP BLANK	EPA 624 Low	MSV/58505		
60159955002	TRIP BLANK	EPA 624 Low	MSV/58592		
60159955001	316-169RRR	EPA 1664A	WET/45257		
60159955001	316-169RRR	EPA 1664A	WET/45376		
60159955001	316-169RRR	SM 2540D	WET/45294		
60159955001	316-169RRR	SM 4500-H+B	WET/45259		
60159955001	316-169RRR	SM 5210B	WET/45250	SM 5210B	WET/45316
60159955001	316-169RRR	EPA 350.1	WETA/27629		
60159955001	316-169RRR	EPA 410.4	WETA/27655		

REPORT OF LABORATORY ANALYSIS

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WO#: 60159955



60159955



Sample Condition Upon Receipt

Client Name: Barr Engineering

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ fuels

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☒ 2"

Thermometer Used: T-239 / T-194 Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 1.0 (circle one)

Date and initials of person examining contents: 12/19/13 [Signature]

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>300, pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>W</u>		15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, <u>O&G</u> , WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>093013-36E2</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution: Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☐ N ☒

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 12/19/13

December 27, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 96-SW01
Pace Project No.: 60159958

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 19, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159958001	96-SW01	Water	12/18/13 07:00	12/19/13 01:45
60159958002	TRIP BLANK	Water	12/18/13 00:00	12/19/13 01:45

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159958001	96-SW01	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JML	1
		EPA 624 Low	EAK	26
60159958002	TRIP BLANK			

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 96-SW01
Pace Project No.: 60159958

Sample: 96-SW01		Lab ID: 60159958001	Collected: 12/18/13 07:00	Received: 12/19/13 01:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	2720	ug/L	375	1	12/24/13 09:00	12/24/13 17:07	7429-90-5	
Antimony	ND	ug/L	50.0	1	12/24/13 09:00	12/24/13 17:07	7440-36-0	
Arsenic	ND	ug/L	50.0	1	12/24/13 09:00	12/24/13 17:07	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/24/13 09:00	12/24/13 17:07	7440-41-7	
Cadmium	ND	ug/L	25.0	1	12/24/13 09:00	12/24/13 17:07	7440-43-9	
Chromium	31.1	ug/L	25.0	1	12/24/13 09:00	12/24/13 17:07	7440-47-3	
Cobalt	ND	ug/L	25.0	1	12/24/13 09:00	12/26/13 09:36	7440-48-4	
Copper	ND	ug/L	50.0	1	12/24/13 09:00	12/24/13 17:07	7440-50-8	
Iron	67400	ug/L	250	1	12/24/13 09:00	12/24/13 17:07	7439-89-6	
Lead	ND	ug/L	25.0	1	12/24/13 09:00	12/24/13 17:07	7439-92-1	
Nickel	ND	ug/L	25.0	1	12/24/13 09:00	12/24/13 17:07	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/24/13 09:00	12/24/13 17:07	7782-49-2	
Silver	ND	ug/L	35.0	1	12/24/13 09:00	12/24/13 17:07	7440-22-4	
Thallium	ND	ug/L	100	1	12/24/13 09:00	12/24/13 17:07	7440-28-0	
Zinc	2350	ug/L	250	1	12/24/13 09:00	12/24/13 17:07	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	ND	ug/L	375	1	12/24/13 13:30	12/27/13 11:00	7429-90-5	
Antimony, Dissolved	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 11:00	7440-36-0	
Arsenic, Dissolved	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 11:00	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/24/13 13:30	12/27/13 11:00	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:00	7440-43-9	
Chromium, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:00	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:00	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 11:00	7440-50-8	
Iron, Dissolved	20800	ug/L	250	1	12/24/13 13:30	12/27/13 11:00	7439-89-6	
Lead, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:00	7439-92-1	
Nickel, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:00	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/24/13 13:30	12/27/13 11:00	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/24/13 13:30	12/27/13 11:00	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/24/13 13:30	12/27/13 11:00	7440-28-0	
Zinc, Dissolved	1450	ug/L	250	1	12/24/13 13:30	12/27/13 11:00	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	0.20	1	12/20/13 10:05	12/20/13 14:33	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/26/13 11:05	12/27/13 10:53	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/20/13 00:00	12/26/13 16:24	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:24	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:24	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:24	67-72-1	
Naphthalene	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:24	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:24	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

Sample: 96-SW01		Lab ID: 60159958001	Collected: 12/18/13 07:00	Received: 12/19/13 01:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:24	87-86-5	
Phenol	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:24	108-95-2	
1,2,4-Trichlorobenzene	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:24	120-82-1	
2,4,6-Trichlorophenol	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:24	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	74	%	33-120	2	12/20/13 00:00	12/26/13 16:24	4165-60-0	
2-Fluorobiphenyl (S)	80	%	39-120	2	12/20/13 00:00	12/26/13 16:24	321-60-8	
Terphenyl-d14 (S)	90	%	45-120	2	12/20/13 00:00	12/26/13 16:24	1718-51-0	
Phenol-d6 (S)	27	%	11-120	2	12/20/13 00:00	12/26/13 16:24	13127-88-3	
2-Fluorophenol (S)	41	%	17-120	2	12/20/13 00:00	12/26/13 16:24	367-12-4	
2,4,6-Tribromophenol (S)	77	%	39-120	2	12/20/13 00:00	12/26/13 16:24	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	4680	ug/L	50.0	5		12/23/13 12:43	67-64-1	N2
Benzene	30.9	ug/L	5.0	5		12/23/13 12:43	71-43-2	
Bromodichloromethane	ND	ug/L	5.0	5		12/23/13 12:43	75-27-4	
Bromoform	ND	ug/L	5.0	5		12/23/13 12:43	75-25-2	
Bromomethane	ND	ug/L	25.0	5		12/23/13 12:43	74-83-9	
Carbon tetrachloride	ND	ug/L	5.0	5		12/23/13 12:43	56-23-5	
Chloroethane	ND	ug/L	5.0	5		12/23/13 12:43	75-00-3	
Chloroform	ND	ug/L	5.0	5		12/23/13 12:43	67-66-3	
1,4-Dichlorobenzene	21.2	ug/L	5.0	5		12/23/13 12:43	106-46-7	
1,2-Dichloroethane	ND	ug/L	5.0	5		12/23/13 12:43	107-06-2	
cis-1,2-Dichloroethene	ND	ug/L	5.0	5		12/23/13 12:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	5		12/23/13 12:43	156-60-5	
Ethylbenzene	7.5	ug/L	5.0	5		12/23/13 12:43	100-41-4	
Methylene chloride	ND	ug/L	5.0	5		12/23/13 12:43	75-09-2	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	5		12/23/13 12:43	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	5		12/23/13 12:43	127-18-4	
Toluene	12.4	ug/L	5.0	5		12/23/13 12:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	5		12/23/13 12:43	71-55-6	
1,1,2-Trichloroethane	28.2	ug/L	5.0	5		12/23/13 12:43	79-00-5	
Trichloroethene	ND	ug/L	5.0	5		12/23/13 12:43	79-01-6	
Vinyl chloride	ND	ug/L	5.0	5		12/23/13 12:43	75-01-4	
Xylene (Total)	28.2	ug/L	15.0	5		12/23/13 12:43	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	98	%	80-120	5		12/23/13 12:43	460-00-4	
Toluene-d8 (S)	103	%	80-120	5		12/23/13 12:43	2037-26-5	
1,2-Dichloroethane-d4 (S)	102	%	80-120	5		12/23/13 12:43	17060-07-0	
Preservation pH	6.0		1.0	5		12/23/13 12:43		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	19.6	mg/L	5.0	1		12/20/13 07:37		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	5.4	mg/L	5.0	1		12/27/13 08:48		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

Sample: 96-SW01		Lab ID: 60159958001	Collected: 12/18/13 07:00	Received: 12/19/13 01:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	203	mg/L	5.0	1		12/23/13 10:03		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	6.7	Std. Units	0.10	1		12/20/13 07:45		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	1640	mg/L	2.0	1	12/19/13 12:57	12/24/13 06:52		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	41.2	mg/L	1.0	10		12/23/13 16:03	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	5540	mg/L	1000	100		12/27/13 10:33		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

Sample: TRIP BLANK		Lab ID: 60159958002	Collected: 12/18/13 00:00	Received: 12/19/13 01:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/20/13 15:21	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/20/13 15:21	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/20/13 15:21	75-27-4	
Bromoform	ND ug/L		1.0	1		12/20/13 15:21	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/20/13 15:21	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/20/13 15:21	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/20/13 15:21	75-00-3	L3
Chloroform	ND ug/L		1.0	1		12/20/13 15:21	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/20/13 15:21	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/20/13 15:21	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/20/13 15:21	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/20/13 15:21	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/20/13 15:21	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/20/13 15:21	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/20/13 15:21	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/20/13 15:21	127-18-4	
Toluene	ND ug/L		1.0	1		12/20/13 15:21	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/20/13 15:21	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/20/13 15:21	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/20/13 15:21	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/20/13 15:21	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/20/13 15:21	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	1		12/20/13 15:21	460-00-4	
Toluene-d8 (S)	103 %		80-120	1		12/20/13 15:21	2037-26-5	
1,2-Dichloroethane-d4 (S)	100 %		80-120	1		12/20/13 15:21	17060-07-0	
Preservation pH	6.0		1.0	1		12/20/13 15:21		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

QC Batch:	MERP/8017	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury
Associated Lab Samples:	60159958001		

METHOD BLANK: 1309344 Matrix: Water

Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/20/13 14:17	

LABORATORY CONTROL SAMPLE: 1309345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.8	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1309346 1309347

Parameter	Units	60159987001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.6	4.6	93	92	70-130	1	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

QC Batch: MERP/8028

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60159958001

METHOD BLANK: 1311671

Matrix: Water

Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/26/13 16:50	

LABORATORY CONTROL SAMPLE: 1311672

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311673 1311674

Parameter	Units	60159525003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	4.6	4.6	92	92	70-130	0	20	

MATRIX SPIKE SAMPLE: 1311675

Parameter	Units	60160244001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	ND	150	149	99	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01
Pace Project No.: 60159958

QC Batch:	MPRP/25703	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
Associated Lab Samples:	60159958001		

METHOD BLANK: 1310952 Matrix: Water
Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/24/13 16:56	
Antimony	ug/L	ND	10.0	12/24/13 16:56	
Arsenic	ug/L	ND	10.0	12/24/13 16:56	
Beryllium	ug/L	ND	1.0	12/24/13 16:56	
Cadmium	ug/L	ND	5.0	12/24/13 16:56	
Chromium	ug/L	ND	5.0	12/24/13 16:56	
Cobalt	ug/L	ND	5.0	12/24/13 16:56	
Copper	ug/L	ND	10.0	12/24/13 16:56	
Iron	ug/L	ND	50.0	12/24/13 16:56	
Lead	ug/L	ND	5.0	12/24/13 16:56	
Nickel	ug/L	ND	5.0	12/24/13 16:56	
Selenium	ug/L	ND	15.0	12/24/13 16:56	
Silver	ug/L	ND	7.0	12/24/13 16:56	
Thallium	ug/L	ND	20.0	12/24/13 16:56	
Zinc	ug/L	ND	50.0	12/24/13 16:56	

LABORATORY CONTROL SAMPLE: 1310953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10300	103	85-115	
Antimony	ug/L	1000	1060	106	85-115	
Arsenic	ug/L	1000	993	99	85-115	
Beryllium	ug/L	1000	1030	103	85-115	
Cadmium	ug/L	1000	1030	103	85-115	
Chromium	ug/L	1000	1030	103	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Copper	ug/L	1000	998	100	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1070	107	85-115	
Nickel	ug/L	1000	1070	107	85-115	
Selenium	ug/L	1000	1030	103	85-115	
Silver	ug/L	500	504	101	85-115	
Thallium	ug/L	1000	1060	106	85-115	
Zinc	ug/L	1000	1040	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310954 1310955

Parameter	Units	60159867001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	10200	10300	102	102	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310954 1310955											
Parameter	Units	60159867001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						RPD
Antimony	ug/L	ND	1000	1000	1000	1090	1110	109	111	70-130	2
Arsenic	ug/L	ND	1000	1000	1000	1040	1050	104	104	70-130	0
Beryllium	ug/L	ND	1000	1000	1000	1040	1050	104	105	70-130	1
Cadmium	ug/L	ND	1000	1000	1000	1050	1050	105	105	70-130	0
Chromium	ug/L	ND	1000	1000	1000	989	993	99	99	70-130	0
Cobalt	ug/L	ND	1000	1000	1000	997	992	100	99	70-130	1
Copper	ug/L	0.017 mg/L	1000	1000	1000	1040	1040	103	103	70-130	0
Iron	ug/L	2930	10000	10000	10000	12700	12600	98	96	70-130	1
Lead	ug/L	ND	1000	1000	1000	1080	1080	107	108	70-130	1
Nickel	ug/L	0.010 mg/L	1000	1000	1000	1080	1090	107	108	70-130	1
Selenium	ug/L	ND	1000	1000	1000	1070	1080	107	108	70-130	1
Silver	ug/L	ND	500	500	500	502	504	100	101	70-130	0
Thallium	ug/L	ND	1000	1000	1000	1060	1060	106	106	70-130	1
Zinc	ug/L	0.051 mg/L	1000	1000	1000	1080	1080	102	103	70-130	0

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01
Pace Project No.: 60159958

QC Batch: MPRP/25718 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60159958001

METHOD BLANK: 1311272 Matrix: Water
Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/27/13 10:42	
Antimony, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Arsenic, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Beryllium, Dissolved	ug/L	ND	1.0	12/27/13 10:42	
Cadmium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Chromium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Cobalt, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Copper, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Iron, Dissolved	ug/L	ND	50.0	12/27/13 10:42	
Lead, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Nickel, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Selenium, Dissolved	ug/L	ND	15.0	12/27/13 10:42	
Silver, Dissolved	ug/L	ND	7.0	12/27/13 10:42	
Thallium, Dissolved	ug/L	ND	20.0	12/27/13 10:42	
Zinc, Dissolved	ug/L	ND	50.0	12/27/13 10:42	

LABORATORY CONTROL SAMPLE: 1311273

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9670	97	85-115	
Antimony, Dissolved	ug/L	1000	976	98	85-115	
Arsenic, Dissolved	ug/L	1000	953	95	85-115	
Beryllium, Dissolved	ug/L	1000	984	98	85-115	
Cadmium, Dissolved	ug/L	1000	975	97	85-115	
Chromium, Dissolved	ug/L	1000	993	99	85-115	
Cobalt, Dissolved	ug/L	1000	950	95	85-115	
Copper, Dissolved	ug/L	1000	969	97	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	979	98	85-115	
Nickel, Dissolved	ug/L	1000	988	99	85-115	
Selenium, Dissolved	ug/L	1000	972	97	85-115	
Silver, Dissolved	ug/L	500	491	98	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	974	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275

Parameter	Units	60159955001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	1350	50000	50000	49600	49500	97	96	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275												
Parameter	Units	60159955001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Antimony, Dissolved	ug/L	ND	5000	5000	4940	4920	99	98	70-130	1	7	
Arsenic, Dissolved	ug/L	239	5000	5000	5200	5150	99	98	70-130	1	10	
Beryllium, Dissolved	ug/L	ND	5000	5000	4880	4870	97	97	70-130	0	7	
Cadmium, Dissolved	ug/L	ND	5000	5000	4920	4880	98	98	70-130	1	10	
Chromium, Dissolved	ug/L	75.8	5000	5000	4920	4910	97	97	70-130	0	10	
Cobalt, Dissolved	ug/L	ND	5000	5000	4590	4580	92	91	70-130	0	6	
Copper, Dissolved	ug/L	ND	5000	5000	5000	4970	99	99	70-130	1	11	
Iron, Dissolved	ug/L	248000	50000	50000	308000	290000	120	83	70-130	6	10	
Lead, Dissolved	ug/L	28.9	5000	5000	4610	4600	92	91	70-130	0	10	
Nickel, Dissolved	ug/L	ND	5000	5000	4730	4710	94	94	70-130	0	10	
Selenium, Dissolved	ug/L	ND	5000	5000	5050	4980	101	100	70-130	1	10	
Silver, Dissolved	ug/L	ND	2500	2500	2500	2470	100	99	70-130	1	10	
Thallium, Dissolved	ug/L	ND	5000	5000	4480	4480	90	90	70-130	0	6	
Zinc, Dissolved	ug/L	3220	5000	5000	7980	7720	95	90	70-130	3	11	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01
Pace Project No.: 60159958

QC Batch:	MSV/58505	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60159958002		

METHOD BLANK: 1309491 Matrix: Water
Associated Lab Samples: 60159958002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/20/13 13:51	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/20/13 13:51	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/20/13 13:51	
1,2-Dichloroethane	ug/L	ND	1.0	12/20/13 13:51	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/20/13 13:51	
Benzene	ug/L	ND	1.0	12/20/13 13:51	
Bromodichloromethane	ug/L	ND	1.0	12/20/13 13:51	
Bromoform	ug/L	ND	1.0	12/20/13 13:51	
Bromomethane	ug/L	ND	5.0	12/20/13 13:51	
Carbon tetrachloride	ug/L	ND	1.0	12/20/13 13:51	
Chloroethane	ug/L	ND	1.0	12/20/13 13:51	
Chloroform	ug/L	ND	1.0	12/20/13 13:51	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/20/13 13:51	
Ethylbenzene	ug/L	ND	1.0	12/20/13 13:51	
Methylene chloride	ug/L	ND	1.0	12/20/13 13:51	
Tetrachloroethene	ug/L	ND	1.0	12/20/13 13:51	
Toluene	ug/L	ND	1.0	12/20/13 13:51	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/20/13 13:51	
Trichloroethene	ug/L	ND	1.0	12/20/13 13:51	
Vinyl chloride	ug/L	ND	1.0	12/20/13 13:51	
Xylene (Total)	ug/L	ND	3.0	12/20/13 13:51	
1,2-Dichloroethane-d4 (S)	%	100	80-120	12/20/13 13:51	
4-Bromofluorobenzene (S)	%	98	80-120	12/20/13 13:51	
Toluene-d8 (S)	%	100	80-120	12/20/13 13:51	

LABORATORY CONTROL SAMPLE: 1309492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.7	99	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	18.3	92	59-138	
1,1,2-Trichloroethane	ug/L	20	18.9	94	69-127	
1,2-Dichloroethane	ug/L	20	18.2	91	71-129	
1,4-Dichlorobenzene	ug/L	20	18.9	95	68-124	
Benzene	ug/L	20	18.4	92	73-129	
Bromodichloromethane	ug/L	20	20.2	101	63-129	
Bromoform	ug/L	20	20.1	100	52-123	
Bromomethane	ug/L	20	16.9	85	10-160	
Carbon tetrachloride	ug/L	20	21.1	106	70-140	
Chloroethane	ug/L	20	38.3	191	42-160	
Chloroform	ug/L	20	19.4	97	60-120	
cis-1,2-Dichloroethene	ug/L	20	19.2	96	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

LABORATORY CONTROL SAMPLE: 1309492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.6	98	66-133	
Methylene chloride	ug/L	20	21.5	108	56-135	
Tetrachloroethene	ug/L	20	19.2	96	64-143	
Toluene	ug/L	20	19.6	98	70-130	
trans-1,2-Dichloroethene	ug/L	20	20.9	105	67-149	
Trichloroethene	ug/L	20	19.7	99	71-130	
Vinyl chloride	ug/L	20	17.8	89	41-160	
Xylene (Total)	ug/L	60	57.2	95	67-130	
1,2-Dichloroethane-d4 (S)	%			95	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			103	80-120	

MATRIX SPIKE SAMPLE: 1309493

Parameter	Units	60159955001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3090	77	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3270	82	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3420	86	52-150	
1,2-Dichloroethane	ug/L	ND	4000	2960	74	49-155	
1,4-Dichlorobenzene	ug/L	862	4000	3660	70	18-147	
Benzene	ug/L	ND	4000	3130	77	37-151	
Bromodichloromethane	ug/L	ND	4000	3060	77	35-155	
Bromoform	ug/L	ND	4000	3150	79	45-133	
Bromomethane	ug/L	ND	4000	1760	44	10-160	
Carbon tetrachloride	ug/L	ND	4000	3490	87	70-140	
Chloroethane	ug/L	ND	4000	4080	102	14-160	
Chloroform	ug/L	ND	4000	3010	75	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	2930	73	19-160	
Ethylbenzene	ug/L	ND	4000	3330	80	37-154	
Methylene chloride	ug/L	204	4000	3460	81	15-156	
Tetrachloroethene	ug/L	ND	4000	3220	81	64-148	
Toluene	ug/L	ND	4000	3110	74	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3310	83	54-156	
Trichloroethene	ug/L	ND	4000	3030	76	71-157	
Vinyl chloride	ug/L	ND	4000	2710	68	10-160	
Xylene (Total)	ug/L	ND	12000	9550	77	12-153	
1,2-Dichloroethane-d4 (S)	%				103	80-120	
4-Bromofluorobenzene (S)	%				100	80-120	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01
Pace Project No.: 60159958

QC Batch:	MSV/58528	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60159958001		

METHOD BLANK: 1310756 Matrix: Water
Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/23/13 11:58	N2
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/23/13 11:58	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/23/13 11:58	
1,2-Dichloroethane	ug/L	ND	1.0	12/23/13 11:58	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/23/13 11:58	
Benzene	ug/L	ND	1.0	12/23/13 11:58	N2
Bromodichloromethane	ug/L	ND	1.0	12/23/13 11:58	
Bromoform	ug/L	ND	1.0	12/23/13 11:58	
Bromomethane	ug/L	ND	5.0	12/23/13 11:58	
Carbon tetrachloride	ug/L	ND	1.0	12/23/13 11:58	
Chloroethane	ug/L	ND	1.0	12/23/13 11:58	
Chloroform	ug/L	ND	1.0	12/23/13 11:58	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/23/13 11:58	
Ethylbenzene	ug/L	ND	1.0	12/23/13 11:58	
Methylene chloride	ug/L	ND	1.0	12/23/13 11:58	
Tetrachloroethene	ug/L	ND	1.0	12/23/13 11:58	N2
Toluene	ug/L	ND	1.0	12/23/13 11:58	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/23/13 11:58	
Trichloroethene	ug/L	ND	1.0	12/23/13 11:58	
Vinyl chloride	ug/L	ND	1.0	12/23/13 11:58	
Xylene (Total)	ug/L	ND	3.0	12/23/13 11:58	N2
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/23/13 11:58	
4-Bromofluorobenzene (S)	%	101	80-120	12/23/13 11:58	
Toluene-d8 (S)	%	101	80-120	12/23/13 11:58	

LABORATORY CONTROL SAMPLE: 1310757

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.1	95	71-139	N2
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	97	59-138	
1,1,2-Trichloroethane	ug/L	20	18.2	91	69-127	
1,2-Dichloroethane	ug/L	20	17.7	88	71-129	
1,4-Dichlorobenzene	ug/L	20	20.0	100	68-124	
Benzene	ug/L	20	17.6	88	73-129	N2
Bromodichloromethane	ug/L	20	19.7	98	63-129	
Bromoform	ug/L	20	19.1	95	52-123	
Bromomethane	ug/L	20	15.6	78	10-160	
Carbon tetrachloride	ug/L	20	20.0	100	70-140	
Chloroethane	ug/L	20	15.0	75	42-160	
Chloroform	ug/L	20	19.4	97	60-120	
cis-1,2-Dichloroethene	ug/L	20	17.9	90	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

LABORATORY CONTROL SAMPLE: 1310757

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.1	95	66-133	
Methylene chloride	ug/L	20	21.4	107	56-135	
Tetrachloroethene	ug/L	20	18.5	92	64-143	
Toluene	ug/L	20	18.3	92	70-130	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	67-149	
Trichloroethene	ug/L	20	19.1	95	71-130	
Vinyl chloride	ug/L	20	16.7	83	41-160	
Xylene (Total)	ug/L	60	56.7	94	67-130	N2
1,2-Dichloroethane-d4 (S)	%			93	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			105	80-120	

MATRIX SPIKE SAMPLE: 1310758

Parameter	Units	60160164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3120	78	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3010	75	46-157	N2
1,1,2-Trichloroethane	ug/L	ND	4000	3290	82	52-150	
1,2-Dichloroethane	ug/L	ND	4000	2960	74	49-155	
1,4-Dichlorobenzene	ug/L	428	4000	3190	69	18-147	
Benzene	ug/L	ND	4000	2960	74	37-151	
Bromodichloromethane	ug/L	ND	4000	3120	78	35-155	
Bromoform	ug/L	ND	4000	3140	78	45-133	
Bromomethane	ug/L	ND	4000	1990	50	10-160	
Carbon tetrachloride	ug/L	ND	4000	3440	86	70-140	
Chloroethane	ug/L	ND	4000	3910	98	14-160	
Chloroform	ug/L	ND	4000	3050	76	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	2770	69	19-160	N2
Ethylbenzene	ug/L	ND	4000	3100	77	37-154	
Methylene chloride	ug/L	ND	4000	3030	75	15-156	
Tetrachloroethene	ug/L	ND	4000	3130	78	64-148	
Toluene	ug/L	ND	4000	2870	72	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	2940	74	54-156	
Trichloroethene	ug/L	ND	4000	3080	77	71-157	
Vinyl chloride	ug/L	ND	4000	2990	75	10-160	
Xylene (Total)	ug/L	ND	12000	9180	76	12-153	N2
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				94	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

QC Batch:	MSV/58592	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60159958002		

METHOD BLANK: 1311753 Matrix: Water

Associated Lab Samples: 60159958002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/20/13 13:51	N2
1,2-Dichloroethane-d4 (S)	%	100	80-120	12/20/13 13:51	
4-Bromofluorobenzene (S)	%	98	80-120	12/20/13 13:51	
Toluene-d8 (S)	%	100	80-120	12/20/13 13:51	

LABORATORY CONTROL SAMPLE: 1311754

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	89.6	90	40-160	N2
1,2-Dichloroethane-d4 (S)	%			95	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			103	80-120	

MATRIX SPIKE SAMPLE: 1311755

Parameter	Units	60159955001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	138000	20000	156000	91	40-160	N2
1,2-Dichloroethane-d4 (S)	%				103	80-120	
4-Bromofluorobenzene (S)	%				100	80-120	
Toluene-d8 (S)	%				99	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

QC Batch:	MSV/58593	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60159958001		

METHOD BLANK: 1311756 Matrix: Water

Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/23/13 11:58	N2
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/23/13 11:58	
4-Bromofluorobenzene (S)	%	101	80-120	12/23/13 11:58	
Toluene-d8 (S)	%	101	80-120	12/23/13 11:58	

LABORATORY CONTROL SAMPLE: 1311757

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	90.0	90	40-160	N2
1,2-Dichloroethane-d4 (S)	%			93	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			105	80-120	

MATRIX SPIKE SAMPLE: 1311758

Parameter	Units	60160164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	120000	20000	133000	68	40-160	N2
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				94	80-120	
Toluene-d8 (S)	%				100	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01
Pace Project No.: 60159958

QC Batch:	OEXT/42042	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60159958001		

METHOD BLANK: 1309339 Matrix: Water
Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/26/13 12:13	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/26/13 12:13	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/26/13 12:13	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/26/13 12:13	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/26/13 12:13	
Hexachloroethane	ug/L	ND	5.0	12/26/13 12:13	
Naphthalene	ug/L	ND	5.0	12/26/13 12:13	
Nitrobenzene	ug/L	ND	5.0	12/26/13 12:13	
Pentachlorophenol	ug/L	ND	5.0	12/26/13 12:13	
Phenol	ug/L	ND	5.0	12/26/13 12:13	
2,4,6-Tribromophenol (S)	%	67	39-120	12/26/13 12:13	
2-Fluorobiphenyl (S)	%	86	39-120	12/26/13 12:13	
2-Fluorophenol (S)	%	47	17-120	12/26/13 12:13	
Nitrobenzene-d5 (S)	%	84	33-120	12/26/13 12:13	
Phenol-d6 (S)	%	29	11-120	12/26/13 12:13	
Terphenyl-d14 (S)	%	94	45-120	12/26/13 12:13	

LABORATORY CONTROL SAMPLE: 1309340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	37.3	75	46-120	
2,4,6-Trichlorophenol	ug/L	50	40.0	80	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	33.9	68	40-133	
Hexachloro-1,3-butadiene	ug/L	50	37.6	75	44-116	
Hexachlorocyclopentadiene	ug/L	100	59.2	59	24-120	
Hexachloroethane	ug/L	50	37.3	75	43-113	
Naphthalene	ug/L	50	38.7	77	48-120	
Nitrobenzene	ug/L	50	38.8	78	48-120	
Pentachlorophenol	ug/L	50	38.8	78	47-120	
Phenol	ug/L	50	15.6	31	16-112	
2,4,6-Tribromophenol (S)	%			85	39-120	
2-Fluorobiphenyl (S)	%			87	39-120	
2-Fluorophenol (S)	%			47	17-120	
Nitrobenzene-d5 (S)	%			80	33-120	
Phenol-d6 (S)	%			30	11-120	
Terphenyl-d14 (S)	%			92	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

MATRIX SPIKE SAMPLE:		1309341					
Parameter	Units	60159955001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3420	68	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4070	81	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3570J	71	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3470	69	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	6370	64	11-120	
Hexachloroethane	ug/L	ND	5000	3450	69	40-113	
Naphthalene	ug/L	1100	5000	4340	65	45-120	
Nitrobenzene	ug/L	ND	5000	3570	71	38-120	
Pentachlorophenol	ug/L	ND	5000	4520	90	43-135	
Phenol	ug/L	11500	5000	11500	-1	13-112	M1
2,4,6-Tribromophenol (S)	%				89	39-120	
2-Fluorobiphenyl (S)	%				80	39-120	
2-Fluorophenol (S)	%				47	17-120	
Nitrobenzene-d5 (S)	%				112	33-120	
Phenol-d6 (S)	%				31	11-120	
Terphenyl-d14 (S)	%				81	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

QC Batch:	WET/45257	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60159958001		

METHOD BLANK: 1309209 Matrix: Water

Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/20/13 07:36	

LABORATORY CONTROL SAMPLE: 1309210

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.3	101	78-114	

MATRIX SPIKE SAMPLE: 1309213

Parameter	Units	60159672001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.4	40.6	98	78-114	

SAMPLE DUPLICATE: 1309214

Parameter	Units	60159855001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	1.5J		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

QC Batch: WET/45376

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60159958001

METHOD BLANK: 1312020

Matrix: Water

Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/27/13 08:45	

LABORATORY CONTROL SAMPLE: 1312021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.6	103	64-132	

MATRIX SPIKE SAMPLE: 1312022

Parameter	Units	60159625001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	20	22.3	109	64-132	

SAMPLE DUPLICATE: 1312024

Parameter	Units	60159625001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

QC Batch: WET/45294

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60159958001

METHOD BLANK: 1310525

Matrix: Water

Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/23/13 09:59	

SAMPLE DUPLICATE: 1310526

Parameter	Units	60159948001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	131	129	2	25	

SAMPLE DUPLICATE: 1310527

Parameter	Units	60159964001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	840	845	1	25	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

QC Batch:	WET/45259	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60159958001		

SAMPLE DUPLICATE: 1309228

Parameter	Units	60159968001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.2	8.2	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

QC Batch: WET/45242

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60159958001

METHOD BLANK: 1308560

Matrix: Water

Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/24/13 06:39	

LABORATORY CONTROL SAMPLE: 1308561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	210	106	85-115	

SAMPLE DUPLICATE: 1308562

Parameter	Units	60159809002 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	2.3	2.2	4	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

QC Batch: WETA/27629

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60159958001

METHOD BLANK: 1310641

Matrix: Water

Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/23/13 15:50	

LABORATORY CONTROL SAMPLE: 1310642

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	104	90-110	

MATRIX SPIKE SAMPLE: 1310643

Parameter	Units	60159814001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	528	400	888	90	90-110	

SAMPLE DUPLICATE: 1310644

Parameter	Units	60159520001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW01
Pace Project No.: 60159958

QC Batch:	WETA/27655	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60159958001		

METHOD BLANK: 1311828 Matrix: Water
Associated Lab Samples: 60159958001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/27/13 09:49	

LABORATORY CONTROL SAMPLE: 1311829

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	53.3	107	90-110	

MATRIX SPIKE SAMPLE: 1311830

Parameter	Units	60159430001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	901	500	1360	92	90-110	

MATRIX SPIKE SAMPLE: 1311832

Parameter	Units	60159745001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	4080	2500	6600	101	90-110	

SAMPLE DUPLICATE: 1311831

Parameter	Units	60159489001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	779	840	8	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 96-SW01
Pace Project No.: 60159958

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold TNI accreditation for this parameter.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 96-SW01

Pace Project No.: 60159958

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159958001	96-SW01	EPA 200.7	MPRP/25703	EPA 200.7	ICP/19726
60159958001	96-SW01	EPA 200.7	MPRP/25718	EPA 200.7	ICP/19731
60159958001	96-SW01	EPA 245.1	MERP/8017	EPA 245.1	MERC/7971
60159958001	96-SW01	EPA 245.1	MERP/8028	EPA 245.1	MERC/7982
60159958001	96-SW01	EPA 625	OEXT/42042	EPA 625	MSSV/13374
60159958001	96-SW01	EPA 624 Low	MSV/58528		
60159958001	96-SW01	EPA 624 Low	MSV/58593		
60159958002	TRIP BLANK	EPA 624 Low	MSV/58505		
60159958002	TRIP BLANK	EPA 624 Low	MSV/58592		
60159958001	96-SW01	EPA 1664A	WET/45257		
60159958001	96-SW01	EPA 1664A	WET/45376		
60159958001	96-SW01	SM 2540D	WET/45294		
60159958001	96-SW01	SM 4500-H+B	WET/45259		
60159958001	96-SW01	SM 5210B	WET/45242	SM 5210B	WET/45313
60159958001	96-SW01	EPA 350.1	WETA/27629		
60159958001	96-SW01	EPA 410.4	WETA/27655		

REPORT OF LABORATORY ANALYSIS

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WO#: 60159958



60159958



Sample Condition Upon Receipt

Client Name: Barr EngineeringCourier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ L-RoadsTracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☒ UpicThermometer Used: T-239 / T-194Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)Cooler Temperature: 3.8Date and initials of person examining contents: 12/19/13 [Signature]

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>wt</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☐ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased): <u>covered</u>		18.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]Date: 12/19/13

December 31, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-170
Pace Project No.: 60160075

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 20, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Emily Webb for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160075001	316-170	Water	12/19/13 10:40	12/20/13 01:30
60160075002	TRIP BLANK	Water	12/19/13 10:40	12/20/13 01:30

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160075001	316-170	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JMC1	1
		EPA 624 Low	EAK	26
60160075002	TRIP BLANK			

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

Sample: 316-170		Lab ID: 60160075001	Collected: 12/19/13 10:40	Received: 12/20/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	12200	ug/L	375	1	12/24/13 09:00	12/24/13 17:12	7429-90-5	
Antimony	ND	ug/L	50.0	1	12/24/13 09:00	12/24/13 17:12	7440-36-0	
Arsenic	934	ug/L	50.0	1	12/24/13 09:00	12/24/13 17:12	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/24/13 09:00	12/24/13 17:12	7440-41-7	
Cadmium	ND	ug/L	25.0	1	12/24/13 09:00	12/24/13 17:12	7440-43-9	
Chromium	291	ug/L	25.0	1	12/24/13 09:00	12/24/13 17:12	7440-47-3	
Cobalt	36.8	ug/L	25.0	1	12/24/13 09:00	12/26/13 09:38	7440-48-4	
Copper	ND	ug/L	50.0	1	12/24/13 09:00	12/24/13 17:12	7440-50-8	
Iron	1070000	ug/L	250	1	12/24/13 09:00	12/24/13 17:12	7439-89-6	
Lead	225	ug/L	25.0	1	12/24/13 09:00	12/24/13 17:12	7439-92-1	
Nickel	70.6	ug/L	25.0	1	12/24/13 09:00	12/24/13 17:12	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/24/13 09:00	12/24/13 17:12	7782-49-2	
Silver	ND	ug/L	35.0	1	12/24/13 09:00	12/24/13 17:12	7440-22-4	
Thallium	ND	ug/L	100	1	12/24/13 09:00	12/24/13 17:12	7440-28-0	
Zinc	13000	ug/L	500	2	12/24/13 09:00	12/24/13 17:14	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2540	ug/L	375	1	12/24/13 13:30	12/27/13 11:11	7429-90-5	
Antimony, Dissolved	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 11:11	7440-36-0	
Arsenic, Dissolved	474	ug/L	50.0	1	12/24/13 13:30	12/27/13 11:11	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/24/13 13:30	12/27/13 11:11	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:11	7440-43-9	
Chromium, Dissolved	141	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:11	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:11	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 11:11	7440-50-8	
Iron, Dissolved	459000	ug/L	250	1	12/24/13 13:30	12/27/13 11:11	7439-89-6	
Lead, Dissolved	60.5	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:11	7439-92-1	
Nickel, Dissolved	32.5	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:11	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/24/13 13:30	12/27/13 11:11	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/24/13 13:30	12/27/13 11:11	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/24/13 13:30	12/27/13 11:11	7440-28-0	
Zinc, Dissolved	6360	ug/L	250	1	12/24/13 13:30	12/27/13 11:11	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	15.9	ug/L	6.0	1	12/23/13 17:30	12/24/13 08:55	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/26/13 11:05	12/27/13 10:55	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/20/13 00:00	12/26/13 16:45	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:45	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:45	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:45	67-72-1	
Naphthalene	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:45	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/20/13 00:00	12/26/13 16:45	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

Sample: 316-170		Lab ID: 60160075001	Collected: 12/19/13 10:40	Received: 12/20/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/20/13 00:00	12/26/13 16:45	87-86-5	
Phenol	10500 ug/L		1000	2	12/20/13 00:00	12/26/13 16:45	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/20/13 00:00	12/26/13 16:45	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/20/13 00:00	12/26/13 16:45	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	121 %		33-120	2	12/20/13 00:00	12/26/13 16:45	4165-60-0	S0
2-Fluorobiphenyl (S)	86 %		39-120	2	12/20/13 00:00	12/26/13 16:45	321-60-8	
Terphenyl-d14 (S)	91 %		45-120	2	12/20/13 00:00	12/26/13 16:45	1718-51-0	
Phenol-d6 (S)	32 %		11-120	2	12/20/13 00:00	12/26/13 16:45	13127-88-3	
2-Fluorophenol (S)	48 %		17-120	2	12/20/13 00:00	12/26/13 16:45	367-12-4	
2,4,6-Tribromophenol (S)	97 %		39-120	2	12/20/13 00:00	12/26/13 16:45	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	155000 ug/L		2000	200		12/20/13 17:23	67-64-1	N2
Benzene	ND ug/L		200	200		12/20/13 17:23	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/20/13 17:23	75-27-4	
Bromoform	ND ug/L		200	200		12/20/13 17:23	75-25-2	
Bromomethane	ND ug/L		1000	200		12/20/13 17:23	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/20/13 17:23	56-23-5	
Chloroethane	ND ug/L		200	200		12/20/13 17:23	75-00-3	L3
Chloroform	ND ug/L		200	200		12/20/13 17:23	67-66-3	
1,4-Dichlorobenzene	647 ug/L		200	200		12/20/13 17:23	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/20/13 17:23	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/20/13 17:23	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/20/13 17:23	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/20/13 17:23	100-41-4	
Methylene chloride	ND ug/L		200	200		12/20/13 17:23	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/20/13 17:23	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/20/13 17:23	127-18-4	
Toluene	ND ug/L		200	200		12/20/13 17:23	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/20/13 17:23	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/20/13 17:23	79-00-5	
Trichloroethene	ND ug/L		200	200		12/20/13 17:23	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/20/13 17:23	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/20/13 17:23	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		12/20/13 17:23	460-00-4	D3
4-Bromofluorobenzene (S)	99 %		80-120	200		12/20/13 17:23	460-00-4	
Toluene-d8 (S)	107 %		80-120	200		12/20/13 17:23	2037-26-5	
Toluene-d8 (S)	107 %		80-120	200		12/20/13 17:23	2037-26-5	
1,2-Dichloroethane-d4 (S)	103 %		80-120	200		12/20/13 17:23	17060-07-0	
1,2-Dichloroethane-d4 (S)	103 %		80-120	200		12/20/13 17:23	17060-07-0	
Preservation pH	6.0		1.0	200		12/20/13 17:23		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	358 mg/L		5.0	1		12/23/13 07:26		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

Sample: 316-170		Lab ID: 60160075001	Collected: 12/19/13 10:40	Received: 12/20/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	5.6	mg/L	5.0	1		12/27/13 08:49		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3220	mg/L	5.0	1		12/26/13 10:53		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.3	Std. Units	0.10	1		12/26/13 13:05		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	32200	mg/L	2.0	1	12/21/13 09:59	12/26/13 08:30		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	613	mg/L	20.0	200		12/23/13 16:04	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	52200	mg/L	5000	500		12/31/13 08:14		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

Sample: TRIP BLANK		Lab ID: 60160075002	Collected: 12/19/13 10:40	Received: 12/20/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/20/13 17:38	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/20/13 17:38	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/20/13 17:38	75-27-4	
Bromoform	ND ug/L		1.0	1		12/20/13 17:38	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/20/13 17:38	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/20/13 17:38	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/20/13 17:38	75-00-3	L3
Chloroform	ND ug/L		1.0	1		12/20/13 17:38	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/20/13 17:38	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/20/13 17:38	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/20/13 17:38	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/20/13 17:38	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/20/13 17:38	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/20/13 17:38	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/20/13 17:38	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/20/13 17:38	127-18-4	
Toluene	ND ug/L		1.0	1		12/20/13 17:38	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/20/13 17:38	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/20/13 17:38	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/20/13 17:38	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/20/13 17:38	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/20/13 17:38	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	97 %		80-120	1		12/20/13 17:38	460-00-4	
4-Bromofluorobenzene (S)	97 %		80-120	1		12/20/13 17:38	460-00-4	
Toluene-d8 (S)	107 %		80-120	1		12/20/13 17:38	2037-26-5	
Toluene-d8 (S)	107 %		80-120	1		12/20/13 17:38	2037-26-5	
1,2-Dichloroethane-d4 (S)	102 %		80-120	1		12/20/13 17:38	17060-07-0	
1,2-Dichloroethane-d4 (S)	102 %		80-120	1		12/20/13 17:38	17060-07-0	
Preservation pH	6.0		1.0	1		12/20/13 17:38		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

QC Batch: MERP/8022

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60160075001

METHOD BLANK: 1310976

Matrix: Water

Associated Lab Samples: 60160075001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/24/13 08:35	

LABORATORY CONTROL SAMPLE: 1310977

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.8	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310978 1310979

Parameter	Units	60159525003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.8	4.8	96	96	70-130	1	20	

MATRIX SPIKE SAMPLE: 1310980

Parameter	Units	60160061001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	5.0	99	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

QC Batch: MERP/8028

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160075001

METHOD BLANK: 1311671

Matrix: Water

Associated Lab Samples: 60160075001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/26/13 16:50	

LABORATORY CONTROL SAMPLE: 1311672

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311673 1311674

Parameter	Units	60159525003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	4.6	4.6	92	92	70-130	0	20	

MATRIX SPIKE SAMPLE: 1311675

Parameter	Units	60160244001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	ND	150	149	99	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170
Pace Project No.: 60160075

QC Batch: MPRP/25703 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60160075001

METHOD BLANK: 1310952 Matrix: Water
Associated Lab Samples: 60160075001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/24/13 16:56	
Antimony	ug/L	ND	10.0	12/24/13 16:56	
Arsenic	ug/L	ND	10.0	12/24/13 16:56	
Beryllium	ug/L	ND	1.0	12/24/13 16:56	
Cadmium	ug/L	ND	5.0	12/24/13 16:56	
Chromium	ug/L	ND	5.0	12/24/13 16:56	
Cobalt	ug/L	ND	5.0	12/24/13 16:56	
Copper	ug/L	ND	10.0	12/24/13 16:56	
Iron	ug/L	ND	50.0	12/24/13 16:56	
Lead	ug/L	ND	5.0	12/24/13 16:56	
Nickel	ug/L	ND	5.0	12/24/13 16:56	
Selenium	ug/L	ND	15.0	12/24/13 16:56	
Silver	ug/L	ND	7.0	12/24/13 16:56	
Thallium	ug/L	ND	20.0	12/24/13 16:56	
Zinc	ug/L	ND	50.0	12/24/13 16:56	

LABORATORY CONTROL SAMPLE: 1310953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10300	103	85-115	
Antimony	ug/L	1000	1060	106	85-115	
Arsenic	ug/L	1000	993	99	85-115	
Beryllium	ug/L	1000	1030	103	85-115	
Cadmium	ug/L	1000	1030	103	85-115	
Chromium	ug/L	1000	1030	103	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Copper	ug/L	1000	998	100	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1070	107	85-115	
Nickel	ug/L	1000	1070	107	85-115	
Selenium	ug/L	1000	1030	103	85-115	
Silver	ug/L	500	504	101	85-115	
Thallium	ug/L	1000	1060	106	85-115	
Zinc	ug/L	1000	1040	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310954 1310955

Parameter	Units	60159867001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	10200	10300	102	102	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310954 1310955											
Parameter	Units	60159867001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						RPD
Antimony	ug/L	ND	1000	1000	1000	1090	1110	109	111	70-130	2
Arsenic	ug/L	ND	1000	1000	1000	1040	1050	104	104	70-130	0
Beryllium	ug/L	ND	1000	1000	1000	1040	1050	104	105	70-130	1
Cadmium	ug/L	ND	1000	1000	1000	1050	1050	105	105	70-130	0
Chromium	ug/L	ND	1000	1000	1000	989	993	99	99	70-130	0
Cobalt	ug/L	ND	1000	1000	1000	997	992	100	99	70-130	1
Copper	ug/L	0.017 mg/L	1000	1000	1000	1040	1040	103	103	70-130	0
Iron	ug/L	2930	10000	10000	10000	12700	12600	98	96	70-130	1
Lead	ug/L	ND	1000	1000	1000	1080	1080	107	108	70-130	1
Nickel	ug/L	0.010 mg/L	1000	1000	1000	1080	1090	107	108	70-130	1
Selenium	ug/L	ND	1000	1000	1000	1070	1080	107	108	70-130	1
Silver	ug/L	ND	500	500	500	502	504	100	101	70-130	0
Thallium	ug/L	ND	1000	1000	1000	1060	1060	106	106	70-130	1
Zinc	ug/L	0.051 mg/L	1000	1000	1000	1080	1080	102	103	70-130	0

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170
Pace Project No.: 60160075

QC Batch:	MPRP/25718	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60160075001		

METHOD BLANK: 1311272 Matrix: Water
Associated Lab Samples: 60160075001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/27/13 10:42	
Antimony, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Arsenic, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Beryllium, Dissolved	ug/L	ND	1.0	12/27/13 10:42	
Cadmium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Chromium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Cobalt, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Copper, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Iron, Dissolved	ug/L	ND	50.0	12/27/13 10:42	
Lead, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Nickel, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Selenium, Dissolved	ug/L	ND	15.0	12/27/13 10:42	
Silver, Dissolved	ug/L	ND	7.0	12/27/13 10:42	
Thallium, Dissolved	ug/L	ND	20.0	12/27/13 10:42	
Zinc, Dissolved	ug/L	ND	50.0	12/27/13 10:42	

LABORATORY CONTROL SAMPLE: 1311273

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9670	97	85-115	
Antimony, Dissolved	ug/L	1000	976	98	85-115	
Arsenic, Dissolved	ug/L	1000	953	95	85-115	
Beryllium, Dissolved	ug/L	1000	984	98	85-115	
Cadmium, Dissolved	ug/L	1000	975	97	85-115	
Chromium, Dissolved	ug/L	1000	993	99	85-115	
Cobalt, Dissolved	ug/L	1000	950	95	85-115	
Copper, Dissolved	ug/L	1000	969	97	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	979	98	85-115	
Nickel, Dissolved	ug/L	1000	988	99	85-115	
Selenium, Dissolved	ug/L	1000	972	97	85-115	
Silver, Dissolved	ug/L	500	491	98	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	974	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275

Parameter	Units	60159955001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	1350	50000	50000	49600	49500	97	96	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275												
Parameter	Units	60159955001		MS	MSD	MSD		MS	MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5000	4940	4920	99	98	70-130	1	7
Arsenic, Dissolved	ug/L	239	5000	5000	5000	5200	5150	99	98	70-130	1	10
Beryllium, Dissolved	ug/L	ND	5000	5000	5000	4880	4870	97	97	70-130	0	7
Cadmium, Dissolved	ug/L	ND	5000	5000	5000	4920	4880	98	98	70-130	1	10
Chromium, Dissolved	ug/L	75.8	5000	5000	5000	4920	4910	97	97	70-130	0	10
Cobalt, Dissolved	ug/L	ND	5000	5000	5000	4590	4580	92	91	70-130	0	6
Copper, Dissolved	ug/L	ND	5000	5000	5000	5000	4970	99	99	70-130	1	11
Iron, Dissolved	ug/L	248000	50000	50000	50000	308000	290000	120	83	70-130	6	10
Lead, Dissolved	ug/L	28.9	5000	5000	5000	4610	4600	92	91	70-130	0	10
Nickel, Dissolved	ug/L	ND	5000	5000	5000	4730	4710	94	94	70-130	0	10
Selenium, Dissolved	ug/L	ND	5000	5000	5000	5050	4980	101	100	70-130	1	10
Silver, Dissolved	ug/L	ND	2500	2500	2500	2500	2470	100	99	70-130	1	10
Thallium, Dissolved	ug/L	ND	5000	5000	5000	4480	4480	90	90	70-130	0	6
Zinc, Dissolved	ug/L	3220	5000	5000	5000	7980	7720	95	90	70-130	3	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

QC Batch: MSV/58505 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60160075001, 60160075002

METHOD BLANK: 1309491

Matrix: Water

Associated Lab Samples: 60160075001, 60160075002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/20/13 13:51	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/20/13 13:51	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/20/13 13:51	
1,2-Dichloroethane	ug/L	ND	1.0	12/20/13 13:51	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/20/13 13:51	
Benzene	ug/L	ND	1.0	12/20/13 13:51	
Bromodichloromethane	ug/L	ND	1.0	12/20/13 13:51	
Bromoform	ug/L	ND	1.0	12/20/13 13:51	
Bromomethane	ug/L	ND	5.0	12/20/13 13:51	
Carbon tetrachloride	ug/L	ND	1.0	12/20/13 13:51	
Chloroethane	ug/L	ND	1.0	12/20/13 13:51	
Chloroform	ug/L	ND	1.0	12/20/13 13:51	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/20/13 13:51	
Ethylbenzene	ug/L	ND	1.0	12/20/13 13:51	
Methylene chloride	ug/L	ND	1.0	12/20/13 13:51	
Tetrachloroethene	ug/L	ND	1.0	12/20/13 13:51	
Toluene	ug/L	ND	1.0	12/20/13 13:51	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/20/13 13:51	
Trichloroethene	ug/L	ND	1.0	12/20/13 13:51	
Vinyl chloride	ug/L	ND	1.0	12/20/13 13:51	
Xylene (Total)	ug/L	ND	3.0	12/20/13 13:51	
1,2-Dichloroethane-d4 (S)	%	100	80-120	12/20/13 13:51	
4-Bromofluorobenzene (S)	%	98	80-120	12/20/13 13:51	
Toluene-d8 (S)	%	100	80-120	12/20/13 13:51	

LABORATORY CONTROL SAMPLE: 1309492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.7	99	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	18.3	92	59-138	
1,1,2-Trichloroethane	ug/L	20	18.9	94	69-127	
1,2-Dichloroethane	ug/L	20	18.2	91	71-129	
1,4-Dichlorobenzene	ug/L	20	18.9	95	68-124	
Benzene	ug/L	20	18.4	92	73-129	
Bromodichloromethane	ug/L	20	20.2	101	63-129	
Bromoform	ug/L	20	20.1	100	52-123	
Bromomethane	ug/L	20	16.9	85	10-160	
Carbon tetrachloride	ug/L	20	21.1	106	70-140	
Chloroethane	ug/L	20	38.3	191	42-160	
Chloroform	ug/L	20	19.4	97	60-120	
cis-1,2-Dichloroethene	ug/L	20	19.2	96	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

LABORATORY CONTROL SAMPLE: 1309492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.6	98	66-133	
Methylene chloride	ug/L	20	21.5	108	56-135	
Tetrachloroethene	ug/L	20	19.2	96	64-143	
Toluene	ug/L	20	19.6	98	70-130	
trans-1,2-Dichloroethene	ug/L	20	20.9	105	67-149	
Trichloroethene	ug/L	20	19.7	99	71-130	
Vinyl chloride	ug/L	20	17.8	89	41-160	
Xylene (Total)	ug/L	60	57.2	95	67-130	
1,2-Dichloroethane-d4 (S)	%			95	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			103	80-120	

MATRIX SPIKE SAMPLE: 1309493

Parameter	Units	60159955001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3090	77	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3270	82	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3420	86	52-150	
1,2-Dichloroethane	ug/L	ND	4000	2960	74	49-155	
1,4-Dichlorobenzene	ug/L	862	4000	3660	70	18-147	
Benzene	ug/L	ND	4000	3130	77	37-151	
Bromodichloromethane	ug/L	ND	4000	3060	77	35-155	
Bromoform	ug/L	ND	4000	3150	79	45-133	
Bromomethane	ug/L	ND	4000	1760	44	10-160	
Carbon tetrachloride	ug/L	ND	4000	3490	87	70-140	
Chloroethane	ug/L	ND	4000	4080	102	14-160	
Chloroform	ug/L	ND	4000	3010	75	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	2930	73	19-160	
Ethylbenzene	ug/L	ND	4000	3330	80	37-154	
Methylene chloride	ug/L	204	4000	3460	81	15-156	
Tetrachloroethene	ug/L	ND	4000	3220	81	64-148	
Toluene	ug/L	ND	4000	3110	74	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3310	83	54-156	
Trichloroethene	ug/L	ND	4000	3030	76	71-157	
Vinyl chloride	ug/L	ND	4000	2710	68	10-160	
Xylene (Total)	ug/L	ND	12000	9550	77	12-153	
1,2-Dichloroethane-d4 (S)	%				103	80-120	
4-Bromofluorobenzene (S)	%				100	80-120	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

QC Batch:	MSV/58596	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples: 60160075001, 60160075002			

METHOD BLANK: 1311770 Matrix: Water

Associated Lab Samples: 60160075001, 60160075002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/20/13 13:51	N2
1,2-Dichloroethane-d4 (S)	%	100	80-120	12/20/13 13:51	
4-Bromofluorobenzene (S)	%	98	80-120	12/20/13 13:51	
Toluene-d8 (S)	%	100	80-120	12/20/13 13:51	

LABORATORY CONTROL SAMPLE: 1311771

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	89.6	90	40-160	N2
1,2-Dichloroethane-d4 (S)	%			95	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			103	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170
Pace Project No.: 60160075

QC Batch:	OEXT/42042	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60160075001		

METHOD BLANK: 1309339 Matrix: Water
Associated Lab Samples: 60160075001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/26/13 12:13	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/26/13 12:13	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/26/13 12:13	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/26/13 12:13	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/26/13 12:13	
Hexachloroethane	ug/L	ND	5.0	12/26/13 12:13	
Naphthalene	ug/L	ND	5.0	12/26/13 12:13	
Nitrobenzene	ug/L	ND	5.0	12/26/13 12:13	
Pentachlorophenol	ug/L	ND	5.0	12/26/13 12:13	
Phenol	ug/L	ND	5.0	12/26/13 12:13	
2,4,6-Tribromophenol (S)	%	67	39-120	12/26/13 12:13	
2-Fluorobiphenyl (S)	%	86	39-120	12/26/13 12:13	
2-Fluorophenol (S)	%	47	17-120	12/26/13 12:13	
Nitrobenzene-d5 (S)	%	84	33-120	12/26/13 12:13	
Phenol-d6 (S)	%	29	11-120	12/26/13 12:13	
Terphenyl-d14 (S)	%	94	45-120	12/26/13 12:13	

LABORATORY CONTROL SAMPLE: 1309340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	37.3	75	46-120	
2,4,6-Trichlorophenol	ug/L	50	40.0	80	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	33.9	68	40-133	
Hexachloro-1,3-butadiene	ug/L	50	37.6	75	44-116	
Hexachlorocyclopentadiene	ug/L	100	59.2	59	24-120	
Hexachloroethane	ug/L	50	37.3	75	43-113	
Naphthalene	ug/L	50	38.7	77	48-120	
Nitrobenzene	ug/L	50	38.8	78	48-120	
Pentachlorophenol	ug/L	50	38.8	78	47-120	
Phenol	ug/L	50	15.6	31	16-112	
2,4,6-Tribromophenol (S)	%			85	39-120	
2-Fluorobiphenyl (S)	%			87	39-120	
2-Fluorophenol (S)	%			47	17-120	
Nitrobenzene-d5 (S)	%			80	33-120	
Phenol-d6 (S)	%			30	11-120	
Terphenyl-d14 (S)	%			92	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

MATRIX SPIKE SAMPLE:		1309341					
Parameter	Units	60159955001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3420	68	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4070	81	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3570J	71	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3470	69	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	6370	64	11-120	
Hexachloroethane	ug/L	ND	5000	3450	69	40-113	
Naphthalene	ug/L	1100	5000	4340	65	45-120	
Nitrobenzene	ug/L	ND	5000	3570	71	38-120	
Pentachlorophenol	ug/L	ND	5000	4520	90	43-135	
Phenol	ug/L	11500	5000	11500	-1	13-112	M1
2,4,6-Tribromophenol (S)	%				89	39-120	
2-Fluorobiphenyl (S)	%				80	39-120	
2-Fluorophenol (S)	%				47	17-120	
Nitrobenzene-d5 (S)	%				112	33-120	
Phenol-d6 (S)	%				31	11-120	
Terphenyl-d14 (S)	%				81	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

QC Batch:	WET/45290	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60160075001		

METHOD BLANK: 1310402 Matrix: Water

Associated Lab Samples: 60160075001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/23/13 07:24	

LABORATORY CONTROL SAMPLE: 1310403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	38.2	96	78-114	

MATRIX SPIKE SAMPLE: 1310406

Parameter	Units	60159912001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	39.1	44.4	80.3	93	78-114	

SAMPLE DUPLICATE: 1310405

Parameter	Units	60160116001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

QC Batch: WET/45376

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160075001

METHOD BLANK: 1312020

Matrix: Water

Associated Lab Samples: 60160075001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/27/13 08:45	

LABORATORY CONTROL SAMPLE: 1312021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.6	103	64-132	

MATRIX SPIKE SAMPLE: 1312022

Parameter	Units	60159625001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	20	22.3	109	64-132	

SAMPLE DUPLICATE: 1312024

Parameter	Units	60159625001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

QC Batch: WET/45337

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160075001

METHOD BLANK: 1311687

Matrix: Water

Associated Lab Samples: 60160075001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/26/13 10:52	

SAMPLE DUPLICATE: 1311688

Parameter	Units	60160005002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1311689

Parameter	Units	60160296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	11.0	11.0	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

QC Batch: WET/45356 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60160075001

SAMPLE DUPLICATE: 1311797

Parameter	Units	60159953002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

QC Batch: WET/45285

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160075001

METHOD BLANK: 1310077

Matrix: Water

Associated Lab Samples: 60160075001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/26/13 08:22	

LABORATORY CONTROL SAMPLE: 1310078

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	186	94	85-115	

SAMPLE DUPLICATE: 1310080

Parameter	Units	60160092001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	ND	ND		17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

QC Batch: WETA/27629

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160075001

METHOD BLANK: 1310641

Matrix: Water

Associated Lab Samples: 60160075001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/23/13 15:50	

LABORATORY CONTROL SAMPLE: 1310642

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	104	90-110	

MATRIX SPIKE SAMPLE: 1310643

Parameter	Units	60159814001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	528	400	888	90	90-110	

SAMPLE DUPLICATE: 1310644

Parameter	Units	60159520001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

QC Batch:	WETA/27707	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60160075001		

METHOD BLANK: 1312807 Matrix: Water

Associated Lab Samples: 60160075001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/31/13 08:08	

LABORATORY CONTROL SAMPLE: 1312808

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	53.4	107	90-110	

MATRIX SPIKE SAMPLE: 1312809

Parameter	Units	60159791001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	431	250	654	89	90-110	M1

MATRIX SPIKE SAMPLE: 1312815

Parameter	Units	60160092001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	147	50	191	88	90-110	M1

SAMPLE DUPLICATE: 1312810

Parameter	Units	60159792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	32.1	32.4	1	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-170

Pace Project No.: 60160075

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160075001	316-170	EPA 200.7	MPRP/25703	EPA 200.7	ICP/19726
60160075001	316-170	EPA 200.7	MPRP/25718	EPA 200.7	ICP/19731
60160075001	316-170	EPA 245.1	MERP/8022	EPA 245.1	MERC/7978
60160075001	316-170	EPA 245.1	MERP/8028	EPA 245.1	MERC/7982
60160075001	316-170	EPA 625	OEXT/42042	EPA 625	MSSV/13374
60160075001	316-170	EPA 624 Low	MSV/58505		
60160075001	316-170	EPA 624 Low	MSV/58596		
60160075002	TRIP BLANK	EPA 624 Low	MSV/58505		
60160075002	TRIP BLANK	EPA 624 Low	MSV/58596		
60160075001	316-170	EPA 1664A	WET/45290		
60160075001	316-170	EPA 1664A	WET/45376		
60160075001	316-170	SM 2540D	WET/45337		
60160075001	316-170	SM 4500-H+B	WET/45356		
60160075001	316-170	SM 5210B	WET/45285	SM 5210B	WET/45344
60160075001	316-170	EPA 350.1	WETA/27629		
60160075001	316-170	EPA 410.4	WETA/27707		

REPORT OF LABORATORY ANALYSIS

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WO#: 60160075



60160075



Sample Condition Upon Receipt

Client Name: Barr

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ Proact

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☒ None ☐ Other 12/11

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2-8

Date and initials of person examining contents: 12/12/2015

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOP</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>WT</u>	☒ Yes ☐ No ☐ N/A	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed <u>PV</u> Lot # of added preservative <u>12518</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	18.
Pace Trip Blank lot # (if purchased): <u>093013-3</u>	☐ Yes ☒ No ☐ N/A	19.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	20.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	21. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 12/20/15

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: John Powell					
SIGNATURE of SAMPLER: [Signature]	DATE Signed: 12-19-13				

January 02, 2014

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: UNTREATED COMMINGLED
Pace Project No.: 60160170

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 21, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Emily Webb for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

Dallas Certification IDs

400 West Bethany Dr Suite 190 75013 Allen TX 75013

Texas Certification #: T104704232-13-5

Kansas Certification #: E-10388

Arkansas Certification #: 88-0647

Oklahoma Certification #: 2012-080

Louisiana Certification #: 02007

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160170001	TCLP DEC 13	Water	12/19/13 13:00	12/21/13 01:15
60160170002	TRIP BLANK	Water	12/19/13 08:00	12/21/13 01:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60160170001	TCLP DEC 13	EPA 8081	TA	9	PASI-D
		EPA 8151	PMS	3	PASI-D
		EPA 6010	TDS	7	PASI-K
		EPA 7470	TJT	1	PASI-K
		EPA 8270	JMT	18	PASI-K
		EPA 8260	JTS	13	PASI-K
		EPA 5030B/8260	JTS	25	PASI-K
		EPA 1664A	JMC1	1	PASI-K
		SM 2540B	RAH	1	PASI-K
60160170002	TRIP BLANK	EPA 5030B/8260	JTS	25	PASI-K

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ANALYTICAL RESULTS

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

Sample: TCLP DEC 13		Lab ID: 60160170001		Collected: 12/19/13 13:00		Received: 12/21/13 01:15		Matrix: Water	
Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides, TCLP Analytical Method: EPA 8081 Preparation Method: EPA 3510									
gamma-BHC (Lindane)	ND mg/L		0.00020	.4	1	12/30/13 11:45	12/31/13 15:46	58-89-9	
Chlordane (Technical)	ND mg/L		0.0050	.03	1	12/30/13 11:45	12/31/13 15:46	57-74-9	
Endrin	ND mg/L		0.00020	.02	1	12/30/13 11:45	12/31/13 15:46	72-20-8	M1
Heptachlor	ND mg/L		0.00020	.008	1	12/30/13 11:45	12/31/13 15:14	76-44-8	
Heptachlor epoxide	ND mg/L		0.00050	.008	1	12/30/13 11:45	12/31/13 15:46	1024-57-3	
Methoxychlor	ND mg/L		0.00050	10	1	12/30/13 11:45	12/31/13 15:46	72-43-5	
Toxaphene	ND mg/L		0.010	.5	1	12/30/13 11:45	12/31/13 15:46	8001-35-2	
Surrogates									
Decachlorobiphenyl (S)	22 %		40-140		1	12/30/13 11:45	12/31/13 15:46	2051-24-3	S0
Tetrachloro-m-xylene (S)	134 %		40-140		1	12/30/13 11:45	12/31/13 15:46	877-09-8	
8151 Chlorinate Herbicide TCLP Analytical Method: EPA 8151 Preparation Method: EPA 8151									
2,4-D	ND mg/L		0.0050	10	10	12/30/13 11:43	12/31/13 16:56	94-75-7	M6
2,4,5-TP (Silvex)	ND mg/L		0.0050	1	10	12/30/13 11:43	12/31/13 16:56	93-72-1	
Surrogates									
2,4-DCAA (S)	94 %		40-140		10	12/30/13 11:43	12/31/13 16:56	19719-28-9	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Leachate Method/Date: EPA 1311; 12/27/13 00:00									
Arsenic	0.76 mg/L		0.50	5	1	12/27/13 14:20	12/27/13 16:18	7440-38-2	
Barium	3.1 mg/L		2.5	100	1	12/27/13 14:20	12/27/13 16:18	7440-39-3	
Cadmium	ND mg/L		0.050	1	1	12/27/13 14:20	12/27/13 16:18	7440-43-9	
Chromium	0.88 mg/L		0.10	5	1	12/27/13 14:20	12/27/13 16:18	7440-47-3	
Lead	ND mg/L		0.50	5	1	12/27/13 14:20	12/27/13 16:18	7439-92-1	
Selenium	ND mg/L		0.50	1	1	12/27/13 14:20	12/27/13 16:18	7782-49-2	
Silver	ND mg/L		0.10	5	1	12/27/13 14:20	12/27/13 16:18	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Leachate Method/Date: EPA 1311; 12/27/13 00:00									
Mercury	ND mg/L		0.0020	.2	1	12/27/13 12:15	12/27/13 17:13	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510									
Leachate Method/Date: EPA 1311; 12/27/13 00:00									
1,4-Dichlorobenzene	ND ug/L		1000	7500	1	12/27/13 00:00	12/29/13 14:33	106-46-7	
2,4-Dinitrotoluene	ND ug/L		1000	130	1	12/27/13 00:00	12/29/13 14:33	121-14-2	
Hexachloro-1,3-butadiene	ND ug/L		1000	500	1	12/27/13 00:00	12/29/13 14:33	87-68-3	
Hexachlorobenzene	ND ug/L		1000	130	1	12/27/13 00:00	12/29/13 14:33	118-74-1	
Hexachloroethane	ND ug/L		1000	3000	1	12/27/13 00:00	12/29/13 14:33	67-72-1	
2-Methylphenol(o-Cresol)	ND ug/L		1000	200000	1	12/27/13 00:00	12/29/13 14:33	95-48-7	
3&4-Methylphenol(m&p Cresol)	9650 ug/L		2000	200000	1	12/27/13 00:00	12/29/13 14:33		
Nitrobenzene	ND ug/L		1000	2000	1	12/27/13 00:00	12/29/13 14:33	98-95-3	
Pentachlorophenol	ND ug/L		5000	100000	1	12/27/13 00:00	12/29/13 14:33	87-86-5	
Pyridine	ND ug/L		1000	5000	1	12/27/13 00:00	12/29/13 14:33	110-86-1	
2,4,5-Trichlorophenol	ND ug/L		5000	400000	1	12/27/13 00:00	12/29/13 14:33	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		1000	2000	1	12/27/13 00:00	12/29/13 14:33	88-06-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

Sample: TCLP DEC 13 **Lab ID: 60160170001** Collected: 12/19/13 13:00 Received: 12/21/13 01:15 Matrix: Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8270 MSSV TCLP Sep Funnel

Analytical Method: EPA 8270 Preparation Method: EPA 3510

Leachate Method/Date: EPA 1311; 12/27/13 00:00

Surrogates

Nitrobenzene-d5 (S)	85 %		44-120		1	12/27/13 00:00	12/29/13 14:33	4165-60-0	
2-Fluorobiphenyl (S)	78 %		49-120		1	12/27/13 00:00	12/29/13 14:33	321-60-8	
Terphenyl-d14 (S)	79 %		52-122		1	12/27/13 00:00	12/29/13 14:33	1718-51-0	
Phenol-d6 (S)	82 %		36-120		1	12/27/13 00:00	12/29/13 14:33	13127-88-3	
2-Fluorophenol (S)	79 %		37-120		1	12/27/13 00:00	12/29/13 14:33	367-12-4	
2,4,6-Tribromophenol (S)	78 %		36-128		1	12/27/13 00:00	12/29/13 14:33	118-79-6	

8260 MSV TCLP

Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 12/27/13 00:00

Benzene	338 ug/L		250	500	5		12/27/13 15:46	71-43-2	
2-Butanone (MEK)	20700 ug/L		5000	200000	5		12/27/13 15:46	78-93-3	
Carbon tetrachloride	ND ug/L		250	500	5		12/27/13 15:46	56-23-5	
Chlorobenzene	ND ug/L		250	100000	5		12/27/13 15:46	108-90-7	
Chloroform	ND ug/L		1000	6000	5		12/27/13 15:46	67-66-3	
1,2-Dichloroethane	ND ug/L		250	500	5		12/27/13 15:46	107-06-2	
1,1-Dichloroethene	ND ug/L		250	700	5		12/27/13 15:46	75-35-4	
Tetrachloroethene	ND ug/L		250	700	5		12/27/13 15:46	127-18-4	
Trichloroethene	ND ug/L		250	500	5		12/27/13 15:46	79-01-6	
Vinyl chloride	ND ug/L		100	200	5		12/27/13 15:46	75-01-4	

Surrogates

1,2-Dichloroethane-d4 (S)	99 %		80-120		5		12/27/13 15:46	17060-07-0	
Toluene-d8 (S)	100 %		80-120		5		12/27/13 15:46	2037-26-5	
4-Bromofluorobenzene (S)	100 %		80-120		5		12/27/13 15:46	460-00-4	

8260 MSV

Analytical Method: EPA 5030B/8260

Benzene	571 ug/L		200		200		12/26/13 15:51	71-43-2	
Bromodichloromethane	ND ug/L		200		200		12/26/13 15:51	75-27-4	
Bromoform	ND ug/L		200		200		12/26/13 15:51	75-25-2	
Bromomethane	ND ug/L		1000		200		12/26/13 15:51	74-83-9	
Carbon tetrachloride	ND ug/L		200		200		12/26/13 15:51	56-23-5	
Chloroethane	ND ug/L		200		200		12/26/13 15:51	75-00-3	
Chloroform	271 ug/L		200		200		12/26/13 15:51	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200		200		12/26/13 15:51	106-46-7	
1,2-Dichloroethane	ND ug/L		200		200		12/26/13 15:51	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200		200		12/26/13 15:51	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200		200		12/26/13 15:51	156-60-5	
Ethylbenzene	ND ug/L		200		200		12/26/13 15:51	100-41-4	
Methylene chloride	ND ug/L		200		200		12/26/13 15:51	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200		200		12/26/13 15:51	79-34-5	
Tetrachloroethene	ND ug/L		200		200		12/26/13 15:51	127-18-4	
Toluene	ND ug/L		200		200		12/26/13 15:51	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200		200		12/26/13 15:51	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200		200		12/26/13 15:51	79-00-5	
Trichloroethene	ND ug/L		200		200		12/26/13 15:51	79-01-6	
Vinyl chloride	ND ug/L		200		200		12/26/13 15:51	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

Sample: TCLP DEC 13		Lab ID: 60160170001		Collected: 12/19/13 13:00		Received: 12/21/13 01:15		Matrix: Water	
Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 5030B/8260							
Xylene (Total)	ND	ug/L	600		200		12/26/13 15:51	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98 %		80-120		200		12/26/13 15:51	460-00-4	D3
1,2-Dichloroethane-d4 (S)	97 %		80-120		200		12/26/13 15:51	17060-07-0	
Toluene-d8 (S)	99 %		80-120		200		12/26/13 15:51	2037-26-5	
Preservation pH	6.0		0.10		200		12/26/13 15:51		pH
HEM, Oil and Grease		Analytical Method: EPA 1664A							
Oil and Grease	1200	mg/L	5.0		1		12/23/13 07:31		
2540B Total Solids		Analytical Method: SM 2540B							
Total Solids	45800	mg/L	5.0		1		12/26/13 17:04		

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ANALYTICAL RESULTS

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

Sample: TRIP BLANK		Lab ID: 60160170002		Collected: 12/19/13 08:00		Received: 12/21/13 01:15		Matrix: Water	
Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 5030B/8260							
Benzene	ND ug/L		1.0		1		12/26/13 16:07	71-43-2	
Bromodichloromethane	ND ug/L		1.0		1		12/26/13 16:07	75-27-4	
Bromoform	ND ug/L		1.0		1		12/26/13 16:07	75-25-2	
Bromomethane	ND ug/L		5.0		1		12/26/13 16:07	74-83-9	
Carbon tetrachloride	ND ug/L		1.0		1		12/26/13 16:07	56-23-5	
Chloroethane	ND ug/L		1.0		1		12/26/13 16:07	75-00-3	
Chloroform	ND ug/L		1.0		1		12/26/13 16:07	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0		1		12/26/13 16:07	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0		1		12/26/13 16:07	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0		1		12/26/13 16:07	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0		1		12/26/13 16:07	156-60-5	
Ethylbenzene	ND ug/L		1.0		1		12/26/13 16:07	100-41-4	
Methylene chloride	ND ug/L		1.0		1		12/26/13 16:07	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0		1		12/26/13 16:07	79-34-5	
Tetrachloroethene	ND ug/L		1.0		1		12/26/13 16:07	127-18-4	
Toluene	ND ug/L		1.0		1		12/26/13 16:07	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0		1		12/26/13 16:07	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0		1		12/26/13 16:07	79-00-5	
Trichloroethene	ND ug/L		1.0		1		12/26/13 16:07	79-01-6	
Vinyl chloride	ND ug/L		1.0		1		12/26/13 16:07	75-01-4	
Xylene (Total)	ND ug/L		3.0		1		12/26/13 16:07	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99 %		80-120		1		12/26/13 16:07	460-00-4	
1,2-Dichloroethane-d4 (S)	98 %		80-120		1		12/26/13 16:07	17060-07-0	
Toluene-d8 (S)	100 %		80-120		1		12/26/13 16:07	2037-26-5	
Preservation pH	1.0		0.10		1		12/26/13 16:07		

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

QC Batch: MERP/8035

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury TCLP

Associated Lab Samples: 60160170001

METHOD BLANK: 1312257

Matrix: Water

Associated Lab Samples: 60160170001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0020	12/27/13 16:04	

LABORATORY CONTROL SAMPLE: 1312258

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.005	0.0053	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312259 1312260

Parameter	Units	60159926001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.015	.015	0.017	0.016	111	105	75-125	6	20	

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

QC Batch: MPRP/25745

Analysis Method: EPA 6010

QC Batch Method: EPA 3010

Analysis Description: 6010 MET TCLP

Associated Lab Samples: 60160170001

METHOD BLANK: 1312280

Matrix: Water

Associated Lab Samples: 60160170001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.50	12/27/13 16:16	
Barium	mg/L	ND	2.5	12/27/13 16:16	
Cadmium	mg/L	ND	0.050	12/27/13 16:16	
Chromium	mg/L	ND	0.10	12/27/13 16:16	
Lead	mg/L	ND	0.50	12/27/13 16:16	
Selenium	mg/L	ND	0.50	12/27/13 16:16	
Silver	mg/L	ND	0.10	12/27/13 16:16	

LABORATORY CONTROL SAMPLE: 1312281

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	1	0.98	98	80-120	
Barium	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	1	0.99	99	80-120	
Chromium	mg/L	1	0.99	99	80-120	
Lead	mg/L	1	1.0	103	80-120	
Selenium	mg/L	1	0.97	97	80-120	
Silver	mg/L	.5	0.48	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312282 1312283

Parameter	Units	60159928001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10	10	10	10	100	100	75-125	0	20	
Barium	mg/L	ND	10	10	10.7	10.8	100	100	75-125	1	20	
Cadmium	mg/L	1.3	10	10	11.2	11.2	99	99	75-125	0	20	
Chromium	mg/L	0.15	10	10	10.0	10.1	99	100	75-125	1	20	
Lead	mg/L	28.6	10	10	38.0	37.8	94	92	75-125	1	20	
Selenium	mg/L	ND	10	10	9.8	9.7	98	97	75-125	1	20	
Silver	mg/L	ND	5	5	4.8	4.9	96	97	75-125	1	20	

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

QC Batch: MSV/58625

Analysis Method: EPA 8260

QC Batch Method: EPA 8260

Analysis Description: 8260 MSV TCLP

Associated Lab Samples: 60160170001

METHOD BLANK: 1312277

Matrix: Water

Associated Lab Samples: 60160170001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	12/27/13 15:15	
1,2-Dichloroethane	ug/L	ND	50.0	12/27/13 15:15	
2-Butanone (MEK)	ug/L	ND	1000	12/27/13 15:15	
Benzene	ug/L	ND	50.0	12/27/13 15:15	
Carbon tetrachloride	ug/L	ND	50.0	12/27/13 15:15	
Chlorobenzene	ug/L	ND	50.0	12/27/13 15:15	
Chloroform	ug/L	ND	200	12/27/13 15:15	
Tetrachloroethene	ug/L	ND	50.0	12/27/13 15:15	
Trichloroethene	ug/L	ND	50.0	12/27/13 15:15	
Vinyl chloride	ug/L	ND	20.0	12/27/13 15:15	
1,2-Dichloroethane-d4 (S)	%	94	80-120	12/27/13 15:15	
4-Bromofluorobenzene (S)	%	98	80-120	12/27/13 15:15	
Toluene-d8 (S)	%	99	80-120	12/27/13 15:15	

LABORATORY CONTROL SAMPLE: 1312278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	1000	966	97	70-127	
1,2-Dichloroethane	ug/L	1000	902	90	72-122	
2-Butanone (MEK)	ug/L	5000	3950	79	69-124	
Benzene	ug/L	1000	943	94	73-122	
Carbon tetrachloride	ug/L	1000	1070	107	73-125	
Chlorobenzene	ug/L	1000	932	93	80-120	
Chloroform	ug/L	1000	877	88	76-120	
Tetrachloroethene	ug/L	1000	965	96	79-122	
Trichloroethene	ug/L	1000	956	96	76-120	
Vinyl chloride	ug/L	1000	932	93	57-140	
1,2-Dichloroethane-d4 (S)	%			100	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			102	80-120	

MATRIX SPIKE SAMPLE: 1312279

Parameter	Units	60160170001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	ND	5000	4880	98	66-142	
1,2-Dichloroethane	ug/L	ND	5000	4620	92	53-144	
2-Butanone (MEK)	ug/L	20700	25000	36800	64	54-127	
Benzene	ug/L	338	5000	5210	97	48-150	
Carbon tetrachloride	ug/L	ND	5000	5490	110	68-145	
Chlorobenzene	ug/L	ND	5000	4880	97	68-131	

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

MATRIX SPIKE SAMPLE:		1312279					
Parameter	Units	60160170001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	ND	5000	4550	91	69-126	
Tetrachloroethene	ug/L	ND	5000	5040	101	66-139	
Trichloroethene	ug/L	ND	5000	4840	97	67-130	
Vinyl chloride	ug/L	ND	5000	4820	96	47-159	
1,2-Dichloroethane-d4 (S)	%				97	80-120	
4-Bromofluorobenzene (S)	%				102	80-120	
Toluene-d8 (S)	%				101	80-120	

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

QC Batch:	MSV/58595	Analysis Method:	EPA 5030B/8260
QC Batch Method:	EPA 5030B/8260	Analysis Description:	8260 MSV Water 10 mL Purge
Associated Lab Samples:	60160170001, 60160170002		

METHOD BLANK: 1311767 Matrix: Water

Associated Lab Samples: 60160170001, 60160170002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/26/13 15:02	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/26/13 15:02	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/26/13 15:02	
1,2-Dichloroethane	ug/L	ND	1.0	12/26/13 15:02	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/26/13 15:02	
Benzene	ug/L	ND	1.0	12/26/13 15:02	
Bromodichloromethane	ug/L	ND	1.0	12/26/13 15:02	
Bromoform	ug/L	ND	1.0	12/26/13 15:02	
Bromomethane	ug/L	ND	5.0	12/26/13 15:02	
Carbon tetrachloride	ug/L	ND	1.0	12/26/13 15:02	
Chloroethane	ug/L	ND	1.0	12/26/13 15:02	
Chloroform	ug/L	ND	1.0	12/26/13 15:02	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/26/13 15:02	
Ethylbenzene	ug/L	ND	1.0	12/26/13 15:02	
Methylene chloride	ug/L	ND	1.0	12/26/13 15:02	
Tetrachloroethene	ug/L	ND	1.0	12/26/13 15:02	
Toluene	ug/L	ND	1.0	12/26/13 15:02	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/26/13 15:02	
Trichloroethene	ug/L	ND	1.0	12/26/13 15:02	
Vinyl chloride	ug/L	ND	1.0	12/26/13 15:02	
Xylene (Total)	ug/L	ND	3.0	12/26/13 15:02	
1,2-Dichloroethane-d4 (S)	%	97	80-120	12/26/13 15:02	
4-Bromofluorobenzene (S)	%	100	80-120	12/26/13 15:02	
Toluene-d8 (S)	%	101	80-120	12/26/13 15:02	

LABORATORY CONTROL SAMPLE: 1311768

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.6	98	75-124	
1,1,2,2-Tetrachloroethane	ug/L	20	19.7	99	73-120	
1,1,2-Trichloroethane	ug/L	20	19.2	96	76-120	
1,2-Dichloroethane	ug/L	20	19.9	100	72-122	
1,4-Dichlorobenzene	ug/L	20	20.3	102	80-120	
Benzene	ug/L	20	19.7	99	73-122	
Bromodichloromethane	ug/L	20	19.8	99	73-120	
Bromoform	ug/L	20	20.2	101	74-120	
Bromomethane	ug/L	20	21.3	107	40-146	
Carbon tetrachloride	ug/L	20	20.9	104	73-125	
Chloroethane	ug/L	20	18.9	95	56-159	
Chloroform	ug/L	20	19.9	100	76-120	
cis-1,2-Dichloroethene	ug/L	20	19.6	98	69-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

LABORATORY CONTROL SAMPLE: 1311768

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.5	98	76-123	
Methylene chloride	ug/L	20	20.8	104	71-123	
Tetrachloroethene	ug/L	20	19.6	98	79-122	
Toluene	ug/L	20	20.0	100	76-122	
trans-1,2-Dichloroethene	ug/L	20	19.3	97	78-126	
Trichloroethene	ug/L	20	20.2	101	76-120	
Vinyl chloride	ug/L	20	20.0	100	57-140	
Xylene (Total)	ug/L	60	59.3	99	76-122	
1,2-Dichloroethane-d4 (S)	%			100	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			99	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

QC Batch:	OEXT/3121	Analysis Method:	EPA 8081
QC Batch Method:	EPA 3510	Analysis Description:	8081 GCS TCLP Pesticides
Associated Lab Samples:	60160170001		

METHOD BLANK: 56077 Matrix: Water

Associated Lab Samples: 60160170001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlordane (Technical)	mg/L	ND	0.00050	12/31/13 13:38	
Endrin	mg/L	ND	0.000020	12/31/13 13:38	
gamma-BHC (Lindane)	mg/L	ND	0.000020	12/31/13 13:38	
Heptachlor	mg/L	ND	0.000020	12/31/13 13:06	
Heptachlor epoxide	mg/L	ND	0.000050	12/31/13 13:38	
Methoxychlor	mg/L	ND	0.000050	12/31/13 13:38	
Toxaphene	mg/L	ND	0.0010	12/31/13 13:38	
Decachlorobiphenyl (S)	%	84	40-140	12/31/13 13:38	
Tetrachloro-m-xylene (S)	%	95	40-140	12/31/13 13:38	

LABORATORY CONTROL SAMPLE: 56078

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlordane (Technical)	mg/L		ND			
Endrin	mg/L	.001	0.0010	102	40-140	
gamma-BHC (Lindane)	mg/L	.001	0.00098	98	40-140	
Heptachlor	mg/L	.001	0.0010	101	40-140	
Heptachlor epoxide	mg/L	.001	0.00091	91	40-140	
Methoxychlor	mg/L	.001	0.00080	80	40-140	
Toxaphene	mg/L		ND			
Decachlorobiphenyl (S)	%			81	40-140	
Tetrachloro-m-xylene (S)	%			96	40-140	

MATRIX SPIKE SAMPLE: 56079

Parameter	Units	60160170001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chlordane (Technical)	mg/L	ND		ND			
Endrin	mg/L	ND	.01	0.018	177	40-140	M1
gamma-BHC (Lindane)	mg/L	ND	.01	0.0083	83	40-140	
Heptachlor	mg/L	ND	.01	0.011	111	40-140	
Heptachlor epoxide	mg/L	ND	.01	0.0097	97	40-140	
Methoxychlor	mg/L	ND	.01	0.011	107	40-140	
Toxaphene	mg/L	ND		ND			
Decachlorobiphenyl (S)	%				33	40-140	S0
Tetrachloro-m-xylene (S)	%				176	40-140	S0

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

QC Batch: OEXT/3120

Analysis Method: EPA 8151

QC Batch Method: EPA 8151

Analysis Description: 8151 GCS TCLP Herbicides

Associated Lab Samples: 60160170001

METHOD BLANK: 56073

Matrix: Water

Associated Lab Samples: 60160170001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2,4,5-TP (Silvex)	mg/L	ND	0.000050	12/31/13 15:22	
2,4-D	mg/L	ND	0.000050	12/31/13 15:22	
2,4-DCAA (S)	%.	92	40-140	12/31/13 15:22	

LABORATORY CONTROL SAMPLE: 56074

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4,5-TP (Silvex)	mg/L	.002	0.0022	110	10-140	
2,4-D	mg/L	.002	0.0017	83	40-140	
2,4-DCAA (S)	%.			127	40-140	

MATRIX SPIKE SAMPLE: 56075

Parameter	Units	60160170001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
2,4,5-TP (Silvex)	mg/L	ND	.02	0.0073	37	10-140	
2,4-D	mg/L	ND	.02	0.034	172	40-140 M6	
2,4-DCAA (S)	%.				157	40-140 S4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

QC Batch: OEXT/42121

Analysis Method: EPA 8270

QC Batch Method: EPA 3510

Analysis Description: 8270 TCLP MSSV

Associated Lab Samples: 60160170001

METHOD BLANK: 1312267

Matrix: Water

Associated Lab Samples: 60160170001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	100	12/29/13 13:10	
2,4,5-Trichlorophenol	ug/L	ND	500	12/29/13 13:10	
2,4,6-Trichlorophenol	ug/L	ND	100	12/29/13 13:10	
2,4-Dinitrotoluene	ug/L	ND	100	12/29/13 13:10	
2-Methylphenol(o-Cresol)	ug/L	ND	100	12/29/13 13:10	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	200	12/29/13 13:10	
Hexachloro-1,3-butadiene	ug/L	ND	100	12/29/13 13:10	
Hexachlorobenzene	ug/L	ND	100	12/29/13 13:10	
Hexachloroethane	ug/L	ND	100	12/29/13 13:10	
Nitrobenzene	ug/L	ND	100	12/29/13 13:10	
Pentachlorophenol	ug/L	ND	500	12/29/13 13:10	
Pyridine	ug/L	ND	100	12/29/13 13:10	
2,4,6-Tribromophenol (S)	%	79	36-128	12/29/13 13:10	
2-Fluorobiphenyl (S)	%	83	49-120	12/29/13 13:10	
2-Fluorophenol (S)	%	70	37-120	12/29/13 13:10	
Nitrobenzene-d5 (S)	%	79	44-120	12/29/13 13:10	
Phenol-d6 (S)	%	72	36-120	12/29/13 13:10	
Terphenyl-d14 (S)	%	82	52-122	12/29/13 13:10	

LABORATORY CONTROL SAMPLE: 1312268

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	500	384	77	47-120	
2,4,5-Trichlorophenol	ug/L	500	425J	85	51-124	
2,4,6-Trichlorophenol	ug/L	500	417	83	46-120	
2,4-Dinitrotoluene	ug/L	500	374	75	38-120	
2-Methylphenol(o-Cresol)	ug/L	500	369	74	46-120	
3&4-Methylphenol(m&p Cresol)	ug/L	1000	760	76	41-120	
Hexachloro-1,3-butadiene	ug/L	500	377	75	49-120	
Hexachlorobenzene	ug/L	500	387	77	50-120	
Hexachloroethane	ug/L	500	369	74	38-120	
Nitrobenzene	ug/L	500	400	80	49-120	
Pentachlorophenol	ug/L	500	360J	72	35-125	
Pyridine	ug/L	500	254	51	10-120	
2,4,6-Tribromophenol (S)	%			82	36-128	
2-Fluorobiphenyl (S)	%			87	49-120	
2-Fluorophenol (S)	%			72	37-120	
Nitrobenzene-d5 (S)	%			83	44-120	
Phenol-d6 (S)	%			76	36-120	
Terphenyl-d14 (S)	%			87	52-122	

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

MATRIX SPIKE SAMPLE:		1312269					
Parameter	Units	60160170001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	5000	3570	71	48-120	
2,4,5-Trichlorophenol	ug/L	ND	5000	4080J	82	57-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	3990	80	48-120	
2,4-Dinitrotoluene	ug/L	ND	5000	3770	75	38-120	
2-Methylphenol(o-Cresol)	ug/L	ND	5000	4490	81	48-120	
3&4-Methylphenol(m&p Cresol)	ug/L	9650	10000	14700J	51	47-120	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3430	69	49-120	
Hexachlorobenzene	ug/L	ND	5000	3660	73	53-120	
Hexachloroethane	ug/L	ND	5000	3780	76	38-120	
Nitrobenzene	ug/L	ND	5000	3640	73	51-120	
Pentachlorophenol	ug/L	ND	5000	4260J	85	34-131	
Pyridine	ug/L	ND	5000	3790	69	10-120	
2,4,6-Tribromophenol (S)	%				79	36-128	
2-Fluorobiphenyl (S)	%				78	49-120	
2-Fluorophenol (S)	%				77	37-120	
Nitrobenzene-d5 (S)	%				91	44-120	
Phenol-d6 (S)	%				83	36-120	
Terphenyl-d14 (S)	%				79	52-122	

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

QC Batch:	WET/45290	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60160170001		

METHOD BLANK: 1310402 Matrix: Water

Associated Lab Samples: 60160170001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/23/13 07:24	

LABORATORY CONTROL SAMPLE: 1310403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	38.2	96	78-114	

MATRIX SPIKE SAMPLE: 1310406

Parameter	Units	60159912001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	39.1	44.4	80.3	93	78-114	

SAMPLE DUPLICATE: 1310405

Parameter	Units	60160116001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

QC Batch: WET/45341

Analysis Method: SM 2540B

QC Batch Method: SM 2540B

Analysis Description: 2540B Total Solids

Associated Lab Samples: 60160170001

METHOD BLANK: 1311701

Matrix: Water

Associated Lab Samples: 60160170001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	mg/L	ND	5.0	12/26/13 17:00	

LABORATORY CONTROL SAMPLE: 1311702

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	mg/L	1000	979	98	80-120	

SAMPLE DUPLICATE: 1311703

Parameter	Units	60160043007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	mg/L	2920	3060	5	10	

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QUALIFIERS

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-D Pace Analytical Services - Dallas

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: MSV/58595

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

S0 Surrogate recovery outside laboratory control limits.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

pH Post-analysis pH measurement indicates insufficient VOA sample preservation.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: UNTREATED COMMINGLED

Pace Project No.: 60160170

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160170001	TCLP DEC 13	EPA 3510	OEXT/3121	EPA 8081	GCSV/2155
60160170001	TCLP DEC 13	EPA 8151	OEXT/3120	EPA 8151	GCSV/2154
60160170001	TCLP DEC 13	EPA 3010	MPRP/25745	EPA 6010	ICP/19754
60160170001	TCLP DEC 13	EPA 7470	MERP/8035	EPA 7470	MERC/7990
60160170001	TCLP DEC 13	EPA 3510	OEXT/42121	EPA 8270	MSSV/13391
60160170001	TCLP DEC 13	EPA 8260	MSV/58625		
60160170001	TCLP DEC 13	EPA 5030B/8260	MSV/58595		
60160170002	TRIP BLANK	EPA 5030B/8260	MSV/58595		
60160170001	TCLP DEC 13	EPA 1664A	WET/45290		
60160170001	TCLP DEC 13	SM 2540B	WET/45341		

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Sample Condition Upon Receipt

WO#: 60160170



60160170

Client Name: BARR

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ XR

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ Zip

Thermometer Used: T-239 / T-194 Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.4 p

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 8/2/13

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☒ No ☐ N/A	6.
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WY</u>	15.
All containers needing preservation have been checked.	☐ Yes ☒ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased): <u>Covered</u>		
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	<u>1 of 3 vials</u>
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: mw hr (AKR)

Date: 12/21/13

Section A

Required Client Information:

Company: BARR ENGINEERING
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B

Required Project Information:

Report To: ED GALBRAITH/BARR
Copy To: SCOTT FEDAK/FEEZOR
DANA BAKER/MARGARET TREANOR-BARR
Purchase Order No.: PO 3727110
Project Name: UNTREATED COMMINGLED
Project Number:

Section C

Invoice Information:

Attention: JANET ROLLEN
Company Name: REPUBLIC SERVICES
Address: BRIDGETON, MO 63044
Pace Quote Reference:
Pace Project Manager: Angie Brown 913-563-1402
Pace Profile #: PROFILE 6787-LINE 6

Page: 1 of 1

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location

MO

STATE:

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test ↓	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
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ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS		
	Paul Linscott / PEI	12-20-13	2:00 PM	L. Linscott	12-20-13	2:00 PM			
				Shirley McKee / PAST	12/21	0115	3Lp	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed

(MM/DD/YY):

Temp in °C

Received on Ice (Y/N)

Custody Sealed Cooler (Y/N)

Samples Intact (Y/N)

Pace Analytical®
www.paceanalytical.com

Owner Received Date: 12/21/2013 Results Requested By: 12/31/2013

Page Pkg Page 25 of 27



Sample Condition Upon Receipt

Client Name: PACE KS Pace WO#: 7571148

Courier: ☒ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Courier ☐ LSO ☐ Pace ☐ Other: _____ Tracking #: SL8912752991

Custody Seal on Cooler/Box Present: ☒ Yes ☐ No Seal Intact: ☒ Yes ☐ No ☐ NA

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: _____

Thermometer Used: IR-01/IR-02 Type of Ice: Wet Blue None ☒ Sample on Ice, cooling process has begun

Cooler Temperature: 5.00 Ice Visible in Sample Containers: ☐ Yes ☒ No

(corrected, if applicable)

Temp should be above freezing to 6°C

Comments: _____

Initials/Date of person examining contents: SM 12/30/13

Sample Receiving	Y	N	NA	Notes/Comments
Chain of Custody Present	☒			1.
Chain of Custody Filled out	☒			2.
Chain of Custody Relinquished	☒			3.
Sampler Name & Signature on COC		☒		4.
Short Hold Time Analysis (<72hr)		☒		5.
Rush Turn Around Time Requested	☒			6.
Containers Intact	☒			7.
Sample Labels match COC Includes date/time/ID/analysis	☒			8.
a. Samples received with preservation, if yes, what is the preservative			☒	9a. Circle HNO3, H2SO4, HCL, NaOH
b. All container needing acid/base preservation have been checked				9b. If applicable see below
Exceptions: VOA, Coliform, O&G			☒	pH strip lot# <u>10 11 13</u>
c. All containers needing preservation are found to be in compliance with EPA recommendation			☒	Potassium Iodide strip lot# _____ Lead Acetate strip lot # _____
Do samples need pH adjustment, if Yes, what preservative is used ? List analyses: _____				10. Circle HNO3, Lot# _____ H2SO4, Lot# _____ HCL, Lot# _____ NaOH, Lot# _____ Adjusted pH: _____
			☒	Comments: _____
Headspace in VOA vials (>6mm)			☒	11.
Trip Blank Present			☒	12.
Trip Blank Custody Seals Present			☒	
Samples arrived within Hold Time	☒			13.
Sufficient Volume	☒			14.
Correct containers Used	☒			15.

Client Notification/Resolution

Person contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: ARM Date: 12/30/13

Sample Container Count



COC PAGE 1 of 1
COC ID# _____

Pace Project # 25 11148

Sample Line Item	BP2N	AG1U	VG9U	VG9H	BP2S	BP1U	BP2U	BG1H	AG1S	BP2O	SP5T	WGFU	WGKU	AG2U	Comments
1														2	
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

Container Codes

DG9H	40mL HCL amber vial	AF	Air Filter	BP1N	1 liter HNO3 plastic	DG9P	40mL TSP amber vial
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCL amber glass	BP1S	1 liter H2SO4 plastic	DG9S	40mL H2SO4 amber vial
WGFU	4oz clear soil jar	AG1S	1 liter H2SO4 amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R	terra core kit	AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved amber vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic	I	Wipe/Swab
BP2U	500mL unpreserved plastic	AG2S	500mL H2SO4 amber glass	BP2O	500mL NaOH plastic	JGFU	4oz unpreserved amber wide
BP2S	500mL H2SO4 plastic	AG2U	500mL unpreserved amber gla	BP2Z	500mL NaOH, Zn Ac	U	Summa Can
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	BP3A	250mL NaOH, Asc Acid plastic	VG9H	40mL HCL clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCL clear glass	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio. clear vial
BP3S	250mL H2SO4 plastic	BG1S	1 liter H2SO4 clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VG9U	40mL unpreserved clear vial
AG3S	250mL H2SO4 glass amber	BG1T	1 liter Na Thiosulfate clear gla	C	Air Cassettes	VSG	Headspace septa vial & HCL
AG1S	1 liter H2SO4 amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfate amber vial	WGFU	4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag
WGKU	8oz wide jar unpreserved	SP5T	120mL Coliform Na Thiosulfate	SP5U	120mL Coliform unpreserved	GN	General unpreserved
Other	Other						

Sample Preparation Log

1311 ZHE

Page Number 2328

Organic Extractions Prep Method: ZHE 1311

Thursday, December 26, 2013

SampleID	Client	Project #	Comments	Sample Wt.	Extraction Fluid		Pressure On		Pressure Off		Initial pH	Final pH	QCBatch	Piston Ch	InitPress
					Vol. (mL)	Fluid pH	(psi)	(psi)	(psi)						
60159751001	Baker Corp	60159751		25.3	500	4.98	20	20			5.23		6050	Y	50
60159890001	ellan Midstream Partners, L.P.	60159890		25.2	500	4.98	20	20			5.33		6050	Y	50
60159928001	ANHANDLE EASTERN PIPELIN	60159928		25.5	500	4.98	20	20			5.33		6050	Y	50
60160170001	Barr Engineering Company	60160170	5.5% S	17.07	341.4	4.98	20	20			5.29		6050	Y	50
60160232013	P66 Ponca City Foster Design	60160232		25.3	500	4.98	20	20			4.99		6050	Y	50
60160172001	Geotechnology, Inc. - STL	60160172		25.2	500	4.98	20	20			6.31		6050	Y	50
60160214001	P66 CRA OK	60160214		25.4	500	4.98	20	20			5.04		6050	Y	50
60160214002	P66 CRA OK	60160214	8.2% S	10.14	202.8	4.98	20	20			5.09		6050	Y	50
BLANK				N/A	500	4.98	20	20			5.01		6050	Y	50

Task Breakdown

Setup By: CEM
 Rotated By: CEM
 Rotation Started: 16:30
 Rotation Stopped: 8:30
 Initial Temp °C: 22.4
 Max Temp °C: 25.8
 Min Temp °C: 21.6
 Matrix: SOIL

Reagents Lot Number

Extraction Fluid: 12435135
 Date Started: 12/26/2013
 Date Stopped: 12/27/2013
 1N HCL: N/A
 ZHE Filter ID: 6742

Rotation RPM: 28

PASI Kansas City Laboratory
 9608 Loiret Blvd.
 Lenexa, Kansas 66219

Reviewed By:

Date:

TCLP/SPLP Determination of Percent Solids (Only if sample is liquid or semi-liquid. Skip if sample is obviously 100% solid.)



Date: 12/26/13

Batch: 6050

Analyst: CEM

Balance ID: 6002XT3

Reviewed by: _____

Sample Number	A Weight of Beaker (g)	B Weight of Sample & Beaker (g)	C Weight of Filtrate Container (g)	D Weight of 142-mm TCLP Filter (g)	E Weight of Waste Beaker After Filtration (g)	F Weight of Filtrate & Container (g)	G Weight of Filter and Solid Phase After Filtration (g)	H Weight of Filtrate (g) (F - C)	I Weight of Waste Filtered (g) (E - B)	J Percent WET Solids $\left(\frac{I - H}{I \times 0.01}\right)$	K DRY Weight #1 of Solid Phase plus Filter (g)	L DRY Weight #2 of Solid Phase plus Filter (g) (1)	M Percent DRY Solids $\left(\frac{L - D}{I \times 0.01}\right)$	If Multiphase, Are Phases Compatible (2)
60160170001	108.7	236.3	280.8	1.3	109.3	406.8	2.2	120.0	127.0	5.5%	1.6	1.6	0.24%	Yes / No (NA)
60160214002	102.4	221.2	281.3	1.3	103.1	389.7	6.2	108.4	118.1	8.2%	2.6	2.6	1.0%	Yes / No (NA)
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA

CEM 12/26/13

NOTE: If Wet Solids are ≥ 0.5 and $< 5\%$ and a small amount of liquid is entrapped in the filter, then determine Percent Dry Solids. If the entrapped liquid is oily (non-aqueous) do not determine Percent Dry Solids. If Solids are $< 0.5\%$, tumbling is not required because the filtrate is considered to be the TCLP/SPLP extract.

- (1) Dry Weight #1 and Dry Weight #2 must be within 1% of each other. If the weights are within 1% of each other, use Dry Weight #2 in further calculations. If not within 1%, continue drying and weighing until two successive weighings are within 1%.
- (2) If compatible, combine the filtered liquid resulting from extraction with the initial liquid phase of sample. If the initial liquid phase is not compatible with the filtered liquid resulting from extraction, do not combine. Analyze liquids separately and combine the results mathematically.

If solids are ≥ 5.0 and $< 100\%$	Weight of waste to charge the ZHE = $\frac{25}{\text{Percent solids}} \times 100$
	Weight of waste to filter = $\frac{\text{mL of leachate required}}{20 \times \text{Percent solids}} \times 100$

$$123.7_g = 100 \cdot \frac{x}{8.2} \rightarrow 10.14_g \text{ solids}$$

$$310.4_g = 100 \cdot \frac{x}{5.5} \rightarrow 17.07_g \text{ solids}$$

Sample Preparation Log

1311 TCLP

Page Number 4126

Organic Extractions Prep Method: 1311 TCLP

Thursday, December 26, 2013

SampleID	Client	Project #	Comments	pH Wt. (g)	Sample Wt.	Extraction Fluid Vol. (mL)	pH 1	pH 2	Fluid pH	Final pH	QCBatch
60159164005	TRC ENVIRONMENTAL	60159164		5.0	100.3	2000	9.13	1.66	4.98	5.32	6052
60159908002	NCRA	60159908		5.0	100.2	2000	9.71	1.76	4.98	6.94	6052
60159795001	HONEYWELL FM&T	60159795	0% S	N/A	N/A	N/A	N/A	N/A	N/A	0.53	6052
60159730025	TERRACON Wichita	60159730		5.0	100.0	2000	9.51	1.79	4.98	5.39	6052
60159926001	PANHANDLE EASTERN PI	60159926		5.0	100.5	2000	7.80	1.43	4.98	4.92	6052
60159928001	PANHANDLE EASTERN PI	60159928	G	5.0	50.2	1004	10.32	3.16	4.98	5.07	6052/6051
60160170001	Barr Engineering Company	60160170	G 5.5% S	1.0	10.6	212	5.52	1.76	4.98	5.36	6052/6051
60160232013	P66 Ponca City Foster Desig	60160232		5.0	100.2	2000	8.46	1.57	4.98	5.01	6052
BLANK				N/A	N/A	2000	N/A	N/A	4.98	5.50	6052
NM BLANK			G	N/A	N/A	2000	N/A	N/A	4.98	4.99	6052/6051

Task Breakdown

Setup By:	CEM	Reagents	Lot Number
Rotated By:	CEM	Extraction Fluid#1:	12435135
Rotation Started:	16:30	Extraction Fluid#2:	N/A
Rotation Stopped:	8:30	Date Started:	12/26/2013
Initial Temp °C:	22.4	Date Stopped:	12/27/2013
Max Temp °C:	25.8	1N HCL:	12435123
Min Temp °C:	21.6	Filter ID:	7057
Matrix:	SOIL/WATER	Extract Vessel Lot#	7056

Rotation RPM: 28

PASI Kansas City Laboratory
9608 Loiret Blvd.
Lenexa, Kansas 66219

Reviewed By:

Date:

TCLP/SPLP Determination of Percent Solids

(Only if sample is liquid or semi-liquid. Skip if sample is obviously 100% solid.)



Date: 12/26/13

Batch: 6052/6051

Analyst: CEM

Balance ID: 6002XT3

Reviewed by: _____

Sample Number	A Weight of Beaker (g)	B Weight of Sample & Beaker (g)	C Weight of Filtrate Container (g)	D Weight of 142-mm TCLP Filter (g)	E Weight of Waste Beaker After Filtration (g)	F Weight of Filtrate & Container (g)	G Weight of Filter and Solid Phase After Filtration (g)	H Weight of Filtrate (g) (F - C)	I Weight of Waste Filtered (g) (E - B)	J Percent WET Solids $\left(\frac{(I - H)}{I} \times 0.01\right)$	K DRY Weight #1 of Solid Phase plus Filter (g)	L DRY Weight #2 of Solid Phase plus Filter (g) (1)	M Percent DRY Solids $\left(\frac{(L - D)}{I} \times 0.01\right)$	If Multiphase, Are Phases Compatible (2)
60160170001	108.7	236.3	280.8	1.3	109.3	400.8	2.2	120.0	127.0	5.5%	1.6	1.6	0.24%	Yes / No / NA
60159795001	107.8	236.5	281.4	1.3	108.4	405.3	3.3	123.9	128.1	3.28%	1.3	1.3	0	Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA
														Yes / No / NA

CEM 12/26/13

NOTE: If Wet Solids are ≥ 0.5 and $< 5\%$ and a small amount of liquid is entrapped in the filter, then determine Percent Dry Solids. If the entrapped liquid is oily (non-aqueous) do not determine Percent Dry Solids. If Solids are $< 0.5\%$, tumbling is not required because the filtrate is considered to be the TCLP/SPLP extract.

- Dry Weight #1 and Dry Weight #2 must be within 1% of each other. If the weights are within 1% of each other, use Dry Weight #2 in further calculations. If not within 1%, continue drying and weighing until two successive weighings are within 1%.
- If compatible, combine the filtered liquid resulting from extraction with the initial liquid phase of sample. If the initial liquid phase is not compatible with the filtered liquid resulting from extraction, do not combine. Analyze liquids separately and combine the results mathematically.

If solids are ≥ 5.0 and $< 100\%$	Weight of waste to charge the ZHE = $\frac{25}{\text{Percent solids}} \times 100$
	Weight of waste to filter = $\frac{\text{mL of leachate required}}{20 \times \text{Percent solids}} \times 100$

December 31, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-171
Pace Project No.: 60160164

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 21, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Emily Webb for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160164001	316-171	Water	12/20/13 09:10	12/21/13 01:15
60160164002	TRIP BLANK	Water	12/20/13 00:00	12/21/13 01:15

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160164001	316-171	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JMC1	1
		EPA 624 Low	EAK	26
60160164002	TRIP BLANK			

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

Sample: 316-171		Lab ID: 60160164001	Collected: 12/20/13 09:10	Received: 12/21/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	7470	ug/L	375	1	12/24/13 13:30	12/27/13 18:07	7429-90-5	
Antimony	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 18:07	7440-36-0	
Arsenic	831	ug/L	50.0	1	12/24/13 13:30	12/27/13 18:07	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/24/13 13:30	12/27/13 18:07	7440-41-7	
Cadmium	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 18:07	7440-43-9	
Chromium	257	ug/L	25.0	1	12/24/13 13:30	12/27/13 18:07	7440-47-3	
Cobalt	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 18:07	7440-48-4	
Copper	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 18:07	7440-50-8	
Iron	873000	ug/L	250	1	12/24/13 13:30	12/27/13 18:07	7439-89-6	
Lead	156	ug/L	25.0	1	12/24/13 13:30	12/27/13 18:07	7439-92-1	
Nickel	101	ug/L	25.0	1	12/24/13 13:30	12/27/13 18:07	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/24/13 13:30	12/27/13 18:07	7782-49-2	
Silver	ND	ug/L	35.0	1	12/24/13 13:30	12/27/13 18:07	7440-22-4	
Thallium	ND	ug/L	100	1	12/24/13 13:30	12/27/13 18:07	7440-28-0	
Zinc	9000	ug/L	500	2	12/24/13 13:30	12/27/13 18:10	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2330	ug/L	375	1	12/24/13 13:30	12/27/13 11:15	7429-90-5	
Antimony, Dissolved	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 11:15	7440-36-0	
Arsenic, Dissolved	467	ug/L	50.0	1	12/24/13 13:30	12/27/13 11:15	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/24/13 13:30	12/27/13 11:15	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:15	7440-43-9	
Chromium, Dissolved	138	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:15	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:15	7440-48-4	
Copper, Dissolved	51.2	ug/L	50.0	1	12/24/13 13:30	12/27/13 11:15	7440-50-8	
Iron, Dissolved	420000	ug/L	250	1	12/24/13 13:30	12/27/13 11:15	7439-89-6	
Lead, Dissolved	44.5	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:15	7439-92-1	
Nickel, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:15	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/24/13 13:30	12/27/13 11:15	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/24/13 13:30	12/27/13 11:15	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/24/13 13:30	12/27/13 11:15	7440-28-0	
Zinc, Dissolved	5100	ug/L	250	1	12/24/13 13:30	12/27/13 11:15	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	8.0	ug/L	6.0	1	12/23/13 17:30	12/24/13 09:18	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/26/13 11:05	12/27/13 10:57	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/24/13 00:00	12/29/13 11:27	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/24/13 00:00	12/29/13 11:27	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/24/13 00:00	12/29/13 11:27	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/24/13 00:00	12/29/13 11:27	67-72-1	
Naphthalene	ND	ug/L	1000	2	12/24/13 00:00	12/29/13 11:27	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/24/13 00:00	12/29/13 11:27	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

Sample: 316-171		Lab ID: 60160164001	Collected: 12/20/13 09:10	Received: 12/21/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/24/13 00:00	12/29/13 11:27	87-86-5	
Phenol	13600 ug/L		1000	2	12/24/13 00:00	12/29/13 11:27	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/24/13 00:00	12/29/13 11:27	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/24/13 00:00	12/29/13 11:27	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	115 %		33-120	2	12/24/13 00:00	12/29/13 11:27	4165-60-0	
2-Fluorobiphenyl (S)	71 %		39-120	2	12/24/13 00:00	12/29/13 11:27	321-60-8	
Terphenyl-d14 (S)	78 %		45-120	2	12/24/13 00:00	12/29/13 11:27	1718-51-0	
Phenol-d6 (S)	29 %		11-120	2	12/24/13 00:00	12/29/13 11:27	13127-88-3	
2-Fluorophenol (S)	39 %		17-120	2	12/24/13 00:00	12/29/13 11:27	367-12-4	
2,4,6-Tribromophenol (S)	72 %		39-120	2	12/24/13 00:00	12/29/13 11:27	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	120000 ug/L		2000	200		12/23/13 13:28	67-64-1	N2
Benzene	ND ug/L		200	200		12/23/13 13:28	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/23/13 13:28	75-27-4	
Bromoform	ND ug/L		200	200		12/23/13 13:28	75-25-2	
Bromomethane	ND ug/L		1000	200		12/23/13 13:28	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/23/13 13:28	56-23-5	
Chloroethane	ND ug/L		200	200		12/23/13 13:28	75-00-3	
Chloroform	ND ug/L		200	200		12/23/13 13:28	67-66-3	
1,4-Dichlorobenzene	428 ug/L		200	200		12/23/13 13:28	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/23/13 13:28	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/23/13 13:28	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/23/13 13:28	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/23/13 13:28	100-41-4	
Methylene chloride	ND ug/L		200	200		12/23/13 13:28	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/23/13 13:28	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/23/13 13:28	127-18-4	
Toluene	ND ug/L		200	200		12/23/13 13:28	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/23/13 13:28	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/23/13 13:28	79-00-5	
Trichloroethene	ND ug/L		200	200		12/23/13 13:28	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/23/13 13:28	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/23/13 13:28	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	94 %		80-120	200		12/23/13 13:28	460-00-4	D3
Toluene-d8 (S)	102 %		80-120	200		12/23/13 13:28	2037-26-5	
1,2-Dichloroethane-d4 (S)	106 %		80-120	200		12/23/13 13:28	17060-07-0	
Preservation pH	6.0		1.0	200		12/23/13 13:28		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	1260 mg/L		5.0	1		12/23/13 07:31		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	5.8 mg/L		5.0	1		12/27/13 08:49		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

Sample: 316-171		Lab ID: 60160164001	Collected: 12/20/13 09:10	Received: 12/21/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3740	mg/L	5.0	1		12/26/13 10:55		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		12/26/13 13:05		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	35400	mg/L	2.0	1	12/21/13 10:17	12/26/13 08:45		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	743	mg/L	50.0	500		12/24/13 16:26	7664-41-7	M1
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	60400	mg/L	5000	500		12/31/13 08:23		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

Sample: TRIP BLANK		Lab ID: 60160164002	Collected: 12/20/13 00:00	Received: 12/21/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/23/13 13:59	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/23/13 13:59	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/23/13 13:59	75-27-4	
Bromoform	ND ug/L		1.0	1		12/23/13 13:59	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/23/13 13:59	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/23/13 13:59	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/23/13 13:59	75-00-3	
Chloroform	ND ug/L		1.0	1		12/23/13 13:59	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/23/13 13:59	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/23/13 13:59	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/23/13 13:59	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/23/13 13:59	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/23/13 13:59	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/23/13 13:59	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/23/13 13:59	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/23/13 13:59	127-18-4	
Toluene	ND ug/L		1.0	1		12/23/13 13:59	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/23/13 13:59	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/23/13 13:59	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/23/13 13:59	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/23/13 13:59	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/23/13 13:59	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	1		12/23/13 13:59	460-00-4	
4-Bromofluorobenzene (S)	102 %		80-120	1		12/23/13 13:59	460-00-4	
Toluene-d8 (S)	106 %		80-120	1		12/23/13 13:59	2037-26-5	
Toluene-d8 (S)	106 %		80-120	1		12/23/13 13:59	2037-26-5	
1,2-Dichloroethane-d4 (S)	92 %		80-120	1		12/23/13 13:59	17060-07-0	
1,2-Dichloroethane-d4 (S)	92 %		80-120	1		12/23/13 13:59	17060-07-0	
Preservation pH	6.0		1.0	1		12/23/13 13:59		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

QC Batch: MERP/8022

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60160164001

METHOD BLANK: 1310976

Matrix: Water

Associated Lab Samples: 60160164001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/24/13 08:35	

LABORATORY CONTROL SAMPLE: 1310977

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.8	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310978 1310979

Parameter	Units	60159525003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.8	4.8	96	96	70-130	1	20	

MATRIX SPIKE SAMPLE: 1310980

Parameter	Units	60160061001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	5.0	99	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

QC Batch: MERP/8028

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160164001

METHOD BLANK: 1311671

Matrix: Water

Associated Lab Samples: 60160164001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/26/13 16:50	

LABORATORY CONTROL SAMPLE: 1311672

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311673 1311674

Parameter	Units	60159525003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	4.6	4.6	92	92	70-130	0	20	

MATRIX SPIKE SAMPLE: 1311675

Parameter	Units	60160244001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	ND	150	149	99	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171
Pace Project No.: 60160164

QC Batch: MPRP/25720 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60160164001

METHOD BLANK: 1311282 Matrix: Water
Associated Lab Samples: 60160164001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/27/13 17:52	
Antimony	ug/L	ND	10.0	12/27/13 17:52	
Arsenic	ug/L	ND	10.0	12/27/13 17:52	
Beryllium	ug/L	ND	1.0	12/27/13 17:52	
Cadmium	ug/L	ND	5.0	12/27/13 17:52	
Chromium	ug/L	ND	5.0	12/27/13 17:52	
Cobalt	ug/L	ND	5.0	12/27/13 17:52	
Copper	ug/L	ND	10.0	12/27/13 17:52	
Iron	ug/L	ND	50.0	12/27/13 17:52	
Lead	ug/L	ND	5.0	12/27/13 17:52	
Nickel	ug/L	ND	5.0	12/27/13 17:52	
Selenium	ug/L	ND	15.0	12/27/13 17:52	
Silver	ug/L	ND	7.0	12/27/13 17:52	
Thallium	ug/L	ND	20.0	12/27/13 17:52	
Zinc	ug/L	ND	50.0	12/27/13 17:52	

LABORATORY CONTROL SAMPLE: 1311283

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10000	100	85-115	
Antimony	ug/L	1000	1040	104	85-115	
Arsenic	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1040	104	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Copper	ug/L	1000	1020	102	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1040	104	85-115	
Nickel	ug/L	1000	1050	105	85-115	
Selenium	ug/L	1000	1040	104	85-115	
Silver	ug/L	500	505	101	85-115	
Thallium	ug/L	1000	1070	107	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311284 1311285

Parameter	Units	60160066002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	75.9	10000	10000	10100	9880	100	98	70-130	2	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311284 1311285											
Parameter	Units	60160066002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1040	1020	104	102	70-130	2	7
Arsenic	ug/L	ND	1000	1000	1040	1020	103	101	70-130	2	10
Beryllium	ug/L	ND	1000	1000	1010	992	101	99	70-130	2	7
Cadmium	ug/L	ND	1000	1000	1030	1010	103	101	70-130	2	10
Chromium	ug/L	ND	1000	1000	992	974	99	97	70-130	2	10
Cobalt	ug/L	ND	1000	1000	989	970	99	97	70-130	2	6
Copper	ug/L	ND	1000	1000	1020	1000	101	99	70-130	2	11
Iron	ug/L	134	10000	10000	10200	9990	100	99	70-130	2	10
Lead	ug/L	ND	1000	1000	972	956	97	96	70-130	2	10
Nickel	ug/L	6.2	1000	1000	997	979	99	97	70-130	2	10
Selenium	ug/L	77.0	1000	1000	1110	1080	103	100	70-130	2	10
Silver	ug/L	ND	500	500	506	494	101	99	70-130	2	10
Thallium	ug/L	ND	1000	1000	939	924	94	92	70-130	2	6
Zinc	ug/L	ND	1000	1000	1010	989	99	97	70-130	2	11

MATRIX SPIKE SAMPLE: 1311286							
Parameter	Units	60160073001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	280	10000	10500	102	70-130	
Antimony	ug/L	ND	1000	1050	105	70-130	
Arsenic	ug/L	ND	1000	1070	107	70-130	
Beryllium	ug/L	ND	1000	1020	102	70-130	
Cadmium	ug/L	ND	1000	1050	105	70-130	
Chromium	ug/L	ND	1000	994	99	70-130	
Cobalt	ug/L	ND	1000	975	97	70-130	
Copper	ug/L	275	1000	1300	103	70-130	
Iron	ug/L	500	10000	10100	96	70-130	
Lead	ug/L	ND	1000	951	95	70-130	
Nickel	ug/L	8.2	1000	980	97	70-130	
Selenium	ug/L	ND	1000	1050	105	70-130	
Silver	ug/L	ND	500	523	104	70-130	
Thallium	ug/L	ND	1000	874	87	70-130	
Zinc	ug/L	ND	1000	1030	98	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171
Pace Project No.: 60160164

QC Batch: MPRP/25718 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60160164001

METHOD BLANK: 1311272 Matrix: Water
Associated Lab Samples: 60160164001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/27/13 10:42	
Antimony, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Arsenic, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Beryllium, Dissolved	ug/L	ND	1.0	12/27/13 10:42	
Cadmium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Chromium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Cobalt, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Copper, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Iron, Dissolved	ug/L	ND	50.0	12/27/13 10:42	
Lead, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Nickel, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Selenium, Dissolved	ug/L	ND	15.0	12/27/13 10:42	
Silver, Dissolved	ug/L	ND	7.0	12/27/13 10:42	
Thallium, Dissolved	ug/L	ND	20.0	12/27/13 10:42	
Zinc, Dissolved	ug/L	ND	50.0	12/27/13 10:42	

LABORATORY CONTROL SAMPLE: 1311273

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9670	97	85-115	
Antimony, Dissolved	ug/L	1000	976	98	85-115	
Arsenic, Dissolved	ug/L	1000	953	95	85-115	
Beryllium, Dissolved	ug/L	1000	984	98	85-115	
Cadmium, Dissolved	ug/L	1000	975	97	85-115	
Chromium, Dissolved	ug/L	1000	993	99	85-115	
Cobalt, Dissolved	ug/L	1000	950	95	85-115	
Copper, Dissolved	ug/L	1000	969	97	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	979	98	85-115	
Nickel, Dissolved	ug/L	1000	988	99	85-115	
Selenium, Dissolved	ug/L	1000	972	97	85-115	
Silver, Dissolved	ug/L	500	491	98	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	974	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275

Parameter	Units	60159955001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	1350	50000	50000	49600	49500	97	96	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275												
Parameter	Units	60159955001		MS	MSD	MS		MSD	% Rec		Max	
		Result	Conc.	Spike	Spike	Result	Result	Result	% Rec	Limits	RPD	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5000	4940	4920	99	98	70-130	1	7
Arsenic, Dissolved	ug/L	239	5000	5000	5000	5200	5150	99	98	70-130	1	10
Beryllium, Dissolved	ug/L	ND	5000	5000	5000	4880	4870	97	97	70-130	0	7
Cadmium, Dissolved	ug/L	ND	5000	5000	5000	4920	4880	98	98	70-130	1	10
Chromium, Dissolved	ug/L	75.8	5000	5000	5000	4920	4910	97	97	70-130	0	10
Cobalt, Dissolved	ug/L	ND	5000	5000	5000	4590	4580	92	91	70-130	0	6
Copper, Dissolved	ug/L	ND	5000	5000	5000	5000	4970	99	99	70-130	1	11
Iron, Dissolved	ug/L	248000	50000	50000	50000	308000	290000	120	83	70-130	6	10
Lead, Dissolved	ug/L	28.9	5000	5000	5000	4610	4600	92	91	70-130	0	10
Nickel, Dissolved	ug/L	ND	5000	5000	5000	4730	4710	94	94	70-130	0	10
Selenium, Dissolved	ug/L	ND	5000	5000	5000	5050	4980	101	100	70-130	1	10
Silver, Dissolved	ug/L	ND	2500	2500	2500	2500	2470	100	99	70-130	1	10
Thallium, Dissolved	ug/L	ND	5000	5000	5000	4480	4480	90	90	70-130	0	6
Zinc, Dissolved	ug/L	3220	5000	5000	5000	7980	7720	95	90	70-130	3	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

QC Batch: MSV/58528 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60160164001, 60160164002

METHOD BLANK: 1310756

Matrix: Water

Associated Lab Samples: 60160164001, 60160164002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/23/13 11:58	N2
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/23/13 11:58	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/23/13 11:58	
1,2-Dichloroethane	ug/L	ND	1.0	12/23/13 11:58	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/23/13 11:58	
Benzene	ug/L	ND	1.0	12/23/13 11:58	N2
Bromodichloromethane	ug/L	ND	1.0	12/23/13 11:58	
Bromoform	ug/L	ND	1.0	12/23/13 11:58	
Bromomethane	ug/L	ND	5.0	12/23/13 11:58	
Carbon tetrachloride	ug/L	ND	1.0	12/23/13 11:58	
Chloroethane	ug/L	ND	1.0	12/23/13 11:58	
Chloroform	ug/L	ND	1.0	12/23/13 11:58	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/23/13 11:58	
Ethylbenzene	ug/L	ND	1.0	12/23/13 11:58	
Methylene chloride	ug/L	ND	1.0	12/23/13 11:58	
Tetrachloroethene	ug/L	ND	1.0	12/23/13 11:58	N2
Toluene	ug/L	ND	1.0	12/23/13 11:58	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/23/13 11:58	
Trichloroethene	ug/L	ND	1.0	12/23/13 11:58	
Vinyl chloride	ug/L	ND	1.0	12/23/13 11:58	
Xylene (Total)	ug/L	ND	3.0	12/23/13 11:58	N2
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/23/13 11:58	
4-Bromofluorobenzene (S)	%	101	80-120	12/23/13 11:58	
Toluene-d8 (S)	%	101	80-120	12/23/13 11:58	

LABORATORY CONTROL SAMPLE: 1310757

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.1	95	71-139	N2
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	97	59-138	
1,1,2-Trichloroethane	ug/L	20	18.2	91	69-127	
1,2-Dichloroethane	ug/L	20	17.7	88	71-129	
1,4-Dichlorobenzene	ug/L	20	20.0	100	68-124	
Benzene	ug/L	20	17.6	88	73-129	N2
Bromodichloromethane	ug/L	20	19.7	98	63-129	
Bromoform	ug/L	20	19.1	95	52-123	
Bromomethane	ug/L	20	15.6	78	10-160	
Carbon tetrachloride	ug/L	20	20.0	100	70-140	
Chloroethane	ug/L	20	15.0	75	42-160	
Chloroform	ug/L	20	19.4	97	60-120	
cis-1,2-Dichloroethene	ug/L	20	17.9	90	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

LABORATORY CONTROL SAMPLE: 1310757

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.1	95	66-133	
Methylene chloride	ug/L	20	21.4	107	56-135	
Tetrachloroethene	ug/L	20	18.5	92	64-143	
Toluene	ug/L	20	18.3	92	70-130	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	67-149	
Trichloroethene	ug/L	20	19.1	95	71-130	
Vinyl chloride	ug/L	20	16.7	83	41-160	
Xylene (Total)	ug/L	60	56.7	94	67-130	N2
1,2-Dichloroethane-d4 (S)	%			93	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			105	80-120	

MATRIX SPIKE SAMPLE: 1310758

Parameter	Units	60160164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3120	78	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3010	75	46-157	N2
1,1,2-Trichloroethane	ug/L	ND	4000	3290	82	52-150	
1,2-Dichloroethane	ug/L	ND	4000	2960	74	49-155	
1,4-Dichlorobenzene	ug/L	428	4000	3190	69	18-147	
Benzene	ug/L	ND	4000	2960	74	37-151	
Bromodichloromethane	ug/L	ND	4000	3120	78	35-155	
Bromoform	ug/L	ND	4000	3140	78	45-133	
Bromomethane	ug/L	ND	4000	1990	50	10-160	
Carbon tetrachloride	ug/L	ND	4000	3440	86	70-140	
Chloroethane	ug/L	ND	4000	3910	98	14-160	
Chloroform	ug/L	ND	4000	3050	76	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	2770	69	19-160	N2
Ethylbenzene	ug/L	ND	4000	3100	77	37-154	
Methylene chloride	ug/L	ND	4000	3030	75	15-156	
Tetrachloroethene	ug/L	ND	4000	3130	78	64-148	
Toluene	ug/L	ND	4000	2870	72	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	2940	74	54-156	
Trichloroethene	ug/L	ND	4000	3080	77	71-157	
Vinyl chloride	ug/L	ND	4000	2990	75	10-160	
Xylene (Total)	ug/L	ND	12000	9180	76	12-153	N2
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				94	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

QC Batch: MSV/58593 Analysis Method: EPA 624 Low
QC Batch Method: EPA 624 Low Analysis Description: 624 MSV
Associated Lab Samples: 60160164001, 60160164002

METHOD BLANK: 1311756 Matrix: Water

Associated Lab Samples: 60160164001, 60160164002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	12/23/13 11:58	N2
1,2-Dichloroethane-d4 (S)	%	102	80-120	12/23/13 11:58	
4-Bromofluorobenzene (S)	%	101	80-120	12/23/13 11:58	
Toluene-d8 (S)	%	101	80-120	12/23/13 11:58	

LABORATORY CONTROL SAMPLE: 1311757

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	90.0	90	40-160	N2
1,2-Dichloroethane-d4 (S)	%			93	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			105	80-120	

MATRIX SPIKE SAMPLE: 1311758

Parameter	Units	60160164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	120000	20000	133000	68	40-160	N2
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				94	80-120	
Toluene-d8 (S)	%				100	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

QC Batch: OEXT/42092

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60160164001

METHOD BLANK: 1311069

Matrix: Water

Associated Lab Samples: 60160164001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/29/13 10:26	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/29/13 10:26	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/29/13 10:26	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/29/13 10:26	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/29/13 10:26	
Hexachloroethane	ug/L	ND	5.0	12/29/13 10:26	
Naphthalene	ug/L	ND	5.0	12/29/13 10:26	
Nitrobenzene	ug/L	ND	5.0	12/29/13 10:26	
Pentachlorophenol	ug/L	ND	5.0	12/29/13 10:26	
Phenol	ug/L	ND	5.0	12/29/13 10:26	
2,4,6-Tribromophenol (S)	%	76	39-120	12/29/13 10:26	
2-Fluorobiphenyl (S)	%	79	39-120	12/29/13 10:26	
2-Fluorophenol (S)	%	44	17-120	12/29/13 10:26	
Nitrobenzene-d5 (S)	%	77	33-120	12/29/13 10:26	
Phenol-d6 (S)	%	29	11-120	12/29/13 10:26	
Terphenyl-d14 (S)	%	84	45-120	12/29/13 10:26	

LABORATORY CONTROL SAMPLE: 1311070

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	35.2	70	46-120	
2,4,6-Trichlorophenol	ug/L	50	38.8	78	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	41.8	84	40-133	
Hexachloro-1,3-butadiene	ug/L	50	32.2	64	44-116	
Hexachlorocyclopentadiene	ug/L	100	46.0	46	24-120	
Hexachloroethane	ug/L	50	32.4	65	43-113	
Naphthalene	ug/L	50	36.2	72	48-120	
Nitrobenzene	ug/L	50	36.9	74	48-120	
Pentachlorophenol	ug/L	50	34.7	69	47-120	
Phenol	ug/L	50	17.0	34	16-112	
2,4,6-Tribromophenol (S)	%			80	39-120	
2-Fluorobiphenyl (S)	%			79	39-120	
2-Fluorophenol (S)	%			43	17-120	
Nitrobenzene-d5 (S)	%			76	33-120	
Phenol-d6 (S)	%			29	11-120	
Terphenyl-d14 (S)	%			87	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

MATRIX SPIKE SAMPLE:		1311071					
Parameter	Units	60160164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3380	68	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	3770	75	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3700J	74	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3330	67	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	4390	44	11-120	
Hexachloroethane	ug/L	ND	5000	3260	65	40-113	
Naphthalene	ug/L	ND	5000	4030	68	45-120	
Nitrobenzene	ug/L	ND	5000	3470	69	38-120	
Pentachlorophenol	ug/L	ND	5000	3520	70	43-135	
Phenol	ug/L	13600	5000	14800	24	13-112	
2,4,6-Tribromophenol (S)	%				81	39-120	
2-Fluorobiphenyl (S)	%				77	39-120	
2-Fluorophenol (S)	%				40	17-120	
Nitrobenzene-d5 (S)	%				117	33-120	
Phenol-d6 (S)	%				30	11-120	
Terphenyl-d14 (S)	%				84	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

QC Batch: WET/45290

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60160164001

METHOD BLANK: 1310402

Matrix: Water

Associated Lab Samples: 60160164001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/23/13 07:24	

LABORATORY CONTROL SAMPLE: 1310403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	38.2	96	78-114	

MATRIX SPIKE SAMPLE: 1310406

Parameter	Units	60159912001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	39.1	44.4	80.3	93	78-114	

SAMPLE DUPLICATE: 1310405

Parameter	Units	60160116001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

QC Batch: WET/45376

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160164001

METHOD BLANK: 1312020

Matrix: Water

Associated Lab Samples: 60160164001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/27/13 08:45	

LABORATORY CONTROL SAMPLE: 1312021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.6	103	64-132	

MATRIX SPIKE SAMPLE: 1312022

Parameter	Units	60159625001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	20	22.3	109	64-132	

SAMPLE DUPLICATE: 1312024

Parameter	Units	60159625001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

QC Batch: WET/45337

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160164001

METHOD BLANK: 1311687

Matrix: Water

Associated Lab Samples: 60160164001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/26/13 10:52	

SAMPLE DUPLICATE: 1311688

Parameter	Units	60160005002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1311689

Parameter	Units	60160296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	11.0	11.0	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

QC Batch: WET/45356 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60160164001

SAMPLE DUPLICATE: 1311797

Parameter	Units	60159953002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

QC Batch: WET/45285

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160164001

METHOD BLANK: 1310077

Matrix: Water

Associated Lab Samples: 60160164001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/26/13 08:22	

LABORATORY CONTROL SAMPLE: 1310078

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	186	94	85-115	

SAMPLE DUPLICATE: 1310080

Parameter	Units	60160092001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	ND	ND		17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

QC Batch: WETA/27644

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160164001

METHOD BLANK: 1311496

Matrix: Water

Associated Lab Samples: 60160164001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/24/13 16:24	

LABORATORY CONTROL SAMPLE: 1311497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	106	90-110	

MATRIX SPIKE SAMPLE: 1311498

Parameter	Units	60160164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	743	1000	1960	122	90-110	M1

SAMPLE DUPLICATE: 1311499

Parameter	Units	60160245001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	816	788	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

QC Batch:	WETA/27707	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60160164001		

METHOD BLANK: 1312807 Matrix: Water

Associated Lab Samples: 60160164001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/31/13 08:08	

LABORATORY CONTROL SAMPLE: 1312808

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	53.4	107	90-110	

MATRIX SPIKE SAMPLE: 1312809

Parameter	Units	60159791001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	431	250	654	89	90-110	M1

MATRIX SPIKE SAMPLE: 1312815

Parameter	Units	60160092001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	147	50	191	88	90-110	M1

SAMPLE DUPLICATE: 1312810

Parameter	Units	60159792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	32.1	32.4	1	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-171

Pace Project No.: 60160164

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160164001	316-171	EPA 200.7	MPRP/25720	EPA 200.7	ICP/19733
60160164001	316-171	EPA 200.7	MPRP/25718	EPA 200.7	ICP/19731
60160164001	316-171	EPA 245.1	MERP/8022	EPA 245.1	MERC/7978
60160164001	316-171	EPA 245.1	MERP/8028	EPA 245.1	MERC/7982
60160164001	316-171	EPA 625	OEXT/42092	EPA 625	MSSV/13389
60160164001	316-171	EPA 624 Low	MSV/58528		
60160164001	316-171	EPA 624 Low	MSV/58593		
60160164002	TRIP BLANK	EPA 624 Low	MSV/58528		
60160164002	TRIP BLANK	EPA 624 Low	MSV/58593		
60160164001	316-171	EPA 1664A	WET/45290		
60160164001	316-171	EPA 1664A	WET/45376		
60160164001	316-171	SM 2540D	WET/45337		
60160164001	316-171	SM 4500-H+B	WET/45356		
60160164001	316-171	SM 5210B	WET/45285	SM 5210B	WET/45344
60160164001	316-171	EPA 350.1	WETA/27644		
60160164001	316-171	EPA 410.4	WETA/27707		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60160164



60160164

Client Name: Barr Engineering

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ X-roads

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ Upk

Thermometer Used: T-238 / T-194

Type of Ice: Wet ☒ Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.8

Date and initials of person examining contents: 12/21/13 [initials]

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☐ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☐ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☐ No ☐ N/A	6. <u>Bad, ph</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>ut</u>		15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>093013-3 BEZ</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature]

Date: 12/23/13

December 31, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-173R
Pace Project No.: 60160246

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 23, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Emily Webb for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160246001	316-173R	Water	12/22/13 10:56	12/23/13 13:10
60160246002	TRIP BLANK	Water	12/22/13 08:00	12/23/13 13:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160246001	316-173R	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	AJM	1
		EPA 350.1	NDL	1
		EPA 410.4	JMC1	1
		EPA 624 Low	EAK	26
60160246002	TRIP BLANK			

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

Sample: 316-173R		Lab ID: 60160246001	Collected: 12/22/13 10:56	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	5670 ug/L		375	1	12/24/13 13:30	12/27/13 18:35	7429-90-5	
Antimony	ND ug/L		50.0	1	12/24/13 13:30	12/27/13 18:35	7440-36-0	
Arsenic	703 ug/L		50.0	1	12/24/13 13:30	12/27/13 18:35	7440-38-2	
Beryllium	ND ug/L		5.0	1	12/24/13 13:30	12/27/13 18:35	7440-41-7	
Cadmium	ND ug/L		25.0	1	12/24/13 13:30	12/27/13 18:35	7440-43-9	
Chromium	212 ug/L		25.0	1	12/24/13 13:30	12/27/13 18:35	7440-47-3	
Cobalt	ND ug/L		25.0	1	12/24/13 13:30	12/27/13 18:35	7440-48-4	
Copper	ND ug/L		50.0	1	12/24/13 13:30	12/27/13 18:35	7440-50-8	
Iron	728000 ug/L		250	1	12/24/13 13:30	12/27/13 18:35	7439-89-6	
Lead	125 ug/L		25.0	1	12/24/13 13:30	12/27/13 18:35	7439-92-1	
Nickel	94.0 ug/L		25.0	1	12/24/13 13:30	12/27/13 18:35	7440-02-0	
Selenium	ND ug/L		75.0	1	12/24/13 13:30	12/27/13 18:35	7782-49-2	
Silver	ND ug/L		35.0	1	12/24/13 13:30	12/27/13 18:35	7440-22-4	
Thallium	ND ug/L		100	1	12/24/13 13:30	12/27/13 18:35	7440-28-0	
Zinc	8570 ug/L		500	2	12/24/13 13:30	12/27/13 18:37	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3640 ug/L		375	1	12/24/13 13:30	12/27/13 11:29	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	1	12/24/13 13:30	12/27/13 11:29	7440-36-0	
Arsenic, Dissolved	724 ug/L		50.0	1	12/24/13 13:30	12/27/13 11:29	7440-38-2	D9
Beryllium, Dissolved	ND ug/L		5.0	1	12/24/13 13:30	12/27/13 11:29	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	1	12/24/13 13:30	12/27/13 11:29	7440-43-9	
Chromium, Dissolved	220 ug/L		25.0	1	12/24/13 13:30	12/27/13 11:29	7440-47-3	D9
Cobalt, Dissolved	ND ug/L		25.0	1	12/24/13 13:30	12/27/13 11:29	7440-48-4	
Copper, Dissolved	53.6 ug/L		50.0	1	12/24/13 13:30	12/27/13 11:29	7440-50-8	D9
Iron, Dissolved	694000 ug/L		250	1	12/24/13 13:30	12/27/13 11:29	7439-89-6	
Lead, Dissolved	74.9 ug/L		25.0	1	12/24/13 13:30	12/27/13 11:29	7439-92-1	
Nickel, Dissolved	53.3 ug/L		25.0	1	12/24/13 13:30	12/27/13 11:29	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	1	12/24/13 13:30	12/27/13 11:29	7782-49-2	
Silver, Dissolved	ND ug/L		35.0	1	12/24/13 13:30	12/27/13 11:29	7440-22-4	
Thallium, Dissolved	ND ug/L		100	1	12/24/13 13:30	12/27/13 11:29	7440-28-0	
Zinc, Dissolved	9220 ug/L		500	2	12/24/13 13:30	12/27/13 11:36	7440-66-6	D9
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	14.7 ug/L		6.0	1	12/27/13 12:15	12/27/13 17:02	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		6.0	1	12/26/13 11:05	12/27/13 11:06	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	2	12/24/13 00:00	12/29/13 12:50	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:50	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:50	77-47-4	
Hexachloroethane	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:50	67-72-1	
Naphthalene	2090 ug/L		1000	2	12/24/13 00:00	12/29/13 12:50	91-20-3	
Nitrobenzene	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:50	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

Sample: 316-173R		Lab ID: 60160246001	Collected: 12/22/13 10:56	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:50	87-86-5	
Phenol	12700 ug/L		1000	2	12/24/13 00:00	12/29/13 12:50	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:50	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:50	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	137 %		33-120	2	12/24/13 00:00	12/29/13 12:50	4165-60-0	S0
2-Fluorobiphenyl (S)	82 %		39-120	2	12/24/13 00:00	12/29/13 12:50	321-60-8	
Terphenyl-d14 (S)	85 %		45-120	2	12/24/13 00:00	12/29/13 12:50	1718-51-0	
Phenol-d6 (S)	34 %		11-120	2	12/24/13 00:00	12/29/13 12:50	13127-88-3	
2-Fluorophenol (S)	46 %		17-120	2	12/24/13 00:00	12/29/13 12:50	367-12-4	
2,4,6-Tribromophenol (S)	85 %		39-120	2	12/24/13 00:00	12/29/13 12:50	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	114000 ug/L		2000	200		12/26/13 18:40	67-64-1	N2
Benzene	ND ug/L		200	200		12/26/13 18:40	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/26/13 18:40	75-27-4	
Bromoform	ND ug/L		200	200		12/26/13 18:40	75-25-2	
Bromomethane	ND ug/L		1000	200		12/26/13 18:40	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/26/13 18:40	56-23-5	
Chloroethane	ND ug/L		200	200		12/26/13 18:40	75-00-3	
Chloroform	ND ug/L		200	200		12/26/13 18:40	67-66-3	
1,4-Dichlorobenzene	1200 ug/L		200	200		12/26/13 18:40	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/26/13 18:40	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/26/13 18:40	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		200	200		12/26/13 18:40	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/26/13 18:40	100-41-4	
Methylene chloride	ND ug/L		200	200		12/26/13 18:40	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/26/13 18:40	79-34-5	N2
Tetrachloroethene	ND ug/L		200	200		12/26/13 18:40	127-18-4	
Toluene	ND ug/L		200	200		12/26/13 18:40	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/26/13 18:40	71-55-6	
1,1,2-Trichloroethane	574 ug/L		200	200		12/26/13 18:40	79-00-5	
Trichloroethene	ND ug/L		200	200		12/26/13 18:40	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/26/13 18:40	75-01-4	
Xylene (Total)	779 ug/L		600	200		12/26/13 18:40	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	91 %		80-120	200		12/26/13 18:40	460-00-4	D3
Toluene-d8 (S)	102 %		80-120	200		12/26/13 18:40	2037-26-5	
1,2-Dichloroethane-d4 (S)	94 %		80-120	200		12/26/13 18:40	17060-07-0	
Preservation pH	6.0		1.0	200		12/26/13 18:40		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	573 mg/L		5.0	1		12/24/13 07:44		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	7.3 mg/L		5.0	1		12/27/13 08:50		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

Sample: 316-173R		Lab ID: 60160246001	Collected: 12/22/13 10:56	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1300	mg/L	5.0	1		12/27/13 09:38		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		12/26/13 13:15		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	26900	mg/L	2.0	1	12/23/13 15:30	12/28/13 12:10		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	744	mg/L	50.0	500		12/24/13 16:32	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	56500	mg/L	5000	500		12/31/13 08:25		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

Sample: TRIP BLANK		Lab ID: 60160246002	Collected: 12/22/13 08:00	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/26/13 18:55	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/26/13 18:55	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/26/13 18:55	75-27-4	
Bromoform	ND ug/L		1.0	1		12/26/13 18:55	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/26/13 18:55	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/26/13 18:55	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/26/13 18:55	75-00-3	
Chloroform	ND ug/L		1.0	1		12/26/13 18:55	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/26/13 18:55	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/26/13 18:55	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/26/13 18:55	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/26/13 18:55	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/26/13 18:55	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/26/13 18:55	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/26/13 18:55	79-34-5	N2
Tetrachloroethene	ND ug/L		1.0	1		12/26/13 18:55	127-18-4	
Toluene	ND ug/L		1.0	1		12/26/13 18:55	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/26/13 18:55	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/26/13 18:55	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/26/13 18:55	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/26/13 18:55	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/26/13 18:55	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	87 %		80-120	1		12/26/13 18:55	460-00-4	
Toluene-d8 (S)	103 %		80-120	1		12/26/13 18:55	2037-26-5	
1,2-Dichloroethane-d4 (S)	98 %		80-120	1		12/26/13 18:55	17060-07-0	
Preservation pH	6.0		1.0	1		12/26/13 18:55		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

QC Batch: MERP/8036

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60160246001

METHOD BLANK: 1312261

Matrix: Water

Associated Lab Samples: 60160246001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/27/13 16:17	

LABORATORY CONTROL SAMPLE: 1312262

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312263 1312264

Parameter	Units	60160254001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	0.95	1.0	19	21	70-130	9	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

QC Batch: MERP/8028

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160246001

METHOD BLANK: 1311671

Matrix: Water

Associated Lab Samples: 60160246001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/26/13 16:50	

LABORATORY CONTROL SAMPLE: 1311672

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311673 1311674

Parameter	Units	60159525003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	4.6	4.6	92	92	70-130	0	20	

MATRIX SPIKE SAMPLE: 1311675

Parameter	Units	60160244001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	ND	150	149	99	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R
Pace Project No.: 60160246

QC Batch: MPRP/25720 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60160246001

METHOD BLANK: 1311282 Matrix: Water
Associated Lab Samples: 60160246001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/27/13 17:52	
Antimony	ug/L	ND	10.0	12/27/13 17:52	
Arsenic	ug/L	ND	10.0	12/27/13 17:52	
Beryllium	ug/L	ND	1.0	12/27/13 17:52	
Cadmium	ug/L	ND	5.0	12/27/13 17:52	
Chromium	ug/L	ND	5.0	12/27/13 17:52	
Cobalt	ug/L	ND	5.0	12/27/13 17:52	
Copper	ug/L	ND	10.0	12/27/13 17:52	
Iron	ug/L	ND	50.0	12/27/13 17:52	
Lead	ug/L	ND	5.0	12/27/13 17:52	
Nickel	ug/L	ND	5.0	12/27/13 17:52	
Selenium	ug/L	ND	15.0	12/27/13 17:52	
Silver	ug/L	ND	7.0	12/27/13 17:52	
Thallium	ug/L	ND	20.0	12/27/13 17:52	
Zinc	ug/L	ND	50.0	12/27/13 17:52	

LABORATORY CONTROL SAMPLE: 1311283

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10000	100	85-115	
Antimony	ug/L	1000	1040	104	85-115	
Arsenic	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1040	104	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Copper	ug/L	1000	1020	102	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1040	104	85-115	
Nickel	ug/L	1000	1050	105	85-115	
Selenium	ug/L	1000	1040	104	85-115	
Silver	ug/L	500	505	101	85-115	
Thallium	ug/L	1000	1070	107	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311284 1311285

Parameter	Units	60160066002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	75.9	10000	10000	10100	9880	100	98	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311284 1311285											
Parameter	Units	60160066002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1040	1020	104	102	70-130	2	7
Arsenic	ug/L	ND	1000	1000	1040	1020	103	101	70-130	2	10
Beryllium	ug/L	ND	1000	1000	1010	992	101	99	70-130	2	7
Cadmium	ug/L	ND	1000	1000	1030	1010	103	101	70-130	2	10
Chromium	ug/L	ND	1000	1000	992	974	99	97	70-130	2	10
Cobalt	ug/L	ND	1000	1000	989	970	99	97	70-130	2	6
Copper	ug/L	ND	1000	1000	1020	1000	101	99	70-130	2	11
Iron	ug/L	134	10000	10000	10200	9990	100	99	70-130	2	10
Lead	ug/L	ND	1000	1000	972	956	97	96	70-130	2	10
Nickel	ug/L	6.2	1000	1000	997	979	99	97	70-130	2	10
Selenium	ug/L	77.0	1000	1000	1110	1080	103	100	70-130	2	10
Silver	ug/L	ND	500	500	506	494	101	99	70-130	2	10
Thallium	ug/L	ND	1000	1000	939	924	94	92	70-130	2	6
Zinc	ug/L	ND	1000	1000	1010	989	99	97	70-130	2	11

MATRIX SPIKE SAMPLE: 1311286							
Parameter	Units	60160073001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	280	10000	10500	102	70-130	
Antimony	ug/L	ND	1000	1050	105	70-130	
Arsenic	ug/L	ND	1000	1070	107	70-130	
Beryllium	ug/L	ND	1000	1020	102	70-130	
Cadmium	ug/L	ND	1000	1050	105	70-130	
Chromium	ug/L	ND	1000	994	99	70-130	
Cobalt	ug/L	ND	1000	975	97	70-130	
Copper	ug/L	275	1000	1300	103	70-130	
Iron	ug/L	500	10000	10100	96	70-130	
Lead	ug/L	ND	1000	951	95	70-130	
Nickel	ug/L	8.2	1000	980	97	70-130	
Selenium	ug/L	ND	1000	1050	105	70-130	
Silver	ug/L	ND	500	523	104	70-130	
Thallium	ug/L	ND	1000	874	87	70-130	
Zinc	ug/L	ND	1000	1030	98	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R
Pace Project No.: 60160246

QC Batch:	MPRP/25718	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60160246001		

METHOD BLANK: 1311272 Matrix: Water
Associated Lab Samples: 60160246001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/27/13 10:42	
Antimony, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Arsenic, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Beryllium, Dissolved	ug/L	ND	1.0	12/27/13 10:42	
Cadmium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Chromium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Cobalt, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Copper, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Iron, Dissolved	ug/L	ND	50.0	12/27/13 10:42	
Lead, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Nickel, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Selenium, Dissolved	ug/L	ND	15.0	12/27/13 10:42	
Silver, Dissolved	ug/L	ND	7.0	12/27/13 10:42	
Thallium, Dissolved	ug/L	ND	20.0	12/27/13 10:42	
Zinc, Dissolved	ug/L	ND	50.0	12/27/13 10:42	

LABORATORY CONTROL SAMPLE: 1311273

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9670	97	85-115	
Antimony, Dissolved	ug/L	1000	976	98	85-115	
Arsenic, Dissolved	ug/L	1000	953	95	85-115	
Beryllium, Dissolved	ug/L	1000	984	98	85-115	
Cadmium, Dissolved	ug/L	1000	975	97	85-115	
Chromium, Dissolved	ug/L	1000	993	99	85-115	
Cobalt, Dissolved	ug/L	1000	950	95	85-115	
Copper, Dissolved	ug/L	1000	969	97	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	979	98	85-115	
Nickel, Dissolved	ug/L	1000	988	99	85-115	
Selenium, Dissolved	ug/L	1000	972	97	85-115	
Silver, Dissolved	ug/L	500	491	98	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	974	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275

Parameter	Units	60159955001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	1350	50000	50000	49600	49500	97	96	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275											
Parameter	Units	60159955001		MS	MSD	MS		MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5000	4940	4920	99	98	70-130	1
Arsenic, Dissolved	ug/L	239	5000	5000	5000	5200	5150	99	98	70-130	1
Beryllium, Dissolved	ug/L	ND	5000	5000	5000	4880	4870	97	97	70-130	0
Cadmium, Dissolved	ug/L	ND	5000	5000	5000	4920	4880	98	98	70-130	1
Chromium, Dissolved	ug/L	75.8	5000	5000	5000	4920	4910	97	97	70-130	0
Cobalt, Dissolved	ug/L	ND	5000	5000	5000	4590	4580	92	91	70-130	0
Copper, Dissolved	ug/L	ND	5000	5000	5000	5000	4970	99	99	70-130	1
Iron, Dissolved	ug/L	248000	50000	50000	50000	308000	290000	120	83	70-130	6
Lead, Dissolved	ug/L	28.9	5000	5000	5000	4610	4600	92	91	70-130	0
Nickel, Dissolved	ug/L	ND	5000	5000	5000	4730	4710	94	94	70-130	0
Selenium, Dissolved	ug/L	ND	5000	5000	5000	5050	4980	101	100	70-130	1
Silver, Dissolved	ug/L	ND	2500	2500	2500	2500	2470	100	99	70-130	1
Thallium, Dissolved	ug/L	ND	5000	5000	5000	4480	4480	90	90	70-130	0
Zinc, Dissolved	ug/L	3220	5000	5000	5000	7980	7720	95	90	70-130	3

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

QC Batch: MSV/58587 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60160246001, 60160246002

METHOD BLANK: 1311706

Matrix: Water

Associated Lab Samples: 60160246001, 60160246002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/26/13 16:55	N2
1,1,2-Trichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,2-Dichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/26/13 16:55	
Acetone	ug/L	ND	10.0	12/26/13 16:55	N2
Benzene	ug/L	ND	1.0	12/26/13 16:55	
Bromodichloromethane	ug/L	ND	1.0	12/26/13 16:55	
Bromoform	ug/L	ND	1.0	12/26/13 16:55	
Bromomethane	ug/L	ND	5.0	12/26/13 16:55	
Carbon tetrachloride	ug/L	ND	1.0	12/26/13 16:55	
Chloroethane	ug/L	ND	1.0	12/26/13 16:55	
Chloroform	ug/L	ND	1.0	12/26/13 16:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/26/13 16:55	N2
Ethylbenzene	ug/L	ND	1.0	12/26/13 16:55	
Methylene chloride	ug/L	ND	1.0	12/26/13 16:55	
Tetrachloroethene	ug/L	ND	1.0	12/26/13 16:55	
Toluene	ug/L	ND	1.0	12/26/13 16:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/26/13 16:55	
Trichloroethene	ug/L	ND	1.0	12/26/13 16:55	
Vinyl chloride	ug/L	ND	1.0	12/26/13 16:55	
Xylene (Total)	ug/L	ND	3.0	12/26/13 16:55	N2
1,2-Dichloroethane-d4 (S)	%	90	80-120	12/26/13 16:55	
4-Bromofluorobenzene (S)	%	93	80-120	12/26/13 16:55	
Toluene-d8 (S)	%	95	80-120	12/26/13 16:55	

LABORATORY CONTROL SAMPLE: 1311707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.8	89	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	97	59-138	N2
1,1,2-Trichloroethane	ug/L	20	18.9	95	69-127	
1,2-Dichloroethane	ug/L	20	16.7	84	71-129	
1,4-Dichlorobenzene	ug/L	20	18.7	94	68-124	
Acetone	ug/L	100	56.4	56	40-160	N2
Benzene	ug/L	20	19.1	95	73-129	
Bromodichloromethane	ug/L	20	19.8	99	63-129	
Bromoform	ug/L	20	19.0	95	52-123	
Bromomethane	ug/L	20	11.1	56	10-160	
Carbon tetrachloride	ug/L	20	18.0	90	70-140	
Chloroethane	ug/L	20	28.5	142	42-160	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

LABORATORY CONTROL SAMPLE: 1311707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	20	18.2	91	60-120	
cis-1,2-Dichloroethene	ug/L	20	18.0	90	70-125	N2
Ethylbenzene	ug/L	20	18.4	92	66-133	
Methylene chloride	ug/L	20	20.2	101	56-135	
Tetrachloroethene	ug/L	20	19.0	95	64-143	
Toluene	ug/L	20	18.5	93	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.3	91	67-149	
Trichloroethene	ug/L	20	19.5	97	71-130	
Vinyl chloride	ug/L	20	14.3	72	41-160	
Xylene (Total)	ug/L	60	56.9	95	67-130	N2
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			107	80-120	

MATRIX SPIKE SAMPLE: 1311708

Parameter	Units	60160245001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4070	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4220	106	46-157	N2
1,1,2-Trichloroethane	ug/L	399	4000	4030	91	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3430	86	49-155	
1,4-Dichlorobenzene	ug/L	1110	4000	5020	98	18-147	
Acetone	ug/L	96800	20000	114000	88	40-160	N2
Benzene	ug/L	ND	4000	3920	97	37-151	
Bromodichloromethane	ug/L	ND	4000	4120	103	35-155	
Bromoform	ug/L	ND	4000	4380	109	45-133	
Bromomethane	ug/L	ND	4000	2930	73	10-160	
Carbon tetrachloride	ug/L	ND	4000	4600	115	70-140	
Chloroethane	ug/L	ND	4000	4340	108	14-160	
Chloroform	ug/L	ND	4000	3750	94	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3770	94	19-160	N2
Ethylbenzene	ug/L	ND	4000	4250	104	37-154	
Methylene chloride	ug/L	ND	4000	4250	105	15-156	
Tetrachloroethene	ug/L	ND	4000	4410	110	64-148	
Toluene	ug/L	ND	4000	4000	100	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	4340	109	54-156	
Trichloroethene	ug/L	ND	4000	4150	104	71-157	
Vinyl chloride	ug/L	ND	4000	3380	84	10-160	
Xylene (Total)	ug/L	ND	12000	12500	104	12-153	N2
1,2-Dichloroethane-d4 (S)	%				91	80-120	
4-Bromofluorobenzene (S)	%				95	80-120	
Toluene-d8 (S)	%				103	80-120	
Preservation pH		6.0		6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R
Pace Project No.: 60160246

QC Batch:	OEXT/42092	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60160246001		

METHOD BLANK: 1311069 Matrix: Water
Associated Lab Samples: 60160246001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/29/13 10:26	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/29/13 10:26	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/29/13 10:26	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/29/13 10:26	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/29/13 10:26	
Hexachloroethane	ug/L	ND	5.0	12/29/13 10:26	
Naphthalene	ug/L	ND	5.0	12/29/13 10:26	
Nitrobenzene	ug/L	ND	5.0	12/29/13 10:26	
Pentachlorophenol	ug/L	ND	5.0	12/29/13 10:26	
Phenol	ug/L	ND	5.0	12/29/13 10:26	
2,4,6-Tribromophenol (S)	%	76	39-120	12/29/13 10:26	
2-Fluorobiphenyl (S)	%	79	39-120	12/29/13 10:26	
2-Fluorophenol (S)	%	44	17-120	12/29/13 10:26	
Nitrobenzene-d5 (S)	%	77	33-120	12/29/13 10:26	
Phenol-d6 (S)	%	29	11-120	12/29/13 10:26	
Terphenyl-d14 (S)	%	84	45-120	12/29/13 10:26	

LABORATORY CONTROL SAMPLE: 1311070

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	35.2	70	46-120	
2,4,6-Trichlorophenol	ug/L	50	38.8	78	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	41.8	84	40-133	
Hexachloro-1,3-butadiene	ug/L	50	32.2	64	44-116	
Hexachlorocyclopentadiene	ug/L	100	46.0	46	24-120	
Hexachloroethane	ug/L	50	32.4	65	43-113	
Naphthalene	ug/L	50	36.2	72	48-120	
Nitrobenzene	ug/L	50	36.9	74	48-120	
Pentachlorophenol	ug/L	50	34.7	69	47-120	
Phenol	ug/L	50	17.0	34	16-112	
2,4,6-Tribromophenol (S)	%			80	39-120	
2-Fluorobiphenyl (S)	%			79	39-120	
2-Fluorophenol (S)	%			43	17-120	
Nitrobenzene-d5 (S)	%			76	33-120	
Phenol-d6 (S)	%			29	11-120	
Terphenyl-d14 (S)	%			87	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

MATRIX SPIKE SAMPLE:		1311071					
Parameter	Units	60160164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3380	68	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	3770	75	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3700J	74	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3330	67	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	4390	44	11-120	
Hexachloroethane	ug/L	ND	5000	3260	65	40-113	
Naphthalene	ug/L	ND	5000	4030	68	45-120	
Nitrobenzene	ug/L	ND	5000	3470	69	38-120	
Pentachlorophenol	ug/L	ND	5000	3520	70	43-135	
Phenol	ug/L	13600	5000	14800	24	13-112	
2,4,6-Tribromophenol (S)	%				81	39-120	
2-Fluorobiphenyl (S)	%				77	39-120	
2-Fluorophenol (S)	%				40	17-120	
Nitrobenzene-d5 (S)	%				117	33-120	
Phenol-d6 (S)	%				30	11-120	
Terphenyl-d14 (S)	%				84	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

QC Batch:	WET/45310	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60160246001		

METHOD BLANK: 1311044 Matrix: Water

Associated Lab Samples: 60160246001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/24/13 07:43	

LABORATORY CONTROL SAMPLE: 1311045

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	38.9	97	78-114	

MATRIX SPIKE SAMPLE: 1311048

Parameter	Units	60160092001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	5.3	40.4	43.2	94	78-114	

SAMPLE DUPLICATE: 1311049

Parameter	Units	60160018001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	12.9	10.1	25	18 D6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

QC Batch: WET/45376

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160246001

METHOD BLANK: 1312020

Matrix: Water

Associated Lab Samples: 60160246001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/27/13 08:45	

LABORATORY CONTROL SAMPLE: 1312021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.6	103	64-132	

MATRIX SPIKE SAMPLE: 1312022

Parameter	Units	60159625001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	20	22.3	109	64-132	

SAMPLE DUPLICATE: 1312024

Parameter	Units	60159625001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

QC Batch: WET/45369

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160246001

METHOD BLANK: 1311955

Matrix: Water

Associated Lab Samples: 60160246001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/27/13 09:37	

SAMPLE DUPLICATE: 1311957

Parameter	Units	60160223001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	3000	3060	2	25	

SAMPLE DUPLICATE: 1312162

Parameter	Units	60160186001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	6.0	6.0	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

QC Batch:	WET/45357	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60160246001		

SAMPLE DUPLICATE: 1311798

Parameter	Units	60160245001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.4	5.5	1	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

QC Batch: WET/45305

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160246001

METHOD BLANK: 1310761

Matrix: Water

Associated Lab Samples: 60160246001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/28/13 11:36	

LABORATORY CONTROL SAMPLE: 1310762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	176	89	85-115	

SAMPLE DUPLICATE: 1310763

Parameter	Units	60160223001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	323	280	14	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

QC Batch: WETA/27644

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160246001

METHOD BLANK: 1311496

Matrix: Water

Associated Lab Samples: 60160246001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/24/13 16:24	

LABORATORY CONTROL SAMPLE: 1311497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	106	90-110	

MATRIX SPIKE SAMPLE: 1311498

Parameter	Units	60160164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	743	1000	1960	122	90-110	M1

SAMPLE DUPLICATE: 1311499

Parameter	Units	60160245001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	816	788	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

QC Batch:	WETA/27707	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60160246001		

METHOD BLANK: 1312807 Matrix: Water
Associated Lab Samples: 60160246001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/31/13 08:08	

LABORATORY CONTROL SAMPLE: 1312808

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	53.4	107	90-110	

MATRIX SPIKE SAMPLE: 1312809

Parameter	Units	60159791001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	431	250	654	89	90-110	M1

MATRIX SPIKE SAMPLE: 1312815

Parameter	Units	60160092001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	147	50	191	88	90-110	M1

SAMPLE DUPLICATE: 1312810

Parameter	Units	60159792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	32.1	32.4	1	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- | | |
|----|---|
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| D6 | The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits. |
| D9 | Dissolved result is greater than the total. Data is within laboratory control limits. |
| H6 | Analysis initiated outside of the 15 minute EPA recommended holding time. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| N2 | The lab does not hold TNI accreditation for this parameter. |
| S0 | Surrogate recovery outside laboratory control limits. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-173R

Pace Project No.: 60160246

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160246001	316-173R	EPA 200.7	MPRP/25720	EPA 200.7	ICP/19733
60160246001	316-173R	EPA 200.7	MPRP/25718	EPA 200.7	ICP/19731
60160246001	316-173R	EPA 245.1	MERP/8036	EPA 245.1	MERC/7989
60160246001	316-173R	EPA 245.1	MERP/8028	EPA 245.1	MERC/7982
60160246001	316-173R	EPA 625	OEXT/42092	EPA 625	MSSV/13389
60160246001	316-173R	EPA 624 Low	MSV/58587		
60160246002	TRIP BLANK	EPA 624 Low	MSV/58587		
60160246001	316-173R	EPA 1664A	WET/45310		
60160246001	316-173R	EPA 1664A	WET/45376		
60160246001	316-173R	SM 2540D	WET/45369		
60160246001	316-173R	SM 4500-H+B	WET/45357		
60160246001	316-173R	SM 5210B	WET/45305	SM 5210B	WET/45392
60160246001	316-173R	EPA 350.1	WETA/27644		
60160246001	316-173R	EPA 410.4	WETA/27707		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60160246



60160246

Client Name: Barr Eng.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☐ XRoads

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T-230 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: _____

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 12/23/13 JMS

1320

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, plt</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>water</u>	15.
All containers needing preservation have been checked.	☒ Yes ☒ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>JMS</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative <u>12513-10-7</u>
Pace Trip Blank lot # (if purchased): <u>covered</u>		
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 12/23/13

December 31, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-172R
Pace Project No.: 60160245

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 23, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Emily Webb for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160245001	316-172R	Water	12/21/13 16:07	12/23/13 13:10
60160245002	TRIP BLANK	Water	12/21/13 08:00	12/23/13 13:10

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160245001	316-172R	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	28
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	AJM	1
		EPA 350.1	NDL	1
		EPA 410.4	JMC1	1
		EPA 624 Low	EAK	26
60160245002	TRIP BLANK			

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

Sample: 316-172R		Lab ID: 60160245001	Collected: 12/21/13 16:07	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	5720 ug/L		375	1	12/24/13 13:30	12/27/13 18:30	7429-90-5	
Antimony	ND ug/L		50.0	1	12/24/13 13:30	12/27/13 18:30	7440-36-0	
Arsenic	680 ug/L		50.0	1	12/24/13 13:30	12/27/13 18:30	7440-38-2	
Beryllium	ND ug/L		5.0	1	12/24/13 13:30	12/27/13 18:30	7440-41-7	
Cadmium	ND ug/L		25.0	1	12/24/13 13:30	12/27/13 18:30	7440-43-9	
Chromium	196 ug/L		25.0	1	12/24/13 13:30	12/27/13 18:30	7440-47-3	
Cobalt	ND ug/L		25.0	1	12/24/13 13:30	12/27/13 18:30	7440-48-4	
Copper	ND ug/L		50.0	1	12/24/13 13:30	12/27/13 18:30	7440-50-8	
Iron	630000 ug/L		250	1	12/24/13 13:30	12/27/13 18:30	7439-89-6	
Lead	87.8 ug/L		25.0	1	12/24/13 13:30	12/27/13 18:30	7439-92-1	
Nickel	84.2 ug/L		25.0	1	12/24/13 13:30	12/27/13 18:30	7440-02-0	
Selenium	ND ug/L		75.0	1	12/24/13 13:30	12/27/13 18:30	7782-49-2	
Silver	ND ug/L		35.0	1	12/24/13 13:30	12/27/13 18:30	7440-22-4	
Thallium	ND ug/L		100	1	12/24/13 13:30	12/27/13 18:30	7440-28-0	
Zinc	7310 ug/L		500	2	12/24/13 13:30	12/27/13 18:33	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2760 ug/L		375	1	12/24/13 13:30	12/27/13 11:25	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	1	12/24/13 13:30	12/27/13 11:25	7440-36-0	
Arsenic, Dissolved	571 ug/L		50.0	1	12/24/13 13:30	12/27/13 11:25	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	1	12/24/13 13:30	12/27/13 11:25	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	1	12/24/13 13:30	12/27/13 11:25	7440-43-9	
Chromium, Dissolved	163 ug/L		25.0	1	12/24/13 13:30	12/27/13 11:25	7440-47-3	
Cobalt, Dissolved	ND ug/L		25.0	1	12/24/13 13:30	12/27/13 11:25	7440-48-4	
Copper, Dissolved	ND ug/L		50.0	1	12/24/13 13:30	12/27/13 11:25	7440-50-8	
Iron, Dissolved	486000 ug/L		250	1	12/24/13 13:30	12/27/13 11:25	7439-89-6	
Lead, Dissolved	ND ug/L		50.0	2	12/24/13 13:30	12/27/13 11:27	7439-92-1	D3
Nickel, Dissolved	38.9 ug/L		25.0	1	12/24/13 13:30	12/27/13 11:25	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	1	12/24/13 13:30	12/27/13 11:25	7782-49-2	
Silver, Dissolved	ND ug/L		35.0	1	12/24/13 13:30	12/27/13 11:25	7440-22-4	
Thallium, Dissolved	ND ug/L		100	1	12/24/13 13:30	12/27/13 11:25	7440-28-0	
Zinc, Dissolved	6380 ug/L		500	2	12/24/13 13:30	12/27/13 11:27	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	6.8 ug/L		6.0	1	12/27/13 12:15	12/27/13 17:00	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		6.0	1	12/26/13 11:05	12/27/13 11:04	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	2	12/24/13 00:00	12/29/13 12:29	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:29	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:29	77-47-4	
Hexachloroethane	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:29	67-72-1	
Naphthalene	1680 ug/L		1000	2	12/24/13 00:00	12/29/13 12:29	91-20-3	
Nitrobenzene	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:29	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

Sample: 316-172R		Lab ID: 60160245001	Collected: 12/21/13 16:07	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:29	87-86-5	
Phenol	13100 ug/L		1000	2	12/24/13 00:00	12/29/13 12:29	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:29	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/24/13 00:00	12/29/13 12:29	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	136 %		33-120	2	12/24/13 00:00	12/29/13 12:29	4165-60-0	S0
2-Fluorobiphenyl (S)	83 %		39-120	2	12/24/13 00:00	12/29/13 12:29	321-60-8	
Terphenyl-d14 (S)	85 %		45-120	2	12/24/13 00:00	12/29/13 12:29	1718-51-0	
Phenol-d6 (S)	33 %		11-120	2	12/24/13 00:00	12/29/13 12:29	13127-88-3	
2-Fluorophenol (S)	44 %		17-120	2	12/24/13 00:00	12/29/13 12:29	367-12-4	
2,4,6-Tribromophenol (S)	84 %		39-120	2	12/24/13 00:00	12/29/13 12:29	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	96800 ug/L		2000	200		12/26/13 17:10	67-64-1	N2
Benzene	ND ug/L		200	200		12/26/13 17:10	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/26/13 17:10	75-27-4	
Bromoform	ND ug/L		200	200		12/26/13 17:10	75-25-2	
Bromomethane	ND ug/L		1000	200		12/26/13 17:10	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/26/13 17:10	56-23-5	
Chloroethane	ND ug/L		200	200		12/26/13 17:10	75-00-3	
Chloroform	ND ug/L		200	200		12/26/13 17:10	67-66-3	
1,4-Dichlorobenzene	1110 ug/L		200	200		12/26/13 17:10	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/26/13 17:10	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/26/13 17:10	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		200	200		12/26/13 17:10	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/26/13 17:10	100-41-4	
Methylene chloride	ND ug/L		200	200		12/26/13 17:10	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/26/13 17:10	79-34-5	N2
Tetrachloroethene	ND ug/L		200	200		12/26/13 17:10	127-18-4	
Toluene	ND ug/L		200	200		12/26/13 17:10	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/26/13 17:10	71-55-6	
1,1,2-Trichloroethane	399 ug/L		200	200		12/26/13 17:10	79-00-5	
Trichloroethene	ND ug/L		200	200		12/26/13 17:10	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/26/13 17:10	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/26/13 17:10	1330-20-7	N2
m&p-Xylene	ND ug/L		400	200		12/26/13 17:10	179601-23-1	N2
o-Xylene	ND ug/L		200	200		12/26/13 17:10	95-47-6	N2
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		12/26/13 17:10	460-00-4	D3
Toluene-d8 (S)	112 %		80-120	200		12/26/13 17:10	2037-26-5	
1,2-Dichloroethane-d4 (S)	88 %		80-120	200		12/26/13 17:10	17060-07-0	
Preservation pH	6.0		1.0	200		12/26/13 17:10		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	550 mg/L		5.0	1		12/24/13 07:44		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

Sample: 316-172R		Lab ID: 60160245001	Collected: 12/21/13 16:07	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	6.2	mg/L	5.0	1		12/27/13 08:49		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2940	mg/L	5.0	1		12/26/13 10:56		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		12/26/13 13:15		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	28800	mg/L	2.0	1	12/23/13 15:29	12/28/13 12:05		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	816	mg/L	50.0	500		12/24/13 16:30	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	56900	mg/L	5000	500		12/31/13 08:25		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

Sample: TRIP BLANK		Lab ID: 60160245002	Collected: 12/21/13 08:00	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/26/13 17:40	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/26/13 17:40	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/26/13 17:40	75-27-4	
Bromoform	ND ug/L		1.0	1		12/26/13 17:40	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/26/13 17:40	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/26/13 17:40	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/26/13 17:40	75-00-3	
Chloroform	ND ug/L		1.0	1		12/26/13 17:40	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/26/13 17:40	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/26/13 17:40	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/26/13 17:40	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/26/13 17:40	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/26/13 17:40	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/26/13 17:40	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/26/13 17:40	79-34-5	N2
Tetrachloroethene	ND ug/L		1.0	1		12/26/13 17:40	127-18-4	
Toluene	ND ug/L		1.0	1		12/26/13 17:40	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/26/13 17:40	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/26/13 17:40	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/26/13 17:40	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/26/13 17:40	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/26/13 17:40	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	94 %		80-120	1		12/26/13 17:40	460-00-4	
Toluene-d8 (S)	106 %		80-120	1		12/26/13 17:40	2037-26-5	
1,2-Dichloroethane-d4 (S)	91 %		80-120	1		12/26/13 17:40	17060-07-0	
Preservation pH	6.0		1.0	1		12/26/13 17:40		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R
Pace Project No.: 60160245

QC Batch:	MERP/8036	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury
Associated Lab Samples:	60160245001		

METHOD BLANK: 1312261 Matrix: Water
Associated Lab Samples: 60160245001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/27/13 16:17	

LABORATORY CONTROL SAMPLE: 1312262

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312263 1312264

Parameter	Units	60160254001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	0.95	1.0	19	21	70-130	9	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

QC Batch: MERP/8028

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160245001

METHOD BLANK: 1311671

Matrix: Water

Associated Lab Samples: 60160245001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/26/13 16:50	

LABORATORY CONTROL SAMPLE: 1311672

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311673 1311674

Parameter	Units	60159525003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	4.6	4.6	92	92	70-130	0	20	

MATRIX SPIKE SAMPLE: 1311675

Parameter	Units	60160244001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	ND	150	149	99	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R
Pace Project No.: 60160245

QC Batch: MPRP/25720 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60160245001

METHOD BLANK: 1311282 Matrix: Water
Associated Lab Samples: 60160245001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/27/13 17:52	
Antimony	ug/L	ND	10.0	12/27/13 17:52	
Arsenic	ug/L	ND	10.0	12/27/13 17:52	
Beryllium	ug/L	ND	1.0	12/27/13 17:52	
Cadmium	ug/L	ND	5.0	12/27/13 17:52	
Chromium	ug/L	ND	5.0	12/27/13 17:52	
Cobalt	ug/L	ND	5.0	12/27/13 17:52	
Copper	ug/L	ND	10.0	12/27/13 17:52	
Iron	ug/L	ND	50.0	12/27/13 17:52	
Lead	ug/L	ND	5.0	12/27/13 17:52	
Nickel	ug/L	ND	5.0	12/27/13 17:52	
Selenium	ug/L	ND	15.0	12/27/13 17:52	
Silver	ug/L	ND	7.0	12/27/13 17:52	
Thallium	ug/L	ND	20.0	12/27/13 17:52	
Zinc	ug/L	ND	50.0	12/27/13 17:52	

LABORATORY CONTROL SAMPLE: 1311283

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10000	100	85-115	
Antimony	ug/L	1000	1040	104	85-115	
Arsenic	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1040	104	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Copper	ug/L	1000	1020	102	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1040	104	85-115	
Nickel	ug/L	1000	1050	105	85-115	
Selenium	ug/L	1000	1040	104	85-115	
Silver	ug/L	500	505	101	85-115	
Thallium	ug/L	1000	1070	107	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311284 1311285

Parameter	Units	60160066002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	75.9	10000	10000	10100	9880	100	98	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311284 1311285											
Parameter	Units	60160066002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1040	1020	104	102	70-130	2	7
Arsenic	ug/L	ND	1000	1000	1040	1020	103	101	70-130	2	10
Beryllium	ug/L	ND	1000	1000	1010	992	101	99	70-130	2	7
Cadmium	ug/L	ND	1000	1000	1030	1010	103	101	70-130	2	10
Chromium	ug/L	ND	1000	1000	992	974	99	97	70-130	2	10
Cobalt	ug/L	ND	1000	1000	989	970	99	97	70-130	2	6
Copper	ug/L	ND	1000	1000	1020	1000	101	99	70-130	2	11
Iron	ug/L	134	10000	10000	10200	9990	100	99	70-130	2	10
Lead	ug/L	ND	1000	1000	972	956	97	96	70-130	2	10
Nickel	ug/L	6.2	1000	1000	997	979	99	97	70-130	2	10
Selenium	ug/L	77.0	1000	1000	1110	1080	103	100	70-130	2	10
Silver	ug/L	ND	500	500	506	494	101	99	70-130	2	10
Thallium	ug/L	ND	1000	1000	939	924	94	92	70-130	2	6
Zinc	ug/L	ND	1000	1000	1010	989	99	97	70-130	2	11

MATRIX SPIKE SAMPLE: 1311286							
Parameter	Units	60160073001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	280	10000	10500	102	70-130	
Antimony	ug/L	ND	1000	1050	105	70-130	
Arsenic	ug/L	ND	1000	1070	107	70-130	
Beryllium	ug/L	ND	1000	1020	102	70-130	
Cadmium	ug/L	ND	1000	1050	105	70-130	
Chromium	ug/L	ND	1000	994	99	70-130	
Cobalt	ug/L	ND	1000	975	97	70-130	
Copper	ug/L	275	1000	1300	103	70-130	
Iron	ug/L	500	10000	10100	96	70-130	
Lead	ug/L	ND	1000	951	95	70-130	
Nickel	ug/L	8.2	1000	980	97	70-130	
Selenium	ug/L	ND	1000	1050	105	70-130	
Silver	ug/L	ND	500	523	104	70-130	
Thallium	ug/L	ND	1000	874	87	70-130	
Zinc	ug/L	ND	1000	1030	98	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R
Pace Project No.: 60160245

QC Batch: MPRP/25718 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60160245001

METHOD BLANK: 1311272 Matrix: Water
Associated Lab Samples: 60160245001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/27/13 10:42	
Antimony, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Arsenic, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Beryllium, Dissolved	ug/L	ND	1.0	12/27/13 10:42	
Cadmium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Chromium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Cobalt, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Copper, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Iron, Dissolved	ug/L	ND	50.0	12/27/13 10:42	
Lead, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Nickel, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Selenium, Dissolved	ug/L	ND	15.0	12/27/13 10:42	
Silver, Dissolved	ug/L	ND	7.0	12/27/13 10:42	
Thallium, Dissolved	ug/L	ND	20.0	12/27/13 10:42	
Zinc, Dissolved	ug/L	ND	50.0	12/27/13 10:42	

LABORATORY CONTROL SAMPLE: 1311273

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9670	97	85-115	
Antimony, Dissolved	ug/L	1000	976	98	85-115	
Arsenic, Dissolved	ug/L	1000	953	95	85-115	
Beryllium, Dissolved	ug/L	1000	984	98	85-115	
Cadmium, Dissolved	ug/L	1000	975	97	85-115	
Chromium, Dissolved	ug/L	1000	993	99	85-115	
Cobalt, Dissolved	ug/L	1000	950	95	85-115	
Copper, Dissolved	ug/L	1000	969	97	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	979	98	85-115	
Nickel, Dissolved	ug/L	1000	988	99	85-115	
Selenium, Dissolved	ug/L	1000	972	97	85-115	
Silver, Dissolved	ug/L	500	491	98	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	974	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275

Parameter	Units	60159955001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	1350	50000	50000	49600	49500	97	96	70-130	0	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275												
Parameter	Units	60159955001		MS	MSD	MS		MSD	% Rec		Max	
		Result	Conc.	Spike	Spike	Result	Result	Result	% Rec	Limits	RPD	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5000	4940	4920	99	98	70-130	1	7
Arsenic, Dissolved	ug/L	239	5000	5000	5000	5200	5150	99	98	70-130	1	10
Beryllium, Dissolved	ug/L	ND	5000	5000	5000	4880	4870	97	97	70-130	0	7
Cadmium, Dissolved	ug/L	ND	5000	5000	5000	4920	4880	98	98	70-130	1	10
Chromium, Dissolved	ug/L	75.8	5000	5000	5000	4920	4910	97	97	70-130	0	10
Cobalt, Dissolved	ug/L	ND	5000	5000	5000	4590	4580	92	91	70-130	0	6
Copper, Dissolved	ug/L	ND	5000	5000	5000	5000	4970	99	99	70-130	1	11
Iron, Dissolved	ug/L	248000	50000	50000	50000	308000	290000	120	83	70-130	6	10
Lead, Dissolved	ug/L	28.9	5000	5000	5000	4610	4600	92	91	70-130	0	10
Nickel, Dissolved	ug/L	ND	5000	5000	5000	4730	4710	94	94	70-130	0	10
Selenium, Dissolved	ug/L	ND	5000	5000	5000	5050	4980	101	100	70-130	1	10
Silver, Dissolved	ug/L	ND	2500	2500	2500	2500	2470	100	99	70-130	1	10
Thallium, Dissolved	ug/L	ND	5000	5000	5000	4480	4480	90	90	70-130	0	6
Zinc, Dissolved	ug/L	3220	5000	5000	5000	7980	7720	95	90	70-130	3	11

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

QC Batch: MSV/58587 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60160245001, 60160245002

METHOD BLANK: 1311706

Matrix: Water

Associated Lab Samples: 60160245001, 60160245002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/26/13 16:55	N2
1,1,2-Trichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,2-Dichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/26/13 16:55	
Acetone	ug/L	ND	10.0	12/26/13 16:55	N2
Benzene	ug/L	ND	1.0	12/26/13 16:55	
Bromodichloromethane	ug/L	ND	1.0	12/26/13 16:55	
Bromoform	ug/L	ND	1.0	12/26/13 16:55	
Bromomethane	ug/L	ND	5.0	12/26/13 16:55	
Carbon tetrachloride	ug/L	ND	1.0	12/26/13 16:55	
Chloroethane	ug/L	ND	1.0	12/26/13 16:55	
Chloroform	ug/L	ND	1.0	12/26/13 16:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/26/13 16:55	N2
Ethylbenzene	ug/L	ND	1.0	12/26/13 16:55	
m&p-Xylene	ug/L	ND	2.0	12/26/13 16:55	N2
Methylene chloride	ug/L	ND	1.0	12/26/13 16:55	
o-Xylene	ug/L	ND	1.0	12/26/13 16:55	N2
Tetrachloroethene	ug/L	ND	1.0	12/26/13 16:55	
Toluene	ug/L	ND	1.0	12/26/13 16:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/26/13 16:55	
Trichloroethene	ug/L	ND	1.0	12/26/13 16:55	
Vinyl chloride	ug/L	ND	1.0	12/26/13 16:55	
Xylene (Total)	ug/L	ND	3.0	12/26/13 16:55	N2
1,2-Dichloroethane-d4 (S)	%	90	80-120	12/26/13 16:55	
4-Bromofluorobenzene (S)	%	93	80-120	12/26/13 16:55	
Toluene-d8 (S)	%	95	80-120	12/26/13 16:55	

LABORATORY CONTROL SAMPLE: 1311707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.8	89	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	97	59-138	N2
1,1,2-Trichloroethane	ug/L	20	18.9	95	69-127	
1,2-Dichloroethane	ug/L	20	16.7	84	71-129	
1,4-Dichlorobenzene	ug/L	20	18.7	94	68-124	
Acetone	ug/L	100	56.4	56	40-160	N2
Benzene	ug/L	20	19.1	95	73-129	
Bromodichloromethane	ug/L	20	19.8	99	63-129	
Bromoform	ug/L	20	19.0	95	52-123	
Bromomethane	ug/L	20	11.1	56	10-160	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

LABORATORY CONTROL SAMPLE: 1311707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/L	20	18.0	90	70-140	
Chloroethane	ug/L	20	28.5	142	42-160	
Chloroform	ug/L	20	18.2	91	60-120	
cis-1,2-Dichloroethene	ug/L	20	18.0	90	70-125	N2
Ethylbenzene	ug/L	20	18.4	92	66-133	
m&p-Xylene	ug/L	40	37.5	94	66-130	N2
Methylene chloride	ug/L	20	20.2	101	56-135	
o-Xylene	ug/L	20	19.4	97	69-130	N2
Tetrachloroethene	ug/L	20	19.0	95	64-143	
Toluene	ug/L	20	18.5	93	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.3	91	67-149	
Trichloroethene	ug/L	20	19.5	97	71-130	
Vinyl chloride	ug/L	20	14.3	72	41-160	
Xylene (Total)	ug/L	60	56.9	95	67-130	N2
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			107	80-120	

MATRIX SPIKE SAMPLE: 1311708

Parameter	Units	60160245001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4070	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4220	106	46-157	N2
1,1,2-Trichloroethane	ug/L	399	4000	4030	91	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3430	86	49-155	
1,4-Dichlorobenzene	ug/L	1110	4000	5020	98	18-147	
Acetone	ug/L	96800	20000	114000	88	40-160	N2
Benzene	ug/L	ND	4000	3920	97	37-151	
Bromodichloromethane	ug/L	ND	4000	4120	103	35-155	
Bromoform	ug/L	ND	4000	4380	109	45-133	
Bromomethane	ug/L	ND	4000	2930	73	10-160	
Carbon tetrachloride	ug/L	ND	4000	4600	115	70-140	
Chloroethane	ug/L	ND	4000	4340	108	14-160	
Chloroform	ug/L	ND	4000	3750	94	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3770	94	19-160	N2
Ethylbenzene	ug/L	ND	4000	4250	104	37-154	
m&p-Xylene	ug/L	ND	8000	8170	99	12-151	N2
Methylene chloride	ug/L	ND	4000	4250	105	15-156	
o-Xylene	ug/L	ND	4000	4290	103	10-156	N2
Tetrachloroethene	ug/L	ND	4000	4410	110	64-148	
Toluene	ug/L	ND	4000	4000	100	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	4340	109	54-156	
Trichloroethene	ug/L	ND	4000	4150	104	71-157	
Vinyl chloride	ug/L	ND	4000	3380	84	10-160	
Xylene (Total)	ug/L	ND	12000	12500	104	12-153	N2
1,2-Dichloroethane-d4 (S)	%				91	80-120	
4-Bromofluorobenzene (S)	%				95	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

MATRIX SPIKE SAMPLE:		1311708					
Parameter	Units	60160245001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Toluene-d8 (S)	%					103	80-120
Preservation pH		6.0		6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R
Pace Project No.: 60160245

QC Batch:	OEXT/42092	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60160245001		

METHOD BLANK: 1311069 Matrix: Water
Associated Lab Samples: 60160245001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/29/13 10:26	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/29/13 10:26	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/29/13 10:26	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/29/13 10:26	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/29/13 10:26	
Hexachloroethane	ug/L	ND	5.0	12/29/13 10:26	
Naphthalene	ug/L	ND	5.0	12/29/13 10:26	
Nitrobenzene	ug/L	ND	5.0	12/29/13 10:26	
Pentachlorophenol	ug/L	ND	5.0	12/29/13 10:26	
Phenol	ug/L	ND	5.0	12/29/13 10:26	
2,4,6-Tribromophenol (S)	%	76	39-120	12/29/13 10:26	
2-Fluorobiphenyl (S)	%	79	39-120	12/29/13 10:26	
2-Fluorophenol (S)	%	44	17-120	12/29/13 10:26	
Nitrobenzene-d5 (S)	%	77	33-120	12/29/13 10:26	
Phenol-d6 (S)	%	29	11-120	12/29/13 10:26	
Terphenyl-d14 (S)	%	84	45-120	12/29/13 10:26	

LABORATORY CONTROL SAMPLE: 1311070

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	35.2	70	46-120	
2,4,6-Trichlorophenol	ug/L	50	38.8	78	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	41.8	84	40-133	
Hexachloro-1,3-butadiene	ug/L	50	32.2	64	44-116	
Hexachlorocyclopentadiene	ug/L	100	46.0	46	24-120	
Hexachloroethane	ug/L	50	32.4	65	43-113	
Naphthalene	ug/L	50	36.2	72	48-120	
Nitrobenzene	ug/L	50	36.9	74	48-120	
Pentachlorophenol	ug/L	50	34.7	69	47-120	
Phenol	ug/L	50	17.0	34	16-112	
2,4,6-Tribromophenol (S)	%			80	39-120	
2-Fluorobiphenyl (S)	%			79	39-120	
2-Fluorophenol (S)	%			43	17-120	
Nitrobenzene-d5 (S)	%			76	33-120	
Phenol-d6 (S)	%			29	11-120	
Terphenyl-d14 (S)	%			87	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

MATRIX SPIKE SAMPLE:		1311071					
Parameter	Units	60160164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3380	68	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	3770	75	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3700J	74	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3330	67	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	4390	44	11-120	
Hexachloroethane	ug/L	ND	5000	3260	65	40-113	
Naphthalene	ug/L	ND	5000	4030	68	45-120	
Nitrobenzene	ug/L	ND	5000	3470	69	38-120	
Pentachlorophenol	ug/L	ND	5000	3520	70	43-135	
Phenol	ug/L	13600	5000	14800	24	13-112	
2,4,6-Tribromophenol (S)	%				81	39-120	
2-Fluorobiphenyl (S)	%				77	39-120	
2-Fluorophenol (S)	%				40	17-120	
Nitrobenzene-d5 (S)	%				117	33-120	
Phenol-d6 (S)	%				30	11-120	
Terphenyl-d14 (S)	%				84	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

QC Batch: WET/45310

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60160245001

METHOD BLANK: 1311044

Matrix: Water

Associated Lab Samples: 60160245001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/24/13 07:43	

LABORATORY CONTROL SAMPLE: 1311045

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	38.9	97	78-114	

MATRIX SPIKE SAMPLE: 1311048

Parameter	Units	60160092001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	5.3	40.4	43.2	94	78-114	

SAMPLE DUPLICATE: 1311049

Parameter	Units	60160018001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	12.9	10.1	25	18 D6	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

QC Batch: WET/45376

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160245001

METHOD BLANK: 1312020

Matrix: Water

Associated Lab Samples: 60160245001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/27/13 08:45	

LABORATORY CONTROL SAMPLE: 1312021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.6	103	64-132	

MATRIX SPIKE SAMPLE: 1312022

Parameter	Units	60159625001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	20	22.3	109	64-132	

SAMPLE DUPLICATE: 1312024

Parameter	Units	60159625001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

QC Batch: WET/45337

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160245001

METHOD BLANK: 1311687

Matrix: Water

Associated Lab Samples: 60160245001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/26/13 10:52	

SAMPLE DUPLICATE: 1311688

Parameter	Units	60160005002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1311689

Parameter	Units	60160296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	11.0	11.0	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

QC Batch: WET/45357 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60160245001

SAMPLE DUPLICATE: 1311798

Parameter	Units	60160245001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.4	5.5	1	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

QC Batch: WET/45305

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160245001

METHOD BLANK: 1310761

Matrix: Water

Associated Lab Samples: 60160245001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/28/13 11:36	

LABORATORY CONTROL SAMPLE: 1310762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	176	89	85-115	

SAMPLE DUPLICATE: 1310763

Parameter	Units	60160223001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	323	280	14	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

QC Batch: WETA/27644

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160245001

METHOD BLANK: 1311496

Matrix: Water

Associated Lab Samples: 60160245001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/24/13 16:24	

LABORATORY CONTROL SAMPLE: 1311497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	106	90-110	

MATRIX SPIKE SAMPLE: 1311498

Parameter	Units	60160164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	743	1000	1960	122	90-110	M1

SAMPLE DUPLICATE: 1311499

Parameter	Units	60160245001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	816	788	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

QC Batch:	WETA/27707	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60160245001		

METHOD BLANK: 1312807 Matrix: Water

Associated Lab Samples: 60160245001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/31/13 08:08	

LABORATORY CONTROL SAMPLE: 1312808

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	53.4	107	90-110	

MATRIX SPIKE SAMPLE: 1312809

Parameter	Units	60159791001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	431	250	654	89	90-110	M1

MATRIX SPIKE SAMPLE: 1312815

Parameter	Units	60160092001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	147	50	191	88	90-110	M1

SAMPLE DUPLICATE: 1312810

Parameter	Units	60159792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	32.1	32.4	1	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- | | |
|----|---|
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| D6 | The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits. |
| H6 | Analysis initiated outside of the 15 minute EPA recommended holding time. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| N2 | The lab does not hold TNI accreditation for this parameter. |
| S0 | Surrogate recovery outside laboratory control limits. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-172R

Pace Project No.: 60160245

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160245001	316-172R	EPA 200.7	MPRP/25720	EPA 200.7	ICP/19733
60160245001	316-172R	EPA 200.7	MPRP/25718	EPA 200.7	ICP/19731
60160245001	316-172R	EPA 245.1	MERP/8036	EPA 245.1	MERC/7989
60160245001	316-172R	EPA 245.1	MERP/8028	EPA 245.1	MERC/7982
60160245001	316-172R	EPA 625	OEXT/42092	EPA 625	MSSV/13389
60160245001	316-172R	EPA 624 Low	MSV/58587		
60160245002	TRIP BLANK	EPA 624 Low	MSV/58587		
60160245001	316-172R	EPA 1664A	WET/45310		
60160245001	316-172R	EPA 1664A	WET/45376		
60160245001	316-172R	SM 2540D	WET/45337		
60160245001	316-172R	SM 4500-H+B	WET/45357		
60160245001	316-172R	SM 5210B	WET/45305	SM 5210B	WET/45392
60160245001	316-172R	EPA 350.1	WETA/27644		
60160245001	316-172R	EPA 410.4	WETA/27707		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60160245



60160245

Client Name: Barr Eng.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☐ XRoads

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: _____

Date and initials of person examining contents: 12/23/13 JHS 1320

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, plT</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>water</u>		15. <u>unable to preserve BPSN + BPS</u>
All containers needing preservation have been checked.	☒ Yes ☒ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>JHS</u> Lot # of added preservative <u>12513-10-7</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	18.
Pace Trip Blank lot # (if purchased): <u>covered</u>		19.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	20.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	21. List State: _____

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☐ N ☒

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 12/23/13

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company:	BARR ENGINEERING	
Address:		
Email To:		
Phone:	(816) 285-8410	Fax
Requested Due Date/TAT:	10 Day (Default)	

Section B

Required Project Information:

Report To:	ED GALBRAITH/BARR
Copy To:	SCOTT FEDAK/FEEZOR
	DANA BAKER/MARGARET TREANOR -BARR
Purchase Order No.	PO 3727110
Client Project ID:	BRIDGETON LF
Container Order Number:	

Section C

Invoice Information:

Attention:	JANET ROLLEN
Company Name:	REPUBLIC SERVICES
Address:	BRIDGETON, MO 63044
Pace Quote Reference:	130426_7588
Pace Project Manager:	Brown, Angie
Pace Profile #:	6787 LINE 2

Page : 1 Of 1

	Regulatory Agency
	State / Location
	Missouri

[illegible]

December 31, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 96-SW02B
Pace Project No.: 60160244

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 23, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Emily Webb for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160244001	96-SW02B	Water	12/22/13 10:14	12/23/13 13:10
60160244002	96-SW02B	Water	12/22/13 10:14	12/23/13 13:10
60160244003	TRIP BLANK	Water	12/22/13 08:00	12/23/13 13:10

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160244001	96-SW02B	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	AJM	1
		EPA 350.1	NDL	1
		EPA 410.4	JMC1	1
60160244002	96-SW02B	EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
60160244003	TRIP BLANK	EPA 624 Low	EAK	26

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

Sample: 96-SW02B		Lab ID: 60160244001	Collected: 12/22/13 10:14	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	4380	ug/L	375	1	12/24/13 13:30	12/27/13 18:26	7429-90-5	
Antimony	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 18:26	7440-36-0	
Arsenic	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 18:26	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/24/13 13:30	12/27/13 18:26	7440-41-7	
Cadmium	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 18:26	7440-43-9	
Chromium	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 18:26	7440-47-3	
Cobalt	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 18:26	7440-48-4	
Copper	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 18:26	7440-50-8	
Iron	13300	ug/L	250	1	12/24/13 13:30	12/27/13 18:26	7439-89-6	
Lead	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 18:26	7439-92-1	
Nickel	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 18:26	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/24/13 13:30	12/27/13 18:26	7782-49-2	
Silver	ND	ug/L	35.0	1	12/24/13 13:30	12/27/13 18:26	7440-22-4	
Thallium	ND	ug/L	100	1	12/24/13 13:30	12/27/13 18:26	7440-28-0	
Zinc	ND	ug/L	250	1	12/24/13 13:30	12/27/13 18:26	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	ND	ug/L	375	1	12/24/13 13:30	12/27/13 11:20	7429-90-5	
Antimony, Dissolved	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 11:20	7440-36-0	
Arsenic, Dissolved	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 11:20	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/24/13 13:30	12/27/13 11:20	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:20	7440-43-9	
Chromium, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:20	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:20	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/24/13 13:30	12/27/13 11:20	7440-50-8	
Iron, Dissolved	1620	ug/L	250	1	12/24/13 13:30	12/27/13 11:20	7439-89-6	
Lead, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:20	7439-92-1	
Nickel, Dissolved	ND	ug/L	25.0	1	12/24/13 13:30	12/27/13 11:20	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/24/13 13:30	12/27/13 11:20	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/24/13 13:30	12/27/13 11:20	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/24/13 13:30	12/27/13 11:20	7440-28-0	
Zinc, Dissolved	ND	ug/L	250	1	12/24/13 13:30	12/27/13 11:20	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	6.0	1	12/27/13 12:15	12/27/13 16:21	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/26/13 11:05	12/27/13 11:00	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	2500	1	12/24/13 00:00	12/29/13 12:09	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	500	1	12/24/13 00:00	12/29/13 12:09	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	500	1	12/24/13 00:00	12/29/13 12:09	77-47-4	
Hexachloroethane	ND	ug/L	500	1	12/24/13 00:00	12/29/13 12:09	67-72-1	
Naphthalene	ND	ug/L	500	1	12/24/13 00:00	12/29/13 12:09	91-20-3	
Nitrobenzene	ND	ug/L	500	1	12/24/13 00:00	12/29/13 12:09	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

Sample: 96-SW02B		Lab ID: 60160244001	Collected: 12/22/13 10:14	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		500	1	12/24/13 00:00	12/29/13 12:09	87-86-5	
Phenol	ND ug/L		500	1	12/24/13 00:00	12/29/13 12:09	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		500	1	12/24/13 00:00	12/29/13 12:09	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		500	1	12/24/13 00:00	12/29/13 12:09	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	78 %		33-120	1	12/24/13 00:00	12/29/13 12:09	4165-60-0	
2-Fluorobiphenyl (S)	79 %		39-120	1	12/24/13 00:00	12/29/13 12:09	321-60-8	
Terphenyl-d14 (S)	87 %		45-120	1	12/24/13 00:00	12/29/13 12:09	1718-51-0	
Phenol-d6 (S)	30 %		11-120	1	12/24/13 00:00	12/29/13 12:09	13127-88-3	
2-Fluorophenol (S)	45 %		17-120	1	12/24/13 00:00	12/29/13 12:09	367-12-4	
2,4,6-Tribromophenol (S)	77 %		39-120	1	12/24/13 00:00	12/29/13 12:09	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	1260 ug/L		100	10		12/26/13 17:55	67-64-1	N2
Benzene	22.3 ug/L		10.0	10		12/26/13 17:55	71-43-2	
Bromodichloromethane	ND ug/L		10.0	10		12/26/13 17:55	75-27-4	
Bromoform	ND ug/L		10.0	10		12/26/13 17:55	75-25-2	
Bromomethane	ND ug/L		50.0	10		12/26/13 17:55	74-83-9	
Carbon tetrachloride	ND ug/L		10.0	10		12/26/13 17:55	56-23-5	
Chloroethane	ND ug/L		10.0	10		12/26/13 17:55	75-00-3	
Chloroform	ND ug/L		10.0	10		12/26/13 17:55	67-66-3	
1,4-Dichlorobenzene	ND ug/L		10.0	10		12/26/13 17:55	106-46-7	
1,2-Dichloroethane	ND ug/L		10.0	10		12/26/13 17:55	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		10.0	10		12/26/13 17:55	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		10.0	10		12/26/13 17:55	156-60-5	
Ethylbenzene	ND ug/L		10.0	10		12/26/13 17:55	100-41-4	
Methylene chloride	ND ug/L		10.0	10		12/26/13 17:55	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		10.0	10		12/26/13 17:55	79-34-5	N2
Tetrachloroethene	ND ug/L		10.0	10		12/26/13 17:55	127-18-4	
Toluene	ND ug/L		10.0	10		12/26/13 17:55	108-88-3	
1,1,1-Trichloroethane	ND ug/L		10.0	10		12/26/13 17:55	71-55-6	
1,1,2-Trichloroethane	ND ug/L		10.0	10		12/26/13 17:55	79-00-5	
Trichloroethene	ND ug/L		10.0	10		12/26/13 17:55	79-01-6	
Vinyl chloride	ND ug/L		10.0	10		12/26/13 17:55	75-01-4	
Xylene (Total)	ND ug/L		30.0	10		12/26/13 17:55	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	94 %		80-120	10		12/26/13 17:55	460-00-4	D3
Toluene-d8 (S)	103 %		80-120	10		12/26/13 17:55	2037-26-5	
1,2-Dichloroethane-d4 (S)	94 %		80-120	10		12/26/13 17:55	17060-07-0	
Preservation pH	6.0		1.0	10		12/26/13 17:55		
2540D Total Suspended Solids		Analytical Method: SM 2540D						
Total Suspended Solids	143 mg/L		5.0	1		12/27/13 09:38		
4500H+ pH, Electrometric		Analytical Method: SM 4500-H+B						
pH at 25 Degrees C	7.2 Std. Units		0.10	1		12/26/13 13:15		H6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

Sample: 96-SW02B		Lab ID: 60160244001	Collected: 12/22/13 10:14	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	ND	mg/L	6000	1	12/23/13 15:28	12/28/13 12:01		B2
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	8.4	mg/L	0.20	2		12/24/13 17:39	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	584	mg/L	50.0	5		12/31/13 08:24		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

Sample: 96-SW02B		Lab ID: 60160244002	Collected: 12/22/13 10:14	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	7.7	mg/L	5.0	1		12/23/13 07:30		
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	ND	mg/L	5.0	1		12/23/13 16:44		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

Sample: TRIP BLANK		Lab ID: 60160244003	Collected: 12/22/13 08:00	Received: 12/23/13 13:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/26/13 18:25	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/26/13 18:25	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/26/13 18:25	75-27-4	
Bromoform	ND ug/L		1.0	1		12/26/13 18:25	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/26/13 18:25	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/26/13 18:25	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/26/13 18:25	75-00-3	
Chloroform	ND ug/L		1.0	1		12/26/13 18:25	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/26/13 18:25	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/26/13 18:25	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/26/13 18:25	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/26/13 18:25	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/26/13 18:25	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/26/13 18:25	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/26/13 18:25	79-34-5	N2
Tetrachloroethene	ND ug/L		1.0	1		12/26/13 18:25	127-18-4	
Toluene	ND ug/L		1.0	1		12/26/13 18:25	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/26/13 18:25	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/26/13 18:25	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/26/13 18:25	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/26/13 18:25	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/26/13 18:25	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	91 %		80-120	1		12/26/13 18:25	460-00-4	
Toluene-d8 (S)	95 %		80-120	1		12/26/13 18:25	2037-26-5	
1,2-Dichloroethane-d4 (S)	88 %		80-120	1		12/26/13 18:25	17060-07-0	
Preservation pH	6.0		1.0	1		12/26/13 18:25		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

QC Batch: MERP/8036

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60160244001

METHOD BLANK: 1312261

Matrix: Water

Associated Lab Samples: 60160244001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/27/13 16:17	

LABORATORY CONTROL SAMPLE: 1312262

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312263 1312264

Parameter	Units	60160254001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	0.95	1.0	19	21	70-130	9	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

QC Batch: MERP/8028

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160244001

METHOD BLANK: 1311671

Matrix: Water

Associated Lab Samples: 60160244001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/26/13 16:50	

LABORATORY CONTROL SAMPLE: 1311672

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311673 1311674

Parameter	Units	60159525003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	4.6	4.6	92	92	70-130	0	20	

MATRIX SPIKE SAMPLE: 1311675

Parameter	Units	60160244001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	ND	150	149	99	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B
Pace Project No.: 60160244

QC Batch: MPRP/25720 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60160244001

METHOD BLANK: 1311282 Matrix: Water
Associated Lab Samples: 60160244001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/27/13 17:52	
Antimony	ug/L	ND	10.0	12/27/13 17:52	
Arsenic	ug/L	ND	10.0	12/27/13 17:52	
Beryllium	ug/L	ND	1.0	12/27/13 17:52	
Cadmium	ug/L	ND	5.0	12/27/13 17:52	
Chromium	ug/L	ND	5.0	12/27/13 17:52	
Cobalt	ug/L	ND	5.0	12/27/13 17:52	
Copper	ug/L	ND	10.0	12/27/13 17:52	
Iron	ug/L	ND	50.0	12/27/13 17:52	
Lead	ug/L	ND	5.0	12/27/13 17:52	
Nickel	ug/L	ND	5.0	12/27/13 17:52	
Selenium	ug/L	ND	15.0	12/27/13 17:52	
Silver	ug/L	ND	7.0	12/27/13 17:52	
Thallium	ug/L	ND	20.0	12/27/13 17:52	
Zinc	ug/L	ND	50.0	12/27/13 17:52	

LABORATORY CONTROL SAMPLE: 1311283

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10000	100	85-115	
Antimony	ug/L	1000	1040	104	85-115	
Arsenic	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1040	104	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Copper	ug/L	1000	1020	102	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1040	104	85-115	
Nickel	ug/L	1000	1050	105	85-115	
Selenium	ug/L	1000	1040	104	85-115	
Silver	ug/L	500	505	101	85-115	
Thallium	ug/L	1000	1070	107	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311284 1311285

Parameter	Units	60160066002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	75.9	10000	10000	10100	9880	100	98	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311284 1311285											
Parameter	Units	60160066002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1040	1020	104	102	70-130	2	7
Arsenic	ug/L	ND	1000	1000	1040	1020	103	101	70-130	2	10
Beryllium	ug/L	ND	1000	1000	1010	992	101	99	70-130	2	7
Cadmium	ug/L	ND	1000	1000	1030	1010	103	101	70-130	2	10
Chromium	ug/L	ND	1000	1000	992	974	99	97	70-130	2	10
Cobalt	ug/L	ND	1000	1000	989	970	99	97	70-130	2	6
Copper	ug/L	ND	1000	1000	1020	1000	101	99	70-130	2	11
Iron	ug/L	134	10000	10000	10200	9990	100	99	70-130	2	10
Lead	ug/L	ND	1000	1000	972	956	97	96	70-130	2	10
Nickel	ug/L	6.2	1000	1000	997	979	99	97	70-130	2	10
Selenium	ug/L	77.0	1000	1000	1110	1080	103	100	70-130	2	10
Silver	ug/L	ND	500	500	506	494	101	99	70-130	2	10
Thallium	ug/L	ND	1000	1000	939	924	94	92	70-130	2	6
Zinc	ug/L	ND	1000	1000	1010	989	99	97	70-130	2	11

MATRIX SPIKE SAMPLE: 1311286							
Parameter	Units	60160073001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	280	10000	10500	102	70-130	
Antimony	ug/L	ND	1000	1050	105	70-130	
Arsenic	ug/L	ND	1000	1070	107	70-130	
Beryllium	ug/L	ND	1000	1020	102	70-130	
Cadmium	ug/L	ND	1000	1050	105	70-130	
Chromium	ug/L	ND	1000	994	99	70-130	
Cobalt	ug/L	ND	1000	975	97	70-130	
Copper	ug/L	275	1000	1300	103	70-130	
Iron	ug/L	500	10000	10100	96	70-130	
Lead	ug/L	ND	1000	951	95	70-130	
Nickel	ug/L	8.2	1000	980	97	70-130	
Selenium	ug/L	ND	1000	1050	105	70-130	
Silver	ug/L	ND	500	523	104	70-130	
Thallium	ug/L	ND	1000	874	87	70-130	
Zinc	ug/L	ND	1000	1030	98	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B
Pace Project No.: 60160244

QC Batch: MPRP/25718 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60160244001

METHOD BLANK: 1311272 Matrix: Water
Associated Lab Samples: 60160244001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/27/13 10:42	
Antimony, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Arsenic, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Beryllium, Dissolved	ug/L	ND	1.0	12/27/13 10:42	
Cadmium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Chromium, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Cobalt, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Copper, Dissolved	ug/L	ND	10.0	12/27/13 10:42	
Iron, Dissolved	ug/L	ND	50.0	12/27/13 10:42	
Lead, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Nickel, Dissolved	ug/L	ND	5.0	12/27/13 10:42	
Selenium, Dissolved	ug/L	ND	15.0	12/27/13 10:42	
Silver, Dissolved	ug/L	ND	7.0	12/27/13 10:42	
Thallium, Dissolved	ug/L	ND	20.0	12/27/13 10:42	
Zinc, Dissolved	ug/L	ND	50.0	12/27/13 10:42	

LABORATORY CONTROL SAMPLE: 1311273

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9670	97	85-115	
Antimony, Dissolved	ug/L	1000	976	98	85-115	
Arsenic, Dissolved	ug/L	1000	953	95	85-115	
Beryllium, Dissolved	ug/L	1000	984	98	85-115	
Cadmium, Dissolved	ug/L	1000	975	97	85-115	
Chromium, Dissolved	ug/L	1000	993	99	85-115	
Cobalt, Dissolved	ug/L	1000	950	95	85-115	
Copper, Dissolved	ug/L	1000	969	97	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	979	98	85-115	
Nickel, Dissolved	ug/L	1000	988	99	85-115	
Selenium, Dissolved	ug/L	1000	972	97	85-115	
Silver, Dissolved	ug/L	500	491	98	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	974	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275

Parameter	Units	60159955001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	1350	50000	50000	49600	49500	97	96	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311274 1311275												
Parameter	Units	60159955001		MS	MSD	MS		MSD	% Rec		Max	
		Result	Conc.	Spike	Spike	Result	Result	Result	% Rec	Limits	RPD	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5000	4940	4920	99	98	70-130	1	7
Arsenic, Dissolved	ug/L	239	5000	5000	5000	5200	5150	99	98	70-130	1	10
Beryllium, Dissolved	ug/L	ND	5000	5000	5000	4880	4870	97	97	70-130	0	7
Cadmium, Dissolved	ug/L	ND	5000	5000	5000	4920	4880	98	98	70-130	1	10
Chromium, Dissolved	ug/L	75.8	5000	5000	5000	4920	4910	97	97	70-130	0	10
Cobalt, Dissolved	ug/L	ND	5000	5000	5000	4590	4580	92	91	70-130	0	6
Copper, Dissolved	ug/L	ND	5000	5000	5000	5000	4970	99	99	70-130	1	11
Iron, Dissolved	ug/L	248000	50000	50000	50000	308000	290000	120	83	70-130	6	10
Lead, Dissolved	ug/L	28.9	5000	5000	5000	4610	4600	92	91	70-130	0	10
Nickel, Dissolved	ug/L	ND	5000	5000	5000	4730	4710	94	94	70-130	0	10
Selenium, Dissolved	ug/L	ND	5000	5000	5000	5050	4980	101	100	70-130	1	10
Silver, Dissolved	ug/L	ND	2500	2500	2500	2500	2470	100	99	70-130	1	10
Thallium, Dissolved	ug/L	ND	5000	5000	5000	4480	4480	90	90	70-130	0	6
Zinc, Dissolved	ug/L	3220	5000	5000	5000	7980	7720	95	90	70-130	3	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

QC Batch: MSV/58587 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60160244001, 60160244003

METHOD BLANK: 1311706

Matrix: Water

Associated Lab Samples: 60160244001, 60160244003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/26/13 16:55	N2
1,1,2-Trichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,2-Dichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/26/13 16:55	
Acetone	ug/L	ND	10.0	12/26/13 16:55	N2
Benzene	ug/L	ND	1.0	12/26/13 16:55	
Bromodichloromethane	ug/L	ND	1.0	12/26/13 16:55	
Bromoform	ug/L	ND	1.0	12/26/13 16:55	
Bromomethane	ug/L	ND	5.0	12/26/13 16:55	
Carbon tetrachloride	ug/L	ND	1.0	12/26/13 16:55	
Chloroethane	ug/L	ND	1.0	12/26/13 16:55	
Chloroform	ug/L	ND	1.0	12/26/13 16:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/26/13 16:55	N2
Ethylbenzene	ug/L	ND	1.0	12/26/13 16:55	
Methylene chloride	ug/L	ND	1.0	12/26/13 16:55	
Tetrachloroethene	ug/L	ND	1.0	12/26/13 16:55	
Toluene	ug/L	ND	1.0	12/26/13 16:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/26/13 16:55	
Trichloroethene	ug/L	ND	1.0	12/26/13 16:55	
Vinyl chloride	ug/L	ND	1.0	12/26/13 16:55	
Xylene (Total)	ug/L	ND	3.0	12/26/13 16:55	N2
1,2-Dichloroethane-d4 (S)	%	90	80-120	12/26/13 16:55	
4-Bromofluorobenzene (S)	%	93	80-120	12/26/13 16:55	
Toluene-d8 (S)	%	95	80-120	12/26/13 16:55	

LABORATORY CONTROL SAMPLE: 1311707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.8	89	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	97	59-138	N2
1,1,2-Trichloroethane	ug/L	20	18.9	95	69-127	
1,2-Dichloroethane	ug/L	20	16.7	84	71-129	
1,4-Dichlorobenzene	ug/L	20	18.7	94	68-124	
Acetone	ug/L	100	56.4	56	40-160	N2
Benzene	ug/L	20	19.1	95	73-129	
Bromodichloromethane	ug/L	20	19.8	99	63-129	
Bromoform	ug/L	20	19.0	95	52-123	
Bromomethane	ug/L	20	11.1	56	10-160	
Carbon tetrachloride	ug/L	20	18.0	90	70-140	
Chloroethane	ug/L	20	28.5	142	42-160	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

LABORATORY CONTROL SAMPLE: 1311707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	20	18.2	91	60-120	
cis-1,2-Dichloroethene	ug/L	20	18.0	90	70-125	N2
Ethylbenzene	ug/L	20	18.4	92	66-133	
Methylene chloride	ug/L	20	20.2	101	56-135	
Tetrachloroethene	ug/L	20	19.0	95	64-143	
Toluene	ug/L	20	18.5	93	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.3	91	67-149	
Trichloroethene	ug/L	20	19.5	97	71-130	
Vinyl chloride	ug/L	20	14.3	72	41-160	
Xylene (Total)	ug/L	60	56.9	95	67-130	N2
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			107	80-120	

MATRIX SPIKE SAMPLE: 1311708

Parameter	Units	60160245001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4070	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4220	106	46-157	N2
1,1,2-Trichloroethane	ug/L	399	4000	4030	91	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3430	86	49-155	
1,4-Dichlorobenzene	ug/L	1110	4000	5020	98	18-147	
Acetone	ug/L	96800	20000	114000	88	40-160	N2
Benzene	ug/L	ND	4000	3920	97	37-151	
Bromodichloromethane	ug/L	ND	4000	4120	103	35-155	
Bromoform	ug/L	ND	4000	4380	109	45-133	
Bromomethane	ug/L	ND	4000	2930	73	10-160	
Carbon tetrachloride	ug/L	ND	4000	4600	115	70-140	
Chloroethane	ug/L	ND	4000	4340	108	14-160	
Chloroform	ug/L	ND	4000	3750	94	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3770	94	19-160	N2
Ethylbenzene	ug/L	ND	4000	4250	104	37-154	
Methylene chloride	ug/L	ND	4000	4250	105	15-156	
Tetrachloroethene	ug/L	ND	4000	4410	110	64-148	
Toluene	ug/L	ND	4000	4000	100	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	4340	109	54-156	
Trichloroethene	ug/L	ND	4000	4150	104	71-157	
Vinyl chloride	ug/L	ND	4000	3380	84	10-160	
Xylene (Total)	ug/L	ND	12000	12500	104	12-153	N2
1,2-Dichloroethane-d4 (S)	%				91	80-120	
4-Bromofluorobenzene (S)	%				95	80-120	
Toluene-d8 (S)	%				103	80-120	
Preservation pH		6.0		6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

QC Batch: OEXT/42092

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60160244001

METHOD BLANK: 1311069

Matrix: Water

Associated Lab Samples: 60160244001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/29/13 10:26	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/29/13 10:26	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/29/13 10:26	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/29/13 10:26	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/29/13 10:26	
Hexachloroethane	ug/L	ND	5.0	12/29/13 10:26	
Naphthalene	ug/L	ND	5.0	12/29/13 10:26	
Nitrobenzene	ug/L	ND	5.0	12/29/13 10:26	
Pentachlorophenol	ug/L	ND	5.0	12/29/13 10:26	
Phenol	ug/L	ND	5.0	12/29/13 10:26	
2,4,6-Tribromophenol (S)	%	76	39-120	12/29/13 10:26	
2-Fluorobiphenyl (S)	%	79	39-120	12/29/13 10:26	
2-Fluorophenol (S)	%	44	17-120	12/29/13 10:26	
Nitrobenzene-d5 (S)	%	77	33-120	12/29/13 10:26	
Phenol-d6 (S)	%	29	11-120	12/29/13 10:26	
Terphenyl-d14 (S)	%	84	45-120	12/29/13 10:26	

LABORATORY CONTROL SAMPLE: 1311070

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	35.2	70	46-120	
2,4,6-Trichlorophenol	ug/L	50	38.8	78	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	41.8	84	40-133	
Hexachloro-1,3-butadiene	ug/L	50	32.2	64	44-116	
Hexachlorocyclopentadiene	ug/L	100	46.0	46	24-120	
Hexachloroethane	ug/L	50	32.4	65	43-113	
Naphthalene	ug/L	50	36.2	72	48-120	
Nitrobenzene	ug/L	50	36.9	74	48-120	
Pentachlorophenol	ug/L	50	34.7	69	47-120	
Phenol	ug/L	50	17.0	34	16-112	
2,4,6-Tribromophenol (S)	%			80	39-120	
2-Fluorobiphenyl (S)	%			79	39-120	
2-Fluorophenol (S)	%			43	17-120	
Nitrobenzene-d5 (S)	%			76	33-120	
Phenol-d6 (S)	%			29	11-120	
Terphenyl-d14 (S)	%			87	45-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

MATRIX SPIKE SAMPLE:		1311071					
Parameter	Units	60160164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3380	68	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	3770	75	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3700J	74	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3330	67	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	4390	44	11-120	
Hexachloroethane	ug/L	ND	5000	3260	65	40-113	
Naphthalene	ug/L	ND	5000	4030	68	45-120	
Nitrobenzene	ug/L	ND	5000	3470	69	38-120	
Pentachlorophenol	ug/L	ND	5000	3520	70	43-135	
Phenol	ug/L	13600	5000	14800	24	13-112	
2,4,6-Tribromophenol (S)	%				81	39-120	
2-Fluorobiphenyl (S)	%				77	39-120	
2-Fluorophenol (S)	%				40	17-120	
Nitrobenzene-d5 (S)	%				117	33-120	
Phenol-d6 (S)	%				30	11-120	
Terphenyl-d14 (S)	%				84	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

QC Batch: WET/45290

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60160244002

METHOD BLANK: 1310402

Matrix: Water

Associated Lab Samples: 60160244002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/23/13 07:24	

LABORATORY CONTROL SAMPLE: 1310403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	38.2	96	78-114	

MATRIX SPIKE SAMPLE: 1310406

Parameter	Units	60159912001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	39.1	44.4	80.3	93	78-114	

SAMPLE DUPLICATE: 1310405

Parameter	Units	60160116001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

QC Batch: WET/45308

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160244002

METHOD BLANK: 1311022

Matrix: Water

Associated Lab Samples: 60160244002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/23/13 16:43	

LABORATORY CONTROL SAMPLE: 1311023

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.8	104	64-132	

MATRIX SPIKE SAMPLE: 1311024

Parameter	Units	60160244002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	76.9	77.7	95	64-132	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

QC Batch: WET/45369

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160244001

METHOD BLANK: 1311955

Matrix: Water

Associated Lab Samples: 60160244001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/27/13 09:37	

SAMPLE DUPLICATE: 1311957

Parameter	Units	60160223001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	3000	3060	2	25	

SAMPLE DUPLICATE: 1312162

Parameter	Units	60160186001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	6.0	6.0	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

QC Batch: WET/45357 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60160244001

SAMPLE DUPLICATE: 1311798

Parameter	Units	60160245001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.4	5.5	1	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

QC Batch: WET/45305

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160244001

METHOD BLANK: 1310761

Matrix: Water

Associated Lab Samples: 60160244001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/28/13 11:36	

LABORATORY CONTROL SAMPLE: 1310762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	176	89	85-115	

SAMPLE DUPLICATE: 1310763

Parameter	Units	60160223001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	323	280	14	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

QC Batch: WETA/27644

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160244001

METHOD BLANK: 1311496

Matrix: Water

Associated Lab Samples: 60160244001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/24/13 16:24	

LABORATORY CONTROL SAMPLE: 1311497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	106	90-110	

MATRIX SPIKE SAMPLE: 1311498

Parameter	Units	60160164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	743	1000	1960	122	90-110	M1

SAMPLE DUPLICATE: 1311499

Parameter	Units	60160245001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	816	788	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

QC Batch:	WETA/27707	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60160244001		

METHOD BLANK: 1312807 Matrix: Water

Associated Lab Samples: 60160244001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	12/31/13 08:08	

LABORATORY CONTROL SAMPLE: 1312808

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	53.4	107	90-110	

MATRIX SPIKE SAMPLE: 1312809

Parameter	Units	60159791001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	431	250	654	89	90-110	M1

MATRIX SPIKE SAMPLE: 1312815

Parameter	Units	60160092001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	147	50	191	88	90-110	M1

SAMPLE DUPLICATE: 1312810

Parameter	Units	60159792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	32.1	32.4	1	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B2 Oxygen usage is less than 2.0 for all dilutions set. The reported value is an estimated less than value and is calculated for the dilution using the most amount of sample.

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 96-SW02B

Pace Project No.: 60160244

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160244001	96-SW02B	EPA 200.7	MPRP/25720	EPA 200.7	ICP/19733
60160244001	96-SW02B	EPA 200.7	MPRP/25718	EPA 200.7	ICP/19731
60160244001	96-SW02B	EPA 245.1	MERP/8036	EPA 245.1	MERC/7989
60160244001	96-SW02B	EPA 245.1	MERP/8028	EPA 245.1	MERC/7982
60160244001	96-SW02B	EPA 625	OEXT/42092	EPA 625	MSSV/13389
60160244001	96-SW02B	EPA 624 Low	MSV/58587		
60160244003	TRIP BLANK	EPA 624 Low	MSV/58587		
60160244002	96-SW02B	EPA 1664A	WET/45290		
60160244002	96-SW02B	EPA 1664A	WET/45308		
60160244001	96-SW02B	SM 2540D	WET/45369		
60160244001	96-SW02B	SM 4500-H+B	WET/45357		
60160244001	96-SW02B	SM 5210B	WET/45305	SM 5210B	WET/45392
60160244001	96-SW02B	EPA 350.1	WETA/27644		
60160244001	96-SW02B	EPA 410.4	WETA/27707		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60160244



60160244

Client Name: Barr Eng.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☐ XRoads

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: _____

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 12/23/13 JMS 1320

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, p1t</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>water</u>		15.
All containers needing preservation have been checked.	☒ Yes ☒ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>covered</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution: Copy COC to Client? Y ☐ N ☒ Field Data Required? Y ☐ N ☒

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 12/23/13

January 02, 2014

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-174
Pace Project No.: 60160327

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 25, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Emily Webb for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160327001	316-174	Water	12/23/13 11:00	12/25/13 01:00
60160327002	TRIP BLANK	Water	12/23/13 11:00	12/25/13 01:00

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160327001	316-174	EPA 200.7	TDS	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	AJM	1
		EPA 410.4	JMC	1
60160327002	TRIP BLANK	EPA 624 Low	EAK	26

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

Sample: 316-174		Lab ID: 60160327001	Collected: 12/23/13 11:00	Received: 12/25/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	6100	ug/L	375	1	12/27/13 10:00	12/27/13 19:15	7429-90-5	
Antimony	ND	ug/L	100	2	12/27/13 10:00	12/27/13 19:17	7440-36-0	
Arsenic	918	ug/L	50.0	1	12/27/13 10:00	12/27/13 19:15	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/27/13 10:00	12/27/13 19:15	7440-41-7	
Cadmium	ND	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:15	7440-43-9	
Chromium	253	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:15	7440-47-3	
Cobalt	27.0	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:15	7440-48-4	
Copper	ND	ug/L	50.0	1	12/27/13 10:00	12/27/13 19:15	7440-50-8	
Iron	855000	ug/L	250	1	12/27/13 10:00	12/27/13 19:15	7439-89-6	
Lead	142	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:15	7439-92-1	
Nickel	105	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:15	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/27/13 10:00	12/27/13 19:15	7782-49-2	
Silver	ND	ug/L	35.0	1	12/27/13 10:00	12/27/13 19:15	7440-22-4	
Thallium	ND	ug/L	100	1	12/27/13 10:00	12/27/13 19:15	7440-28-0	
Zinc	9490	ug/L	500	2	12/27/13 10:00	12/27/13 19:17	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3720	ug/L	375	1	12/27/13 10:00	12/27/13 17:16	7429-90-5	
Antimony, Dissolved	ND	ug/L	50.0	1	12/27/13 10:00	12/27/13 17:16	7440-36-0	
Arsenic, Dissolved	657	ug/L	50.0	1	12/27/13 10:00	12/27/13 17:16	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/27/13 10:00	12/27/13 17:16	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	12/27/13 10:00	12/27/13 17:16	7440-43-9	
Chromium, Dissolved	202	ug/L	25.0	1	12/27/13 10:00	12/27/13 17:16	7440-47-3	
Cobalt, Dissolved	28.0	ug/L	25.0	1	12/27/13 10:00	12/27/13 17:16	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/27/13 10:00	12/27/13 17:16	7440-50-8	
Iron, Dissolved	640000	ug/L	500	2	12/27/13 10:00	12/27/13 17:19	7439-89-6	
Lead, Dissolved	100	ug/L	25.0	1	12/27/13 10:00	12/27/13 17:16	7439-92-1	
Nickel, Dissolved	88.6	ug/L	25.0	1	12/27/13 10:00	12/27/13 17:16	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/27/13 10:00	12/27/13 17:16	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/27/13 10:00	12/27/13 17:16	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/27/13 10:00	12/27/13 17:16	7440-28-0	
Zinc, Dissolved	8520	ug/L	500	2	12/27/13 10:00	12/27/13 17:19	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	6.0	1	12/27/13 12:15	12/27/13 16:56	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/30/13 15:30	12/31/13 13:39	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/27/13 00:00	12/30/13 12:22	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/27/13 00:00	12/30/13 12:22	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/27/13 00:00	12/30/13 12:22	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/27/13 00:00	12/30/13 12:22	67-72-1	
Naphthalene	1520	ug/L	1000	2	12/27/13 00:00	12/30/13 12:22	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/27/13 00:00	12/30/13 12:22	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

Sample: 316-174		Lab ID: 60160327001	Collected: 12/23/13 11:00	Received: 12/25/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/27/13 00:00	12/30/13 12:22	87-86-5	
Phenol	11800 ug/L		1000	2	12/27/13 00:00	12/30/13 12:22	108-95-2	M1
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/27/13 00:00	12/30/13 12:22	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/27/13 00:00	12/30/13 12:22	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	148 %		33-120	2	12/27/13 00:00	12/30/13 12:22	4165-60-0	S0
2-Fluorobiphenyl (S)	91 %		39-120	2	12/27/13 00:00	12/30/13 12:22	321-60-8	
Terphenyl-d14 (S)	92 %		45-120	2	12/27/13 00:00	12/30/13 12:22	1718-51-0	
Phenol-d6 (S)	35 %		11-120	2	12/27/13 00:00	12/30/13 12:22	13127-88-3	
2-Fluorophenol (S)	46 %		17-120	2	12/27/13 00:00	12/30/13 12:22	367-12-4	
2,4,6-Tribromophenol (S)	99 %		39-120	2	12/27/13 00:00	12/30/13 12:22	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	95400 ug/L		2000	200		12/26/13 19:10	67-64-1	N2
Benzene	ND ug/L		200	200		12/26/13 19:10	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/26/13 19:10	75-27-4	
Bromoform	ND ug/L		200	200		12/26/13 19:10	75-25-2	
Bromomethane	ND ug/L		1000	200		12/26/13 19:10	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/26/13 19:10	56-23-5	
Chloroethane	ND ug/L		200	200		12/26/13 19:10	75-00-3	
Chloroform	ND ug/L		200	200		12/26/13 19:10	67-66-3	
1,4-Dichlorobenzene	1180 ug/L		200	200		12/26/13 19:10	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/26/13 19:10	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/26/13 19:10	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		200	200		12/26/13 19:10	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/26/13 19:10	100-41-4	
Methylene chloride	ND ug/L		200	200		12/26/13 19:10	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/26/13 19:10	79-34-5	N2
Tetrachloroethene	ND ug/L		200	200		12/26/13 19:10	127-18-4	
Toluene	ND ug/L		200	200		12/26/13 19:10	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/26/13 19:10	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/26/13 19:10	79-00-5	
Trichloroethene	ND ug/L		200	200		12/26/13 19:10	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/26/13 19:10	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/26/13 19:10	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	94 %		80-120	200		12/26/13 19:10	460-00-4	D3
Toluene-d8 (S)	97 %		80-120	200		12/26/13 19:10	2037-26-5	
1,2-Dichloroethane-d4 (S)	87 %		80-120	200		12/26/13 19:10	17060-07-0	
Preservation pH	6.0		1.0	200		12/26/13 19:10		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	1620 mg/L		5.0	1		12/29/13 09:36		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	5.0 mg/L		5.0	1		01/02/14 10:31		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

Sample: 316-174		Lab ID: 60160327001	Collected: 12/23/13 11:00	Received: 12/25/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1580	mg/L	5.0	1		12/30/13 09:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		12/26/13 13:15		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	24900	mg/L	2.0	1	12/25/13 10:58	12/30/13 12:39		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	633	mg/L	20.0	200		12/27/13 11:31	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	56800	mg/L	5000	500		01/02/14 07:56		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

Sample: TRIP BLANK		Lab ID: 60160327002	Collected: 12/23/13 11:00	Received: 12/25/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/26/13 19:26	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/26/13 19:26	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/26/13 19:26	75-27-4	
Bromoform	ND ug/L		1.0	1		12/26/13 19:26	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/26/13 19:26	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/26/13 19:26	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/26/13 19:26	75-00-3	
Chloroform	ND ug/L		1.0	1		12/26/13 19:26	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/26/13 19:26	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/26/13 19:26	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/26/13 19:26	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/26/13 19:26	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/26/13 19:26	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/26/13 19:26	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/26/13 19:26	79-34-5	N2
Tetrachloroethene	ND ug/L		1.0	1		12/26/13 19:26	127-18-4	
Toluene	ND ug/L		1.0	1		12/26/13 19:26	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/26/13 19:26	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/26/13 19:26	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/26/13 19:26	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/26/13 19:26	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/26/13 19:26	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	92 %		80-120	1		12/26/13 19:26	460-00-4	
Toluene-d8 (S)	96 %		80-120	1		12/26/13 19:26	2037-26-5	
1,2-Dichloroethane-d4 (S)	89 %		80-120	1		12/26/13 19:26	17060-07-0	
Preservation pH	6.0		1.0	1		12/26/13 19:26		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

QC Batch: MERP/8036

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60160327001

METHOD BLANK: 1312261

Matrix: Water

Associated Lab Samples: 60160327001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/27/13 16:17	

LABORATORY CONTROL SAMPLE: 1312262

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312263 1312264

Parameter	Units	60160254001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	0.95	1.0	19	21	70-130	9	20	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

QC Batch: MERP/8042

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160327001

METHOD BLANK: 1312966

Matrix: Water

Associated Lab Samples: 60160327001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/31/13 13:35	

LABORATORY CONTROL SAMPLE: 1312967

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312968 1312969

Parameter	Units	60160327001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	136	139	91	93	70-130	2	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174
Pace Project No.: 60160327

QC Batch:	MPRP/25739	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
Associated Lab Samples:	60160327001		

METHOD BLANK: 1312109 Matrix: Water
Associated Lab Samples: 60160327001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/27/13 15:11	
Antimony	ug/L	ND	10.0	12/27/13 15:11	
Arsenic	ug/L	ND	10.0	12/27/13 15:11	
Beryllium	ug/L	ND	1.0	12/27/13 15:11	
Cadmium	ug/L	ND	5.0	12/27/13 15:11	
Chromium	ug/L	ND	5.0	12/27/13 15:11	
Cobalt	ug/L	ND	5.0	12/27/13 15:11	
Copper	ug/L	ND	10.0	12/27/13 15:11	
Iron	ug/L	ND	50.0	12/27/13 15:11	
Lead	ug/L	ND	5.0	12/27/13 15:11	
Nickel	ug/L	ND	5.0	12/27/13 15:11	
Selenium	ug/L	ND	15.0	12/27/13 15:11	
Silver	ug/L	ND	7.0	12/27/13 15:11	
Thallium	ug/L	ND	20.0	12/27/13 15:11	
Zinc	ug/L	ND	50.0	12/27/13 15:11	

LABORATORY CONTROL SAMPLE: 1312110

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10100	101	85-115	
Antimony	ug/L	1000	1030	103	85-115	
Arsenic	ug/L	1000	1000	100	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1020	102	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Copper	ug/L	1000	1010	101	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1040	104	85-115	
Nickel	ug/L	1000	1050	105	85-115	
Selenium	ug/L	1000	1030	103	85-115	
Silver	ug/L	500	502	100	85-115	
Thallium	ug/L	1000	1060	106	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312111 1312112

Parameter	Units	60160366001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	2240	10000	10000	14100	13600	118	114	70-130	3	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312111 1312112											
Parameter	Units	60160366001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7
Arsenic	ug/L	11.7	1000	1000	1030	1030	102	102	70-130	0	10
Beryllium	ug/L	ND	1000	1000	1040	1040	104	104	70-130	1	7
Cadmium	ug/L	ND	1000	1000	1020	1020	102	102	70-130	0	10
Chromium	ug/L	ND	1000	1000	1020	1020	102	101	70-130	1	10
Cobalt	ug/L	6.9	1000	1000	1010	1010	100	100	70-130	0	6
Copper	ug/L	10.3	1000	1000	1050	1040	104	103	70-130	1	11
Iron	ug/L	2580	10000	10000	13200	13000	106	104	70-130	2	10
Lead	ug/L	ND	1000	1000	996	995	99	99	70-130	0	10
Nickel	ug/L	25.5	1000	1000	1030	1030	101	100	70-130	0	10
Selenium	ug/L	ND	1000	1000	1040	1040	104	104	70-130	0	10
Silver	ug/L	ND	500	500	504	503	101	101	70-130	0	10
Thallium	ug/L	ND	1000	1000	985	983	98	98	70-130	0	6
Zinc	ug/L	ND	1000	1000	1010	999	98	98	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174
Pace Project No.: 60160327

QC Batch: MPRP/25736 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60160327001

METHOD BLANK: 1312091 Matrix: Water
Associated Lab Samples: 60160327001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/27/13 16:57	
Antimony, Dissolved	ug/L	ND	10.0	12/27/13 16:57	
Arsenic, Dissolved	ug/L	ND	10.0	12/27/13 16:57	
Beryllium, Dissolved	ug/L	ND	1.0	12/27/13 16:57	
Cadmium, Dissolved	ug/L	ND	5.0	12/27/13 16:57	
Chromium, Dissolved	ug/L	ND	5.0	12/27/13 16:57	
Cobalt, Dissolved	ug/L	ND	5.0	12/27/13 16:57	
Copper, Dissolved	ug/L	ND	10.0	12/27/13 16:57	
Iron, Dissolved	ug/L	ND	50.0	12/27/13 16:57	
Lead, Dissolved	ug/L	ND	5.0	12/27/13 16:57	
Nickel, Dissolved	ug/L	ND	5.0	12/27/13 16:57	
Selenium, Dissolved	ug/L	ND	15.0	12/27/13 16:57	
Silver, Dissolved	ug/L	ND	7.0	12/27/13 16:57	
Thallium, Dissolved	ug/L	ND	20.0	12/27/13 16:57	
Zinc, Dissolved	ug/L	ND	50.0	12/27/13 16:57	

LABORATORY CONTROL SAMPLE: 1312092

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9700	97	85-115	
Antimony, Dissolved	ug/L	1000	1040	104	85-115	
Arsenic, Dissolved	ug/L	1000	983	98	85-115	
Beryllium, Dissolved	ug/L	1000	1010	101	85-115	
Cadmium, Dissolved	ug/L	1000	1030	103	85-115	
Chromium, Dissolved	ug/L	1000	1010	101	85-115	
Cobalt, Dissolved	ug/L	1000	1010	101	85-115	
Copper, Dissolved	ug/L	1000	1000	100	85-115	
Iron, Dissolved	ug/L	10000	9960	100	85-115	
Lead, Dissolved	ug/L	1000	1030	103	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	1000	100	85-115	
Silver, Dissolved	ug/L	500	495	99	85-115	
Thallium, Dissolved	ug/L	1000	1060	106	85-115	
Zinc, Dissolved	ug/L	1000	999	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312093 1312094

Parameter	Units	60160303001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	10200	10000	102	100	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312093 1312094											
Parameter	Units	60160303001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	993	982	99	98	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	1040	1020	104	102	70-130	2	7
Cadmium, Dissolved	ug/L	ND	1000	1000	1020	1020	102	101	70-130	1	10
Chromium, Dissolved	ug/L	ND	1000	1000	1030	1010	103	101	70-130	2	10
Cobalt, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	11
Iron, Dissolved	ug/L	77.5	10000	10000	10100	10000	101	100	70-130	1	10
Lead, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Nickel, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	1000	996	100	99	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	499	492	100	98	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	1040	1030	104	103	70-130	1	6
Zinc, Dissolved	ug/L	ND	1000	1000	1010	1000	100	99	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

QC Batch:	MSV/58587	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples: 60160327001, 60160327002			

METHOD BLANK: 1311706 Matrix: Water

Associated Lab Samples: 60160327001, 60160327002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/26/13 16:55	N2
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,2-Dichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/26/13 16:55	N2
Acetone	ug/L	ND	10.0	12/26/13 16:55	
Benzene	ug/L	ND	1.0	12/26/13 16:55	
Bromodichloromethane	ug/L	ND	1.0	12/26/13 16:55	
Bromoform	ug/L	ND	1.0	12/26/13 16:55	N2
Bromomethane	ug/L	ND	5.0	12/26/13 16:55	
Carbon tetrachloride	ug/L	ND	1.0	12/26/13 16:55	
Chloroethane	ug/L	ND	1.0	12/26/13 16:55	
Chloroform	ug/L	ND	1.0	12/26/13 16:55	N2
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/26/13 16:55	
Ethylbenzene	ug/L	ND	1.0	12/26/13 16:55	
Methylene chloride	ug/L	ND	1.0	12/26/13 16:55	
Tetrachloroethene	ug/L	ND	1.0	12/26/13 16:55	N2
Toluene	ug/L	ND	1.0	12/26/13 16:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/26/13 16:55	
Trichloroethene	ug/L	ND	1.0	12/26/13 16:55	
Vinyl chloride	ug/L	ND	1.0	12/26/13 16:55	N2
Xylene (Total)	ug/L	ND	3.0	12/26/13 16:55	
1,2-Dichloroethane-d4 (S)	%	90	80-120	12/26/13 16:55	
4-Bromofluorobenzene (S)	%	93	80-120	12/26/13 16:55	
Toluene-d8 (S)	%	95	80-120	12/26/13 16:55	

LABORATORY CONTROL SAMPLE: 1311707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.8	89	71-139	N2
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	97	59-138	
1,1,2-Trichloroethane	ug/L	20	18.9	95	69-127	
1,2-Dichloroethane	ug/L	20	16.7	84	71-129	
1,4-Dichlorobenzene	ug/L	20	18.7	94	68-124	N2
Acetone	ug/L	100	56.4	56	40-160	
Benzene	ug/L	20	19.1	95	73-129	
Bromodichloromethane	ug/L	20	19.8	99	63-129	
Bromoform	ug/L	20	19.0	95	52-123	N2
Bromomethane	ug/L	20	11.1	56	10-160	
Carbon tetrachloride	ug/L	20	18.0	90	70-140	
Chloroethane	ug/L	20	28.5	142	42-160	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

LABORATORY CONTROL SAMPLE: 1311707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	20	18.2	91	60-120	
cis-1,2-Dichloroethene	ug/L	20	18.0	90	70-125	N2
Ethylbenzene	ug/L	20	18.4	92	66-133	
Methylene chloride	ug/L	20	20.2	101	56-135	
Tetrachloroethene	ug/L	20	19.0	95	64-143	
Toluene	ug/L	20	18.5	93	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.3	91	67-149	
Trichloroethene	ug/L	20	19.5	97	71-130	
Vinyl chloride	ug/L	20	14.3	72	41-160	
Xylene (Total)	ug/L	60	56.9	95	67-130	N2
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			107	80-120	

MATRIX SPIKE SAMPLE: 1311708

Parameter	Units	60160245001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4070	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4220	106	46-157	N2
1,1,2-Trichloroethane	ug/L	399	4000	4030	91	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3430	86	49-155	
1,4-Dichlorobenzene	ug/L	1110	4000	5020	98	18-147	
Acetone	ug/L	96800	20000	114000	88	40-160	N2
Benzene	ug/L	ND	4000	3920	97	37-151	
Bromodichloromethane	ug/L	ND	4000	4120	103	35-155	
Bromoform	ug/L	ND	4000	4380	109	45-133	
Bromomethane	ug/L	ND	4000	2930	73	10-160	
Carbon tetrachloride	ug/L	ND	4000	4600	115	70-140	
Chloroethane	ug/L	ND	4000	4340	108	14-160	
Chloroform	ug/L	ND	4000	3750	94	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3770	94	19-160	N2
Ethylbenzene	ug/L	ND	4000	4250	104	37-154	
Methylene chloride	ug/L	ND	4000	4250	105	15-156	
Tetrachloroethene	ug/L	ND	4000	4410	110	64-148	
Toluene	ug/L	ND	4000	4000	100	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	4340	109	54-156	
Trichloroethene	ug/L	ND	4000	4150	104	71-157	
Vinyl chloride	ug/L	ND	4000	3380	84	10-160	
Xylene (Total)	ug/L	ND	12000	12500	104	12-153	N2
1,2-Dichloroethane-d4 (S)	%				91	80-120	
4-Bromofluorobenzene (S)	%				95	80-120	
Toluene-d8 (S)	%				103	80-120	
Preservation pH		6.0		6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

QC Batch: OEXT/42117

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60160327001

METHOD BLANK: 1311915

Matrix: Water

Associated Lab Samples: 60160327001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/30/13 11:20	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/30/13 11:20	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/30/13 11:20	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/30/13 11:20	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/30/13 11:20	
Hexachloroethane	ug/L	ND	5.0	12/30/13 11:20	
Naphthalene	ug/L	ND	5.0	12/30/13 11:20	
Nitrobenzene	ug/L	ND	5.0	12/30/13 11:20	
Pentachlorophenol	ug/L	ND	5.0	12/30/13 11:20	
Phenol	ug/L	ND	5.0	12/30/13 11:20	
2,4,6-Tribromophenol (S)	%	91	39-120	12/30/13 11:20	
2-Fluorobiphenyl (S)	%	86	39-120	12/30/13 11:20	
2-Fluorophenol (S)	%	42	17-120	12/30/13 11:20	
Nitrobenzene-d5 (S)	%	86	33-120	12/30/13 11:20	
Phenol-d6 (S)	%	29	11-120	12/30/13 11:20	
Terphenyl-d14 (S)	%	91	45-120	12/30/13 11:20	

LABORATORY CONTROL SAMPLE: 1311916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	39.6	79	46-120	
2,4,6-Trichlorophenol	ug/L	50	40.5	81	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	38.4	77	40-133	
Hexachloro-1,3-butadiene	ug/L	50	42.5	85	44-116	
Hexachlorocyclopentadiene	ug/L	100	51.9	52	24-120	
Hexachloroethane	ug/L	50	37.4	75	43-113	
Naphthalene	ug/L	50	38.1	76	48-120	
Nitrobenzene	ug/L	50	39.6	79	48-120	
Pentachlorophenol	ug/L	50	36.4	73	47-120	
Phenol	ug/L	50	16.2	32	16-112	
2,4,6-Tribromophenol (S)	%			94	39-120	
2-Fluorobiphenyl (S)	%			85	39-120	
2-Fluorophenol (S)	%			40	17-120	
Nitrobenzene-d5 (S)	%			83	33-120	
Phenol-d6 (S)	%			28	11-120	
Terphenyl-d14 (S)	%			95	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

MATRIX SPIKE SAMPLE:		1311917					
Parameter	Units	60160327001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	4310	86	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4600	92	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	4330J	87	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	4610	92	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	5640	56	11-120	
Hexachloroethane	ug/L	ND	5000	4280	86	40-113	
Naphthalene	ug/L	1520	5000	5650	83	45-120	
Nitrobenzene	ug/L	ND	5000	4290	86	38-120	
Pentachlorophenol	ug/L	ND	5000	4490	90	43-135	
Phenol	ug/L	11800	5000	12400	11	13-112	M1
2,4,6-Tribromophenol (S)	%				102	39-120	
2-Fluorobiphenyl (S)	%				91	39-120	
2-Fluorophenol (S)	%				46	17-120	
Nitrobenzene-d5 (S)	%				143	33-120	S0
Phenol-d6 (S)	%				34	11-120	
Terphenyl-d14 (S)	%				100	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

QC Batch: WET/45398

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60160327001

METHOD BLANK: 1312635

Matrix: Water

Associated Lab Samples: 60160327001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/29/13 09:34	

LABORATORY CONTROL SAMPLE: 1312636

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.5	101	78-114	

MATRIX SPIKE SAMPLE: 1312637

Parameter	Units	60160450001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	42.6	42.7	97	78-114	

SAMPLE DUPLICATE: 1312639

Parameter	Units	60160241001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	1.8J		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

QC Batch: WET/45448

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160327001

METHOD BLANK: 1313679

Matrix: Water

Associated Lab Samples: 60160327001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	01/02/14 10:29	

LABORATORY CONTROL SAMPLE: 1313680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	19.6	98	64-132	

MATRIX SPIKE SAMPLE: 1313681

Parameter	Units	60160185001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	<1.4	21.7	27.0	118	64-132	

SAMPLE DUPLICATE: 1313683

Parameter	Units	60159971001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

QC Batch: WET/45412

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160327001

METHOD BLANK: 1312800

Matrix: Water

Associated Lab Samples: 60160327001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/30/13 09:50	

SAMPLE DUPLICATE: 1312801

Parameter	Units	60160319001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	47.0	50.0	6	25	

SAMPLE DUPLICATE: 1312802

Parameter	Units	60160315002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	38.0	32.0	17	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

QC Batch:	WET/45357	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60160327001		

SAMPLE DUPLICATE: 1311798

Parameter	Units	60160245001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.4	5.5	1	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

QC Batch: WET/45329

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160327001

METHOD BLANK: 1311590

Matrix: Water

Associated Lab Samples: 60160327001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/30/13 12:28	

LABORATORY CONTROL SAMPLE: 1311591

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	170	86	85-115	

SAMPLE DUPLICATE: 1311592

Parameter	Units	60160327001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	24900	25400	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

QC Batch: WETA/27667

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160327001

METHOD BLANK: 1312026

Matrix: Water

Associated Lab Samples: 60160327001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/27/13 11:19	

LABORATORY CONTROL SAMPLE: 1312027

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	106	90-110	

MATRIX SPIKE SAMPLE: 1312028

Parameter	Units	60160366001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	3.5	2	6.2	133	90-110	M1

MATRIX SPIKE SAMPLE: 1312029

Parameter	Units	60160060001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L			5.2			M1

SAMPLE DUPLICATE: 1312030

Parameter	Units	60160060002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L		1.9			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

QC Batch:	WETA/27715	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60160327001		

METHOD BLANK: 1313162 Matrix: Water
Associated Lab Samples: 60160327001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	01/02/14 07:37	

LABORATORY CONTROL SAMPLE: 1313163

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	47.2	94	90-110	

MATRIX SPIKE SAMPLE: 1313166

Parameter	Units	60160148001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	33.2	50	82.4	98	90-110	

MATRIX SPIKE SAMPLE: 1313167

Parameter	Units	60160066002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	37.4	50	85.7	97	90-110	

SAMPLE DUPLICATE: 1313165

Parameter	Units	60160059001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	21.4	21.2	1	25	

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QUALIFIERS

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-174

Pace Project No.: 60160327

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160327001	316-174	EPA 200.7	MPRP/25739	EPA 200.7	ICP/19747
60160327001	316-174	EPA 200.7	MPRP/25736	EPA 200.7	ICP/19744
60160327001	316-174	EPA 245.1	MERP/8036	EPA 245.1	MERC/7989
60160327001	316-174	EPA 245.1	MERP/8042	EPA 245.1	MERC/7997
60160327001	316-174	EPA 625	OEXT/42117	EPA 625	MSSV/13393
60160327001	316-174	EPA 624 Low	MSV/58587		
60160327002	TRIP BLANK	EPA 624 Low	MSV/58587		
60160327001	316-174	EPA 1664A	WET/45398		
60160327001	316-174	EPA 1664A	WET/45448		
60160327001	316-174	SM 2540D	WET/45412		
60160327001	316-174	SM 4500-H+B	WET/45357		
60160327001	316-174	SM 5210B	WET/45329	SM 5210B	WET/45418
60160327001	316-174	EPA 350.1	WETA/27667		
60160327001	316-174	EPA 410.4	WETA/27715		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60160327



60160327

Client Name: Barr Eng.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ XRoads

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☒ 2PLC

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 4.8

Date and initials of person examining contents: 12/25/13 BA

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	14.
Exceptions: <u>VOA</u> coliform, TOC, <u>6&G</u> , WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>BA</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative <u>12513 HN03</u> <u>12518 H2504</u>
Pace Trip Blank lot # (if purchased): <u>093013-3852</u>		15.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: mw for AKB

Date: 12/26/13

January 02, 2014

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-175
Pace Project No.: 60160328

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 25, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Emily Webb for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160328001	316-175	Water	12/24/13 10:40	12/25/13 01:00

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160328001	316-175	EPA 200.7	TDS	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	AJM	1
		EPA 410.4	JMC	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

Sample: 316-175		Lab ID: 60160328001	Collected: 12/24/13 10:40	Received: 12/25/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	6560 ug/L		375	1	12/27/13 10:00	12/27/13 19:20	7429-90-5	
Antimony	ND ug/L		50.0	1	12/27/13 10:00	12/27/13 19:20	7440-36-0	
Arsenic	896 ug/L		50.0	1	12/27/13 10:00	12/27/13 19:20	7440-38-2	
Beryllium	ND ug/L		5.0	1	12/27/13 10:00	12/27/13 19:20	7440-41-7	
Cadmium	ND ug/L		25.0	1	12/27/13 10:00	12/27/13 19:20	7440-43-9	
Chromium	258 ug/L		25.0	1	12/27/13 10:00	12/27/13 19:20	7440-47-3	
Cobalt	30.9 ug/L		25.0	1	12/27/13 10:00	12/27/13 19:20	7440-48-4	
Copper	ND ug/L		50.0	1	12/27/13 10:00	12/27/13 19:20	7440-50-8	
Iron	888000 ug/L		250	1	12/27/13 10:00	12/27/13 19:20	7439-89-6	
Lead	143 ug/L		25.0	1	12/27/13 10:00	12/27/13 19:20	7439-92-1	
Nickel	113 ug/L		25.0	1	12/27/13 10:00	12/27/13 19:20	7440-02-0	
Selenium	ND ug/L		75.0	1	12/27/13 10:00	12/27/13 19:20	7782-49-2	
Silver	ND ug/L		35.0	1	12/27/13 10:00	12/27/13 19:20	7440-22-4	
Thallium	ND ug/L		100	1	12/27/13 10:00	12/27/13 19:20	7440-28-0	
Zinc	9800 ug/L		500	2	12/27/13 10:00	12/27/13 19:22	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3210 ug/L		375	1	12/27/13 10:00	12/27/13 17:23	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	1	12/27/13 10:00	12/27/13 17:23	7440-36-0	
Arsenic, Dissolved	540 ug/L		50.0	1	12/27/13 10:00	12/27/13 17:23	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	1	12/27/13 10:00	12/27/13 17:23	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	1	12/27/13 10:00	12/27/13 17:23	7440-43-9	
Chromium, Dissolved	168 ug/L		25.0	1	12/27/13 10:00	12/27/13 17:23	7440-47-3	
Cobalt, Dissolved	ND ug/L		25.0	1	12/27/13 10:00	12/27/13 17:23	7440-48-4	
Copper, Dissolved	ND ug/L		50.0	1	12/27/13 10:00	12/27/13 17:23	7440-50-8	
Iron, Dissolved	588000 ug/L		500	2	12/27/13 10:00	12/27/13 17:26	7439-89-6	
Lead, Dissolved	94.8 ug/L		25.0	1	12/27/13 10:00	12/27/13 17:23	7439-92-1	
Nickel, Dissolved	78.4 ug/L		25.0	1	12/27/13 10:00	12/27/13 17:23	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	1	12/27/13 10:00	12/27/13 17:23	7782-49-2	
Silver, Dissolved	ND ug/L		35.0	1	12/27/13 10:00	12/27/13 17:23	7440-22-4	
Thallium, Dissolved	ND ug/L		100	1	12/27/13 10:00	12/27/13 17:23	7440-28-0	
Zinc, Dissolved	7250 ug/L		500	2	12/27/13 10:00	12/27/13 17:26	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	13.5 ug/L		6.0	1	12/27/13 12:15	12/27/13 16:58	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		6.0	1	12/30/13 15:30	12/31/13 13:46	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	2	12/27/13 00:00	12/30/13 12:42	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	2	12/27/13 00:00	12/30/13 12:42	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	2	12/27/13 00:00	12/30/13 12:42	77-47-4	
Hexachloroethane	ND ug/L		1000	2	12/27/13 00:00	12/30/13 12:42	67-72-1	
Naphthalene	1410 ug/L		1000	2	12/27/13 00:00	12/30/13 12:42	91-20-3	
Nitrobenzene	ND ug/L		1000	2	12/27/13 00:00	12/30/13 12:42	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

Sample: 316-175		Lab ID: 60160328001	Collected: 12/24/13 10:40	Received: 12/25/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/27/13 00:00	12/30/13 12:42	87-86-5	
Phenol	10700 ug/L		1000	2	12/27/13 00:00	12/30/13 12:42	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/27/13 00:00	12/30/13 12:42	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/27/13 00:00	12/30/13 12:42	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	148 %		33-120	2	12/27/13 00:00	12/30/13 12:42	4165-60-0	S0
2-Fluorobiphenyl (S)	91 %		39-120	2	12/27/13 00:00	12/30/13 12:42	321-60-8	
Terphenyl-d14 (S)	96 %		45-120	2	12/27/13 00:00	12/30/13 12:42	1718-51-0	
Phenol-d6 (S)	33 %		11-120	2	12/27/13 00:00	12/30/13 12:42	13127-88-3	
2-Fluorophenol (S)	45 %		17-120	2	12/27/13 00:00	12/30/13 12:42	367-12-4	
2,4,6-Tribromophenol (S)	101 %		39-120	2	12/27/13 00:00	12/30/13 12:42	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	112000 ug/L		2000	200		12/26/13 19:41	67-64-1	N2
Benzene	ND ug/L		200	200		12/26/13 19:41	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/26/13 19:41	75-27-4	
Bromoform	ND ug/L		200	200		12/26/13 19:41	75-25-2	
Bromomethane	ND ug/L		1000	200		12/26/13 19:41	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/26/13 19:41	56-23-5	
Chloroethane	ND ug/L		200	200		12/26/13 19:41	75-00-3	
Chloroform	ND ug/L		200	200		12/26/13 19:41	67-66-3	
1,4-Dichlorobenzene	1410 ug/L		200	200		12/26/13 19:41	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/26/13 19:41	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/26/13 19:41	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		200	200		12/26/13 19:41	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/26/13 19:41	100-41-4	
Methylene chloride	ND ug/L		200	200		12/26/13 19:41	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/26/13 19:41	79-34-5	N2
Tetrachloroethene	ND ug/L		200	200		12/26/13 19:41	127-18-4	
Toluene	ND ug/L		200	200		12/26/13 19:41	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/26/13 19:41	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/26/13 19:41	79-00-5	
Trichloroethene	ND ug/L		200	200		12/26/13 19:41	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/26/13 19:41	75-01-4	
Xylene (Total)	679 ug/L		600	200		12/26/13 19:41	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	95 %		80-120	200		12/26/13 19:41	460-00-4	D3
Toluene-d8 (S)	108 %		80-120	200		12/26/13 19:41	2037-26-5	
1,2-Dichloroethane-d4 (S)	90 %		80-120	200		12/26/13 19:41	17060-07-0	
Preservation pH	6.0		1.0	200		12/26/13 19:41		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	1590 mg/L		5.0	1		12/29/13 09:36		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		01/02/14 10:31		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

Sample: 316-175		Lab ID: 60160328001	Collected: 12/24/13 10:40	Received: 12/25/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1600	mg/L	5.0	1		12/30/13 09:54		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		12/26/13 13:15		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	24000	mg/L	2.0	1	12/25/13 11:06	12/30/13 12:43		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	634	mg/L	20.0	200		12/27/13 11:32	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	58900	mg/L	5000	500		01/02/14 07:57		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

QC Batch: MERP/8036

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60160328001

METHOD BLANK: 1312261

Matrix: Water

Associated Lab Samples: 60160328001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/27/13 16:17	

LABORATORY CONTROL SAMPLE: 1312262

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312263 1312264

Parameter	Units	60160254001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	0.95	1.0	19	21	70-130	9	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

QC Batch: MERP/8042

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160328001

METHOD BLANK: 1312966

Matrix: Water

Associated Lab Samples: 60160328001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/31/13 13:35	

LABORATORY CONTROL SAMPLE: 1312967

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312968 1312969

Parameter	Units	60160327001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	136	139	91	93	70-130	2	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

QC Batch: MPRP/25739

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60160328001

METHOD BLANK: 1312109

Matrix: Water

Associated Lab Samples: 60160328001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/27/13 15:11	
Antimony	ug/L	ND	10.0	12/27/13 15:11	
Arsenic	ug/L	ND	10.0	12/27/13 15:11	
Beryllium	ug/L	ND	1.0	12/27/13 15:11	
Cadmium	ug/L	ND	5.0	12/27/13 15:11	
Chromium	ug/L	ND	5.0	12/27/13 15:11	
Cobalt	ug/L	ND	5.0	12/27/13 15:11	
Copper	ug/L	ND	10.0	12/27/13 15:11	
Iron	ug/L	ND	50.0	12/27/13 15:11	
Lead	ug/L	ND	5.0	12/27/13 15:11	
Nickel	ug/L	ND	5.0	12/27/13 15:11	
Selenium	ug/L	ND	15.0	12/27/13 15:11	
Silver	ug/L	ND	7.0	12/27/13 15:11	
Thallium	ug/L	ND	20.0	12/27/13 15:11	
Zinc	ug/L	ND	50.0	12/27/13 15:11	

LABORATORY CONTROL SAMPLE: 1312110

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10100	101	85-115	
Antimony	ug/L	1000	1030	103	85-115	
Arsenic	ug/L	1000	1000	100	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1020	102	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Copper	ug/L	1000	1010	101	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1040	104	85-115	
Nickel	ug/L	1000	1050	105	85-115	
Selenium	ug/L	1000	1030	103	85-115	
Silver	ug/L	500	502	100	85-115	
Thallium	ug/L	1000	1060	106	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312111

1312112

Parameter	Units	60160366001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	2240	10000	10000	14100	13600	118	114	70-130	3	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312111 1312112											
Parameter	Units	60160366001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7
Arsenic	ug/L	11.7	1000	1000	1030	1030	102	102	70-130	0	10
Beryllium	ug/L	ND	1000	1000	1040	1040	104	104	70-130	1	7
Cadmium	ug/L	ND	1000	1000	1020	1020	102	102	70-130	0	10
Chromium	ug/L	ND	1000	1000	1020	1020	102	101	70-130	1	10
Cobalt	ug/L	6.9	1000	1000	1010	1010	100	100	70-130	0	6
Copper	ug/L	10.3	1000	1000	1050	1040	104	103	70-130	1	11
Iron	ug/L	2580	10000	10000	13200	13000	106	104	70-130	2	10
Lead	ug/L	ND	1000	1000	996	995	99	99	70-130	0	10
Nickel	ug/L	25.5	1000	1000	1030	1030	101	100	70-130	0	10
Selenium	ug/L	ND	1000	1000	1040	1040	104	104	70-130	0	10
Silver	ug/L	ND	500	500	504	503	101	101	70-130	0	10
Thallium	ug/L	ND	1000	1000	985	983	98	98	70-130	0	6
Zinc	ug/L	ND	1000	1000	1010	999	98	98	70-130	1	11

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175
Pace Project No.: 60160328

QC Batch: MPRP/25736 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60160328001

METHOD BLANK: 1312091 Matrix: Water
Associated Lab Samples: 60160328001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	12/27/13 16:57	
Antimony, Dissolved	ug/L	ND	10.0	12/27/13 16:57	
Arsenic, Dissolved	ug/L	ND	10.0	12/27/13 16:57	
Beryllium, Dissolved	ug/L	ND	1.0	12/27/13 16:57	
Cadmium, Dissolved	ug/L	ND	5.0	12/27/13 16:57	
Chromium, Dissolved	ug/L	ND	5.0	12/27/13 16:57	
Cobalt, Dissolved	ug/L	ND	5.0	12/27/13 16:57	
Copper, Dissolved	ug/L	ND	10.0	12/27/13 16:57	
Iron, Dissolved	ug/L	ND	50.0	12/27/13 16:57	
Lead, Dissolved	ug/L	ND	5.0	12/27/13 16:57	
Nickel, Dissolved	ug/L	ND	5.0	12/27/13 16:57	
Selenium, Dissolved	ug/L	ND	15.0	12/27/13 16:57	
Silver, Dissolved	ug/L	ND	7.0	12/27/13 16:57	
Thallium, Dissolved	ug/L	ND	20.0	12/27/13 16:57	
Zinc, Dissolved	ug/L	ND	50.0	12/27/13 16:57	

LABORATORY CONTROL SAMPLE: 1312092

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9700	97	85-115	
Antimony, Dissolved	ug/L	1000	1040	104	85-115	
Arsenic, Dissolved	ug/L	1000	983	98	85-115	
Beryllium, Dissolved	ug/L	1000	1010	101	85-115	
Cadmium, Dissolved	ug/L	1000	1030	103	85-115	
Chromium, Dissolved	ug/L	1000	1010	101	85-115	
Cobalt, Dissolved	ug/L	1000	1010	101	85-115	
Copper, Dissolved	ug/L	1000	1000	100	85-115	
Iron, Dissolved	ug/L	10000	9960	100	85-115	
Lead, Dissolved	ug/L	1000	1030	103	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	1000	100	85-115	
Silver, Dissolved	ug/L	500	495	99	85-115	
Thallium, Dissolved	ug/L	1000	1060	106	85-115	
Zinc, Dissolved	ug/L	1000	999	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312093 1312094

Parameter	Units	60160303001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	10200	10000	102	100	70-130	1	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312093 1312094											
Parameter	Units	60160303001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	993	982	99	98	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	1040	1020	104	102	70-130	2	7
Cadmium, Dissolved	ug/L	ND	1000	1000	1020	1020	102	101	70-130	1	10
Chromium, Dissolved	ug/L	ND	1000	1000	1030	1010	103	101	70-130	2	10
Cobalt, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	11
Iron, Dissolved	ug/L	77.5	10000	10000	10100	10000	101	100	70-130	1	10
Lead, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Nickel, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	1000	996	100	99	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	499	492	100	98	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	1040	1030	104	103	70-130	1	6
Zinc, Dissolved	ug/L	ND	1000	1000	1010	1000	100	99	70-130	1	11

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

QC Batch:	MSV/58587	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60160328001		

METHOD BLANK: 1311706 Matrix: Water

Associated Lab Samples: 60160328001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/26/13 16:55	N2
1,1,2-Trichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,2-Dichloroethane	ug/L	ND	1.0	12/26/13 16:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/26/13 16:55	
Acetone	ug/L	ND	10.0	12/26/13 16:55	N2
Benzene	ug/L	ND	1.0	12/26/13 16:55	
Bromodichloromethane	ug/L	ND	1.0	12/26/13 16:55	
Bromoform	ug/L	ND	1.0	12/26/13 16:55	
Bromomethane	ug/L	ND	5.0	12/26/13 16:55	
Carbon tetrachloride	ug/L	ND	1.0	12/26/13 16:55	
Chloroethane	ug/L	ND	1.0	12/26/13 16:55	
Chloroform	ug/L	ND	1.0	12/26/13 16:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/26/13 16:55	N2
Ethylbenzene	ug/L	ND	1.0	12/26/13 16:55	
Methylene chloride	ug/L	ND	1.0	12/26/13 16:55	
Tetrachloroethene	ug/L	ND	1.0	12/26/13 16:55	
Toluene	ug/L	ND	1.0	12/26/13 16:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/26/13 16:55	
Trichloroethene	ug/L	ND	1.0	12/26/13 16:55	
Vinyl chloride	ug/L	ND	1.0	12/26/13 16:55	
Xylene (Total)	ug/L	ND	3.0	12/26/13 16:55	N2
1,2-Dichloroethane-d4 (S)	%	90	80-120	12/26/13 16:55	
4-Bromofluorobenzene (S)	%	93	80-120	12/26/13 16:55	
Toluene-d8 (S)	%	95	80-120	12/26/13 16:55	

LABORATORY CONTROL SAMPLE: 1311707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.8	89	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	97	59-138	N2
1,1,2-Trichloroethane	ug/L	20	18.9	95	69-127	
1,2-Dichloroethane	ug/L	20	16.7	84	71-129	
1,4-Dichlorobenzene	ug/L	20	18.7	94	68-124	
Acetone	ug/L	100	56.4	56	40-160	N2
Benzene	ug/L	20	19.1	95	73-129	
Bromodichloromethane	ug/L	20	19.8	99	63-129	
Bromoform	ug/L	20	19.0	95	52-123	
Bromomethane	ug/L	20	11.1	56	10-160	
Carbon tetrachloride	ug/L	20	18.0	90	70-140	
Chloroethane	ug/L	20	28.5	142	42-160	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

LABORATORY CONTROL SAMPLE: 1311707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	20	18.2	91	60-120	
cis-1,2-Dichloroethene	ug/L	20	18.0	90	70-125	N2
Ethylbenzene	ug/L	20	18.4	92	66-133	
Methylene chloride	ug/L	20	20.2	101	56-135	
Tetrachloroethene	ug/L	20	19.0	95	64-143	
Toluene	ug/L	20	18.5	93	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.3	91	67-149	
Trichloroethene	ug/L	20	19.5	97	71-130	
Vinyl chloride	ug/L	20	14.3	72	41-160	
Xylene (Total)	ug/L	60	56.9	95	67-130	N2
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			107	80-120	

MATRIX SPIKE SAMPLE: 1311708

Parameter	Units	60160245001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4070	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4220	106	46-157	N2
1,1,2-Trichloroethane	ug/L	399	4000	4030	91	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3430	86	49-155	
1,4-Dichlorobenzene	ug/L	1110	4000	5020	98	18-147	
Acetone	ug/L	96800	20000	114000	88	40-160	N2
Benzene	ug/L	ND	4000	3920	97	37-151	
Bromodichloromethane	ug/L	ND	4000	4120	103	35-155	
Bromoform	ug/L	ND	4000	4380	109	45-133	
Bromomethane	ug/L	ND	4000	2930	73	10-160	
Carbon tetrachloride	ug/L	ND	4000	4600	115	70-140	
Chloroethane	ug/L	ND	4000	4340	108	14-160	
Chloroform	ug/L	ND	4000	3750	94	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3770	94	19-160	N2
Ethylbenzene	ug/L	ND	4000	4250	104	37-154	
Methylene chloride	ug/L	ND	4000	4250	105	15-156	
Tetrachloroethene	ug/L	ND	4000	4410	110	64-148	
Toluene	ug/L	ND	4000	4000	100	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	4340	109	54-156	
Trichloroethene	ug/L	ND	4000	4150	104	71-157	
Vinyl chloride	ug/L	ND	4000	3380	84	10-160	
Xylene (Total)	ug/L	ND	12000	12500	104	12-153	N2
1,2-Dichloroethane-d4 (S)	%				91	80-120	
4-Bromofluorobenzene (S)	%				95	80-120	
Toluene-d8 (S)	%				103	80-120	
Preservation pH		6.0		6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

QC Batch: OEXT/42117

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60160328001

METHOD BLANK: 1311915

Matrix: Water

Associated Lab Samples: 60160328001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/30/13 11:20	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/30/13 11:20	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/30/13 11:20	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/30/13 11:20	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/30/13 11:20	
Hexachloroethane	ug/L	ND	5.0	12/30/13 11:20	
Naphthalene	ug/L	ND	5.0	12/30/13 11:20	
Nitrobenzene	ug/L	ND	5.0	12/30/13 11:20	
Pentachlorophenol	ug/L	ND	5.0	12/30/13 11:20	
Phenol	ug/L	ND	5.0	12/30/13 11:20	
2,4,6-Tribromophenol (S)	%	91	39-120	12/30/13 11:20	
2-Fluorobiphenyl (S)	%	86	39-120	12/30/13 11:20	
2-Fluorophenol (S)	%	42	17-120	12/30/13 11:20	
Nitrobenzene-d5 (S)	%	86	33-120	12/30/13 11:20	
Phenol-d6 (S)	%	29	11-120	12/30/13 11:20	
Terphenyl-d14 (S)	%	91	45-120	12/30/13 11:20	

LABORATORY CONTROL SAMPLE: 1311916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	39.6	79	46-120	
2,4,6-Trichlorophenol	ug/L	50	40.5	81	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	38.4	77	40-133	
Hexachloro-1,3-butadiene	ug/L	50	42.5	85	44-116	
Hexachlorocyclopentadiene	ug/L	100	51.9	52	24-120	
Hexachloroethane	ug/L	50	37.4	75	43-113	
Naphthalene	ug/L	50	38.1	76	48-120	
Nitrobenzene	ug/L	50	39.6	79	48-120	
Pentachlorophenol	ug/L	50	36.4	73	47-120	
Phenol	ug/L	50	16.2	32	16-112	
2,4,6-Tribromophenol (S)	%			94	39-120	
2-Fluorobiphenyl (S)	%			85	39-120	
2-Fluorophenol (S)	%			40	17-120	
Nitrobenzene-d5 (S)	%			83	33-120	
Phenol-d6 (S)	%			28	11-120	
Terphenyl-d14 (S)	%			95	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

MATRIX SPIKE SAMPLE:		1311917					
Parameter	Units	60160327001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	4310	86	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4600	92	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	4330J	87	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	4610	92	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	5640	56	11-120	
Hexachloroethane	ug/L	ND	5000	4280	86	40-113	
Naphthalene	ug/L	1520	5000	5650	83	45-120	
Nitrobenzene	ug/L	ND	5000	4290	86	38-120	
Pentachlorophenol	ug/L	ND	5000	4490	90	43-135	
Phenol	ug/L	11800	5000	12400	11	13-112	M1
2,4,6-Tribromophenol (S)	%				102	39-120	
2-Fluorobiphenyl (S)	%				91	39-120	
2-Fluorophenol (S)	%				46	17-120	
Nitrobenzene-d5 (S)	%				143	33-120	S0
Phenol-d6 (S)	%				34	11-120	
Terphenyl-d14 (S)	%				100	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

QC Batch: WET/45398

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60160328001

METHOD BLANK: 1312635

Matrix: Water

Associated Lab Samples: 60160328001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/29/13 09:34	

LABORATORY CONTROL SAMPLE: 1312636

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.5	101	78-114	

MATRIX SPIKE SAMPLE: 1312637

Parameter	Units	60160450001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	42.6	42.7	97	78-114	

SAMPLE DUPLICATE: 1312639

Parameter	Units	60160241001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	1.8J		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

QC Batch: WET/45448

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160328001

METHOD BLANK: 1313679

Matrix: Water

Associated Lab Samples: 60160328001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	01/02/14 10:29	

LABORATORY CONTROL SAMPLE: 1313680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	19.6	98	64-132	

MATRIX SPIKE SAMPLE: 1313681

Parameter	Units	60160185001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	<1.4	21.7	27.0	118	64-132	

SAMPLE DUPLICATE: 1313683

Parameter	Units	60159971001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

QC Batch: WET/45412

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160328001

METHOD BLANK: 1312800

Matrix: Water

Associated Lab Samples: 60160328001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/30/13 09:50	

SAMPLE DUPLICATE: 1312801

Parameter	Units	60160319001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	47.0	50.0	6	25	

SAMPLE DUPLICATE: 1312802

Parameter	Units	60160315002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	38.0	32.0	17	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

QC Batch: WET/45357 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60160328001

SAMPLE DUPLICATE: 1311798

Parameter	Units	60160245001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.4	5.5	1	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

QC Batch: WET/45329

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160328001

METHOD BLANK: 1311590

Matrix: Water

Associated Lab Samples: 60160328001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	12/30/13 12:28	

LABORATORY CONTROL SAMPLE: 1311591

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	170	86	85-115	

SAMPLE DUPLICATE: 1311592

Parameter	Units	60160327001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	24900	25400	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

QC Batch: WETA/27667

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160328001

METHOD BLANK: 1312026

Matrix: Water

Associated Lab Samples: 60160328001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	12/27/13 11:19	

LABORATORY CONTROL SAMPLE: 1312027

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	106	90-110	

MATRIX SPIKE SAMPLE: 1312028

Parameter	Units	60160366001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	3.5	2	6.2	133	90-110	M1

MATRIX SPIKE SAMPLE: 1312029

Parameter	Units	60160060001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L			5.2			M1

SAMPLE DUPLICATE: 1312030

Parameter	Units	60160060002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L		1.9			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

QC Batch:	WETA/27715	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60160328001		

METHOD BLANK: 1313162 Matrix: Water
Associated Lab Samples: 60160328001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	01/02/14 07:37	

LABORATORY CONTROL SAMPLE: 1313163

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	47.2	94	90-110	

MATRIX SPIKE SAMPLE: 1313166

Parameter	Units	60160148001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	33.2	50	82.4	98	90-110	

MATRIX SPIKE SAMPLE: 1313167

Parameter	Units	60160066002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	37.4	50	85.7	97	90-110	

SAMPLE DUPLICATE: 1313165

Parameter	Units	60160059001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	21.4	21.2	1	25	

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QUALIFIERS

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-175

Pace Project No.: 60160328

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160328001	316-175	EPA 200.7	MPRP/25739	EPA 200.7	ICP/19747
60160328001	316-175	EPA 200.7	MPRP/25736	EPA 200.7	ICP/19744
60160328001	316-175	EPA 245.1	MERP/8036	EPA 245.1	MERC/7989
60160328001	316-175	EPA 245.1	MERP/8042	EPA 245.1	MERC/7997
60160328001	316-175	EPA 625	OEXT/42117	EPA 625	MSSV/13393
60160328001	316-175	EPA 624 Low	MSV/58587		
60160328001	316-175	EPA 1664A	WET/45398		
60160328001	316-175	EPA 1664A	WET/45448		
60160328001	316-175	SM 2540D	WET/45412		
60160328001	316-175	SM 4500-H+B	WET/45357		
60160328001	316-175	SM 5210B	WET/45329	SM 5210B	WET/45418
60160328001	316-175	EPA 350.1	WETA/27667		
60160328001	316-175	EPA 410.4	WETA/27715		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60160328



60160328

Client Name: Barr Eng

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ XRoads

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ ZPL

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.4

Date and initials of person examining contents: 12/25/13 BA

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. BOD, pH
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15. Both pH were 6.0. Added 2.5 ml HNO3 and pH went to 4.0. Added 2.0 ml H2SO4 pH went to 1.0.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16. Initial when completed BA Lot # of added 12513 HNO3 preservative 12518 H2SO4
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17. No TB in cooler for this project.
Exceptions: <u>VOA</u> coliform, TOC, <u>O&G</u> , WI-DRO (water), Phenolics	☒ Yes ☐ No	18. 1 of 5
Trip Blank present:	☐ Yes ☒ No ☐ N/A	19. List State:
Pace Trip Blank lot # (if purchased):		
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: mwo he ARS

Date: 12/26/13

January 07, 2014

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 136-176RR
Pace Project No.: 60160368

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 27, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160368001	316-176RR	Water	12/25/13 11:30	12/27/13 00:40
60160368002	TRIP BLANK	Water	12/25/13 11:30	12/27/13 00:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160368001	316-176RR	EPA 200.7	TDS	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	28
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
		EPA 624 Low	EAK	28
60160368002	TRIP BLANK			

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

Sample: 316-176RR		Lab ID: 60160368001	Collected: 12/25/13 11:30	Received: 12/27/13 00:40	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Aluminum	5720	ug/L	375	1	12/27/13 10:00	12/27/13 19:25	7429-90-5	D3	
Antimony	61.8	ug/L	50.0	1	12/27/13 10:00	12/27/13 19:25	7440-36-0		
Arsenic	852	ug/L	50.0	1	12/27/13 10:00	12/27/13 19:25	7440-38-2		
Beryllium	ND	ug/L	5.0	1	12/27/13 10:00	12/27/13 19:25	7440-41-7		
Cadmium	ND	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:25	7440-43-9		
Chromium	230	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:25	7440-47-3		
Cobalt	ND	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:25	7440-48-4		
Copper	ND	ug/L	50.0	1	12/27/13 10:00	12/27/13 19:25	7440-50-8		
Iron	784000	ug/L	250	1	12/27/13 10:00	12/27/13 19:25	7439-89-6		
Lead	168	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:25	7439-92-1		
Nickel	98.6	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:25	7440-02-0		
Selenium	ND	ug/L	75.0	1	12/27/13 10:00	12/27/13 19:25	7782-49-2		
Silver	ND	ug/L	35.0	1	12/27/13 10:00	12/27/13 19:25	7440-22-4		
Thallium	ND	ug/L	100	1	12/27/13 10:00	12/27/13 19:25	7440-28-0		
Zinc	9420	ug/L	500	2	12/27/13 10:00	12/27/13 19:28	7440-66-6		
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Aluminum, Dissolved	2630	ug/L	375	1	12/27/13 14:20	01/02/14 17:06	7429-90-5		
Antimony, Dissolved	ND	ug/L	50.0	1	12/27/13 14:20	01/02/14 17:06	7440-36-0		
Arsenic, Dissolved	516	ug/L	50.0	1	12/27/13 14:20	01/02/14 17:06	7440-38-2		
Beryllium, Dissolved	ND	ug/L	5.0	1	12/27/13 14:20	01/02/14 17:06	7440-41-7		
Cadmium, Dissolved	ND	ug/L	25.0	1	12/27/13 14:20	01/02/14 17:06	7440-43-9		
Chromium, Dissolved	160	ug/L	25.0	1	12/27/13 14:20	01/02/14 17:06	7440-47-3		
Cobalt, Dissolved	ND	ug/L	25.0	1	12/27/13 14:20	01/02/14 17:06	7440-48-4		
Copper, Dissolved	ND	ug/L	50.0	1	12/27/13 14:20	01/02/14 17:06	7440-50-8		
Iron, Dissolved	493000	ug/L	250	1	12/27/13 14:20	01/02/14 17:06	7439-89-6		
Lead, Dissolved	70.9	ug/L	25.0	1	12/27/13 14:20	01/02/14 17:06	7439-92-1		
Nickel, Dissolved	61.8	ug/L	25.0	1	12/27/13 14:20	01/02/14 17:06	7440-02-0		
Selenium, Dissolved	ND	ug/L	75.0	1	12/27/13 14:20	01/02/14 17:06	7782-49-2		
Silver, Dissolved	ND	ug/L	35.0	1	12/27/13 14:20	01/02/14 17:06	7440-22-4		
Thallium, Dissolved	ND	ug/L	100	1	12/27/13 14:20	01/02/14 17:06	7440-28-0		
Zinc, Dissolved	6560	ug/L	500	2	12/27/13 14:20	01/02/14 17:13	7440-66-6		
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
Mercury	ND	ug/L	6.0	1	12/30/13 15:30	12/31/13 14:10	7439-97-6		
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
Mercury, Dissolved	ND	ug/L	6.0	1	12/30/13 15:30	12/31/13 13:50	7439-97-6		
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625							
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/27/13 00:00	12/30/13 13:03	534-52-1		
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/27/13 00:00	12/30/13 13:03	87-68-3		
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/27/13 00:00	12/30/13 13:03	77-47-4		
Hexachloroethane	ND	ug/L	1000	2	12/27/13 00:00	12/30/13 13:03	67-72-1		
Naphthalene	2010	ug/L	1000	2	12/27/13 00:00	12/30/13 13:03	91-20-3		
Nitrobenzene	ND	ug/L	1000	2	12/27/13 00:00	12/30/13 13:03	98-95-3		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

Sample: 316-176RR		Lab ID: 60160368001	Collected: 12/25/13 11:30	Received: 12/27/13 00:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/27/13 00:00	12/30/13 13:03	87-86-5	
Phenol	11500 ug/L		1000	2	12/27/13 00:00	12/30/13 13:03	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/27/13 00:00	12/30/13 13:03	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/27/13 00:00	12/30/13 13:03	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	147 %		33-120	2	12/27/13 00:00	12/30/13 13:03	4165-60-0	S0
2-Fluorobiphenyl (S)	90 %		39-120	2	12/27/13 00:00	12/30/13 13:03	321-60-8	
Terphenyl-d14 (S)	91 %		45-120	2	12/27/13 00:00	12/30/13 13:03	1718-51-0	
Phenol-d6 (S)	33 %		11-120	2	12/27/13 00:00	12/30/13 13:03	13127-88-3	
2-Fluorophenol (S)	46 %		17-120	2	12/27/13 00:00	12/30/13 13:03	367-12-4	
2,4,6-Tribromophenol (S)	96 %		39-120	2	12/27/13 00:00	12/30/13 13:03	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	167000 ug/L		2000	200		12/31/13 12:10	67-64-1	M1,N2
Benzene	ND ug/L		200	200		12/31/13 12:10	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/31/13 12:10	75-27-4	
Bromoform	ND ug/L		200	200		12/31/13 12:10	75-25-2	
Bromomethane	ND ug/L		1000	200		12/31/13 12:10	74-83-9	
2-Butanone (MEK)	112000 ug/L		2000	200		12/31/13 12:10	78-93-3	N2
Carbon tetrachloride	ND ug/L		200	200		12/31/13 12:10	56-23-5	
Chloroethane	ND ug/L		200	200		12/31/13 12:10	75-00-3	
Chloroform	ND ug/L		200	200		12/31/13 12:10	67-66-3	
1,4-Dichlorobenzene	1040 ug/L		200	200		12/31/13 12:10	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/31/13 12:10	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/31/13 12:10	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		200	200		12/31/13 12:10	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/31/13 12:10	100-41-4	
Methylene chloride	ND ug/L		200	200		12/31/13 12:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	4380 ug/L		2000	200		12/31/13 12:10	108-10-1	N2
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/31/13 12:10	79-34-5	N2
Tetrachloroethene	ND ug/L		200	200		12/31/13 12:10	127-18-4	
Toluene	ND ug/L		200	200		12/31/13 12:10	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/31/13 12:10	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/31/13 12:10	79-00-5	
Trichloroethene	ND ug/L		200	200		12/31/13 12:10	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/31/13 12:10	75-01-4	
Xylene (Total)	737 ug/L		600	200		12/31/13 12:10	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	200		12/31/13 12:10	460-00-4	
Toluene-d8 (S)	96 %		80-120	200		12/31/13 12:10	2037-26-5	
1,2-Dichloroethane-d4 (S)	102 %		80-120	200		12/31/13 12:10	17060-07-0	
Preservation pH	6.0		1.0	200		12/31/13 12:10		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	857 mg/L		5.0	1		12/27/13 09:43		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

Sample: 316-176RR		Lab ID: 60160368001	Collected: 12/25/13 11:30	Received: 12/27/13 00:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	9.2	mg/L	5.0	1		12/27/13 12:54		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2600	mg/L	5.0	1		12/30/13 09:58		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		12/27/13 13:30		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	35000	mg/L	2.0	1	12/27/13 11:23	01/01/14 10:47		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	750	mg/L	50.0	500		01/07/14 15:05	7664-41-7	M1
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	80500	mg/L	10000	1000		01/07/14 12:00		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

Sample: TRIP BLANK		Lab ID: 60160368002	Collected: 12/25/13 11:30	Received: 12/27/13 00:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/31/13 12:40	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/31/13 12:40	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/31/13 12:40	75-27-4	
Bromoform	ND ug/L		1.0	1		12/31/13 12:40	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/31/13 12:40	74-83-9	
2-Butanone (MEK)	ND ug/L		10.0	1		12/31/13 12:40	78-93-3	N2
Carbon tetrachloride	ND ug/L		1.0	1		12/31/13 12:40	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/31/13 12:40	75-00-3	
Chloroform	ND ug/L		1.0	1		12/31/13 12:40	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/31/13 12:40	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/31/13 12:40	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/31/13 12:40	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/31/13 12:40	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/31/13 12:40	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/31/13 12:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND ug/L		10.0	1		12/31/13 12:40	108-10-1	N2
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/31/13 12:40	79-34-5	N2
Tetrachloroethene	ND ug/L		1.0	1		12/31/13 12:40	127-18-4	
Toluene	ND ug/L		1.0	1		12/31/13 12:40	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/31/13 12:40	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/31/13 12:40	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/31/13 12:40	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/31/13 12:40	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/31/13 12:40	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	1		12/31/13 12:40	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		12/31/13 12:40	2037-26-5	
1,2-Dichloroethane-d4 (S)	96 %		80-120	1		12/31/13 12:40	17060-07-0	
Preservation pH	6.0		1.0	1		12/31/13 12:40		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch: MERP/8043

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60160368001

METHOD BLANK: 1312970

Matrix: Water

Associated Lab Samples: 60160368001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/31/13 13:55	

LABORATORY CONTROL SAMPLE: 1312971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312972 1312973

Parameter	Units	60160425001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	150	150	141	143	94	96	70-130	2	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch: MERP/8042

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160368001

METHOD BLANK: 1312966

Matrix: Water

Associated Lab Samples: 60160368001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/31/13 13:35	

LABORATORY CONTROL SAMPLE: 1312967

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312968 1312969

Parameter	Units	60160327001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	136	139	91	93	70-130	2	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch: MPRP/25739

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60160368001

METHOD BLANK: 1312109

Matrix: Water

Associated Lab Samples: 60160368001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/27/13 15:11	
Antimony	ug/L	ND	10.0	12/27/13 15:11	
Arsenic	ug/L	ND	10.0	12/27/13 15:11	
Beryllium	ug/L	ND	1.0	12/27/13 15:11	
Cadmium	ug/L	ND	5.0	12/27/13 15:11	
Chromium	ug/L	ND	5.0	12/27/13 15:11	
Cobalt	ug/L	ND	5.0	12/27/13 15:11	
Copper	ug/L	ND	10.0	12/27/13 15:11	
Iron	ug/L	ND	50.0	12/27/13 15:11	
Lead	ug/L	ND	5.0	12/27/13 15:11	
Nickel	ug/L	ND	5.0	12/27/13 15:11	
Selenium	ug/L	ND	15.0	12/27/13 15:11	
Silver	ug/L	ND	7.0	12/27/13 15:11	
Thallium	ug/L	ND	20.0	12/27/13 15:11	
Zinc	ug/L	ND	50.0	12/27/13 15:11	

LABORATORY CONTROL SAMPLE: 1312110

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10100	101	85-115	
Antimony	ug/L	1000	1030	103	85-115	
Arsenic	ug/L	1000	1000	100	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1020	102	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Copper	ug/L	1000	1010	101	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1040	104	85-115	
Nickel	ug/L	1000	1050	105	85-115	
Selenium	ug/L	1000	1030	103	85-115	
Silver	ug/L	500	502	100	85-115	
Thallium	ug/L	1000	1060	106	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312111

1312112

Parameter	Units	60160366001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	2240	10000	10000	14100	13600	118	114	70-130	3	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312111 1312112											
Parameter	Units	60160366001		MS	MSD	1312112		MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony	ug/L	ND	1000	1000	1000	1030	1020	103	102	70-130	1
Arsenic	ug/L	11.7	1000	1000	1000	1030	1030	102	102	70-130	0
Beryllium	ug/L	ND	1000	1000	1000	1040	1040	104	104	70-130	1
Cadmium	ug/L	ND	1000	1000	1000	1020	1020	102	102	70-130	0
Chromium	ug/L	ND	1000	1000	1000	1020	1020	102	101	70-130	1
Cobalt	ug/L	6.9	1000	1000	1000	1010	1010	100	100	70-130	0
Copper	ug/L	10.3	1000	1000	1000	1050	1040	104	103	70-130	1
Iron	ug/L	2580	10000	10000	10000	13200	13000	106	104	70-130	2
Lead	ug/L	ND	1000	1000	1000	996	995	99	99	70-130	0
Nickel	ug/L	25.5	1000	1000	1000	1030	1030	101	100	70-130	0
Selenium	ug/L	ND	1000	1000	1000	1040	1040	104	104	70-130	0
Silver	ug/L	ND	500	500	500	504	503	101	101	70-130	0
Thallium	ug/L	ND	1000	1000	1000	985	983	98	98	70-130	0
Zinc	ug/L	ND	1000	1000	1000	1010	999	98	98	70-130	1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch:	MPRP/25749	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60160368001		

METHOD BLANK: 1312321 Matrix: Water

Associated Lab Samples: 60160368001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	01/02/14 16:55	
Antimony, Dissolved	ug/L	ND	10.0	01/02/14 16:55	
Arsenic, Dissolved	ug/L	ND	10.0	01/02/14 16:55	
Beryllium, Dissolved	ug/L	ND	1.0	01/02/14 16:55	
Cadmium, Dissolved	ug/L	ND	5.0	01/02/14 16:55	
Chromium, Dissolved	ug/L	ND	5.0	01/02/14 16:55	
Cobalt, Dissolved	ug/L	ND	5.0	01/02/14 16:55	
Copper, Dissolved	ug/L	ND	10.0	01/02/14 16:55	
Iron, Dissolved	ug/L	92.1	50.0	01/02/14 16:55	
Lead, Dissolved	ug/L	ND	5.0	01/02/14 16:55	
Nickel, Dissolved	ug/L	ND	5.0	01/02/14 16:55	
Selenium, Dissolved	ug/L	ND	15.0	01/02/14 16:55	
Silver, Dissolved	ug/L	ND	7.0	01/02/14 16:55	
Thallium, Dissolved	ug/L	ND	20.0	01/02/14 16:55	
Zinc, Dissolved	ug/L	ND	50.0	01/02/14 16:55	

LABORATORY CONTROL SAMPLE: 1312322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9710	97	85-115	
Antimony, Dissolved	ug/L	1000	991	99	85-115	
Arsenic, Dissolved	ug/L	1000	959	96	85-115	
Beryllium, Dissolved	ug/L	1000	978	98	85-115	
Cadmium, Dissolved	ug/L	1000	985	99	85-115	
Chromium, Dissolved	ug/L	1000	986	99	85-115	
Cobalt, Dissolved	ug/L	1000	993	99	85-115	
Copper, Dissolved	ug/L	1000	960	96	85-115	
Iron, Dissolved	ug/L	10000	9730	97	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	982	98	85-115	
Silver, Dissolved	ug/L	500	496	99	85-115	
Thallium, Dissolved	ug/L	1000	1020	102	85-115	
Zinc, Dissolved	ug/L	1000	995	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312323 1312324

Parameter	Units	4090335002		MSD		MSD		MSD		MSD		% Rec		Max	
		Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	RPD	Qual			
Aluminum, Dissolved	ug/L	ND	10000	10000	9820	9740	98	97	70-130	1	8				

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312323 1312324											
Parameter	Units	4090335002		MS	MSD	MSD		MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1000	1010	987	101	99	70-130	2
Arsenic, Dissolved	ug/L	ND	1000	1000	1000	1000	994	100	99	70-130	1
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	979	972	98	97	70-130	1
Cadmium, Dissolved	ug/L	ND	1000	1000	1000	1000	986	100	99	70-130	1
Chromium, Dissolved	ug/L	ND	1000	1000	1000	971	958	97	96	70-130	1
Cobalt, Dissolved	ug/L	11.0	1000	1000	960	945	95	93	93	70-130	2
Copper, Dissolved	ug/L	ND	1000	1000	980	967	97	96	96	70-130	1
Iron, Dissolved	ug/L	ND			9600	9420					2
Lead, Dissolved	ug/L	ND	1000	1000	934	916	93	92	92	70-130	2
Nickel, Dissolved	ug/L	40.3	1000	1000	991	976	95	94	94	70-130	2
Selenium, Dissolved	ug/L	ND	1000	1000	990	978	99	98	98	70-130	1
Silver, Dissolved	ug/L	ND	500	500	516	509	103	102	102	70-130	1
Thallium, Dissolved	ug/L	ND	1000	1000	881	866	88	87	87	70-130	2
Zinc, Dissolved	ug/L	ND	1000	1000	964	943	96	94	94	70-130	2

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch: MSV/58655 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60160368001, 60160368002

METHOD BLANK: 1313116

Matrix: Water

Associated Lab Samples: 60160368001, 60160368002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/31/13 11:55	N2
1,1,2-Trichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,2-Dichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/31/13 11:55	
Acetone	ug/L	ND	10.0	12/31/13 11:55	N2
Benzene	ug/L	ND	1.0	12/31/13 11:55	
Bromodichloromethane	ug/L	ND	1.0	12/31/13 11:55	
Bromoform	ug/L	ND	1.0	12/31/13 11:55	
Bromomethane	ug/L	ND	5.0	12/31/13 11:55	
Carbon tetrachloride	ug/L	ND	1.0	12/31/13 11:55	
Chloroethane	ug/L	ND	1.0	12/31/13 11:55	
Chloroform	ug/L	ND	1.0	12/31/13 11:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/31/13 11:55	N2
Ethylbenzene	ug/L	ND	1.0	12/31/13 11:55	
Methylene chloride	ug/L	ND	1.0	12/31/13 11:55	
Tetrachloroethene	ug/L	ND	1.0	12/31/13 11:55	
Toluene	ug/L	ND	1.0	12/31/13 11:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/31/13 11:55	
Trichloroethene	ug/L	ND	1.0	12/31/13 11:55	
Vinyl chloride	ug/L	ND	1.0	12/31/13 11:55	
Xylene (Total)	ug/L	ND	3.0	12/31/13 11:55	N2
1,2-Dichloroethane-d4 (S)	%	109	80-120	12/31/13 11:55	
4-Bromofluorobenzene (S)	%	99	80-120	12/31/13 11:55	
Toluene-d8 (S)	%	95	80-120	12/31/13 11:55	

LABORATORY CONTROL SAMPLE: 1313117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.8	94	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	15.9	80	59-138	N2
1,1,2-Trichloroethane	ug/L	20	19.3	96	69-127	
1,2-Dichloroethane	ug/L	20	18.0	90	71-129	
1,4-Dichlorobenzene	ug/L	20	17.5	87	68-124	
Acetone	ug/L	100	84.5	85	40-160	N2
Benzene	ug/L	20	18.9	94	73-129	
Bromodichloromethane	ug/L	20	16.1	80	63-129	
Bromoform	ug/L	20	22.2	111	52-123	
Bromomethane	ug/L	20	14.8	74	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	13.2	66	42-160	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

LABORATORY CONTROL SAMPLE: 1313117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	20	19.7	99	60-120	
cis-1,2-Dichloroethene	ug/L	20	16.2	81	70-125	N2
Ethylbenzene	ug/L	20	20.8	104	66-133	
Methylene chloride	ug/L	20	17.0	85	56-135	
Tetrachloroethene	ug/L	20	17.8	89	64-143	
Toluene	ug/L	20	15.5	77	70-130	
trans-1,2-Dichloroethene	ug/L	20	14.4	72	67-149	
Trichloroethene	ug/L	20	17.4	87	71-130	
Vinyl chloride	ug/L	20	14.3	71	41-160	
Xylene (Total)	ug/L	60	58.8	98	67-130	N2
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			92	80-120	
Toluene-d8 (S)	%			83	80-120	

MATRIX SPIKE SAMPLE: 1313118

Parameter	Units	60160368001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4080	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3680	92	46-157	N2
1,1,2-Trichloroethane	ug/L	ND	4000	4390	110	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3390	85	49-155	
1,4-Dichlorobenzene	ug/L	1040	4000	4640	90	18-147	
Acetone	ug/L	167000	20000	175000	39	40-160	M1,N2
Benzene	ug/L	ND	4000	3820	94	37-151	
Bromodichloromethane	ug/L	ND	4000	3430	86	35-155	
Bromoform	ug/L	ND	4000	3730	93	45-133	
Bromomethane	ug/L	ND	4000	2430	61	10-160	
Carbon tetrachloride	ug/L	ND	4000	3900	97	70-140	
Chloroethane	ug/L	ND	4000	2630	66	14-160	
Chloroform	ug/L	ND	4000	3900	98	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3290	82	19-160	N2
Ethylbenzene	ug/L	ND	4000	4190	100	37-154	
Methylene chloride	ug/L	ND	4000	3180	80	15-156	
Tetrachloroethene	ug/L	ND	4000	3920	98	64-148	
Toluene	ug/L	ND	4000	3510	86	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3080	77	54-156	
Trichloroethene	ug/L	ND	4000	3600	90	71-157	
Vinyl chloride	ug/L	ND	4000	2950	74	10-160	
Xylene (Total)	ug/L	737	12000	12200	96	12-153	N2
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				95	80-120	
Preservation pH		6.0		6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch: OEXT/42117

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60160368001

METHOD BLANK: 1311915

Matrix: Water

Associated Lab Samples: 60160368001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/30/13 11:20	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/30/13 11:20	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/30/13 11:20	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/30/13 11:20	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/30/13 11:20	
Hexachloroethane	ug/L	ND	5.0	12/30/13 11:20	
Naphthalene	ug/L	ND	5.0	12/30/13 11:20	
Nitrobenzene	ug/L	ND	5.0	12/30/13 11:20	
Pentachlorophenol	ug/L	ND	5.0	12/30/13 11:20	
Phenol	ug/L	ND	5.0	12/30/13 11:20	
2,4,6-Tribromophenol (S)	%	91	39-120	12/30/13 11:20	
2-Fluorobiphenyl (S)	%	86	39-120	12/30/13 11:20	
2-Fluorophenol (S)	%	42	17-120	12/30/13 11:20	
Nitrobenzene-d5 (S)	%	86	33-120	12/30/13 11:20	
Phenol-d6 (S)	%	29	11-120	12/30/13 11:20	
Terphenyl-d14 (S)	%	91	45-120	12/30/13 11:20	

LABORATORY CONTROL SAMPLE: 1311916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	39.6	79	46-120	
2,4,6-Trichlorophenol	ug/L	50	40.5	81	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	38.4	77	40-133	
Hexachloro-1,3-butadiene	ug/L	50	42.5	85	44-116	
Hexachlorocyclopentadiene	ug/L	100	51.9	52	24-120	
Hexachloroethane	ug/L	50	37.4	75	43-113	
Naphthalene	ug/L	50	38.1	76	48-120	
Nitrobenzene	ug/L	50	39.6	79	48-120	
Pentachlorophenol	ug/L	50	36.4	73	47-120	
Phenol	ug/L	50	16.2	32	16-112	
2,4,6-Tribromophenol (S)	%			94	39-120	
2-Fluorobiphenyl (S)	%			85	39-120	
2-Fluorophenol (S)	%			40	17-120	
Nitrobenzene-d5 (S)	%			83	33-120	
Phenol-d6 (S)	%			28	11-120	
Terphenyl-d14 (S)	%			95	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

MATRIX SPIKE SAMPLE:		1311917					
Parameter	Units	60160327001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	4310	86	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4600	92	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	4330J	87	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	4610	92	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	5640	56	11-120	
Hexachloroethane	ug/L	ND	5000	4280	86	40-113	
Naphthalene	ug/L	1520	5000	5650	83	45-120	
Nitrobenzene	ug/L	ND	5000	4290	86	38-120	
Pentachlorophenol	ug/L	ND	5000	4490	90	43-135	
Phenol	ug/L	11800	5000	12400	11	13-112	M1
2,4,6-Tribromophenol (S)	%				102	39-120	
2-Fluorobiphenyl (S)	%				91	39-120	
2-Fluorophenol (S)	%				46	17-120	
Nitrobenzene-d5 (S)	%				143	33-120	S0
Phenol-d6 (S)	%				34	11-120	
Terphenyl-d14 (S)	%				100	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch:	WET/45375	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60160368001		

METHOD BLANK: 1311993 Matrix: Water

Associated Lab Samples: 60160368001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/27/13 08:38	

LABORATORY CONTROL SAMPLE: 1311994

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.6	104	78-114	

MATRIX SPIKE SAMPLE: 1311995

Parameter	Units	60160366001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	41.7	42.8	100	78-114	

SAMPLE DUPLICATE: 1312075

Parameter	Units	60160368001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	857	864	1	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch: WET/45382

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160368001

METHOD BLANK: 1312301

Matrix: Water

Associated Lab Samples: 60160368001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/27/13 12:54	

LABORATORY CONTROL SAMPLE: 1312302

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.6	103	64-132	

MATRIX SPIKE SAMPLE: 1312306

Parameter	Units	60159910002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.5	21.0	85	64-132	

SAMPLE DUPLICATE: 1312305

Parameter	Units	60160368001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	9.2	10	8	34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch: WET/45414

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160368001

METHOD BLANK: 1312812

Matrix: Water

Associated Lab Samples: 60160368001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/30/13 09:55	

SAMPLE DUPLICATE: 1312813

Parameter	Units	60160385003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	36.0	34.0	6	25	

SAMPLE DUPLICATE: 1312814

Parameter	Units	60160369003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	36.0	34.0	6	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch:	WET/45384	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60160368001		

SAMPLE DUPLICATE: 1312343

Parameter	Units	60160368001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.4	5.5	1	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch: WET/45379

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160368001

METHOD BLANK: 1312245

Matrix: Water

Associated Lab Samples: 60160368001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	01/01/14 10:44	

LABORATORY CONTROL SAMPLE: 1312246

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	193	97	85-115	

SAMPLE DUPLICATE: 1312247

Parameter	Units	60160394001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	206	209	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch:	WETA/27755	Analysis Method:	EPA 350.1
QC Batch Method:	EPA 350.1	Analysis Description:	350.1 Ammonia
Associated Lab Samples:	60160368001		

METHOD BLANK: 1314699 Matrix: Water

Associated Lab Samples: 60160368001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	01/07/14 15:02	

LABORATORY CONTROL SAMPLE: 1314700

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1314701

Parameter	Units	60160368001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	750	1000	2040	129	90-110	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

QC Batch:	WETA/27743	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60160368001		

METHOD BLANK: 1314484 Matrix: Water

Associated Lab Samples: 60160368001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	01/07/14 11:55	

LABORATORY CONTROL SAMPLE: 1314485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	47.7	95	90-110	

MATRIX SPIKE SAMPLE: 1314486

Parameter	Units	60160372001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	102000	50000	162000	120	90-110	M1

SAMPLE DUPLICATE: 1314487

Parameter	Units	60160608001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	80400	81000	1	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

S0 Surrogate recovery outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 136-176RR

Pace Project No.: 60160368

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160368001	316-176RR	EPA 200.7	MPRP/25739	EPA 200.7	ICP/19747
60160368001	316-176RR	EPA 200.7	MPRP/25749	EPA 200.7	ICP/19750
60160368001	316-176RR	EPA 245.1	MERP/8043	EPA 245.1	MERC/7998
60160368001	316-176RR	EPA 245.1	MERP/8042	EPA 245.1	MERC/7997
60160368001	316-176RR	EPA 625	OEXT/42117	EPA 625	MSSV/13393
60160368001	316-176RR	EPA 624 Low	MSV/58655		
60160368002	TRIP BLANK	EPA 624 Low	MSV/58655		
60160368001	316-176RR	EPA 1664A	WET/45375		
60160368001	316-176RR	EPA 1664A	WET/45382		
60160368001	316-176RR	SM 2540D	WET/45414		
60160368001	316-176RR	SM 4500-H+B	WET/45384		
60160368001	316-176RR	SM 5210B	WET/45379	SM 5210B	WET/45458
60160368001	316-176RR	EPA 350.1	WETA/27755		
60160368001	316-176RR	EPA 410.4	WETA/27743		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60160368



60160368

Client Name: BARR

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ zip

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.4

Date and initials of person examining contents: 8/2/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, pH</u>
Rush Turn Around Time requested:	☒ Yes ☐ No ☐ N/A	7. <u>same day (O+G)</u>
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>W</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased) <u>Covered</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: mw hr (AW)

Date: 12/27/13

January 07, 2014

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-177
Pace Project No.: 60160372

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 27, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160372001	316-177	Water	12/26/13 10:30	12/27/13 00:40
60160372002	316-177	Water	12/26/13 10:30	12/27/13 00:40
60160372003	TRIP BLANK	Water	12/26/13 10:30	12/27/13 00:40

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160372001	316-177	EPA 200.7	TDS	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	28
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60160372002	316-177	EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
60160372003	TRIP BLANK	EPA 624 Low	EAK	28

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

Sample: 316-177		Lab ID: 60160372001	Collected: 12/26/13 10:30	Received: 12/27/13 00:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	6680	ug/L	375	1	12/27/13 10:00	12/27/13 19:30	7429-90-5	D3
Antimony	57.8	ug/L	50.0	1	12/27/13 10:00	12/27/13 19:30	7440-36-0	
Arsenic	1050	ug/L	50.0	1	12/27/13 10:00	12/27/13 19:30	7440-38-2	
Beryllium	ND	ug/L	5.0	1	12/27/13 10:00	12/27/13 19:30	7440-41-7	
Cadmium	ND	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:30	7440-43-9	
Chromium	281	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:30	7440-47-3	
Cobalt	28.1	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:30	7440-48-4	
Copper	ND	ug/L	50.0	1	12/27/13 10:00	12/27/13 19:30	7440-50-8	
Iron	962000	ug/L	250	1	12/27/13 10:00	12/27/13 19:30	7439-89-6	
Lead	195	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:30	7439-92-1	
Nickel	120	ug/L	25.0	1	12/27/13 10:00	12/27/13 19:30	7440-02-0	
Selenium	ND	ug/L	75.0	1	12/27/13 10:00	12/27/13 19:30	7782-49-2	
Silver	ND	ug/L	35.0	1	12/27/13 10:00	12/27/13 19:30	7440-22-4	
Thallium	ND	ug/L	100	1	12/27/13 10:00	12/27/13 19:30	7440-28-0	
Zinc	11800	ug/L	500	2	12/27/13 10:00	12/27/13 19:32	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3440	ug/L	375	1	12/27/13 14:20	01/02/14 17:15	7429-90-5	
Antimony, Dissolved	ND	ug/L	50.0	1	12/27/13 14:20	01/02/14 17:15	7440-36-0	
Arsenic, Dissolved	696	ug/L	50.0	1	12/27/13 14:20	01/02/14 17:15	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	12/27/13 14:20	01/02/14 17:15	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	12/27/13 14:20	01/02/14 17:15	7440-43-9	
Chromium, Dissolved	195	ug/L	25.0	1	12/27/13 14:20	01/02/14 17:15	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	12/27/13 14:20	01/02/14 17:15	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	12/27/13 14:20	01/02/14 17:15	7440-50-8	
Iron, Dissolved	636000	ug/L	250	1	12/27/13 14:20	01/02/14 17:15	7439-89-6	
Lead, Dissolved	96.8	ug/L	25.0	1	12/27/13 14:20	01/02/14 17:15	7439-92-1	
Nickel, Dissolved	80.8	ug/L	25.0	1	12/27/13 14:20	01/02/14 17:15	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	12/27/13 14:20	01/02/14 17:15	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	12/27/13 14:20	01/02/14 17:15	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	12/27/13 14:20	01/02/14 17:15	7440-28-0	
Zinc, Dissolved	8530	ug/L	500	2	12/27/13 14:20	01/02/14 17:18	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	6.0	1	12/30/13 15:30	12/31/13 14:12	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	12/30/13 15:30	12/31/13 13:52	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	2	12/27/13 00:00	12/30/13 13:24	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	2	12/27/13 00:00	12/30/13 13:24	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	2	12/27/13 00:00	12/30/13 13:24	77-47-4	
Hexachloroethane	ND	ug/L	1000	2	12/27/13 00:00	12/30/13 13:24	67-72-1	
Naphthalene	1900	ug/L	1000	2	12/27/13 00:00	12/30/13 13:24	91-20-3	
Nitrobenzene	ND	ug/L	1000	2	12/27/13 00:00	12/30/13 13:24	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

Sample: 316-177		Lab ID: 60160372001	Collected: 12/26/13 10:30	Received: 12/27/13 00:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/27/13 00:00	12/30/13 13:24	87-86-5	
Phenol	12600 ug/L		1000	2	12/27/13 00:00	12/30/13 13:24	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/27/13 00:00	12/30/13 13:24	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/27/13 00:00	12/30/13 13:24	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	155 %		33-120	2	12/27/13 00:00	12/30/13 13:24	4165-60-0	S0
2-Fluorobiphenyl (S)	89 %		39-120	2	12/27/13 00:00	12/30/13 13:24	321-60-8	
Terphenyl-d14 (S)	91 %		45-120	2	12/27/13 00:00	12/30/13 13:24	1718-51-0	
Phenol-d6 (S)	33 %		11-120	2	12/27/13 00:00	12/30/13 13:24	13127-88-3	
2-Fluorophenol (S)	45 %		17-120	2	12/27/13 00:00	12/30/13 13:24	367-12-4	
2,4,6-Tribromophenol (S)	100 %		39-120	2	12/27/13 00:00	12/30/13 13:24	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	160000 ug/L		2000	200		12/31/13 12:55	67-64-1	N2
Benzene	ND ug/L		200	200		12/31/13 12:55	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/31/13 12:55	75-27-4	
Bromoform	ND ug/L		200	200		12/31/13 12:55	75-25-2	
Bromomethane	ND ug/L		1000	200		12/31/13 12:55	74-83-9	
2-Butanone (MEK)	95800 ug/L		2000	200		12/31/13 12:55	78-93-3	N2
Carbon tetrachloride	ND ug/L		200	200		12/31/13 12:55	56-23-5	
Chloroethane	ND ug/L		200	200		12/31/13 12:55	75-00-3	
Chloroform	ND ug/L		200	200		12/31/13 12:55	67-66-3	
1,4-Dichlorobenzene	904 ug/L		200	200		12/31/13 12:55	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/31/13 12:55	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/31/13 12:55	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		200	200		12/31/13 12:55	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/31/13 12:55	100-41-4	
Methylene chloride	ND ug/L		200	200		12/31/13 12:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	3330 ug/L		2000	200		12/31/13 12:55	108-10-1	N2
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/31/13 12:55	79-34-5	N2
Tetrachloroethene	ND ug/L		200	200		12/31/13 12:55	127-18-4	
Toluene	ND ug/L		200	200		12/31/13 12:55	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/31/13 12:55	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/31/13 12:55	79-00-5	
Trichloroethene	ND ug/L		200	200		12/31/13 12:55	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/31/13 12:55	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/31/13 12:55	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		12/31/13 12:55	460-00-4	
Toluene-d8 (S)	98 %		80-120	200		12/31/13 12:55	2037-26-5	
1,2-Dichloroethane-d4 (S)	98 %		80-120	200		12/31/13 12:55	17060-07-0	
Preservation pH	6.0		1.0	200		12/31/13 12:55		
2540D Total Suspended Solids		Analytical Method: SM 2540D						
Total Suspended Solids	2320 mg/L		5.0	1		12/31/13 09:57		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

Sample: 316-177		Lab ID: 60160372001	Collected: 12/26/13 10:30	Received: 12/27/13 00:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		12/27/13 13:30		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	38900	mg/L	2.0	1	12/27/13 12:45	01/01/14 11:31		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	839	mg/L	50.0	500		01/06/14 15:04	7664-41-7	M1
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	102000	mg/L	10000	1000		01/07/14 11:58		M1

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

Sample: 316-177		Lab ID: 60160372002	Collected: 12/26/13 10:30	Received: 12/27/13 00:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	1380	mg/L	5.0	1		12/27/13 11:36		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	5.8	mg/L	5.0	1		12/27/13 12:54		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

Sample: TRIP BLANK		Lab ID: 60160372003	Collected: 12/26/13 10:30	Received: 12/27/13 00:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/31/13 13:10	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/31/13 13:10	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/31/13 13:10	75-27-4	
Bromoform	ND ug/L		1.0	1		12/31/13 13:10	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/31/13 13:10	74-83-9	
2-Butanone (MEK)	ND ug/L		10.0	1		12/31/13 13:10	78-93-3	N2
Carbon tetrachloride	ND ug/L		1.0	1		12/31/13 13:10	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/31/13 13:10	75-00-3	
Chloroform	ND ug/L		1.0	1		12/31/13 13:10	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/31/13 13:10	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/31/13 13:10	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/31/13 13:10	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/31/13 13:10	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/31/13 13:10	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/31/13 13:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND ug/L		10.0	1		12/31/13 13:10	108-10-1	N2
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/31/13 13:10	79-34-5	N2
Tetrachloroethene	ND ug/L		1.0	1		12/31/13 13:10	127-18-4	
Toluene	ND ug/L		1.0	1		12/31/13 13:10	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/31/13 13:10	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/31/13 13:10	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/31/13 13:10	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/31/13 13:10	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/31/13 13:10	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	1		12/31/13 13:10	460-00-4	
Toluene-d8 (S)	103 %		80-120	1		12/31/13 13:10	2037-26-5	
1,2-Dichloroethane-d4 (S)	95 %		80-120	1		12/31/13 13:10	17060-07-0	
Preservation pH	6.0		1.0	1		12/31/13 13:10		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

QC Batch: MERP/8043

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60160372001

METHOD BLANK: 1312970

Matrix: Water

Associated Lab Samples: 60160372001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/31/13 13:55	

LABORATORY CONTROL SAMPLE: 1312971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312972 1312973

Parameter	Units	60160425001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	150	150	141	143	94	96	70-130	2	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

QC Batch: MERP/8042

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160372001

METHOD BLANK: 1312966

Matrix: Water

Associated Lab Samples: 60160372001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/31/13 13:35	

LABORATORY CONTROL SAMPLE: 1312967

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312968 1312969

Parameter	Units	60160327001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	136	139	91	93	70-130	2	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177
Pace Project No.: 60160372

QC Batch: MPRP/25739 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60160372001

METHOD BLANK: 1312109 Matrix: Water
Associated Lab Samples: 60160372001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	12/27/13 15:11	
Antimony	ug/L	ND	10.0	12/27/13 15:11	
Arsenic	ug/L	ND	10.0	12/27/13 15:11	
Beryllium	ug/L	ND	1.0	12/27/13 15:11	
Cadmium	ug/L	ND	5.0	12/27/13 15:11	
Chromium	ug/L	ND	5.0	12/27/13 15:11	
Cobalt	ug/L	ND	5.0	12/27/13 15:11	
Copper	ug/L	ND	10.0	12/27/13 15:11	
Iron	ug/L	ND	50.0	12/27/13 15:11	
Lead	ug/L	ND	5.0	12/27/13 15:11	
Nickel	ug/L	ND	5.0	12/27/13 15:11	
Selenium	ug/L	ND	15.0	12/27/13 15:11	
Silver	ug/L	ND	7.0	12/27/13 15:11	
Thallium	ug/L	ND	20.0	12/27/13 15:11	
Zinc	ug/L	ND	50.0	12/27/13 15:11	

LABORATORY CONTROL SAMPLE: 1312110

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10100	101	85-115	
Antimony	ug/L	1000	1030	103	85-115	
Arsenic	ug/L	1000	1000	100	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1020	102	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Copper	ug/L	1000	1010	101	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1040	104	85-115	
Nickel	ug/L	1000	1050	105	85-115	
Selenium	ug/L	1000	1030	103	85-115	
Silver	ug/L	500	502	100	85-115	
Thallium	ug/L	1000	1060	106	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312111 1312112

Parameter	Units	60160366001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	2240	10000	10000	14100	13600	118	114	70-130	3	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312111 1312112												
Parameter	Units	60160366001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Antimony	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7	
Arsenic	ug/L	11.7	1000	1000	1030	1030	102	102	70-130	0	10	
Beryllium	ug/L	ND	1000	1000	1040	1040	104	104	70-130	1	7	
Cadmium	ug/L	ND	1000	1000	1020	1020	102	102	70-130	0	10	
Chromium	ug/L	ND	1000	1000	1020	1020	102	101	70-130	1	10	
Cobalt	ug/L	6.9	1000	1000	1010	1010	100	100	70-130	0	6	
Copper	ug/L	10.3	1000	1000	1050	1040	104	103	70-130	1	11	
Iron	ug/L	2580	10000	10000	13200	13000	106	104	70-130	2	10	
Lead	ug/L	ND	1000	1000	996	995	99	99	70-130	0	10	
Nickel	ug/L	25.5	1000	1000	1030	1030	101	100	70-130	0	10	
Selenium	ug/L	ND	1000	1000	1040	1040	104	104	70-130	0	10	
Silver	ug/L	ND	500	500	504	503	101	101	70-130	0	10	
Thallium	ug/L	ND	1000	1000	985	983	98	98	70-130	0	6	
Zinc	ug/L	ND	1000	1000	1010	999	98	98	70-130	1	11	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177
Pace Project No.: 60160372

QC Batch: MPRP/25749 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60160372001

METHOD BLANK: 1312321 Matrix: Water
Associated Lab Samples: 60160372001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	01/02/14 16:55	
Antimony, Dissolved	ug/L	ND	10.0	01/02/14 16:55	
Arsenic, Dissolved	ug/L	ND	10.0	01/02/14 16:55	
Beryllium, Dissolved	ug/L	ND	1.0	01/02/14 16:55	
Cadmium, Dissolved	ug/L	ND	5.0	01/02/14 16:55	
Chromium, Dissolved	ug/L	ND	5.0	01/02/14 16:55	
Cobalt, Dissolved	ug/L	ND	5.0	01/02/14 16:55	
Copper, Dissolved	ug/L	ND	10.0	01/02/14 16:55	
Iron, Dissolved	ug/L	92.1	50.0	01/02/14 16:55	
Lead, Dissolved	ug/L	ND	5.0	01/02/14 16:55	
Nickel, Dissolved	ug/L	ND	5.0	01/02/14 16:55	
Selenium, Dissolved	ug/L	ND	15.0	01/02/14 16:55	
Silver, Dissolved	ug/L	ND	7.0	01/02/14 16:55	
Thallium, Dissolved	ug/L	ND	20.0	01/02/14 16:55	
Zinc, Dissolved	ug/L	ND	50.0	01/02/14 16:55	

LABORATORY CONTROL SAMPLE: 1312322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9710	97	85-115	
Antimony, Dissolved	ug/L	1000	991	99	85-115	
Arsenic, Dissolved	ug/L	1000	959	96	85-115	
Beryllium, Dissolved	ug/L	1000	978	98	85-115	
Cadmium, Dissolved	ug/L	1000	985	99	85-115	
Chromium, Dissolved	ug/L	1000	986	99	85-115	
Cobalt, Dissolved	ug/L	1000	993	99	85-115	
Copper, Dissolved	ug/L	1000	960	96	85-115	
Iron, Dissolved	ug/L	10000	9730	97	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	982	98	85-115	
Silver, Dissolved	ug/L	500	496	99	85-115	
Thallium, Dissolved	ug/L	1000	1020	102	85-115	
Zinc, Dissolved	ug/L	1000	995	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312323 1312324

Parameter	Units	4090335002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	9820	9740	98	97	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312323 1312324											
Parameter	Units	4090335002		MS	MSD	MS		MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1000	1010	987	101	99	70-130	2
Arsenic, Dissolved	ug/L	ND	1000	1000	1000	1000	994	100	99	70-130	1
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	979	972	98	97	70-130	1
Cadmium, Dissolved	ug/L	ND	1000	1000	1000	1000	986	100	99	70-130	1
Chromium, Dissolved	ug/L	ND	1000	1000	1000	971	958	97	96	70-130	1
Cobalt, Dissolved	ug/L	11.0	1000	1000	960	945	95	93	93	70-130	2
Copper, Dissolved	ug/L	ND	1000	1000	980	967	97	96	96	70-130	1
Iron, Dissolved	ug/L	ND			9600	9420					2
Lead, Dissolved	ug/L	ND	1000	1000	934	916	93	92	92	70-130	2
Nickel, Dissolved	ug/L	40.3	1000	1000	991	976	95	94	94	70-130	2
Selenium, Dissolved	ug/L	ND	1000	1000	990	978	99	98	98	70-130	1
Silver, Dissolved	ug/L	ND	500	500	516	509	103	102	102	70-130	1
Thallium, Dissolved	ug/L	ND	1000	1000	881	866	88	87	87	70-130	2
Zinc, Dissolved	ug/L	ND	1000	1000	964	943	96	94	94	70-130	2

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

QC Batch: MSV/58655 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60160372001, 60160372003

METHOD BLANK: 1313116

Matrix: Water

Associated Lab Samples: 60160372001, 60160372003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/31/13 11:55	N2
1,1,2-Trichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,2-Dichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/31/13 11:55	
Acetone	ug/L	ND	10.0	12/31/13 11:55	N2
Benzene	ug/L	ND	1.0	12/31/13 11:55	
Bromodichloromethane	ug/L	ND	1.0	12/31/13 11:55	
Bromoform	ug/L	ND	1.0	12/31/13 11:55	
Bromomethane	ug/L	ND	5.0	12/31/13 11:55	
Carbon tetrachloride	ug/L	ND	1.0	12/31/13 11:55	
Chloroethane	ug/L	ND	1.0	12/31/13 11:55	
Chloroform	ug/L	ND	1.0	12/31/13 11:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/31/13 11:55	N2
Ethylbenzene	ug/L	ND	1.0	12/31/13 11:55	
Methylene chloride	ug/L	ND	1.0	12/31/13 11:55	
Tetrachloroethene	ug/L	ND	1.0	12/31/13 11:55	
Toluene	ug/L	ND	1.0	12/31/13 11:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/31/13 11:55	
Trichloroethene	ug/L	ND	1.0	12/31/13 11:55	
Vinyl chloride	ug/L	ND	1.0	12/31/13 11:55	
Xylene (Total)	ug/L	ND	3.0	12/31/13 11:55	N2
1,2-Dichloroethane-d4 (S)	%	109	80-120	12/31/13 11:55	
4-Bromofluorobenzene (S)	%	99	80-120	12/31/13 11:55	
Toluene-d8 (S)	%	95	80-120	12/31/13 11:55	

LABORATORY CONTROL SAMPLE: 1313117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.8	94	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	15.9	80	59-138	N2
1,1,2-Trichloroethane	ug/L	20	19.3	96	69-127	
1,2-Dichloroethane	ug/L	20	18.0	90	71-129	
1,4-Dichlorobenzene	ug/L	20	17.5	87	68-124	
Acetone	ug/L	100	84.5	85	40-160	N2
Benzene	ug/L	20	18.9	94	73-129	
Bromodichloromethane	ug/L	20	16.1	80	63-129	
Bromoform	ug/L	20	22.2	111	52-123	
Bromomethane	ug/L	20	14.8	74	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	13.2	66	42-160	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

LABORATORY CONTROL SAMPLE: 1313117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	20	19.7	99	60-120	
cis-1,2-Dichloroethene	ug/L	20	16.2	81	70-125	N2
Ethylbenzene	ug/L	20	20.8	104	66-133	
Methylene chloride	ug/L	20	17.0	85	56-135	
Tetrachloroethene	ug/L	20	17.8	89	64-143	
Toluene	ug/L	20	15.5	77	70-130	
trans-1,2-Dichloroethene	ug/L	20	14.4	72	67-149	
Trichloroethene	ug/L	20	17.4	87	71-130	
Vinyl chloride	ug/L	20	14.3	71	41-160	
Xylene (Total)	ug/L	60	58.8	98	67-130	N2
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			92	80-120	
Toluene-d8 (S)	%			83	80-120	

MATRIX SPIKE SAMPLE: 1313118

Parameter	Units	60160368001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4080	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3680	92	46-157	N2
1,1,2-Trichloroethane	ug/L	ND	4000	4390	110	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3390	85	49-155	
1,4-Dichlorobenzene	ug/L	1040	4000	4640	90	18-147	
Acetone	ug/L	167000	20000	175000	39	40-160	M1,N2
Benzene	ug/L	ND	4000	3820	94	37-151	
Bromodichloromethane	ug/L	ND	4000	3430	86	35-155	
Bromoform	ug/L	ND	4000	3730	93	45-133	
Bromomethane	ug/L	ND	4000	2430	61	10-160	
Carbon tetrachloride	ug/L	ND	4000	3900	97	70-140	
Chloroethane	ug/L	ND	4000	2630	66	14-160	
Chloroform	ug/L	ND	4000	3900	98	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3290	82	19-160	N2
Ethylbenzene	ug/L	ND	4000	4190	100	37-154	
Methylene chloride	ug/L	ND	4000	3180	80	15-156	
Tetrachloroethene	ug/L	ND	4000	3920	98	64-148	
Toluene	ug/L	ND	4000	3510	86	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3080	77	54-156	
Trichloroethene	ug/L	ND	4000	3600	90	71-157	
Vinyl chloride	ug/L	ND	4000	2950	74	10-160	
Xylene (Total)	ug/L	737	12000	12200	96	12-153	N2
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				95	80-120	
Preservation pH		6.0		6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

QC Batch: OEXT/42117

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60160372001

METHOD BLANK: 1311915

Matrix: Water

Associated Lab Samples: 60160372001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	12/30/13 11:20	
2,4,6-Trichlorophenol	ug/L	ND	5.0	12/30/13 11:20	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	12/30/13 11:20	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	12/30/13 11:20	
Hexachlorocyclopentadiene	ug/L	ND	5.0	12/30/13 11:20	
Hexachloroethane	ug/L	ND	5.0	12/30/13 11:20	
Naphthalene	ug/L	ND	5.0	12/30/13 11:20	
Nitrobenzene	ug/L	ND	5.0	12/30/13 11:20	
Pentachlorophenol	ug/L	ND	5.0	12/30/13 11:20	
Phenol	ug/L	ND	5.0	12/30/13 11:20	
2,4,6-Tribromophenol (S)	%	91	39-120	12/30/13 11:20	
2-Fluorobiphenyl (S)	%	86	39-120	12/30/13 11:20	
2-Fluorophenol (S)	%	42	17-120	12/30/13 11:20	
Nitrobenzene-d5 (S)	%	86	33-120	12/30/13 11:20	
Phenol-d6 (S)	%	29	11-120	12/30/13 11:20	
Terphenyl-d14 (S)	%	91	45-120	12/30/13 11:20	

LABORATORY CONTROL SAMPLE: 1311916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	39.6	79	46-120	
2,4,6-Trichlorophenol	ug/L	50	40.5	81	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	38.4	77	40-133	
Hexachloro-1,3-butadiene	ug/L	50	42.5	85	44-116	
Hexachlorocyclopentadiene	ug/L	100	51.9	52	24-120	
Hexachloroethane	ug/L	50	37.4	75	43-113	
Naphthalene	ug/L	50	38.1	76	48-120	
Nitrobenzene	ug/L	50	39.6	79	48-120	
Pentachlorophenol	ug/L	50	36.4	73	47-120	
Phenol	ug/L	50	16.2	32	16-112	
2,4,6-Tribromophenol (S)	%			94	39-120	
2-Fluorobiphenyl (S)	%			85	39-120	
2-Fluorophenol (S)	%			40	17-120	
Nitrobenzene-d5 (S)	%			83	33-120	
Phenol-d6 (S)	%			28	11-120	
Terphenyl-d14 (S)	%			95	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

MATRIX SPIKE SAMPLE:		1311917					
Parameter	Units	60160327001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	4310	86	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4600	92	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	4330J	87	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	4610	92	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	5640	56	11-120	
Hexachloroethane	ug/L	ND	5000	4280	86	40-113	
Naphthalene	ug/L	1520	5000	5650	83	45-120	
Nitrobenzene	ug/L	ND	5000	4290	86	38-120	
Pentachlorophenol	ug/L	ND	5000	4490	90	43-135	
Phenol	ug/L	11800	5000	12400	11	13-112	M1
2,4,6-Tribromophenol (S)	%				102	39-120	
2-Fluorobiphenyl (S)	%				91	39-120	
2-Fluorophenol (S)	%				46	17-120	
Nitrobenzene-d5 (S)	%				143	33-120	S0
Phenol-d6 (S)	%				34	11-120	
Terphenyl-d14 (S)	%				100	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

QC Batch: WET/45375

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60160372002

METHOD BLANK: 1311993

Matrix: Water

Associated Lab Samples: 60160372002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/27/13 08:38	

LABORATORY CONTROL SAMPLE: 1311994

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.6	104	78-114	

MATRIX SPIKE SAMPLE: 1311995

Parameter	Units	60160366001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	41.7	42.8	100	78-114	

SAMPLE DUPLICATE: 1312075

Parameter	Units	60160368001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	857	864	1	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

QC Batch: WET/45382

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160372002

METHOD BLANK: 1312301

Matrix: Water

Associated Lab Samples: 60160372002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	12/27/13 12:54	

LABORATORY CONTROL SAMPLE: 1312302

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.6	103	64-132	

MATRIX SPIKE SAMPLE: 1312306

Parameter	Units	60159910002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.5	21.0	85	64-132	

SAMPLE DUPLICATE: 1312305

Parameter	Units	60160368001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	9.2	10	8	34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

QC Batch: WET/45427

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160372001

METHOD BLANK: 1313074

Matrix: Water

Associated Lab Samples: 60160372001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/31/13 09:55	

SAMPLE DUPLICATE: 1313075

Parameter	Units	60160367001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1313076

Parameter	Units	60160335003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

QC Batch:	WET/45384	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60160372001		

SAMPLE DUPLICATE: 1312343

Parameter	Units	60160368001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.4	5.5	1	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

QC Batch: WET/45379

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160372001

METHOD BLANK: 1312245

Matrix: Water

Associated Lab Samples: 60160372001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	01/01/14 10:44	

LABORATORY CONTROL SAMPLE: 1312246

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	193	97	85-115	

SAMPLE DUPLICATE: 1312247

Parameter	Units	60160394001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	206	209	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

QC Batch: WETA/27741

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160372001

METHOD BLANK: 1314477

Matrix: Water

Associated Lab Samples: 60160372001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	01/06/14 15:01	

LABORATORY CONTROL SAMPLE: 1314478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	107	90-110	

MATRIX SPIKE SAMPLE: 1314479

Parameter	Units	60160372001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	839	1000	2050	121	90-110	M1

SAMPLE DUPLICATE: 1314480

Parameter	Units	60160473001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	875	851	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

QC Batch:	WETA/27743	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60160372001		

METHOD BLANK: 1314484 Matrix: Water

Associated Lab Samples: 60160372001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	01/07/14 11:55	

LABORATORY CONTROL SAMPLE: 1314485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	47.7	95	90-110	

MATRIX SPIKE SAMPLE: 1314486

Parameter	Units	60160372001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	102000	50000	162000	120	90-110	M1

SAMPLE DUPLICATE: 1314487

Parameter	Units	60160608001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	80400	81000	1	25	

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QUALIFIERS

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-177

Pace Project No.: 60160372

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160372001	316-177	EPA 200.7	MPRP/25739	EPA 200.7	ICP/19747
60160372001	316-177	EPA 200.7	MPRP/25749	EPA 200.7	ICP/19750
60160372001	316-177	EPA 245.1	MERP/8043	EPA 245.1	MERC/7998
60160372001	316-177	EPA 245.1	MERP/8042	EPA 245.1	MERC/7997
60160372001	316-177	EPA 625	OEXT/42117	EPA 625	MSSV/13393
60160372001	316-177	EPA 624 Low	MSV/58655		
60160372003	TRIP BLANK	EPA 624 Low	MSV/58655		
60160372002	316-177	EPA 1664A	WET/45375		
60160372002	316-177	EPA 1664A	WET/45382		
60160372001	316-177	SM 2540D	WET/45427		
60160372001	316-177	SM 4500-H+B	WET/45384		
60160372001	316-177	SM 5210B	WET/45379	SM 5210B	WET/45458
60160372001	316-177	EPA 350.1	WETA/27741		
60160372001	316-177	EPA 410.4	WETA/27743		

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Sample Condition Upon Receipt

WO#: 60160372



60160372

Client Name: BARR

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.4

Date and initials of person examining contents: 8/2/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, pH</u>
Rush Turn Around Time requested:	☒ Yes ☐ No ☐ N/A	7. <u>Same day (0+10)</u>
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>wt</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>Covered</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: mw fr (AKS)

Date: 12/27/13

January 07, 2014

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-178
Pace Project No.: 60160425

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 28, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160425001	316-178	Water	12/27/13 12:00	12/28/13 01:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160425001	316-178	EPA 200.7	SMW	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	AJM	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JMC	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-178
Pace Project No.: 60160425

Sample: 316-178		Lab ID: 60160425001	Collected: 12/27/13 12:00	Received: 12/28/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	2340 ug/L		375	1	12/30/13 08:45	01/02/14 13:29	7429-90-5	
Antimony	ND ug/L		50.0	1	12/30/13 08:45	01/02/14 13:29	7440-36-0	
Arsenic	488 ug/L		50.0	1	12/30/13 08:45	01/02/14 13:29	7440-38-2	
Beryllium	ND ug/L		5.0	1	12/30/13 08:45	01/02/14 13:29	7440-41-7	D3
Cadmium	ND ug/L		25.0	1	12/30/13 08:45	01/02/14 13:29	7440-43-9	
Chromium	133 ug/L		25.0	1	12/30/13 08:45	01/02/14 13:29	7440-47-3	
Cobalt	ND ug/L		25.0	1	12/30/13 08:45	01/02/14 13:29	7440-48-4	
Copper	ND ug/L		50.0	1	12/30/13 08:45	01/02/14 13:29	7440-50-8	
Iron	347000 ug/L		250	1	12/30/13 08:45	01/02/14 13:29	7439-89-6	M1, R1
Lead	65.7 ug/L		25.0	1	12/30/13 08:45	01/02/14 13:29	7439-92-1	
Nickel	55.1 ug/L		25.0	1	12/30/13 08:45	01/02/14 13:29	7440-02-0	
Selenium	ND ug/L		75.0	1	12/30/13 08:45	01/02/14 13:29	7782-49-2	
Silver	ND ug/L		35.0	1	12/30/13 08:45	01/02/14 13:29	7440-22-4	
Thallium	ND ug/L		100	1	12/30/13 08:45	01/02/14 13:29	7440-28-0	
Zinc	5830 ug/L		500	2	12/30/13 08:45	01/02/14 13:32	7440-66-6	M1
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2310 ug/L		375	1	12/30/13 08:45	01/02/14 13:07	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	1	12/30/13 08:45	01/02/14 13:07	7440-36-0	
Arsenic, Dissolved	502 ug/L		50.0	1	12/30/13 08:45	01/02/14 13:07	7440-38-2	D9
Beryllium, Dissolved	ND ug/L		5.0	1	12/30/13 08:45	01/02/14 13:07	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	1	12/30/13 08:45	01/02/14 13:07	7440-43-9	D3
Chromium, Dissolved	141 ug/L		25.0	1	12/30/13 08:45	01/02/14 13:07	7440-47-3	D9
Cobalt, Dissolved	ND ug/L		25.0	1	12/30/13 08:45	01/02/14 13:07	7440-48-4	
Copper, Dissolved	ND ug/L		50.0	1	12/30/13 08:45	01/02/14 13:07	7440-50-8	
Iron, Dissolved	445000 ug/L		250	1	12/30/13 08:45	01/02/14 13:07	7439-89-6	D9, M1, R1
Lead, Dissolved	66.8 ug/L		25.0	1	12/30/13 08:45	01/02/14 13:07	7439-92-1	D9
Nickel, Dissolved	66.8 ug/L		25.0	1	12/30/13 08:45	01/02/14 13:07	7440-02-0	D9
Selenium, Dissolved	ND ug/L		75.0	1	12/30/13 08:45	01/02/14 13:07	7782-49-2	
Silver, Dissolved	ND ug/L		35.0	1	12/30/13 08:45	01/02/14 13:07	7440-22-4	
Thallium, Dissolved	ND ug/L		100	1	12/30/13 08:45	01/02/14 13:07	7440-28-0	
Zinc, Dissolved	5550 ug/L		250	1	12/30/13 08:45	01/02/14 13:07	7440-66-6	M1
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND ug/L		6.0	1	12/30/13 15:30	12/31/13 14:04	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		6.0	1	12/30/13 15:30	12/31/13 13:48	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	2	12/28/13 00:00	01/03/14 01:24	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	2	12/28/13 00:00	01/03/14 01:24	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	2	12/28/13 00:00	01/03/14 01:24	77-47-4	
Hexachloroethane	ND ug/L		1000	2	12/28/13 00:00	01/03/14 01:24	67-72-1	
Naphthalene	1030 ug/L		1000	2	12/28/13 00:00	01/03/14 01:24	91-20-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

Sample: 316-178		Lab ID: 60160425001	Collected: 12/27/13 12:00	Received: 12/28/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Nitrobenzene	ND	ug/L	1000	2	12/28/13 00:00	01/03/14 01:24	98-95-3	
Pentachlorophenol	ND	ug/L	1000	2	12/28/13 00:00	01/03/14 01:24	87-86-5	
Phenol	11700	ug/L	1000	2	12/28/13 00:00	01/03/14 01:24	108-95-2	M1
1,2,4-Trichlorobenzene	ND	ug/L	1000	2	12/28/13 00:00	01/03/14 01:24	120-82-1	
2,4,6-Trichlorophenol	ND	ug/L	1000	2	12/28/13 00:00	01/03/14 01:24	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	121	%	33-120	2	12/28/13 00:00	01/03/14 01:24	4165-60-0	S0
2-Fluorobiphenyl (S)	84	%	39-120	2	12/28/13 00:00	01/03/14 01:24	321-60-8	
Terphenyl-d14 (S)	93	%	45-120	2	12/28/13 00:00	01/03/14 01:24	1718-51-0	
Phenol-d6 (S)	47	%	11-120	2	12/28/13 00:00	01/03/14 01:24	13127-88-3	
2-Fluorophenol (S)	48	%	17-120	2	12/28/13 00:00	01/03/14 01:24	367-12-4	
2,4,6-Tribromophenol (S)	92	%	39-120	2	12/28/13 00:00	01/03/14 01:24	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	150000	ug/L	2000	200		12/31/13 13:25	67-64-1	N2
Benzene	ND	ug/L	200	200		12/31/13 13:25	71-43-2	
Bromodichloromethane	ND	ug/L	200	200		12/31/13 13:25	75-27-4	
Bromoform	ND	ug/L	200	200		12/31/13 13:25	75-25-2	
Bromomethane	ND	ug/L	1000	200		12/31/13 13:25	74-83-9	
Carbon tetrachloride	ND	ug/L	200	200		12/31/13 13:25	56-23-5	
Chloroethane	ND	ug/L	200	200		12/31/13 13:25	75-00-3	
Chloroform	ND	ug/L	200	200		12/31/13 13:25	67-66-3	
1,4-Dichlorobenzene	565	ug/L	200	200		12/31/13 13:25	106-46-7	
1,2-Dichloroethane	ND	ug/L	200	200		12/31/13 13:25	107-06-2	
cis-1,2-Dichloroethene	ND	ug/L	200	200		12/31/13 13:25	156-59-2	N2
trans-1,2-Dichloroethene	ND	ug/L	200	200		12/31/13 13:25	156-60-5	
Ethylbenzene	ND	ug/L	200	200		12/31/13 13:25	100-41-4	
Methylene chloride	ND	ug/L	200	200		12/31/13 13:25	75-09-2	
1,1,2,2-Tetrachloroethane	ND	ug/L	200	200		12/31/13 13:25	79-34-5	N2
Tetrachloroethene	ND	ug/L	200	200		12/31/13 13:25	127-18-4	
Toluene	ND	ug/L	200	200		12/31/13 13:25	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	200	200		12/31/13 13:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	200	200		12/31/13 13:25	79-00-5	
Trichloroethene	ND	ug/L	200	200		12/31/13 13:25	79-01-6	
Vinyl chloride	ND	ug/L	200	200		12/31/13 13:25	75-01-4	
Xylene (Total)	ND	ug/L	600	200		12/31/13 13:25	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	99	%	80-120	200		12/31/13 13:25	460-00-4	
Toluene-d8 (S)	103	%	80-120	200		12/31/13 13:25	2037-26-5	
1,2-Dichloroethane-d4 (S)	100	%	80-120	200		12/31/13 13:25	17060-07-0	
Preservation pH	6.0		1.0	200		12/31/13 13:25		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	1480	mg/L	5.0	1		12/31/13 10:41		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

Sample: 316-178		Lab ID: 60160425001	Collected: 12/27/13 12:00	Received: 12/28/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	5.4	mg/L	5.0	1		01/02/14 10:32		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2360	mg/L	5.0	1		12/31/13 10:05		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		12/28/13 11:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	35100	mg/L	2.0	1	12/28/13 15:18	01/02/14 13:17		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	964	mg/L	50.0	500		01/06/14 15:06	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	59200	mg/L	5000	500		01/03/14 07:51		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

QC Batch: MERP/8043

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60160425001

METHOD BLANK: 1312970

Matrix: Water

Associated Lab Samples: 60160425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/31/13 13:55	

LABORATORY CONTROL SAMPLE: 1312971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312972 1312973

Parameter	Units	60160425001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	150	150	141	143	94	96	70-130	2	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

QC Batch: MERP/8042

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160425001

METHOD BLANK: 1312966

Matrix: Water

Associated Lab Samples: 60160425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/31/13 13:35	

LABORATORY CONTROL SAMPLE: 1312967

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312968 1312969

Parameter	Units	60160327001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	136	139	91	93	70-130	2	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

QC Batch: MPRP/25759

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60160425001

METHOD BLANK: 1312836

Matrix: Water

Associated Lab Samples: 60160425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	01/02/14 13:20	
Antimony	ug/L	ND	10.0	01/02/14 13:20	
Arsenic	ug/L	ND	10.0	01/02/14 13:20	
Beryllium	ug/L	ND	1.0	01/02/14 13:20	
Cadmium	ug/L	ND	5.0	01/02/14 13:20	
Chromium	ug/L	ND	5.0	01/02/14 13:20	
Cobalt	ug/L	ND	5.0	01/02/14 13:20	
Copper	ug/L	ND	10.0	01/02/14 13:20	
Iron	ug/L	ND	50.0	01/02/14 13:20	
Lead	ug/L	ND	5.0	01/02/14 13:20	
Nickel	ug/L	ND	5.0	01/02/14 13:20	
Selenium	ug/L	ND	15.0	01/02/14 13:20	
Silver	ug/L	ND	7.0	01/02/14 13:20	
Thallium	ug/L	ND	20.0	01/02/14 13:20	
Zinc	ug/L	ND	50.0	01/02/14 13:20	

LABORATORY CONTROL SAMPLE: 1312837

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9570	96	85-115	
Antimony	ug/L	1000	990	99	85-115	
Arsenic	ug/L	1000	952	95	85-115	
Beryllium	ug/L	1000	973	97	85-115	
Cadmium	ug/L	1000	982	98	85-115	
Chromium	ug/L	1000	974	97	85-115	
Cobalt	ug/L	1000	991	99	85-115	
Copper	ug/L	1000	960	96	85-115	
Iron	ug/L	10000	9750	98	85-115	
Lead	ug/L	1000	1000	100	85-115	
Nickel	ug/L	1000	1010	101	85-115	
Selenium	ug/L	1000	990	99	85-115	
Silver	ug/L	500	494	99	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	988	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312838

1312839

Parameter	Units	60160425001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	2340	50000	50000	52600	52700	101	101	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312838 1312839												
Parameter	Units	60160425001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
			Spike Conc.	Spike Conc.						RPD	RPD	
Antimony	ug/L	ND	5000	5000	5040	4950	100	99	70-130	2	7	
Arsenic	ug/L	488	5000	5000	5880	6010	108	110	70-130	2	10	
Beryllium	ug/L	ND	5000	5000	4770	4690	95	94	70-130	2	7	
Cadmium	ug/L	ND	5000	5000	4980	4940	100	99	70-130	1	10	
Chromium	ug/L	133	5000	5000	4950	4930	96	96	70-130	0	10	
Cobalt	ug/L	ND	5000	5000	4710	4610	94	92	70-130	2	6	
Copper	ug/L	ND	5000	5000	4970	4880	99	97	70-130	2	11	
Iron	ug/L	347000	50000	50000	520000	612000	345	528	70-130	16	10	M1, R1
Lead	ug/L	65.7	5000	5000	4570	4450	90	88	70-130	3	10	
Nickel	ug/L	55.1	5000	5000	4760	4680	94	93	70-130	2	10	
Selenium	ug/L	ND	5000	5000	5600	5580	112	112	70-130	0	10	
Silver	ug/L	ND	2500	2500	2580	2560	103	102	70-130	1	10	
Thallium	ug/L	ND	5000	5000	4110	4010	82	80	70-130	3	6	
Zinc	ug/L	5830	5000	5000	12700	14100	137	165	70-130	11	11	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178
Pace Project No.: 60160425

QC Batch:	MPRP/25758	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60160425001		

METHOD BLANK: 1312832 Matrix: Water
Associated Lab Samples: 60160425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	01/02/14 13:03	
Antimony, Dissolved	ug/L	ND	10.0	01/02/14 13:03	
Arsenic, Dissolved	ug/L	ND	10.0	01/02/14 13:03	
Beryllium, Dissolved	ug/L	ND	1.0	01/02/14 13:03	
Cadmium, Dissolved	ug/L	ND	5.0	01/02/14 13:03	
Chromium, Dissolved	ug/L	ND	5.0	01/02/14 13:03	
Cobalt, Dissolved	ug/L	ND	5.0	01/02/14 13:03	
Copper, Dissolved	ug/L	ND	10.0	01/02/14 13:03	
Iron, Dissolved	ug/L	55.6	50.0	01/02/14 13:03	
Lead, Dissolved	ug/L	ND	5.0	01/02/14 13:03	
Nickel, Dissolved	ug/L	ND	5.0	01/02/14 13:03	
Selenium, Dissolved	ug/L	ND	15.0	01/02/14 13:03	
Silver, Dissolved	ug/L	ND	7.0	01/02/14 13:03	
Thallium, Dissolved	ug/L	ND	20.0	01/02/14 13:03	
Zinc, Dissolved	ug/L	ND	50.0	01/02/14 13:03	

LABORATORY CONTROL SAMPLE: 1312833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9560	96	85-115	
Antimony, Dissolved	ug/L	1000	983	98	85-115	
Arsenic, Dissolved	ug/L	1000	949	95	85-115	
Beryllium, Dissolved	ug/L	1000	970	97	85-115	
Cadmium, Dissolved	ug/L	1000	978	98	85-115	
Chromium, Dissolved	ug/L	1000	966	97	85-115	
Cobalt, Dissolved	ug/L	1000	986	99	85-115	
Copper, Dissolved	ug/L	1000	949	95	85-115	
Iron, Dissolved	ug/L	10000	9680	97	85-115	
Lead, Dissolved	ug/L	1000	1000	100	85-115	
Nickel, Dissolved	ug/L	1000	1000	100	85-115	
Selenium, Dissolved	ug/L	1000	986	99	85-115	
Silver, Dissolved	ug/L	500	492	98	85-115	
Thallium, Dissolved	ug/L	1000	1020	102	85-115	
Zinc, Dissolved	ug/L	1000	984	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312834 1312835

Parameter	Units	60160425001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2310	50000	50000	51400	51100	98	98	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1312834 1312835												
Parameter	Units	60160425001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
			Spike Conc.	Spike Conc.						RPD	RPD	
Antimony, Dissolved	ug/L	ND	5000	5000	5040	4950	100	99	70-130	2	7	
Arsenic, Dissolved	ug/L	502	5000	5000	5430	5440	99	99	70-130	0	10	
Beryllium, Dissolved	ug/L	ND	5000	5000	4930	4830	99	97	70-130	2	7	
Cadmium, Dissolved	ug/L	ND	5000	5000	4990	4900	100	98	70-130	2	10	
Chromium, Dissolved	ug/L	141	5000	5000	4950	4940	96	96	70-130	0	10	
Cobalt, Dissolved	ug/L	ND	5000	5000	4820	4720	96	94	70-130	2	6	
Copper, Dissolved	ug/L	ND	5000	5000	5000	4930	100	98	70-130	1	11	
Iron, Dissolved	ug/L	445000	50000	50000	385000	446000	-121	2	70-130	15	10	M1, R1
Lead, Dissolved	ug/L	66.8	5000	5000	4710	4610	93	91	70-130	2	10	
Nickel, Dissolved	ug/L	66.8	5000	5000	4840	4760	95	94	70-130	2	10	
Selenium, Dissolved	ug/L	ND	5000	5000	5320	5260	106	105	70-130	1	10	
Silver, Dissolved	ug/L	ND	2500	2500	2560	2520	103	101	70-130	2	10	
Thallium, Dissolved	ug/L	ND	5000	5000	4390	4270	88	85	70-130	3	6	
Zinc, Dissolved	ug/L	5550	5000	5000	8900	9560	67	80	70-130	7	11	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178
Pace Project No.: 60160425

QC Batch:	MSV/58655	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60160425001		

METHOD BLANK: 1313116 Matrix: Water
Associated Lab Samples: 60160425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/31/13 11:55	N2
1,1,2-Trichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,2-Dichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/31/13 11:55	
Acetone	ug/L	ND	10.0	12/31/13 11:55	N2
Benzene	ug/L	ND	1.0	12/31/13 11:55	
Bromodichloromethane	ug/L	ND	1.0	12/31/13 11:55	
Bromoform	ug/L	ND	1.0	12/31/13 11:55	
Bromomethane	ug/L	ND	5.0	12/31/13 11:55	
Carbon tetrachloride	ug/L	ND	1.0	12/31/13 11:55	
Chloroethane	ug/L	ND	1.0	12/31/13 11:55	
Chloroform	ug/L	ND	1.0	12/31/13 11:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/31/13 11:55	N2
Ethylbenzene	ug/L	ND	1.0	12/31/13 11:55	
Methylene chloride	ug/L	ND	1.0	12/31/13 11:55	
Tetrachloroethene	ug/L	ND	1.0	12/31/13 11:55	
Toluene	ug/L	ND	1.0	12/31/13 11:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/31/13 11:55	
Trichloroethene	ug/L	ND	1.0	12/31/13 11:55	
Vinyl chloride	ug/L	ND	1.0	12/31/13 11:55	
Xylene (Total)	ug/L	ND	3.0	12/31/13 11:55	N2
1,2-Dichloroethane-d4 (S)	%	109	80-120	12/31/13 11:55	
4-Bromofluorobenzene (S)	%	99	80-120	12/31/13 11:55	
Toluene-d8 (S)	%	95	80-120	12/31/13 11:55	

LABORATORY CONTROL SAMPLE: 1313117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.8	94	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	15.9	80	59-138	N2
1,1,2-Trichloroethane	ug/L	20	19.3	96	69-127	
1,2-Dichloroethane	ug/L	20	18.0	90	71-129	
1,4-Dichlorobenzene	ug/L	20	17.5	87	68-124	
Acetone	ug/L	100	84.5	85	40-160	N2
Benzene	ug/L	20	18.9	94	73-129	
Bromodichloromethane	ug/L	20	16.1	80	63-129	
Bromoform	ug/L	20	22.2	111	52-123	
Bromomethane	ug/L	20	14.8	74	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	13.2	66	42-160	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

LABORATORY CONTROL SAMPLE: 1313117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	20	19.7	99	60-120	
cis-1,2-Dichloroethene	ug/L	20	16.2	81	70-125	N2
Ethylbenzene	ug/L	20	20.8	104	66-133	
Methylene chloride	ug/L	20	17.0	85	56-135	
Tetrachloroethene	ug/L	20	17.8	89	64-143	
Toluene	ug/L	20	15.5	77	70-130	
trans-1,2-Dichloroethene	ug/L	20	14.4	72	67-149	
Trichloroethene	ug/L	20	17.4	87	71-130	
Vinyl chloride	ug/L	20	14.3	71	41-160	
Xylene (Total)	ug/L	60	58.8	98	67-130	N2
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			92	80-120	
Toluene-d8 (S)	%			83	80-120	

MATRIX SPIKE SAMPLE: 1313118

Parameter	Units	60160368001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4080	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3680	92	46-157	N2
1,1,2-Trichloroethane	ug/L	ND	4000	4390	110	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3390	85	49-155	
1,4-Dichlorobenzene	ug/L	1040	4000	4640	90	18-147	
Acetone	ug/L	167000	20000	175000	39	40-160	M1,N2
Benzene	ug/L	ND	4000	3820	94	37-151	
Bromodichloromethane	ug/L	ND	4000	3430	86	35-155	
Bromoform	ug/L	ND	4000	3730	93	45-133	
Bromomethane	ug/L	ND	4000	2430	61	10-160	
Carbon tetrachloride	ug/L	ND	4000	3900	97	70-140	
Chloroethane	ug/L	ND	4000	2630	66	14-160	
Chloroform	ug/L	ND	4000	3900	98	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3290	82	19-160	N2
Ethylbenzene	ug/L	ND	4000	4190	100	37-154	
Methylene chloride	ug/L	ND	4000	3180	80	15-156	
Tetrachloroethene	ug/L	ND	4000	3920	98	64-148	
Toluene	ug/L	ND	4000	3510	86	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3080	77	54-156	
Trichloroethene	ug/L	ND	4000	3600	90	71-157	
Vinyl chloride	ug/L	ND	4000	2950	74	10-160	
Xylene (Total)	ug/L	737	12000	12200	96	12-153	N2
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				95	80-120	
Preservation pH		6.0		6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

QC Batch: OEXT/42128

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60160425001

METHOD BLANK: 1312479

Matrix: Water

Associated Lab Samples: 60160425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	01/03/14 00:23	
2,4,6-Trichlorophenol	ug/L	ND	5.0	01/03/14 00:23	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	01/03/14 00:23	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	01/03/14 00:23	
Hexachlorocyclopentadiene	ug/L	ND	5.0	01/03/14 00:23	
Hexachloroethane	ug/L	ND	5.0	01/03/14 00:23	
Naphthalene	ug/L	ND	5.0	01/03/14 00:23	
Nitrobenzene	ug/L	ND	5.0	01/03/14 00:23	
Pentachlorophenol	ug/L	ND	5.0	01/03/14 00:23	
Phenol	ug/L	ND	5.0	01/03/14 00:23	
2,4,6-Tribromophenol (S)	%	91	39-120	01/03/14 00:23	
2-Fluorobiphenyl (S)	%	86	39-120	01/03/14 00:23	
2-Fluorophenol (S)	%	45	17-120	01/03/14 00:23	
Nitrobenzene-d5 (S)	%	82	33-120	01/03/14 00:23	
Phenol-d6 (S)	%	30	11-120	01/03/14 00:23	
Terphenyl-d14 (S)	%	94	45-120	01/03/14 00:23	

LABORATORY CONTROL SAMPLE: 1312480

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	41.2	82	46-120	
2,4,6-Trichlorophenol	ug/L	50	40.8	82	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	40.7	81	40-133	
Hexachloro-1,3-butadiene	ug/L	50	42.4	85	44-116	
Hexachlorocyclopentadiene	ug/L	100	70.4	70	24-120	
Hexachloroethane	ug/L	50	40.9	82	43-113	
Naphthalene	ug/L	50	40.9	82	48-120	
Nitrobenzene	ug/L	50	40.1	80	48-120	
Pentachlorophenol	ug/L	50	50.9	102	47-120	
Phenol	ug/L	50	16.4	33	16-112	
2,4,6-Tribromophenol (S)	%			91	39-120	
2-Fluorobiphenyl (S)	%			85	39-120	
2-Fluorophenol (S)	%			45	17-120	
Nitrobenzene-d5 (S)	%			83	33-120	
Phenol-d6 (S)	%			31	11-120	
Terphenyl-d14 (S)	%			94	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

MATRIX SPIKE SAMPLE:		1312481					
Parameter	Units	60160425001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3740	75	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4260	85	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3770J	75	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3900	78	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	6720	67	11-120	
Hexachloroethane	ug/L	ND	5000	3910	78	40-113	
Naphthalene	ug/L	1030	5000	4580	71	45-120	
Nitrobenzene	ug/L	ND	5000	3780	76	38-120	
Pentachlorophenol	ug/L	ND	5000	5710	114	43-135	
Phenol	ug/L	11700	5000	11300	-9	13-112	M1
2,4,6-Tribromophenol (S)	%				90	39-120	
2-Fluorobiphenyl (S)	%				84	39-120	
2-Fluorophenol (S)	%				45	17-120	
Nitrobenzene-d5 (S)	%				118	33-120	
Phenol-d6 (S)	%				43	11-120	
Terphenyl-d14 (S)	%				92	45-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

QC Batch: WET/45401

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60160425001

METHOD BLANK: 1312661

Matrix: Water

Associated Lab Samples: 60160425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/31/13 10:37	

LABORATORY CONTROL SAMPLE: 1312662

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.9	100	78-114	

MATRIX SPIKE SAMPLE: 1312665

Parameter	Units	60160389002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	39.4	98	78-114	

SAMPLE DUPLICATE: 1312666

Parameter	Units	60160426002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	38.5	37.7	2	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

QC Batch: WET/45448

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160425001

METHOD BLANK: 1313679

Matrix: Water

Associated Lab Samples: 60160425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	01/02/14 10:29	

LABORATORY CONTROL SAMPLE: 1313680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	19.6	98	64-132	

MATRIX SPIKE SAMPLE: 1313681

Parameter	Units	60160185001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	<1.4	21.7	27.0	118	64-132	

SAMPLE DUPLICATE: 1313683

Parameter	Units	60159971001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

QC Batch: WET/45428

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160425001

METHOD BLANK: 1313077

Matrix: Water

Associated Lab Samples: 60160425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/31/13 10:00	

SAMPLE DUPLICATE: 1313078

Parameter	Units	60160464001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	7.0	6.0	15	25	

SAMPLE DUPLICATE: 1313079

Parameter	Units	60160413002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

QC Batch: WET/45391 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60160425001

SAMPLE DUPLICATE: 1312429

Parameter	Units	60160410001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.1	5.2	1	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

QC Batch: WET/45395

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160425001

METHOD BLANK: 1312528

Matrix: Water

Associated Lab Samples: 60160425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	01/02/14 13:08	

LABORATORY CONTROL SAMPLE: 1312529

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	203	102	85-115	

SAMPLE DUPLICATE: 1312530

Parameter	Units	60160417002 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	7.9	7.3	8	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

QC Batch: WETA/27741

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160425001

METHOD BLANK: 1314477

Matrix: Water

Associated Lab Samples: 60160425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	01/06/14 15:01	

LABORATORY CONTROL SAMPLE: 1314478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	107	90-110	

MATRIX SPIKE SAMPLE: 1314479

Parameter	Units	60160372001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	839	1000	2050	121	90-110	M1

SAMPLE DUPLICATE: 1314480

Parameter	Units	60160473001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	875	851	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

QC Batch: WETA/27723

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 60160425001

METHOD BLANK: 1313688

Matrix: Water

Associated Lab Samples: 60160425001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	01/03/14 07:46	

LABORATORY CONTROL SAMPLE: 1313689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	52.9	106	90-110	

MATRIX SPIKE SAMPLE: 1313690

Parameter	Units	60160311001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	64.4	110	90-110	

MATRIX SPIKE SAMPLE: 1313692

Parameter	Units	60160288001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	47.7	95	90-110	

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QUALIFIERS

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D9 Dissolved result is greater than the total. Data is within laboratory control limits.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

R1 RPD value was outside control limits.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-178

Pace Project No.: 60160425

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160425001	316-178	EPA 200.7	MPRP/25759	EPA 200.7	ICP/19760
60160425001	316-178	EPA 200.7	MPRP/25758	EPA 200.7	ICP/19759
60160425001	316-178	EPA 245.1	MERP/8043	EPA 245.1	MERC/7998
60160425001	316-178	EPA 245.1	MERP/8042	EPA 245.1	MERC/7997
60160425001	316-178	EPA 625	OEXT/42128	EPA 625	MSSV/13399
60160425001	316-178	EPA 624 Low	MSV/58655		
60160425001	316-178	EPA 1664A	WET/45401		
60160425001	316-178	EPA 1664A	WET/45448		
60160425001	316-178	SM 2540D	WET/45428		
60160425001	316-178	SM 4500-H+B	WET/45391		
60160425001	316-178	SM 5210B	WET/45395	SM 5210B	WET/45455
60160425001	316-178	EPA 350.1	WETA/27741		
60160425001	316-178	EPA 410.4	WETA/27723		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60160425



60160425

Client Name: Rep- BARR

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ VR

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ ZipL

Thermometer Used: T-289 / T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 1.2

Date and initials of person examining contents: 8/12/28

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Bad, PL</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>W</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☐ Yes ☒ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased):		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: nwo fl (APB)

Date: 12/30/13

January 07, 2014

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: UNTREATED COMMINGLED
Pace Project No.: 60160460

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 28, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160460001	TCLP 12-27	Water	12/27/13 12:17	12/28/13 01:45
60160460002	TRIP BLANK	Water	12/27/13 12:17	12/28/13 01:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160460001	TCLP 12-27	EPA 8260	RAB	13
		EPA 5030B/8260	JTS	25
		EPA 1664A	JMC1	1
		SM 2540B	RAH	1
60160460002	TRIP BLANK	EPA 5030B/8260	JTS	25

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

Sample: TCLP 12-27		Lab ID: 60160460001	Collected: 12/27/13 12:17	Received: 12/28/13 01:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV TCLP		Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 12/31/13 00:00						
Benzene	ND ug/L		250	5		12/31/13 15:36	71-43-2	
2-Butanone (MEK)	43500 ug/L		5000	5		12/31/13 15:36	78-93-3	
Carbon tetrachloride	ND ug/L		250	5		12/31/13 15:36	56-23-5	
Chlorobenzene	ND ug/L		250	5		12/31/13 15:36	108-90-7	
Chloroform	ND ug/L		1000	5		12/31/13 15:36	67-66-3	
1,2-Dichloroethane	ND ug/L		250	5		12/31/13 15:36	107-06-2	
1,1-Dichloroethene	ND ug/L		250	5		12/31/13 15:36	75-35-4	
Tetrachloroethene	ND ug/L		250	5		12/31/13 15:36	127-18-4	
Trichloroethene	ND ug/L		250	5		12/31/13 15:36	79-01-6	
Vinyl chloride	ND ug/L		100	5		12/31/13 15:36	75-01-4	
Surrogates								
1,2-Dichloroethane-d4 (S)	98 %		80-120	5		12/31/13 15:36	17060-07-0	
Toluene-d8 (S)	101 %		80-120	5		12/31/13 15:36	2037-26-5	
4-Bromofluorobenzene (S)	101 %		80-120	5		12/31/13 15:36	460-00-4	
8260 MSV		Analytical Method: EPA 5030B/8260						
Benzene	812 ug/L		200	200		12/30/13 15:16	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/30/13 15:16	75-27-4	
Bromoform	ND ug/L		200	200		12/30/13 15:16	75-25-2	
Bromomethane	ND ug/L		1000	200		12/30/13 15:16	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/30/13 15:16	56-23-5	
Chloroethane	ND ug/L		200	200		12/30/13 15:16	75-00-3	
Chloroform	ND ug/L		200	200		12/30/13 15:16	67-66-3	
1,4-Dichlorobenzene	532 ug/L		200	200		12/30/13 15:16	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/30/13 15:16	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/30/13 15:16	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		12/30/13 15:16	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/30/13 15:16	100-41-4	
Methylene chloride	ND ug/L		200	200		12/30/13 15:16	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/30/13 15:16	79-34-5	
Tetrachloroethene	ND ug/L		200	200		12/30/13 15:16	127-18-4	
Toluene	200 ug/L		200	200		12/30/13 15:16	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/30/13 15:16	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		12/30/13 15:16	79-00-5	
Trichloroethene	ND ug/L		200	200		12/30/13 15:16	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/30/13 15:16	75-01-4	
Xylene (Total)	662 ug/L		600	200		12/30/13 15:16	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	200		12/30/13 15:16	460-00-4	D3
1,2-Dichloroethane-d4 (S)	101 %		80-120	200		12/30/13 15:16	17060-07-0	
Toluene-d8 (S)	99 %		80-120	200		12/30/13 15:16	2037-26-5	
Preservation pH	6.0		0.10	200		12/30/13 15:16		pH
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	1210 mg/L		5.0	1		12/31/13 10:44		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

Sample: TCLP 12-27		Lab ID: 60160460001	Collected: 12/27/13 12:17	Received: 12/28/13 01:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540B Total Solids		Analytical Method: SM 2540B						
Total Solids	52200	mg/L	5.0	1		12/30/13 17:01		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

Sample: TRIP BLANK		Lab ID: 60160460002	Collected: 12/27/13 12:17	Received: 12/28/13 01:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 5030B/8260						
Benzene	ND ug/L		1.0	1		12/30/13 13:06	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/30/13 13:06	75-27-4	
Bromoform	ND ug/L		1.0	1		12/30/13 13:06	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/30/13 13:06	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/30/13 13:06	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/30/13 13:06	75-00-3	
Chloroform	ND ug/L		1.0	1		12/30/13 13:06	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/30/13 13:06	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/30/13 13:06	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/30/13 13:06	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/30/13 13:06	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/30/13 13:06	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/30/13 13:06	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/30/13 13:06	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		12/30/13 13:06	127-18-4	
Toluene	ND ug/L		1.0	1		12/30/13 13:06	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/30/13 13:06	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/30/13 13:06	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/30/13 13:06	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/30/13 13:06	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/30/13 13:06	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	1		12/30/13 13:06	460-00-4	
1,2-Dichloroethane-d4 (S)	102 %		80-120	1		12/30/13 13:06	17060-07-0	
Toluene-d8 (S)	101 %		80-120	1		12/30/13 13:06	2037-26-5	
Preservation pH	1.0		0.10	1		12/30/13 13:06		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

QC Batch: MSV/58670

Analysis Method: EPA 8260

QC Batch Method: EPA 8260

Analysis Description: 8260 MSV TCLP

Associated Lab Samples: 60160460001

METHOD BLANK: 1313271

Matrix: Water

Associated Lab Samples: 60160460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	12/31/13 14:50	
1,2-Dichloroethane	ug/L	ND	50.0	12/31/13 14:50	
2-Butanone (MEK)	ug/L	ND	1000	12/31/13 14:50	
Benzene	ug/L	ND	50.0	12/31/13 14:50	
Carbon tetrachloride	ug/L	ND	50.0	12/31/13 14:50	
Chlorobenzene	ug/L	ND	50.0	12/31/13 14:50	
Chloroform	ug/L	ND	200	12/31/13 14:50	
Tetrachloroethene	ug/L	ND	50.0	12/31/13 14:50	
Trichloroethene	ug/L	ND	50.0	12/31/13 14:50	
Vinyl chloride	ug/L	ND	20.0	12/31/13 14:50	
1,2-Dichloroethane-d4 (S)	%	101	80-120	12/31/13 14:50	
4-Bromofluorobenzene (S)	%	98	80-120	12/31/13 14:50	
Toluene-d8 (S)	%	99	80-120	12/31/13 14:50	

LABORATORY CONTROL SAMPLE: 1313272

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	1000	881	88	70-127	
1,2-Dichloroethane	ug/L	1000	917	92	72-122	
2-Butanone (MEK)	ug/L	5000	3760	75	69-124	
Benzene	ug/L	1000	960	96	73-122	
Carbon tetrachloride	ug/L	1000	1090	109	73-125	
Chlorobenzene	ug/L	1000	978	98	80-120	
Chloroform	ug/L	1000	895	90	76-120	
Tetrachloroethene	ug/L	1000	997	100	79-122	
Trichloroethene	ug/L	1000	972	97	76-120	
Vinyl chloride	ug/L	1000	747	75	57-140	
1,2-Dichloroethane-d4 (S)	%			97	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1313273

Parameter	Units	60160460001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	ND	5000	4220	84	66-142	
1,2-Dichloroethane	ug/L	ND	5000	4950	99	53-144	
2-Butanone (MEK)	ug/L	43500	25000	60000	66	54-127	
Benzene	ug/L	ND	5000	4970	95	48-150	
Carbon tetrachloride	ug/L	ND	5000	4860	97	68-145	
Chlorobenzene	ug/L	ND	5000	5110	102	68-131	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

MATRIX SPIKE SAMPLE:		1313273					
Parameter	Units	60160460001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	ND	5000	4820	96	69-126	
Tetrachloroethene	ug/L	ND	5000	4630	93	66-139	
Trichloroethene	ug/L	ND	5000	4610	92	67-130	
Vinyl chloride	ug/L	ND	5000	3710	74	47-159	
1,2-Dichloroethane-d4 (S)	%				98	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				101	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

QC Batch:	MSV/58635	Analysis Method:	EPA 5030B/8260
QC Batch Method:	EPA 5030B/8260	Analysis Description:	8260 MSV Water 10 mL Purge
Associated Lab Samples:	60160460001, 60160460002		

METHOD BLANK: 1312892 Matrix: Water

Associated Lab Samples: 60160460001, 60160460002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/30/13 11:29	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/30/13 11:29	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/30/13 11:29	
1,2-Dichloroethane	ug/L	ND	1.0	12/30/13 11:29	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/30/13 11:29	
Benzene	ug/L	ND	1.0	12/30/13 11:29	
Bromodichloromethane	ug/L	ND	1.0	12/30/13 11:29	
Bromoform	ug/L	ND	1.0	12/30/13 11:29	
Bromomethane	ug/L	ND	5.0	12/30/13 11:29	
Carbon tetrachloride	ug/L	ND	1.0	12/30/13 11:29	
Chloroethane	ug/L	ND	1.0	12/30/13 11:29	
Chloroform	ug/L	ND	1.0	12/30/13 11:29	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/30/13 11:29	
Ethylbenzene	ug/L	ND	1.0	12/30/13 11:29	
Methylene chloride	ug/L	ND	1.0	12/30/13 11:29	
Tetrachloroethene	ug/L	ND	1.0	12/30/13 11:29	
Toluene	ug/L	ND	1.0	12/30/13 11:29	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/30/13 11:29	
Trichloroethene	ug/L	ND	1.0	12/30/13 11:29	
Vinyl chloride	ug/L	ND	1.0	12/30/13 11:29	
Xylene (Total)	ug/L	ND	3.0	12/30/13 11:29	
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/30/13 11:29	
4-Bromofluorobenzene (S)	%	102	80-120	12/30/13 11:29	
Toluene-d8 (S)	%	100	80-120	12/30/13 11:29	

LABORATORY CONTROL SAMPLE: 1312893

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.9	100	75-124	
1,1,2,2-Tetrachloroethane	ug/L	20	20.2	101	73-120	
1,1,2-Trichloroethane	ug/L	20	20.9	105	76-120	
1,2-Dichloroethane	ug/L	20	19.9	99	72-122	
1,4-Dichlorobenzene	ug/L	20	20.0	100	80-120	
Benzene	ug/L	20	19.8	99	73-122	
Bromodichloromethane	ug/L	20	20.0	100	73-120	
Bromoform	ug/L	20	21.0	105	74-120	
Bromomethane	ug/L	20	22.8	114	40-146	
Carbon tetrachloride	ug/L	20	20.0	100	73-125	
Chloroethane	ug/L	20	18.4	92	56-159	
Chloroform	ug/L	20	19.9	100	76-120	
cis-1,2-Dichloroethene	ug/L	20	19.5	97	69-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

LABORATORY CONTROL SAMPLE: 1312893

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	20.0	100	76-123	
Methylene chloride	ug/L	20	20.0	100	71-123	
Tetrachloroethene	ug/L	20	19.9	100	79-122	
Toluene	ug/L	20	19.6	98	76-122	
trans-1,2-Dichloroethene	ug/L	20	19.4	97	78-126	
Trichloroethene	ug/L	20	19.7	99	76-120	
Vinyl chloride	ug/L	20	18.9	95	57-140	
Xylene (Total)	ug/L	60	58.1	97	76-122	
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

QC Batch: WET/45434

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60160460001

METHOD BLANK: 1313144

Matrix: Water

Associated Lab Samples: 60160460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/31/13 10:43	

LABORATORY CONTROL SAMPLE: 1313145

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	42.5	106	78-114	

MATRIX SPIKE SAMPLE: 1313146

Parameter	Units	60160288003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	44.4	46.9	101	78-114	

SAMPLE DUPLICATE: 1313147

Parameter	Units	60160473001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	1160	4.5J		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

QC Batch: WET/45422

Analysis Method: SM 2540B

QC Batch Method: SM 2540B

Analysis Description: 2540B Total Solids

Associated Lab Samples: 60160460001

METHOD BLANK: 1312953

Matrix: Water

Associated Lab Samples: 60160460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	mg/L	ND	5.0	12/30/13 17:00	

LABORATORY CONTROL SAMPLE: 1312954

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	mg/L	1000	973	97	80-120	

SAMPLE DUPLICATE: 1312955

Parameter	Units	60160250001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	mg/L	16600	16900	2	10	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSV/58635

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

pH Post-analysis pH measurement indicates insufficient VOA sample preservation.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: UNTREATED COMMINGLED

Pace Project No.: 60160460

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160460001	TCLP 12-27	EPA 8260	MSV/58670		
60160460001	TCLP 12-27	EPA 5030B/8260	MSV/58635		
60160460002	TRIP BLANK	EPA 5030B/8260	MSV/58635		
60160460001	TCLP 12-27	EPA 1664A	WET/45434		
60160460001	TCLP 12-27	SM 2540B	WET/45422		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical
www.pacelabs.com

Balance ID: 600EXT3 Reviewed by:

[illegible]

NOTE: If Wet Solids are ≥ 0.5 and $< 5\%$ and a small amount of liquid is entrapped in the filter, then determine Percent Dry Solids. If the entrapped liquid is oily (non-aqueous) do not determine Percent Dry Solids. If Solids are $< 0.5\%$, tumbling is not required because the filtrate is considered to be the TCLP/SPLE extract.

- (1) Dry Weight #1 and Dry Weight #2 must be within 1% of each other. If the weights are within 1% of each other, use Dry Weight #2 in further calculations. If not within 1%, continue drying and weighing until two successive weighings are within 1%.
- (2) If compatible, combine the filtered liquid resulting from extraction with the initial liquid phase of sample. If the initial liquid phase is not compatible with the filtered liquid resulting from extraction, do not combine. Analyze liquids separately and combine the results mathematically.

If solids are ≥ 5.0 and $< 100\%$	$\text{Weight of waste to charge the ZHE} = \frac{25}{\text{Percent solids}} \times 100$
	$\text{Weight of waste to filter} = \frac{\text{mL of leachate required}}{20 \times \text{Percent solids}} \times 100$



Sample Condition Upon Receipt

WO#: 60160460



60160460

Client Name: BAER

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other 200

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.0

Date and initials of person examining contents: 8/2/28

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☒ No ☐ N/A	6.
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>wt</u>	15.
All containers needing preservation have been checked.	☐ Yes ☒ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased): <u>Correct</u>		18.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution:

1664 was 250ml container?

Project Manager Review: mw 6/2 (AEB)

Date: 12/30/13

Section A

Required Client Information:

Company: BARR ENGINEERING

Address:

Email To:

Phone: Fax:

Requested Due Date/TAT:

Section B

Required Project Information:

Report To: ED GALBRAITH/BARR

Copy To: SCOTT FEDAK/FEEZOR
DANA BAKER/MARGARET TREANOR-BARR

Purchase Order No.: PO 3727110

Project Name: UNTREATED COMMINGLED

Project Number:

Section C

Invoice Information:

Attention: JANET ROLLEN

Company Name: REPUBLIC SERVICES

Address: BRIDGETON, MO 63044

Pace Quote Reference:

Pace Project Manager: Angie Brown 913-563-1402

Pace Profile #: PROFILE 6787-LINE 6

Page: 1 of 1

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location

STATE: MO

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test ↓	Y/N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS		
	Paul Unsworth / FEI	12-27-13	2:17pm	Vanetta Quach	12-27-13	2:17pm			
				Shirley McElroy / DAST	12/28	6:45	4.0	Y	Y

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: WILLIAM ABERNATHY					
SIGNATURE of SAMPLER: [Signature]	DATE Signed (MM/DD/YY): 12/27/13				

January 07, 2014

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-179
Pace Project No.: 60160474

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 30, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160474001	316-179	Water	12/28/13 16:20	12/30/13 13:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160474001	316-179	EPA 200.7	SMW	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JMC	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

Sample: 316-179		Lab ID: 60160474001	Collected: 12/28/13 16:20		Received: 12/30/13 13:30		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	4480 ug/L		375	1	12/31/13 08:30	01/02/14 14:45	7429-90-5	D3
Antimony	ND ug/L		50.0	1	12/31/13 08:30	01/02/14 14:45	7440-36-0	
Arsenic	844 ug/L		50.0	1	12/31/13 08:30	01/02/14 14:45	7440-38-2	
Beryllium	ND ug/L		5.0	1	12/31/13 08:30	01/02/14 14:45	7440-41-7	
Cadmium	ND ug/L		25.0	1	12/31/13 08:30	01/02/14 14:45	7440-43-9	
Chromium	237 ug/L		25.0	1	12/31/13 08:30	01/02/14 14:45	7440-47-3	
Cobalt	27.4 ug/L		25.0	1	12/31/13 08:30	01/02/14 14:45	7440-48-4	
Copper	ND ug/L		50.0	1	12/31/13 08:30	01/02/14 14:45	7440-50-8	
Iron	744000 ug/L		250	1	12/31/13 08:30	01/02/14 14:45	7439-89-6	
Lead	116 ug/L		25.0	1	12/31/13 08:30	01/02/14 14:45	7439-92-1	
Nickel	99.8 ug/L		25.0	1	12/31/13 08:30	01/02/14 14:45	7440-02-0	
Selenium	ND ug/L		75.0	1	12/31/13 08:30	01/02/14 14:45	7782-49-2	
Silver	ND ug/L		35.0	1	12/31/13 08:30	01/02/14 14:45	7440-22-4	
Thallium	ND ug/L		100	1	12/31/13 08:30	01/02/14 14:45	7440-28-0	
Zinc	8490 ug/L		500	2	12/31/13 08:30	01/02/14 14:52	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3390 ug/L		375	1	12/31/13 00:00	01/02/14 14:12	7429-90-5	D3
Antimony, Dissolved	ND ug/L		50.0	1	12/31/13 00:00	01/02/14 14:12	7440-36-0	
Arsenic, Dissolved	780 ug/L		50.0	1	12/31/13 00:00	01/02/14 14:12	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	1	12/31/13 00:00	01/02/14 14:12	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	1	12/31/13 00:00	01/02/14 14:12	7440-43-9	
Chromium, Dissolved	214 ug/L		25.0	1	12/31/13 00:00	01/02/14 14:12	7440-47-3	
Cobalt, Dissolved	ND ug/L		25.0	1	12/31/13 00:00	01/02/14 14:12	7440-48-4	
Copper, Dissolved	ND ug/L		50.0	1	12/31/13 00:00	01/02/14 14:12	7440-50-8	
Iron, Dissolved	638000 ug/L		250	1	12/31/13 00:00	01/02/14 14:12	7439-89-6	
Lead, Dissolved	73.7 ug/L		25.0	1	12/31/13 00:00	01/02/14 14:12	7439-92-1	
Nickel, Dissolved	90.4 ug/L		25.0	1	12/31/13 00:00	01/02/14 14:12	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	1	12/31/13 00:00	01/02/14 14:12	7782-49-2	
Silver, Dissolved	ND ug/L		35.0	1	12/31/13 00:00	01/02/14 14:12	7440-22-4	
Thallium, Dissolved	ND ug/L		100	1	12/31/13 00:00	01/02/14 14:12	7440-28-0	
Zinc, Dissolved	8060 ug/L		500	2	12/31/13 00:00	01/02/14 14:15	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	13.9 ug/L		6.0	1	01/02/14 11:45	01/02/14 15:20	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		6.0	1	01/02/14 11:45	01/02/14 14:58	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	2	12/31/13 00:00	01/02/14 23:42	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	2	12/31/13 00:00	01/02/14 23:42	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	2	12/31/13 00:00	01/02/14 23:42	77-47-4	
Hexachloroethane	ND ug/L		1000	2	12/31/13 00:00	01/02/14 23:42	67-72-1	
Naphthalene	1120 ug/L		1000	2	12/31/13 00:00	01/02/14 23:42	91-20-3	
Nitrobenzene	ND ug/L		1000	2	12/31/13 00:00	01/02/14 23:42	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

Sample: 316-179		Lab ID: 60160474001	Collected: 12/28/13 16:20	Received: 12/30/13 13:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	2	12/31/13 00:00	01/02/14 23:42	87-86-5	
Phenol	10500 ug/L		1000	2	12/31/13 00:00	01/02/14 23:42	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	2	12/31/13 00:00	01/02/14 23:42	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	2	12/31/13 00:00	01/02/14 23:42	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	140 %		33-120	2	12/31/13 00:00	01/02/14 23:42	4165-60-0	S0
2-Fluorobiphenyl (S)	96 %		39-120	2	12/31/13 00:00	01/02/14 23:42	321-60-8	
Terphenyl-d14 (S)	104 %		45-120	2	12/31/13 00:00	01/02/14 23:42	1718-51-0	
Phenol-d6 (S)	45 %		11-120	2	12/31/13 00:00	01/02/14 23:42	13127-88-3	
2-Fluorophenol (S)	47 %		17-120	2	12/31/13 00:00	01/02/14 23:42	367-12-4	
2,4,6-Tribromophenol (S)	105 %		39-120	2	12/31/13 00:00	01/02/14 23:42	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	162000 ug/L		2000	200		12/31/13 13:39	67-64-1	N2
Benzene	ND ug/L		200	200		12/31/13 13:39	71-43-2	
Bromodichloromethane	ND ug/L		200	200		12/31/13 13:39	75-27-4	
Bromoform	ND ug/L		200	200		12/31/13 13:39	75-25-2	
Bromomethane	ND ug/L		1000	200		12/31/13 13:39	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		12/31/13 13:39	56-23-5	
Chloroethane	ND ug/L		200	200		12/31/13 13:39	75-00-3	
Chloroform	ND ug/L		200	200		12/31/13 13:39	67-66-3	
1,4-Dichlorobenzene	729 ug/L		200	200		12/31/13 13:39	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		12/31/13 13:39	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		12/31/13 13:39	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		200	200		12/31/13 13:39	156-60-5	
Ethylbenzene	ND ug/L		200	200		12/31/13 13:39	100-41-4	
Methylene chloride	ND ug/L		200	200		12/31/13 13:39	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		12/31/13 13:39	79-34-5	N2
Tetrachloroethene	ND ug/L		200	200		12/31/13 13:39	127-18-4	
Toluene	ND ug/L		200	200		12/31/13 13:39	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		12/31/13 13:39	71-55-6	
1,1,2-Trichloroethane	213 ug/L		200	200		12/31/13 13:39	79-00-5	
Trichloroethene	ND ug/L		200	200		12/31/13 13:39	79-01-6	
Vinyl chloride	ND ug/L		200	200		12/31/13 13:39	75-01-4	
Xylene (Total)	ND ug/L		600	200		12/31/13 13:39	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	200		12/31/13 13:39	460-00-4	
Toluene-d8 (S)	104 %		80-120	200		12/31/13 13:39	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	200		12/31/13 13:39	17060-07-0	
Preservation pH	6.0		1.0	200		12/31/13 13:39		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	1090 mg/L		5.0	1		12/31/13 10:45		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	6.4 mg/L		5.0	1		01/02/14 10:32		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

Sample: 316-179		Lab ID: 60160474001	Collected: 12/28/13 16:20	Received: 12/30/13 13:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2360	mg/L	5.0	1		12/31/13 09:49		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		12/31/13 15:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	29700	mg/L	2.0	1	12/30/13 16:11	01/04/14 12:31		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	919	mg/L	50.0	500		01/06/14 15:09	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	57700	mg/L	5000	500		01/03/14 07:53		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

QC Batch: MERP/8047

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60160474001

METHOD BLANK: 1313735

Matrix: Water

Associated Lab Samples: 60160474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/02/14 15:09	

LABORATORY CONTROL SAMPLE: 1313736

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313737 1313738

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	50.1	150	150	168	173	79	82	70-130	3	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

QC Batch: MERP/8046

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160474001

METHOD BLANK: 1313731

Matrix: Water

Associated Lab Samples: 60160474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/02/14 14:42	

LABORATORY CONTROL SAMPLE: 1313732

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.5	110	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313733 1313734

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	104	108	69	72	70-130	5	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179
Pace Project No.: 60160474

QC Batch:	MPRP/25774	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
Associated Lab Samples:	60160474001		

METHOD BLANK: 1313130 Matrix: Water
Associated Lab Samples: 60160474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	01/02/14 14:28	
Antimony	ug/L	ND	10.0	01/02/14 14:28	
Arsenic	ug/L	ND	10.0	01/02/14 14:28	
Beryllium	ug/L	ND	1.0	01/02/14 14:28	
Cadmium	ug/L	ND	5.0	01/02/14 14:28	
Chromium	ug/L	ND	5.0	01/02/14 14:28	
Cobalt	ug/L	ND	5.0	01/02/14 14:28	
Copper	ug/L	ND	10.0	01/02/14 14:28	
Iron	ug/L	ND	50.0	01/02/14 14:28	
Lead	ug/L	ND	5.0	01/02/14 14:28	
Nickel	ug/L	ND	5.0	01/02/14 14:28	
Selenium	ug/L	ND	15.0	01/02/14 14:28	
Silver	ug/L	ND	7.0	01/02/14 14:28	
Thallium	ug/L	ND	20.0	01/02/14 14:28	
Zinc	ug/L	ND	50.0	01/02/14 14:28	

LABORATORY CONTROL SAMPLE: 1313131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9630	96	85-115	
Antimony	ug/L	1000	989	99	85-115	
Arsenic	ug/L	1000	961	96	85-115	
Beryllium	ug/L	1000	980	98	85-115	
Cadmium	ug/L	1000	986	99	85-115	
Chromium	ug/L	1000	984	98	85-115	
Cobalt	ug/L	1000	996	100	85-115	
Copper	ug/L	1000	958	96	85-115	
Iron	ug/L	10000	9750	97	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1010	101	85-115	
Selenium	ug/L	1000	994	99	85-115	
Silver	ug/L	500	497	99	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	1000	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313132 1313133

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	5760	50000	50000	59400	57100	107	103	70-130	4	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313132 1313133												
Parameter	Units	60160473001		MS	MSD	MS		MSD	% Rec		Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	RPD
Antimony	ug/L	ND	5000	5000	5000	5160	5080	102	101	70-130	1	7
Arsenic	ug/L	896	5000	5000	5000	6520	6160	112	105	70-130	6	10
Beryllium	ug/L	ND	5000	5000	5000	4770	4740	95	95	70-130	1	7
Cadmium	ug/L	ND	5000	5000	5000	5060	4980	101	100	70-130	2	10
Chromium	ug/L	281	5000	5000	5000	5080	4970	96	94	70-130	2	10
Cobalt	ug/L	27.9	5000	5000	5000	4690	4650	93	92	70-130	1	6
Copper	ug/L	ND	5000	5000	5000	5060	4980	101	99	70-130	2	11
Iron	ug/L	920000	50000	50000	50000	1130000	954000	426	68	70-130	17	10 M1,R1
Lead	ug/L	151	5000	5000	5000	4580	4530	89	88	70-130	1	10
Nickel	ug/L	109	5000	5000	5000	4790	4730	94	92	70-130	1	10
Selenium	ug/L	ND	5000	5000	5000	5980	5700	120	114	70-130	5	10
Silver	ug/L	ND	2500	2500	2500	2630	2570	105	103	70-130	2	10
Thallium	ug/L	ND	5000	5000	5000	4030	4050	81	81	70-130	0	6
Zinc	ug/L	12600	5000	5000	5000	19600	17000	140	88	70-130	14	11 M1,R1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179
Pace Project No.: 60160474

QC Batch:	MPRP/25773	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60160474001		

METHOD BLANK: 1313126 Matrix: Water
Associated Lab Samples: 60160474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	01/02/14 13:56	
Antimony, Dissolved	ug/L	ND	10.0	01/02/14 13:56	
Arsenic, Dissolved	ug/L	ND	10.0	01/02/14 13:56	
Beryllium, Dissolved	ug/L	ND	1.0	01/02/14 13:56	
Cadmium, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Chromium, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Cobalt, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Copper, Dissolved	ug/L	ND	10.0	01/02/14 13:56	
Iron, Dissolved	ug/L	ND	50.0	01/02/14 13:56	
Lead, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Nickel, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Selenium, Dissolved	ug/L	ND	15.0	01/02/14 13:56	
Silver, Dissolved	ug/L	ND	7.0	01/02/14 13:56	
Thallium, Dissolved	ug/L	ND	20.0	01/02/14 13:56	
Zinc, Dissolved	ug/L	ND	50.0	01/02/14 13:56	

LABORATORY CONTROL SAMPLE: 1313127

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9630	96	85-115	
Antimony, Dissolved	ug/L	1000	984	98	85-115	
Arsenic, Dissolved	ug/L	1000	962	96	85-115	
Beryllium, Dissolved	ug/L	1000	976	98	85-115	
Cadmium, Dissolved	ug/L	1000	989	99	85-115	
Chromium, Dissolved	ug/L	1000	990	99	85-115	
Cobalt, Dissolved	ug/L	1000	989	99	85-115	
Copper, Dissolved	ug/L	1000	955	95	85-115	
Iron, Dissolved	ug/L	10000	9910	99	85-115	
Lead, Dissolved	ug/L	1000	1000	100	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	981	98	85-115	
Silver, Dissolved	ug/L	500	496	99	85-115	
Thallium, Dissolved	ug/L	1000	1020	102	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313128 1313129

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2850	50000	50000	51600	51200	98	97	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313128 1313129											
Parameter	Units	60160473001		MS	MSD	MS		MSD	% Rec		Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5000	5040	5020	100	100	70-130	0
Arsenic, Dissolved	ug/L	600	5000	5000	5000	5990	5660	108	101	70-130	6
Beryllium, Dissolved	ug/L	ND	5000	5000	5000	4720	4810	94	96	70-130	2
Cadmium, Dissolved	ug/L	ND	5000	5000	5000	5020	4990	100	100	70-130	1
Chromium, Dissolved	ug/L	183	5000	5000	5000	4920	4910	95	95	70-130	0
Cobalt, Dissolved	ug/L	ND	5000	5000	5000	4660	4740	93	95	70-130	2
Copper, Dissolved	ug/L	ND	5000	5000	5000	4890	4900	97	97	70-130	0
Iron, Dissolved	ug/L	537000	50000	50000	50000	655000	514000	236	-47	70-130	24
Lead, Dissolved	ug/L	72.8	5000	5000	5000	4540	4600	89	91	70-130	1
Nickel, Dissolved	ug/L	75.8	5000	5000	5000	4770	4810	94	95	70-130	1
Selenium, Dissolved	ug/L	ND	5000	5000	5000	5560	5460	111	109	70-130	2
Silver, Dissolved	ug/L	ND	2500	2500	2500	2560	2540	102	102	70-130	1
Thallium, Dissolved	ug/L	ND	5000	5000	5000	4150	4240	83	85	70-130	2
Zinc, Dissolved	ug/L	8930	5000	5000	5000	15100	12700	123	76	70-130	17

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179
Pace Project No.: 60160474

QC Batch:	MSV/58655	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60160474001		

METHOD BLANK: 1313116 Matrix: Water
Associated Lab Samples: 60160474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/31/13 11:55	N2
1,1,2-Trichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,2-Dichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/31/13 11:55	
Acetone	ug/L	ND	10.0	12/31/13 11:55	N2
Benzene	ug/L	ND	1.0	12/31/13 11:55	
Bromodichloromethane	ug/L	ND	1.0	12/31/13 11:55	
Bromoform	ug/L	ND	1.0	12/31/13 11:55	
Bromomethane	ug/L	ND	5.0	12/31/13 11:55	
Carbon tetrachloride	ug/L	ND	1.0	12/31/13 11:55	
Chloroethane	ug/L	ND	1.0	12/31/13 11:55	
Chloroform	ug/L	ND	1.0	12/31/13 11:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/31/13 11:55	N2
Ethylbenzene	ug/L	ND	1.0	12/31/13 11:55	
Methylene chloride	ug/L	ND	1.0	12/31/13 11:55	
Tetrachloroethene	ug/L	ND	1.0	12/31/13 11:55	
Toluene	ug/L	ND	1.0	12/31/13 11:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/31/13 11:55	
Trichloroethene	ug/L	ND	1.0	12/31/13 11:55	
Vinyl chloride	ug/L	ND	1.0	12/31/13 11:55	
Xylene (Total)	ug/L	ND	3.0	12/31/13 11:55	N2
1,2-Dichloroethane-d4 (S)	%	109	80-120	12/31/13 11:55	
4-Bromofluorobenzene (S)	%	99	80-120	12/31/13 11:55	
Toluene-d8 (S)	%	95	80-120	12/31/13 11:55	

LABORATORY CONTROL SAMPLE: 1313117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.8	94	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	15.9	80	59-138	N2
1,1,2-Trichloroethane	ug/L	20	19.3	96	69-127	
1,2-Dichloroethane	ug/L	20	18.0	90	71-129	
1,4-Dichlorobenzene	ug/L	20	17.5	87	68-124	
Acetone	ug/L	100	84.5	85	40-160	N2
Benzene	ug/L	20	18.9	94	73-129	
Bromodichloromethane	ug/L	20	16.1	80	63-129	
Bromoform	ug/L	20	22.2	111	52-123	
Bromomethane	ug/L	20	14.8	74	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	13.2	66	42-160	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

LABORATORY CONTROL SAMPLE: 1313117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	20	19.7	99	60-120	
cis-1,2-Dichloroethene	ug/L	20	16.2	81	70-125	N2
Ethylbenzene	ug/L	20	20.8	104	66-133	
Methylene chloride	ug/L	20	17.0	85	56-135	
Tetrachloroethene	ug/L	20	17.8	89	64-143	
Toluene	ug/L	20	15.5	77	70-130	
trans-1,2-Dichloroethene	ug/L	20	14.4	72	67-149	
Trichloroethene	ug/L	20	17.4	87	71-130	
Vinyl chloride	ug/L	20	14.3	71	41-160	
Xylene (Total)	ug/L	60	58.8	98	67-130	N2
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			92	80-120	
Toluene-d8 (S)	%			83	80-120	

MATRIX SPIKE SAMPLE: 1313118

Parameter	Units	60160368001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4080	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3680	92	46-157	N2
1,1,2-Trichloroethane	ug/L	ND	4000	4390	110	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3390	85	49-155	
1,4-Dichlorobenzene	ug/L	1040	4000	4640	90	18-147	
Acetone	ug/L	167000	20000	175000	39	40-160	M1,N2
Benzene	ug/L	ND	4000	3820	94	37-151	
Bromodichloromethane	ug/L	ND	4000	3430	86	35-155	
Bromoform	ug/L	ND	4000	3730	93	45-133	
Bromomethane	ug/L	ND	4000	2430	61	10-160	
Carbon tetrachloride	ug/L	ND	4000	3900	97	70-140	
Chloroethane	ug/L	ND	4000	2630	66	14-160	
Chloroform	ug/L	ND	4000	3900	98	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3290	82	19-160	N2
Ethylbenzene	ug/L	ND	4000	4190	100	37-154	
Methylene chloride	ug/L	ND	4000	3180	80	15-156	
Tetrachloroethene	ug/L	ND	4000	3920	98	64-148	
Toluene	ug/L	ND	4000	3510	86	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3080	77	54-156	
Trichloroethene	ug/L	ND	4000	3600	90	71-157	
Vinyl chloride	ug/L	ND	4000	2950	74	10-160	
Xylene (Total)	ug/L	737	12000	12200	96	12-153	N2
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				95	80-120	
Preservation pH			6.0		6.0		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

QC Batch: OEXT/42143

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60160474001

METHOD BLANK: 1313356

Matrix: Water

Associated Lab Samples: 60160474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	01/02/14 22:20	
2,4,6-Trichlorophenol	ug/L	ND	5.0	01/02/14 22:20	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	01/02/14 22:20	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	01/02/14 22:20	
Hexachlorocyclopentadiene	ug/L	ND	5.0	01/02/14 22:20	
Hexachloroethane	ug/L	ND	5.0	01/02/14 22:20	
Naphthalene	ug/L	ND	5.0	01/02/14 22:20	
Nitrobenzene	ug/L	ND	5.0	01/02/14 22:20	
Pentachlorophenol	ug/L	ND	5.0	01/02/14 22:20	
Phenol	ug/L	ND	5.0	01/02/14 22:20	
2,4,6-Tribromophenol (S)	%	82	39-120	01/02/14 22:20	
2-Fluorobiphenyl (S)	%	81	39-120	01/02/14 22:20	
2-Fluorophenol (S)	%	38	17-120	01/02/14 22:20	
Nitrobenzene-d5 (S)	%	80	33-120	01/02/14 22:20	
Phenol-d6 (S)	%	24	11-120	01/02/14 22:20	
Terphenyl-d14 (S)	%	89	45-120	01/02/14 22:20	

LABORATORY CONTROL SAMPLE: 1313357

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	39.8	80	46-120	
2,4,6-Trichlorophenol	ug/L	50	42.4	85	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	39.2	78	40-133	
Hexachloro-1,3-butadiene	ug/L	50	38.1	76	44-116	
Hexachlorocyclopentadiene	ug/L	100	61.2	61	24-120	
Hexachloroethane	ug/L	50	37.3	75	43-113	
Naphthalene	ug/L	50	41.1	82	48-120	
Nitrobenzene	ug/L	50	40.6	81	48-120	
Pentachlorophenol	ug/L	50	47.1	94	47-120	
Phenol	ug/L	50	13.7	27	16-112	
2,4,6-Tribromophenol (S)	%			97	39-120	
2-Fluorobiphenyl (S)	%			88	39-120	
2-Fluorophenol (S)	%			40	17-120	
Nitrobenzene-d5 (S)	%			84	33-120	
Phenol-d6 (S)	%			26	11-120	
Terphenyl-d14 (S)	%			97	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

MATRIX SPIKE SAMPLE:		1313358					
Parameter	Units	60160473001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3550	71	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4270	85	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3510J	70	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3490	70	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	6010	60	11-120	
Hexachloroethane	ug/L	ND	5000	3580	72	40-113	
Naphthalene	ug/L	1460	5000	5010	71	45-120	
Nitrobenzene	ug/L	ND	5000	3830	77	38-120	
Pentachlorophenol	ug/L	ND	5000	5260	105	43-135	
Phenol	ug/L	9730	5000	10100	7	13-112	M1
2,4,6-Tribromophenol (S)	%				87	39-120	
2-Fluorobiphenyl (S)	%				85	39-120	
2-Fluorophenol (S)	%				38	17-120	
Nitrobenzene-d5 (S)	%				127	33-120	S0
Phenol-d6 (S)	%				37	11-120	
Terphenyl-d14 (S)	%				89	45-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

QC Batch:	WET/45434	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60160474001		

METHOD BLANK: 1313144 Matrix: Water

Associated Lab Samples: 60160474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/31/13 10:43	

LABORATORY CONTROL SAMPLE: 1313145

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	42.5	106	78-114	

MATRIX SPIKE SAMPLE: 1313146

Parameter	Units	60160288003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	44.4	46.9	101	78-114	

SAMPLE DUPLICATE: 1313147

Parameter	Units	60160473001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	1160	4.5J		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

QC Batch: WET/45448

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160474001

METHOD BLANK: 1313679

Matrix: Water

Associated Lab Samples: 60160474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	01/02/14 10:29	

LABORATORY CONTROL SAMPLE: 1313680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	19.6	98	64-132	

MATRIX SPIKE SAMPLE: 1313681

Parameter	Units	60160185001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	<1.4	21.7	27.0	118	64-132	

SAMPLE DUPLICATE: 1313683

Parameter	Units	60159971001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

QC Batch: WET/45429

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160474001

METHOD BLANK: 1313080

Matrix: Water

Associated Lab Samples: 60160474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/31/13 09:48	

SAMPLE DUPLICATE: 1313081

Parameter	Units	60160440002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1313082

Parameter	Units	60160470001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	30.0	34.0	13	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

QC Batch: WET/45441 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60160474001

SAMPLE DUPLICATE: 1313521

Parameter	Units	60160464001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

QC Batch: WET/45424

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160474001

METHOD BLANK: 1312993

Matrix: Water

Associated Lab Samples: 60160474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	01/04/14 12:29	

LABORATORY CONTROL SAMPLE: 1312994

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	187	94	85-115	

SAMPLE DUPLICATE: 1312995

Parameter	Units	60160474001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	29700	30300	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

QC Batch: WETA/27741

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160474001

METHOD BLANK: 1314477

Matrix: Water

Associated Lab Samples: 60160474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	01/06/14 15:01	

LABORATORY CONTROL SAMPLE: 1314478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	107	90-110	

MATRIX SPIKE SAMPLE: 1314479

Parameter	Units	60160372001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	839	1000	2050	121	90-110	M1

SAMPLE DUPLICATE: 1314480

Parameter	Units	60160473001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	875	851	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

QC Batch: WETA/27723

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 60160474001

METHOD BLANK: 1313688

Matrix: Water

Associated Lab Samples: 60160474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	01/03/14 07:46	

LABORATORY CONTROL SAMPLE: 1313689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	52.9	106	90-110	

MATRIX SPIKE SAMPLE: 1313690

Parameter	Units	60160311001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	64.4	110	90-110	

MATRIX SPIKE SAMPLE: 1313692

Parameter	Units	60160288001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	47.7	95	90-110	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

R1 RPD value was outside control limits.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-179

Pace Project No.: 60160474

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160474001	316-179	EPA 200.7	MPRP/25774	EPA 200.7	ICP/19768
60160474001	316-179	EPA 200.7	MPRP/25773	EPA 200.7	ICP/19767
60160474001	316-179	EPA 245.1	MERP/8047	EPA 245.1	MERC/8003
60160474001	316-179	EPA 245.1	MERP/8046	EPA 245.1	MERC/8002
60160474001	316-179	EPA 625	OEXT/42143	EPA 625	MSSV/13408
60160474001	316-179	EPA 624 Low	MSV/58655		
60160474001	316-179	EPA 1664A	WET/45434		
60160474001	316-179	EPA 1664A	WET/45448		
60160474001	316-179	SM 2540D	WET/45429		
60160474001	316-179	SM 4500-H+B	WET/45441		
60160474001	316-179	SM 5210B	WET/45424	SM 5210B	WET/45496
60160474001	316-179	EPA 350.1	WETA/27741		
60160474001	316-179	EPA 410.4	WETA/27723		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60160474



Client Name: BARR

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ XR

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ XR

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: _____

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 8/2/30

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, PH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☐ Yes ☒ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased):		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Bu for AKR

Date: 12/31

Page : 1 Of 1

Regulatory Agency

State / Location

State / Location

Missouri

Missouri

Page 28 of 28

January 07, 2014

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-180
Pace Project No.: 60160473

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 30, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160473001	316-180	Water	12/29/13 11:40	12/30/13 13:30
60160473002	TRIP BLANK	Water	12/29/13 11:40	12/30/13 13:30

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160473001	316-180	EPA 200.7	SMW	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JMC	1
		EPA 624 Low	EAK	26
60160473002	TRIP BLANK			

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

Sample: 316-180		Lab ID: 60160473001	Collected: 12/29/13 11:40	Received: 12/30/13 13:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	5760 ug/L		375	1	12/31/13 08:30	01/02/14 14:31	7429-90-5	
Antimony	ND ug/L		50.0	1	12/31/13 08:30	01/02/14 14:31	7440-36-0	D3
Arsenic	896 ug/L		50.0	1	12/31/13 08:30	01/02/14 14:31	7440-38-2	
Beryllium	ND ug/L		5.0	1	12/31/13 08:30	01/02/14 14:31	7440-41-7	
Cadmium	ND ug/L		25.0	1	12/31/13 08:30	01/02/14 14:31	7440-43-9	
Chromium	281 ug/L		25.0	1	12/31/13 08:30	01/02/14 14:31	7440-47-3	
Cobalt	27.9 ug/L		25.0	1	12/31/13 08:30	01/02/14 14:31	7440-48-4	
Copper	ND ug/L		50.0	1	12/31/13 08:30	01/02/14 14:31	7440-50-8	
Iron	920000 ug/L		250	1	12/31/13 08:30	01/02/14 14:31	7439-89-6	M1,R1
Lead	151 ug/L		25.0	1	12/31/13 08:30	01/02/14 14:31	7439-92-1	
Nickel	109 ug/L		25.0	1	12/31/13 08:30	01/02/14 14:31	7440-02-0	
Selenium	ND ug/L		75.0	1	12/31/13 08:30	01/02/14 14:31	7782-49-2	
Silver	ND ug/L		35.0	1	12/31/13 08:30	01/02/14 14:31	7440-22-4	
Thallium	ND ug/L		100	1	12/31/13 08:30	01/02/14 14:31	7440-28-0	
Zinc	12600 ug/L		500	2	12/31/13 08:30	01/02/14 14:33	7440-66-6	M1,R1
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2850 ug/L		375	1	12/31/13 00:00	01/02/14 13:59	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	1	12/31/13 00:00	01/02/14 13:59	7440-36-0	D3
Arsenic, Dissolved	600 ug/L		50.0	1	12/31/13 00:00	01/02/14 13:59	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	1	12/31/13 00:00	01/02/14 13:59	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	1	12/31/13 00:00	01/02/14 13:59	7440-43-9	
Chromium, Dissolved	183 ug/L		25.0	1	12/31/13 00:00	01/02/14 13:59	7440-47-3	
Cobalt, Dissolved	ND ug/L		25.0	1	12/31/13 00:00	01/02/14 13:59	7440-48-4	
Copper, Dissolved	ND ug/L		50.0	1	12/31/13 00:00	01/02/14 13:59	7440-50-8	
Iron, Dissolved	537000 ug/L		250	1	12/31/13 00:00	01/02/14 13:59	7439-89-6	M1,R1
Lead, Dissolved	72.8 ug/L		25.0	1	12/31/13 00:00	01/02/14 13:59	7439-92-1	
Nickel, Dissolved	75.8 ug/L		25.0	1	12/31/13 00:00	01/02/14 13:59	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	1	12/31/13 00:00	01/02/14 13:59	7782-49-2	
Silver, Dissolved	ND ug/L		35.0	1	12/31/13 00:00	01/02/14 13:59	7440-22-4	
Thallium, Dissolved	ND ug/L		100	1	12/31/13 00:00	01/02/14 13:59	7440-28-0	
Zinc, Dissolved	8930 ug/L		500	2	12/31/13 00:00	01/02/14 14:01	7440-66-6	R1
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	50.1 ug/L		6.0	1	01/02/14 11:45	01/02/14 15:13	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		6.0	1	01/02/14 11:45	01/02/14 14:51	7439-97-6	M1
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	2	12/31/13 00:00	01/02/14 23:22	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	2	12/31/13 00:00	01/02/14 23:22	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	2	12/31/13 00:00	01/02/14 23:22	77-47-4	
Hexachloroethane	ND ug/L		1000	2	12/31/13 00:00	01/02/14 23:22	67-72-1	
Naphthalene	1460 ug/L		1000	2	12/31/13 00:00	01/02/14 23:22	91-20-3	
Nitrobenzene	ND ug/L		1000	2	12/31/13 00:00	01/02/14 23:22	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

Sample: 316-180		Lab ID: 60160473001	Collected: 12/29/13 11:40	Received: 12/30/13 13:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND	ug/L	1000	2	12/31/13 00:00	01/02/14 23:22	87-86-5	
Phenol	9730	ug/L	1000	2	12/31/13 00:00	01/02/14 23:22	108-95-2	M1
1,2,4-Trichlorobenzene	ND	ug/L	1000	2	12/31/13 00:00	01/02/14 23:22	120-82-1	
2,4,6-Trichlorophenol	ND	ug/L	1000	2	12/31/13 00:00	01/02/14 23:22	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	141	%	33-120	2	12/31/13 00:00	01/02/14 23:22	4165-60-0	S0
2-Fluorobiphenyl (S)	96	%	39-120	2	12/31/13 00:00	01/02/14 23:22	321-60-8	
Terphenyl-d14 (S)	102	%	45-120	2	12/31/13 00:00	01/02/14 23:22	1718-51-0	
Phenol-d6 (S)	44	%	11-120	2	12/31/13 00:00	01/02/14 23:22	13127-88-3	
2-Fluorophenol (S)	47	%	17-120	2	12/31/13 00:00	01/02/14 23:22	367-12-4	
2,4,6-Tribromophenol (S)	103	%	39-120	2	12/31/13 00:00	01/02/14 23:22	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	149000	ug/L	2000	200		12/31/13 13:54	67-64-1	N2
Benzene	ND	ug/L	200	200		12/31/13 13:54	71-43-2	
Bromodichloromethane	ND	ug/L	200	200		12/31/13 13:54	75-27-4	
Bromoform	ND	ug/L	200	200		12/31/13 13:54	75-25-2	
Bromomethane	ND	ug/L	1000	200		12/31/13 13:54	74-83-9	
Carbon tetrachloride	ND	ug/L	200	200		12/31/13 13:54	56-23-5	
Chloroethane	ND	ug/L	200	200		12/31/13 13:54	75-00-3	
Chloroform	ND	ug/L	200	200		12/31/13 13:54	67-66-3	
1,4-Dichlorobenzene	1170	ug/L	200	200		12/31/13 13:54	106-46-7	
1,2-Dichloroethane	ND	ug/L	200	200		12/31/13 13:54	107-06-2	
cis-1,2-Dichloroethene	ND	ug/L	200	200		12/31/13 13:54	156-59-2	N2
trans-1,2-Dichloroethene	ND	ug/L	200	200		12/31/13 13:54	156-60-5	
Ethylbenzene	ND	ug/L	200	200		12/31/13 13:54	100-41-4	
Methylene chloride	ND	ug/L	200	200		12/31/13 13:54	75-09-2	
1,1,2,2-Tetrachloroethane	ND	ug/L	200	200		12/31/13 13:54	79-34-5	N2
Tetrachloroethene	ND	ug/L	200	200		12/31/13 13:54	127-18-4	
Toluene	ND	ug/L	200	200		12/31/13 13:54	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	200	200		12/31/13 13:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	200	200		12/31/13 13:54	79-00-5	
Trichloroethene	ND	ug/L	200	200		12/31/13 13:54	79-01-6	
Vinyl chloride	ND	ug/L	200	200		12/31/13 13:54	75-01-4	
Xylene (Total)	ND	ug/L	600	200		12/31/13 13:54	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	100	%	80-120	200		12/31/13 13:54	460-00-4	
Toluene-d8 (S)	104	%	80-120	200		12/31/13 13:54	2037-26-5	
1,2-Dichloroethane-d4 (S)	95	%	80-120	200		12/31/13 13:54	17060-07-0	
Preservation pH	6.0		1.0	200		12/31/13 13:54		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	1160	mg/L	5.0	1		12/31/13 10:44		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	6.0	mg/L	5.0	1		01/02/14 10:32		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

Sample: 316-180		Lab ID: 60160473001	Collected: 12/29/13 11:40	Received: 12/30/13 13:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3040	mg/L	5.0	1		12/31/13 09:50		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		12/31/13 15:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	32100	mg/L	2.0	1	12/30/13 16:12	01/04/14 12:34		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	875	mg/L	50.0	500		01/06/14 15:07	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	55300	mg/L	5000	500		01/03/14 07:52		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

Sample: TRIP BLANK		Lab ID: 60160473002	Collected: 12/29/13 11:40	Received: 12/30/13 13:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/31/13 14:09	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/31/13 14:09	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/31/13 14:09	75-27-4	
Bromoform	ND ug/L		1.0	1		12/31/13 14:09	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/31/13 14:09	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/31/13 14:09	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/31/13 14:09	75-00-3	
Chloroform	ND ug/L		1.0	1		12/31/13 14:09	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/31/13 14:09	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/31/13 14:09	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/31/13 14:09	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/31/13 14:09	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/31/13 14:09	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/31/13 14:09	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/31/13 14:09	79-34-5	N2
Tetrachloroethene	ND ug/L		1.0	1		12/31/13 14:09	127-18-4	
Toluene	ND ug/L		1.0	1		12/31/13 14:09	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/31/13 14:09	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/31/13 14:09	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/31/13 14:09	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/31/13 14:09	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/31/13 14:09	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	94 %		80-120	1		12/31/13 14:09	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		12/31/13 14:09	2037-26-5	
1,2-Dichloroethane-d4 (S)	102 %		80-120	1		12/31/13 14:09	17060-07-0	
Preservation pH	6.0		1.0	1		12/31/13 14:09		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

QC Batch: MERP/8047

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60160473001

METHOD BLANK: 1313735

Matrix: Water

Associated Lab Samples: 60160473001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/02/14 15:09	

LABORATORY CONTROL SAMPLE: 1313736

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313737 1313738

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	50.1	150	150	168	173	79	82	70-130	3	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

QC Batch: MERP/8046

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160473001

METHOD BLANK: 1313731

Matrix: Water

Associated Lab Samples: 60160473001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/02/14 14:42	

LABORATORY CONTROL SAMPLE: 1313732

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.5	110	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313733 1313734

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	104	108	69	72	70-130	5	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180
Pace Project No.: 60160473

QC Batch: MPRP/25774 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60160473001

METHOD BLANK: 1313130 Matrix: Water
Associated Lab Samples: 60160473001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	01/02/14 14:28	
Antimony	ug/L	ND	10.0	01/02/14 14:28	
Arsenic	ug/L	ND	10.0	01/02/14 14:28	
Beryllium	ug/L	ND	1.0	01/02/14 14:28	
Cadmium	ug/L	ND	5.0	01/02/14 14:28	
Chromium	ug/L	ND	5.0	01/02/14 14:28	
Cobalt	ug/L	ND	5.0	01/02/14 14:28	
Copper	ug/L	ND	10.0	01/02/14 14:28	
Iron	ug/L	ND	50.0	01/02/14 14:28	
Lead	ug/L	ND	5.0	01/02/14 14:28	
Nickel	ug/L	ND	5.0	01/02/14 14:28	
Selenium	ug/L	ND	15.0	01/02/14 14:28	
Silver	ug/L	ND	7.0	01/02/14 14:28	
Thallium	ug/L	ND	20.0	01/02/14 14:28	
Zinc	ug/L	ND	50.0	01/02/14 14:28	

LABORATORY CONTROL SAMPLE: 1313131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9630	96	85-115	
Antimony	ug/L	1000	989	99	85-115	
Arsenic	ug/L	1000	961	96	85-115	
Beryllium	ug/L	1000	980	98	85-115	
Cadmium	ug/L	1000	986	99	85-115	
Chromium	ug/L	1000	984	98	85-115	
Cobalt	ug/L	1000	996	100	85-115	
Copper	ug/L	1000	958	96	85-115	
Iron	ug/L	10000	9750	97	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1010	101	85-115	
Selenium	ug/L	1000	994	99	85-115	
Silver	ug/L	500	497	99	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	1000	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313132 1313133

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	5760	50000	50000	59400	57100	107	103	70-130	4	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313132 1313133												
Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Antimony	ug/L	ND	5000	5000	5160	5080	102	101	70-130	1	7	
Arsenic	ug/L	896	5000	5000	6520	6160	112	105	70-130	6	10	
Beryllium	ug/L	ND	5000	5000	4770	4740	95	95	70-130	1	7	
Cadmium	ug/L	ND	5000	5000	5060	4980	101	100	70-130	2	10	
Chromium	ug/L	281	5000	5000	5080	4970	96	94	70-130	2	10	
Cobalt	ug/L	27.9	5000	5000	4690	4650	93	92	70-130	1	6	
Copper	ug/L	ND	5000	5000	5060	4980	101	99	70-130	2	11	
Iron	ug/L	920000	50000	50000	1130000	954000	426	68	70-130	17	10	M1, R1
Lead	ug/L	151	5000	5000	4580	4530	89	88	70-130	1	10	
Nickel	ug/L	109	5000	5000	4790	4730	94	92	70-130	1	10	
Selenium	ug/L	ND	5000	5000	5980	5700	120	114	70-130	5	10	
Silver	ug/L	ND	2500	2500	2630	2570	105	103	70-130	2	10	
Thallium	ug/L	ND	5000	5000	4030	4050	81	81	70-130	0	6	
Zinc	ug/L	12600	5000	5000	19600	17000	140	88	70-130	14	11	M1, R1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180
Pace Project No.: 60160473

QC Batch: MPRP/25773 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60160473001

METHOD BLANK: 1313126 Matrix: Water
Associated Lab Samples: 60160473001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	01/02/14 13:56	
Antimony, Dissolved	ug/L	ND	10.0	01/02/14 13:56	
Arsenic, Dissolved	ug/L	ND	10.0	01/02/14 13:56	
Beryllium, Dissolved	ug/L	ND	1.0	01/02/14 13:56	
Cadmium, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Chromium, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Cobalt, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Copper, Dissolved	ug/L	ND	10.0	01/02/14 13:56	
Iron, Dissolved	ug/L	ND	50.0	01/02/14 13:56	
Lead, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Nickel, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Selenium, Dissolved	ug/L	ND	15.0	01/02/14 13:56	
Silver, Dissolved	ug/L	ND	7.0	01/02/14 13:56	
Thallium, Dissolved	ug/L	ND	20.0	01/02/14 13:56	
Zinc, Dissolved	ug/L	ND	50.0	01/02/14 13:56	

LABORATORY CONTROL SAMPLE: 1313127

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9630	96	85-115	
Antimony, Dissolved	ug/L	1000	984	98	85-115	
Arsenic, Dissolved	ug/L	1000	962	96	85-115	
Beryllium, Dissolved	ug/L	1000	976	98	85-115	
Cadmium, Dissolved	ug/L	1000	989	99	85-115	
Chromium, Dissolved	ug/L	1000	990	99	85-115	
Cobalt, Dissolved	ug/L	1000	989	99	85-115	
Copper, Dissolved	ug/L	1000	955	95	85-115	
Iron, Dissolved	ug/L	10000	9910	99	85-115	
Lead, Dissolved	ug/L	1000	1000	100	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	981	98	85-115	
Silver, Dissolved	ug/L	500	496	99	85-115	
Thallium, Dissolved	ug/L	1000	1020	102	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313128 1313129

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2850	50000	50000	51600	51200	98	97	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313128 1313129											
Parameter	Units	60160473001		MS	MSD	MS		MSD	% Rec		Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5000	5040	5020	100	100	70-130	0
Arsenic, Dissolved	ug/L	600	5000	5000	5000	5990	5660	108	101	70-130	6
Beryllium, Dissolved	ug/L	ND	5000	5000	5000	4720	4810	94	96	70-130	2
Cadmium, Dissolved	ug/L	ND	5000	5000	5000	5020	4990	100	100	70-130	1
Chromium, Dissolved	ug/L	183	5000	5000	5000	4920	4910	95	95	70-130	0
Cobalt, Dissolved	ug/L	ND	5000	5000	5000	4660	4740	93	95	70-130	2
Copper, Dissolved	ug/L	ND	5000	5000	5000	4890	4900	97	97	70-130	0
Iron, Dissolved	ug/L	537000	50000	50000	50000	655000	514000	236	-47	70-130	24
Lead, Dissolved	ug/L	72.8	5000	5000	5000	4540	4600	89	91	70-130	1
Nickel, Dissolved	ug/L	75.8	5000	5000	5000	4770	4810	94	95	70-130	1
Selenium, Dissolved	ug/L	ND	5000	5000	5000	5560	5460	111	109	70-130	2
Silver, Dissolved	ug/L	ND	2500	2500	2500	2560	2540	102	102	70-130	1
Thallium, Dissolved	ug/L	ND	5000	5000	5000	4150	4240	83	85	70-130	2
Zinc, Dissolved	ug/L	8930	5000	5000	5000	15100	12700	123	76	70-130	17

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

QC Batch: MSV/58655 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60160473001, 60160473002

METHOD BLANK: 1313116

Matrix: Water

Associated Lab Samples: 60160473001, 60160473002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/31/13 11:55	N2
1,1,2-Trichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,2-Dichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/31/13 11:55	
Acetone	ug/L	ND	10.0	12/31/13 11:55	N2
Benzene	ug/L	ND	1.0	12/31/13 11:55	
Bromodichloromethane	ug/L	ND	1.0	12/31/13 11:55	
Bromoform	ug/L	ND	1.0	12/31/13 11:55	
Bromomethane	ug/L	ND	5.0	12/31/13 11:55	
Carbon tetrachloride	ug/L	ND	1.0	12/31/13 11:55	
Chloroethane	ug/L	ND	1.0	12/31/13 11:55	
Chloroform	ug/L	ND	1.0	12/31/13 11:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/31/13 11:55	N2
Ethylbenzene	ug/L	ND	1.0	12/31/13 11:55	
Methylene chloride	ug/L	ND	1.0	12/31/13 11:55	
Tetrachloroethene	ug/L	ND	1.0	12/31/13 11:55	
Toluene	ug/L	ND	1.0	12/31/13 11:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/31/13 11:55	
Trichloroethene	ug/L	ND	1.0	12/31/13 11:55	
Vinyl chloride	ug/L	ND	1.0	12/31/13 11:55	
Xylene (Total)	ug/L	ND	3.0	12/31/13 11:55	N2
1,2-Dichloroethane-d4 (S)	%	109	80-120	12/31/13 11:55	
4-Bromofluorobenzene (S)	%	99	80-120	12/31/13 11:55	
Toluene-d8 (S)	%	95	80-120	12/31/13 11:55	

LABORATORY CONTROL SAMPLE: 1313117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.8	94	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	15.9	80	59-138	N2
1,1,2-Trichloroethane	ug/L	20	19.3	96	69-127	
1,2-Dichloroethane	ug/L	20	18.0	90	71-129	
1,4-Dichlorobenzene	ug/L	20	17.5	87	68-124	
Acetone	ug/L	100	84.5	85	40-160	N2
Benzene	ug/L	20	18.9	94	73-129	
Bromodichloromethane	ug/L	20	16.1	80	63-129	
Bromoform	ug/L	20	22.2	111	52-123	
Bromomethane	ug/L	20	14.8	74	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	13.2	66	42-160	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

LABORATORY CONTROL SAMPLE: 1313117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	20	19.7	99	60-120	
cis-1,2-Dichloroethene	ug/L	20	16.2	81	70-125	N2
Ethylbenzene	ug/L	20	20.8	104	66-133	
Methylene chloride	ug/L	20	17.0	85	56-135	
Tetrachloroethene	ug/L	20	17.8	89	64-143	
Toluene	ug/L	20	15.5	77	70-130	
trans-1,2-Dichloroethene	ug/L	20	14.4	72	67-149	
Trichloroethene	ug/L	20	17.4	87	71-130	
Vinyl chloride	ug/L	20	14.3	71	41-160	
Xylene (Total)	ug/L	60	58.8	98	67-130	N2
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			92	80-120	
Toluene-d8 (S)	%			83	80-120	

MATRIX SPIKE SAMPLE: 1313118

Parameter	Units	60160368001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4080	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3680	92	46-157	N2
1,1,2-Trichloroethane	ug/L	ND	4000	4390	110	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3390	85	49-155	
1,4-Dichlorobenzene	ug/L	1040	4000	4640	90	18-147	
Acetone	ug/L	167000	20000	175000	39	40-160	M1,N2
Benzene	ug/L	ND	4000	3820	94	37-151	
Bromodichloromethane	ug/L	ND	4000	3430	86	35-155	
Bromoform	ug/L	ND	4000	3730	93	45-133	
Bromomethane	ug/L	ND	4000	2430	61	10-160	
Carbon tetrachloride	ug/L	ND	4000	3900	97	70-140	
Chloroethane	ug/L	ND	4000	2630	66	14-160	
Chloroform	ug/L	ND	4000	3900	98	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3290	82	19-160	N2
Ethylbenzene	ug/L	ND	4000	4190	100	37-154	
Methylene chloride	ug/L	ND	4000	3180	80	15-156	
Tetrachloroethene	ug/L	ND	4000	3920	98	64-148	
Toluene	ug/L	ND	4000	3510	86	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3080	77	54-156	
Trichloroethene	ug/L	ND	4000	3600	90	71-157	
Vinyl chloride	ug/L	ND	4000	2950	74	10-160	
Xylene (Total)	ug/L	737	12000	12200	96	12-153	N2
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				95	80-120	
Preservation pH		6.0		6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180
Pace Project No.: 60160473

QC Batch:	OEXT/42143	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60160473001		

METHOD BLANK: 1313356 Matrix: Water
Associated Lab Samples: 60160473001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	01/02/14 22:20	
2,4,6-Trichlorophenol	ug/L	ND	5.0	01/02/14 22:20	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	01/02/14 22:20	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	01/02/14 22:20	
Hexachlorocyclopentadiene	ug/L	ND	5.0	01/02/14 22:20	
Hexachloroethane	ug/L	ND	5.0	01/02/14 22:20	
Naphthalene	ug/L	ND	5.0	01/02/14 22:20	
Nitrobenzene	ug/L	ND	5.0	01/02/14 22:20	
Pentachlorophenol	ug/L	ND	5.0	01/02/14 22:20	
Phenol	ug/L	ND	5.0	01/02/14 22:20	
2,4,6-Tribromophenol (S)	%	82	39-120	01/02/14 22:20	
2-Fluorobiphenyl (S)	%	81	39-120	01/02/14 22:20	
2-Fluorophenol (S)	%	38	17-120	01/02/14 22:20	
Nitrobenzene-d5 (S)	%	80	33-120	01/02/14 22:20	
Phenol-d6 (S)	%	24	11-120	01/02/14 22:20	
Terphenyl-d14 (S)	%	89	45-120	01/02/14 22:20	

LABORATORY CONTROL SAMPLE: 1313357

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	39.8	80	46-120	
2,4,6-Trichlorophenol	ug/L	50	42.4	85	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	39.2	78	40-133	
Hexachloro-1,3-butadiene	ug/L	50	38.1	76	44-116	
Hexachlorocyclopentadiene	ug/L	100	61.2	61	24-120	
Hexachloroethane	ug/L	50	37.3	75	43-113	
Naphthalene	ug/L	50	41.1	82	48-120	
Nitrobenzene	ug/L	50	40.6	81	48-120	
Pentachlorophenol	ug/L	50	47.1	94	47-120	
Phenol	ug/L	50	13.7	27	16-112	
2,4,6-Tribromophenol (S)	%			97	39-120	
2-Fluorobiphenyl (S)	%			88	39-120	
2-Fluorophenol (S)	%			40	17-120	
Nitrobenzene-d5 (S)	%			84	33-120	
Phenol-d6 (S)	%			26	11-120	
Terphenyl-d14 (S)	%			97	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

MATRIX SPIKE SAMPLE:		1313358					
Parameter	Units	60160473001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3550	71	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4270	85	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3510J	70	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3490	70	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	6010	60	11-120	
Hexachloroethane	ug/L	ND	5000	3580	72	40-113	
Naphthalene	ug/L	1460	5000	5010	71	45-120	
Nitrobenzene	ug/L	ND	5000	3830	77	38-120	
Pentachlorophenol	ug/L	ND	5000	5260	105	43-135	
Phenol	ug/L	9730	5000	10100	7	13-112	M1
2,4,6-Tribromophenol (S)	%				87	39-120	
2-Fluorobiphenyl (S)	%				85	39-120	
2-Fluorophenol (S)	%				38	17-120	
Nitrobenzene-d5 (S)	%				127	33-120	S0
Phenol-d6 (S)	%				37	11-120	
Terphenyl-d14 (S)	%				89	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

QC Batch:	WET/45434	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60160473001		

METHOD BLANK: 1313144 Matrix: Water

Associated Lab Samples: 60160473001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/31/13 10:43	

LABORATORY CONTROL SAMPLE: 1313145

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	42.5	106	78-114	

MATRIX SPIKE SAMPLE: 1313146

Parameter	Units	60160288003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	44.4	46.9	101	78-114	

SAMPLE DUPLICATE: 1313147

Parameter	Units	60160473001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	1160	4.5J		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

QC Batch: WET/45448

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160473001

METHOD BLANK: 1313679

Matrix: Water

Associated Lab Samples: 60160473001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	01/02/14 10:29	

LABORATORY CONTROL SAMPLE: 1313680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	19.6	98	64-132	

MATRIX SPIKE SAMPLE: 1313681

Parameter	Units	60160185001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	<1.4	21.7	27.0	118	64-132	

SAMPLE DUPLICATE: 1313683

Parameter	Units	60159971001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

QC Batch: WET/45429

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160473001

METHOD BLANK: 1313080

Matrix: Water

Associated Lab Samples: 60160473001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/31/13 09:48	

SAMPLE DUPLICATE: 1313081

Parameter	Units	60160440002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1313082

Parameter	Units	60160470001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	30.0	34.0	13	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

QC Batch: WET/45441 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60160473001

SAMPLE DUPLICATE: 1313521

Parameter	Units	60160464001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

QC Batch: WET/45424

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160473001

METHOD BLANK: 1312993

Matrix: Water

Associated Lab Samples: 60160473001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	01/04/14 12:29	

LABORATORY CONTROL SAMPLE: 1312994

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	187	94	85-115	

SAMPLE DUPLICATE: 1312995

Parameter	Units	60160474001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	29700	30300	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

QC Batch: WETA/27741

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160473001

METHOD BLANK: 1314477

Matrix: Water

Associated Lab Samples: 60160473001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	01/06/14 15:01	

LABORATORY CONTROL SAMPLE: 1314478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	107	90-110	

MATRIX SPIKE SAMPLE: 1314479

Parameter	Units	60160372001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	839	1000	2050	121	90-110	M1

SAMPLE DUPLICATE: 1314480

Parameter	Units	60160473001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	875	851	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

QC Batch:	WETA/27723	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60160473001		

METHOD BLANK: 1313688 Matrix: Water
Associated Lab Samples: 60160473001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	01/03/14 07:46	

LABORATORY CONTROL SAMPLE: 1313689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	52.9	106	90-110	

MATRIX SPIKE SAMPLE: 1313690

Parameter	Units	60160311001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	64.4	110	90-110	

MATRIX SPIKE SAMPLE: 1313692

Parameter	Units	60160288001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	47.7	95	90-110	

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QUALIFIERS

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

R1 RPD value was outside control limits.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-180

Pace Project No.: 60160473

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160473001	316-180	EPA 200.7	MPRP/25774	EPA 200.7	ICP/19768
60160473001	316-180	EPA 200.7	MPRP/25773	EPA 200.7	ICP/19767
60160473001	316-180	EPA 245.1	MERP/8047	EPA 245.1	MERC/8003
60160473001	316-180	EPA 245.1	MERP/8046	EPA 245.1	MERC/8002
60160473001	316-180	EPA 625	OEXT/42143	EPA 625	MSSV/13408
60160473001	316-180	EPA 624 Low	MSV/58655		
60160473002	TRIP BLANK	EPA 624 Low	MSV/58655		
60160473001	316-180	EPA 1664A	WET/45434		
60160473001	316-180	EPA 1664A	WET/45448		
60160473001	316-180	SM 2540D	WET/45429		
60160473001	316-180	SM 4500-H+B	WET/45441		
60160473001	316-180	SM 5210B	WET/45424	SM 5210B	WET/45496
60160473001	316-180	EPA 350.1	WETA/27741		
60160473001	316-180	EPA 410.4	WETA/27723		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60160473



60160473

Client Name: BARR

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ XR

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ Tape

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: _____

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 12/30

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, PH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	Added HNO3 to 316-180 BP3N 6.0 / 4.5 Added H2SO4 to 316-180 BP3S 5.5 / 3.5
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>S</u> Lot # of added preservative <u>12513</u> <u>12518</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	345 VOA
Pace Trip Blank lot # (if purchased): <u>DEC. 1 Le</u>		15.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: AKB

Date: 12/31

January 07, 2014

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-181
Pace Project No.: 60160475

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on December 30, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160475001	316-181	Water	12/30/13 08:10	12/30/13 13:30
60160475002	TRIP BLANK	Water	12/30/13 08:10	12/30/13 13:30

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160475001	316-181	EPA 200.7	SMW	15
		EPA 200.7	SMW	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	RAH	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JMC	1
		EPA 624 Low	EAK	26
60160475002	TRIP BLANK			

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

Sample: 316-181		Lab ID: 60160475001	Collected: 12/30/13 08:10	Received: 12/30/13 13:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	4720 ug/L		375	1	12/31/13 08:30	01/02/14 14:54	7429-90-5	
Antimony	ND ug/L		50.0	1	12/31/13 08:30	01/02/14 14:54	7440-36-0	D3
Arsenic	784 ug/L		50.0	1	12/31/13 08:30	01/02/14 14:54	7440-38-2	
Beryllium	ND ug/L		5.0	1	12/31/13 08:30	01/02/14 14:54	7440-41-7	
Cadmium	ND ug/L		25.0	1	12/31/13 08:30	01/02/14 14:54	7440-43-9	
Chromium	238 ug/L		25.0	1	12/31/13 08:30	01/02/14 14:54	7440-47-3	
Cobalt	ND ug/L		25.0	1	12/31/13 08:30	01/02/14 14:54	7440-48-4	
Copper	ND ug/L		50.0	1	12/31/13 08:30	01/02/14 14:54	7440-50-8	
Iron	777000 ug/L		250	1	12/31/13 08:30	01/02/14 14:54	7439-89-6	
Lead	122 ug/L		25.0	1	12/31/13 08:30	01/02/14 14:54	7439-92-1	
Nickel	97.0 ug/L		25.0	1	12/31/13 08:30	01/02/14 14:54	7440-02-0	
Selenium	ND ug/L		75.0	1	12/31/13 08:30	01/02/14 14:54	7782-49-2	
Silver	ND ug/L		35.0	1	12/31/13 08:30	01/02/14 14:54	7440-22-4	
Thallium	ND ug/L		100	1	12/31/13 08:30	01/02/14 14:54	7440-28-0	
Zinc	10100 ug/L		500	2	12/31/13 08:30	01/02/14 14:56	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3860 ug/L		375	1	12/31/13 00:00	01/02/14 14:17	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	1	12/31/13 00:00	01/02/14 14:17	7440-36-0	D3
Arsenic, Dissolved	834 ug/L		50.0	1	12/31/13 00:00	01/02/14 14:17	7440-38-2	D9
Beryllium, Dissolved	ND ug/L		5.0	1	12/31/13 00:00	01/02/14 14:17	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	1	12/31/13 00:00	01/02/14 14:17	7440-43-9	
Chromium, Dissolved	244 ug/L		25.0	1	12/31/13 00:00	01/02/14 14:17	7440-47-3	D9
Cobalt, Dissolved	ND ug/L		25.0	1	12/31/13 00:00	01/02/14 14:17	7440-48-4	
Copper, Dissolved	ND ug/L		50.0	1	12/31/13 00:00	01/02/14 14:17	7440-50-8	
Iron, Dissolved	737000 ug/L		250	1	12/31/13 00:00	01/02/14 14:17	7439-89-6	
Lead, Dissolved	99.6 ug/L		25.0	1	12/31/13 00:00	01/02/14 14:17	7439-92-1	
Nickel, Dissolved	97.6 ug/L		25.0	1	12/31/13 00:00	01/02/14 14:17	7440-02-0	D9
Selenium, Dissolved	ND ug/L		75.0	1	12/31/13 00:00	01/02/14 14:17	7782-49-2	
Silver, Dissolved	ND ug/L		35.0	1	12/31/13 00:00	01/02/14 14:17	7440-22-4	
Thallium, Dissolved	ND ug/L		100	1	12/31/13 00:00	01/02/14 14:17	7440-28-0	
Zinc, Dissolved	11000 ug/L		500	2	12/31/13 00:00	01/02/14 14:24	7440-66-6	D9
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	37.2 ug/L		6.0	1	01/02/14 11:45	01/02/14 15:22	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		6.0	1	01/02/14 11:45	01/02/14 15:05	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	2	12/31/13 00:00	01/03/14 00:03	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	2	12/31/13 00:00	01/03/14 00:03	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	2	12/31/13 00:00	01/03/14 00:03	77-47-4	
Hexachloroethane	ND ug/L		1000	2	12/31/13 00:00	01/03/14 00:03	67-72-1	
Naphthalene	1520 ug/L		1000	2	12/31/13 00:00	01/03/14 00:03	91-20-3	
Nitrobenzene	ND ug/L		1000	2	12/31/13 00:00	01/03/14 00:03	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

Sample: 316-181		Lab ID: 60160475001	Collected: 12/30/13 08:10	Received: 12/30/13 13:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND	ug/L	1000	2	12/31/13 00:00	01/03/14 00:03	87-86-5	
Phenol	10600	ug/L	1000	2	12/31/13 00:00	01/03/14 00:03	108-95-2	
1,2,4-Trichlorobenzene	ND	ug/L	1000	2	12/31/13 00:00	01/03/14 00:03	120-82-1	
2,4,6-Trichlorophenol	ND	ug/L	1000	2	12/31/13 00:00	01/03/14 00:03	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	145	%	33-120	2	12/31/13 00:00	01/03/14 00:03	4165-60-0	S0
2-Fluorobiphenyl (S)	95	%	39-120	2	12/31/13 00:00	01/03/14 00:03	321-60-8	
Terphenyl-d14 (S)	99	%	45-120	2	12/31/13 00:00	01/03/14 00:03	1718-51-0	
Phenol-d6 (S)	43	%	11-120	2	12/31/13 00:00	01/03/14 00:03	13127-88-3	
2-Fluorophenol (S)	44	%	17-120	2	12/31/13 00:00	01/03/14 00:03	367-12-4	
2,4,6-Tribromophenol (S)	104	%	39-120	2	12/31/13 00:00	01/03/14 00:03	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	164000	ug/L	2000	200		12/31/13 14:24	67-64-1	N2
Benzene	ND	ug/L	200	200		12/31/13 14:24	71-43-2	
Bromodichloromethane	ND	ug/L	200	200		12/31/13 14:24	75-27-4	
Bromoform	ND	ug/L	200	200		12/31/13 14:24	75-25-2	
Bromomethane	ND	ug/L	1000	200		12/31/13 14:24	74-83-9	
Carbon tetrachloride	ND	ug/L	200	200		12/31/13 14:24	56-23-5	
Chloroethane	ND	ug/L	200	200		12/31/13 14:24	75-00-3	
Chloroform	ND	ug/L	200	200		12/31/13 14:24	67-66-3	
1,4-Dichlorobenzene	1130	ug/L	200	200		12/31/13 14:24	106-46-7	
1,2-Dichloroethane	ND	ug/L	200	200		12/31/13 14:24	107-06-2	
cis-1,2-Dichloroethene	ND	ug/L	200	200		12/31/13 14:24	156-59-2	N2
trans-1,2-Dichloroethene	ND	ug/L	200	200		12/31/13 14:24	156-60-5	
Ethylbenzene	ND	ug/L	200	200		12/31/13 14:24	100-41-4	
Methylene chloride	ND	ug/L	200	200		12/31/13 14:24	75-09-2	
1,1,2,2-Tetrachloroethane	ND	ug/L	200	200		12/31/13 14:24	79-34-5	N2
Tetrachloroethene	ND	ug/L	200	200		12/31/13 14:24	127-18-4	
Toluene	ND	ug/L	200	200		12/31/13 14:24	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	200	200		12/31/13 14:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	200	200		12/31/13 14:24	79-00-5	
Trichloroethene	ND	ug/L	200	200		12/31/13 14:24	79-01-6	
Vinyl chloride	ND	ug/L	200	200		12/31/13 14:24	75-01-4	
Xylene (Total)	ND	ug/L	600	200		12/31/13 14:24	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	93	%	80-120	200		12/31/13 14:24	460-00-4	
Toluene-d8 (S)	108	%	80-120	200		12/31/13 14:24	2037-26-5	
1,2-Dichloroethane-d4 (S)	98	%	80-120	200		12/31/13 14:24	17060-07-0	
Preservation pH	6.0		1.0	200		12/31/13 14:24		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	1060	mg/L	5.0	1		12/31/13 10:45		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	7.6	mg/L	5.0	1		01/02/14 10:33		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

Sample: 316-181		Lab ID: 60160475001	Collected: 12/30/13 08:10	Received: 12/30/13 13:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1400	mg/L	5.0	1		12/31/13 09:50		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		12/31/13 15:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	30800	mg/L	2.0	1	12/30/13 16:14	01/04/14 12:42		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	835	mg/L	50.0	500		01/06/14 15:10	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	60200	mg/L	5000	500		01/03/14 07:54		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

Sample: TRIP BLANK		Lab ID: 60160475002	Collected: 12/30/13 08:10	Received: 12/30/13 13:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		12/31/13 14:39	67-64-1	N2
Benzene	ND ug/L		1.0	1		12/31/13 14:39	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		12/31/13 14:39	75-27-4	
Bromoform	ND ug/L		1.0	1		12/31/13 14:39	75-25-2	
Bromomethane	ND ug/L		5.0	1		12/31/13 14:39	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		12/31/13 14:39	56-23-5	
Chloroethane	ND ug/L		1.0	1		12/31/13 14:39	75-00-3	
Chloroform	ND ug/L		1.0	1		12/31/13 14:39	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		12/31/13 14:39	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		12/31/13 14:39	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		12/31/13 14:39	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		1.0	1		12/31/13 14:39	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		12/31/13 14:39	100-41-4	
Methylene chloride	ND ug/L		1.0	1		12/31/13 14:39	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		12/31/13 14:39	79-34-5	N2
Tetrachloroethene	ND ug/L		1.0	1		12/31/13 14:39	127-18-4	
Toluene	ND ug/L		1.0	1		12/31/13 14:39	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		12/31/13 14:39	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		12/31/13 14:39	79-00-5	
Trichloroethene	ND ug/L		1.0	1		12/31/13 14:39	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		12/31/13 14:39	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		12/31/13 14:39	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	93 %		80-120	1		12/31/13 14:39	460-00-4	
Toluene-d8 (S)	101 %		80-120	1		12/31/13 14:39	2037-26-5	
1,2-Dichloroethane-d4 (S)	102 %		80-120	1		12/31/13 14:39	17060-07-0	
Preservation pH	6.0		1.0	1		12/31/13 14:39		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

QC Batch: MERP/8047

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60160475001

METHOD BLANK: 1313735

Matrix: Water

Associated Lab Samples: 60160475001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/02/14 15:09	

LABORATORY CONTROL SAMPLE: 1313736

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313737 1313738

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	50.1	150	150	168	173	79	82	70-130	3	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

QC Batch: MERP/8046

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160475001

METHOD BLANK: 1313731

Matrix: Water

Associated Lab Samples: 60160475001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/02/14 14:42	

LABORATORY CONTROL SAMPLE: 1313732

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.5	110	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313733 1313734

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	104	108	69	72	70-130	5	20	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181
Pace Project No.: 60160475

QC Batch: MPRP/25774 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60160475001

METHOD BLANK: 1313130 Matrix: Water
Associated Lab Samples: 60160475001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	01/02/14 14:28	
Antimony	ug/L	ND	10.0	01/02/14 14:28	
Arsenic	ug/L	ND	10.0	01/02/14 14:28	
Beryllium	ug/L	ND	1.0	01/02/14 14:28	
Cadmium	ug/L	ND	5.0	01/02/14 14:28	
Chromium	ug/L	ND	5.0	01/02/14 14:28	
Cobalt	ug/L	ND	5.0	01/02/14 14:28	
Copper	ug/L	ND	10.0	01/02/14 14:28	
Iron	ug/L	ND	50.0	01/02/14 14:28	
Lead	ug/L	ND	5.0	01/02/14 14:28	
Nickel	ug/L	ND	5.0	01/02/14 14:28	
Selenium	ug/L	ND	15.0	01/02/14 14:28	
Silver	ug/L	ND	7.0	01/02/14 14:28	
Thallium	ug/L	ND	20.0	01/02/14 14:28	
Zinc	ug/L	ND	50.0	01/02/14 14:28	

LABORATORY CONTROL SAMPLE: 1313131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9630	96	85-115	
Antimony	ug/L	1000	989	99	85-115	
Arsenic	ug/L	1000	961	96	85-115	
Beryllium	ug/L	1000	980	98	85-115	
Cadmium	ug/L	1000	986	99	85-115	
Chromium	ug/L	1000	984	98	85-115	
Cobalt	ug/L	1000	996	100	85-115	
Copper	ug/L	1000	958	96	85-115	
Iron	ug/L	10000	9750	97	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1010	101	85-115	
Selenium	ug/L	1000	994	99	85-115	
Silver	ug/L	500	497	99	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	1000	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313132 1313133

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	5760	50000	50000	59400	57100	107	103	70-130	4	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313132 1313133												
Parameter	Units	60160473001		MS	MSD	MS		MSD	% Rec		Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	RPD
Antimony	ug/L	ND	5000	5000	5000	5160	5080	102	101	70-130	1	7
Arsenic	ug/L	896	5000	5000	5000	6520	6160	112	105	70-130	6	10
Beryllium	ug/L	ND	5000	5000	5000	4770	4740	95	95	70-130	1	7
Cadmium	ug/L	ND	5000	5000	5000	5060	4980	101	100	70-130	2	10
Chromium	ug/L	281	5000	5000	5000	5080	4970	96	94	70-130	2	10
Cobalt	ug/L	27.9	5000	5000	5000	4690	4650	93	92	70-130	1	6
Copper	ug/L	ND	5000	5000	5000	5060	4980	101	99	70-130	2	11
Iron	ug/L	920000	50000	50000	50000	1130000	954000	426	68	70-130	17	10 M1,R1
Lead	ug/L	151	5000	5000	5000	4580	4530	89	88	70-130	1	10
Nickel	ug/L	109	5000	5000	5000	4790	4730	94	92	70-130	1	10
Selenium	ug/L	ND	5000	5000	5000	5980	5700	120	114	70-130	5	10
Silver	ug/L	ND	2500	2500	2500	2630	2570	105	103	70-130	2	10
Thallium	ug/L	ND	5000	5000	5000	4030	4050	81	81	70-130	0	6
Zinc	ug/L	12600	5000	5000	5000	19600	17000	140	88	70-130	14	11 M1,R1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181
Pace Project No.: 60160475

QC Batch: MPRP/25773 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60160475001

METHOD BLANK: 1313126 Matrix: Water
Associated Lab Samples: 60160475001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	01/02/14 13:56	
Antimony, Dissolved	ug/L	ND	10.0	01/02/14 13:56	
Arsenic, Dissolved	ug/L	ND	10.0	01/02/14 13:56	
Beryllium, Dissolved	ug/L	ND	1.0	01/02/14 13:56	
Cadmium, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Chromium, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Cobalt, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Copper, Dissolved	ug/L	ND	10.0	01/02/14 13:56	
Iron, Dissolved	ug/L	ND	50.0	01/02/14 13:56	
Lead, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Nickel, Dissolved	ug/L	ND	5.0	01/02/14 13:56	
Selenium, Dissolved	ug/L	ND	15.0	01/02/14 13:56	
Silver, Dissolved	ug/L	ND	7.0	01/02/14 13:56	
Thallium, Dissolved	ug/L	ND	20.0	01/02/14 13:56	
Zinc, Dissolved	ug/L	ND	50.0	01/02/14 13:56	

LABORATORY CONTROL SAMPLE: 1313127

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9630	96	85-115	
Antimony, Dissolved	ug/L	1000	984	98	85-115	
Arsenic, Dissolved	ug/L	1000	962	96	85-115	
Beryllium, Dissolved	ug/L	1000	976	98	85-115	
Cadmium, Dissolved	ug/L	1000	989	99	85-115	
Chromium, Dissolved	ug/L	1000	990	99	85-115	
Cobalt, Dissolved	ug/L	1000	989	99	85-115	
Copper, Dissolved	ug/L	1000	955	95	85-115	
Iron, Dissolved	ug/L	10000	9910	99	85-115	
Lead, Dissolved	ug/L	1000	1000	100	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	981	98	85-115	
Silver, Dissolved	ug/L	500	496	99	85-115	
Thallium, Dissolved	ug/L	1000	1020	102	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313128 1313129

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2850	50000	50000	51600	51200	98	97	70-130	1	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313128 1313129											
Parameter	Units	60160473001		MS	MSD	MS		MSD	% Rec	Max	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	5000	5000	5000	5040	5020	100	100	70-130	0
Arsenic, Dissolved	ug/L	600	5000	5000	5000	5990	5660	108	101	70-130	6
Beryllium, Dissolved	ug/L	ND	5000	5000	5000	4720	4810	94	96	70-130	2
Cadmium, Dissolved	ug/L	ND	5000	5000	5000	5020	4990	100	100	70-130	1
Chromium, Dissolved	ug/L	183	5000	5000	5000	4920	4910	95	95	70-130	0
Cobalt, Dissolved	ug/L	ND	5000	5000	5000	4660	4740	93	95	70-130	2
Copper, Dissolved	ug/L	ND	5000	5000	5000	4890	4900	97	97	70-130	0
Iron, Dissolved	ug/L	537000	50000	50000	50000	655000	514000	236	-47	70-130	24
Lead, Dissolved	ug/L	72.8	5000	5000	5000	4540	4600	89	91	70-130	1
Nickel, Dissolved	ug/L	75.8	5000	5000	5000	4770	4810	94	95	70-130	1
Selenium, Dissolved	ug/L	ND	5000	5000	5000	5560	5460	111	109	70-130	2
Silver, Dissolved	ug/L	ND	2500	2500	2500	2560	2540	102	102	70-130	1
Thallium, Dissolved	ug/L	ND	5000	5000	5000	4150	4240	83	85	70-130	2
Zinc, Dissolved	ug/L	8930	5000	5000	5000	15100	12700	123	76	70-130	17

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

QC Batch: MSV/58655 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60160475001, 60160475002

METHOD BLANK: 1313116 Matrix: Water

Associated Lab Samples: 60160475001, 60160475002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/31/13 11:55	N2
1,1,2-Trichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,2-Dichloroethane	ug/L	ND	1.0	12/31/13 11:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/31/13 11:55	
Acetone	ug/L	ND	10.0	12/31/13 11:55	N2
Benzene	ug/L	ND	1.0	12/31/13 11:55	
Bromodichloromethane	ug/L	ND	1.0	12/31/13 11:55	
Bromoform	ug/L	ND	1.0	12/31/13 11:55	
Bromomethane	ug/L	ND	5.0	12/31/13 11:55	
Carbon tetrachloride	ug/L	ND	1.0	12/31/13 11:55	
Chloroethane	ug/L	ND	1.0	12/31/13 11:55	
Chloroform	ug/L	ND	1.0	12/31/13 11:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/31/13 11:55	N2
Ethylbenzene	ug/L	ND	1.0	12/31/13 11:55	
Methylene chloride	ug/L	ND	1.0	12/31/13 11:55	
Tetrachloroethene	ug/L	ND	1.0	12/31/13 11:55	
Toluene	ug/L	ND	1.0	12/31/13 11:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/31/13 11:55	
Trichloroethene	ug/L	ND	1.0	12/31/13 11:55	
Vinyl chloride	ug/L	ND	1.0	12/31/13 11:55	
Xylene (Total)	ug/L	ND	3.0	12/31/13 11:55	N2
1,2-Dichloroethane-d4 (S)	%	109	80-120	12/31/13 11:55	
4-Bromofluorobenzene (S)	%	99	80-120	12/31/13 11:55	
Toluene-d8 (S)	%	95	80-120	12/31/13 11:55	

LABORATORY CONTROL SAMPLE: 1313117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.8	94	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	15.9	80	59-138	N2
1,1,2-Trichloroethane	ug/L	20	19.3	96	69-127	
1,2-Dichloroethane	ug/L	20	18.0	90	71-129	
1,4-Dichlorobenzene	ug/L	20	17.5	87	68-124	
Acetone	ug/L	100	84.5	85	40-160	N2
Benzene	ug/L	20	18.9	94	73-129	
Bromodichloromethane	ug/L	20	16.1	80	63-129	
Bromoform	ug/L	20	22.2	111	52-123	
Bromomethane	ug/L	20	14.8	74	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	13.2	66	42-160	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

LABORATORY CONTROL SAMPLE: 1313117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	20	19.7	99	60-120	
cis-1,2-Dichloroethene	ug/L	20	16.2	81	70-125	N2
Ethylbenzene	ug/L	20	20.8	104	66-133	
Methylene chloride	ug/L	20	17.0	85	56-135	
Tetrachloroethene	ug/L	20	17.8	89	64-143	
Toluene	ug/L	20	15.5	77	70-130	
trans-1,2-Dichloroethene	ug/L	20	14.4	72	67-149	
Trichloroethene	ug/L	20	17.4	87	71-130	
Vinyl chloride	ug/L	20	14.3	71	41-160	
Xylene (Total)	ug/L	60	58.8	98	67-130	N2
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			92	80-120	
Toluene-d8 (S)	%			83	80-120	

MATRIX SPIKE SAMPLE: 1313118

Parameter	Units	60160368001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4080	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3680	92	46-157	N2
1,1,2-Trichloroethane	ug/L	ND	4000	4390	110	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3390	85	49-155	
1,4-Dichlorobenzene	ug/L	1040	4000	4640	90	18-147	
Acetone	ug/L	167000	20000	175000	39	40-160	M1,N2
Benzene	ug/L	ND	4000	3820	94	37-151	
Bromodichloromethane	ug/L	ND	4000	3430	86	35-155	
Bromoform	ug/L	ND	4000	3730	93	45-133	
Bromomethane	ug/L	ND	4000	2430	61	10-160	
Carbon tetrachloride	ug/L	ND	4000	3900	97	70-140	
Chloroethane	ug/L	ND	4000	2630	66	14-160	
Chloroform	ug/L	ND	4000	3900	98	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3290	82	19-160	N2
Ethylbenzene	ug/L	ND	4000	4190	100	37-154	
Methylene chloride	ug/L	ND	4000	3180	80	15-156	
Tetrachloroethene	ug/L	ND	4000	3920	98	64-148	
Toluene	ug/L	ND	4000	3510	86	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3080	77	54-156	
Trichloroethene	ug/L	ND	4000	3600	90	71-157	
Vinyl chloride	ug/L	ND	4000	2950	74	10-160	
Xylene (Total)	ug/L	737	12000	12200	96	12-153	N2
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				95	80-120	
Preservation pH			6.0		6.0		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181
Pace Project No.: 60160475

QC Batch:	OEXT/42143	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60160475001		

METHOD BLANK: 1313356 Matrix: Water
Associated Lab Samples: 60160475001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	01/02/14 22:20	
2,4,6-Trichlorophenol	ug/L	ND	5.0	01/02/14 22:20	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	01/02/14 22:20	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	01/02/14 22:20	
Hexachlorocyclopentadiene	ug/L	ND	5.0	01/02/14 22:20	
Hexachloroethane	ug/L	ND	5.0	01/02/14 22:20	
Naphthalene	ug/L	ND	5.0	01/02/14 22:20	
Nitrobenzene	ug/L	ND	5.0	01/02/14 22:20	
Pentachlorophenol	ug/L	ND	5.0	01/02/14 22:20	
Phenol	ug/L	ND	5.0	01/02/14 22:20	
2,4,6-Tribromophenol (S)	%	82	39-120	01/02/14 22:20	
2-Fluorobiphenyl (S)	%	81	39-120	01/02/14 22:20	
2-Fluorophenol (S)	%	38	17-120	01/02/14 22:20	
Nitrobenzene-d5 (S)	%	80	33-120	01/02/14 22:20	
Phenol-d6 (S)	%	24	11-120	01/02/14 22:20	
Terphenyl-d14 (S)	%	89	45-120	01/02/14 22:20	

LABORATORY CONTROL SAMPLE: 1313357

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	39.8	80	46-120	
2,4,6-Trichlorophenol	ug/L	50	42.4	85	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	39.2	78	40-133	
Hexachloro-1,3-butadiene	ug/L	50	38.1	76	44-116	
Hexachlorocyclopentadiene	ug/L	100	61.2	61	24-120	
Hexachloroethane	ug/L	50	37.3	75	43-113	
Naphthalene	ug/L	50	41.1	82	48-120	
Nitrobenzene	ug/L	50	40.6	81	48-120	
Pentachlorophenol	ug/L	50	47.1	94	47-120	
Phenol	ug/L	50	13.7	27	16-112	
2,4,6-Tribromophenol (S)	%			97	39-120	
2-Fluorobiphenyl (S)	%			88	39-120	
2-Fluorophenol (S)	%			40	17-120	
Nitrobenzene-d5 (S)	%			84	33-120	
Phenol-d6 (S)	%			26	11-120	
Terphenyl-d14 (S)	%			97	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

MATRIX SPIKE SAMPLE:		1313358					
Parameter	Units	60160473001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5000	3550	71	44-120	
2,4,6-Trichlorophenol	ug/L	ND	5000	4270	85	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	5000	3510J	70	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	5000	3490	70	39-116	
Hexachlorocyclopentadiene	ug/L	ND	10000	6010	60	11-120	
Hexachloroethane	ug/L	ND	5000	3580	72	40-113	
Naphthalene	ug/L	1460	5000	5010	71	45-120	
Nitrobenzene	ug/L	ND	5000	3830	77	38-120	
Pentachlorophenol	ug/L	ND	5000	5260	105	43-135	
Phenol	ug/L	9730	5000	10100	7	13-112	M1
2,4,6-Tribromophenol (S)	%				87	39-120	
2-Fluorobiphenyl (S)	%				85	39-120	
2-Fluorophenol (S)	%				38	17-120	
Nitrobenzene-d5 (S)	%				127	33-120	S0
Phenol-d6 (S)	%				37	11-120	
Terphenyl-d14 (S)	%				89	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

QC Batch:	WET/45434	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60160475001		

METHOD BLANK: 1313144 Matrix: Water

Associated Lab Samples: 60160475001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	12/31/13 10:43	

LABORATORY CONTROL SAMPLE: 1313145

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	42.5	106	78-114	

MATRIX SPIKE SAMPLE: 1313146

Parameter	Units	60160288003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	44.4	46.9	101	78-114	

SAMPLE DUPLICATE: 1313147

Parameter	Units	60160473001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	1160	4.5J		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

QC Batch: WET/45448

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160475001

METHOD BLANK: 1313679

Matrix: Water

Associated Lab Samples: 60160475001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	01/02/14 10:29	

LABORATORY CONTROL SAMPLE: 1313680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	19.6	98	64-132	

MATRIX SPIKE SAMPLE: 1313681

Parameter	Units	60160185001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	<1.4	21.7	27.0	118	64-132	

SAMPLE DUPLICATE: 1313683

Parameter	Units	60159971001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	ND		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

QC Batch: WET/45429

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160475001

METHOD BLANK: 1313080

Matrix: Water

Associated Lab Samples: 60160475001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	12/31/13 09:48	

SAMPLE DUPLICATE: 1313081

Parameter	Units	60160440002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1313082

Parameter	Units	60160470001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	30.0	34.0	13	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

QC Batch: WET/45441

Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B

Analysis Description: 4500H+B pH

Associated Lab Samples: 60160475001

SAMPLE DUPLICATE: 1313521

Parameter	Units	60160464001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

QC Batch: WET/45424

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160475001

METHOD BLANK: 1312993

Matrix: Water

Associated Lab Samples: 60160475001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	01/04/14 12:29	

LABORATORY CONTROL SAMPLE: 1312994

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	187	94	85-115	

SAMPLE DUPLICATE: 1312995

Parameter	Units	60160474001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	29700	30300	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

QC Batch: WETA/27741

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160475001

METHOD BLANK: 1314477

Matrix: Water

Associated Lab Samples: 60160475001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	01/06/14 15:01	

LABORATORY CONTROL SAMPLE: 1314478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	107	90-110	

MATRIX SPIKE SAMPLE: 1314479

Parameter	Units	60160372001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	839	1000	2050	121	90-110	M1

SAMPLE DUPLICATE: 1314480

Parameter	Units	60160473001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	875	851	3	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

QC Batch: WETA/27723

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 60160475001

METHOD BLANK: 1313688

Matrix: Water

Associated Lab Samples: 60160475001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	01/03/14 07:46	

LABORATORY CONTROL SAMPLE: 1313689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	52.9	106	90-110	

MATRIX SPIKE SAMPLE: 1313690

Parameter	Units	60160311001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	64.4	110	90-110	

MATRIX SPIKE SAMPLE: 1313692

Parameter	Units	60160288001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	47.7	95	90-110	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- | | |
|----|---|
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| D9 | Dissolved result is greater than the total. Data is within laboratory control limits. |
| H6 | Analysis initiated outside of the 15 minute EPA recommended holding time. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| N2 | The lab does not hold TNI accreditation for this parameter. |
| R1 | RPD value was outside control limits. |
| S0 | Surrogate recovery outside laboratory control limits. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-181

Pace Project No.: 60160475

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160475001	316-181	EPA 200.7	MPRP/25774	EPA 200.7	ICP/19768
60160475001	316-181	EPA 200.7	MPRP/25773	EPA 200.7	ICP/19767
60160475001	316-181	EPA 245.1	MERP/8047	EPA 245.1	MERC/8003
60160475001	316-181	EPA 245.1	MERP/8046	EPA 245.1	MERC/8002
60160475001	316-181	EPA 625	OEXT/42143	EPA 625	MSSV/13408
60160475001	316-181	EPA 624 Low	MSV/58655		
60160475002	TRIP BLANK	EPA 624 Low	MSV/58655		
60160475001	316-181	EPA 1664A	WET/45434		
60160475001	316-181	EPA 1664A	WET/45448		
60160475001	316-181	SM 2540D	WET/45429		
60160475001	316-181	SM 4500-H+B	WET/45441		
60160475001	316-181	SM 5210B	WET/45424	SM 5210B	WET/45496
60160475001	316-181	EPA 350.1	WETA/27741		
60160475001	316-181	EPA 410.4	WETA/27723		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60160475



Client Name: BARR

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ XR

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ T-239

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: _____

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 8/2/30

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BUD, PH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased): <u>Dec 14</u>		
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Bu Jr AKS

Date: 12/31

January 08, 2014

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-182
Pace Project No.: 60160556

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on January 01, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



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CERTIFICATIONS

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60160556001	316-182	Water	12/31/13 11:30	01/01/14 01:30
60160556002	TRIP BLANK	Water	12/31/13 11:30	01/01/14 01:30

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60160556001	316-182	EPA 200.7	TDS	15
		EPA 200.7	TDS	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	EAK	28
		EPA 1664A	DJR	1
		EPA 1664A	DJR	1
		SM 2540D	JMC	1
		SM 4500-H+B	DJR	1
		SM 5210B	JML	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
		EPA 624 Low	EAK	28
60160556002	TRIP BLANK			

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

Sample: 316-182		Lab ID: 60160556001	Collected: 12/31/13 11:30	Received: 01/01/14 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	6700	ug/L	375	1	01/02/14 16:00	01/03/14 16:44	7429-90-5	
Antimony	ND	ug/L	50.0	1	01/02/14 16:00	01/03/14 16:44	7440-36-0	
Arsenic	1070	ug/L	50.0	1	01/02/14 16:00	01/03/14 16:44	7440-38-2	
Beryllium	ND	ug/L	5.0	1	01/02/14 16:00	01/03/14 16:44	7440-41-7	
Cadmium	ND	ug/L	25.0	1	01/02/14 16:00	01/03/14 16:44	7440-43-9	
Chromium	300	ug/L	25.0	1	01/02/14 16:00	01/03/14 16:44	7440-47-3	
Cobalt	26.0	ug/L	25.0	1	01/02/14 16:00	01/03/14 16:44	7440-48-4	
Copper	ND	ug/L	50.0	1	01/02/14 16:00	01/03/14 16:44	7440-50-8	
Iron	1070000	ug/L	250	1	01/02/14 16:00	01/03/14 16:44	7439-89-6	
Lead	171	ug/L	25.0	1	01/02/14 16:00	01/03/14 16:44	7439-92-1	
Nickel	120	ug/L	25.0	1	01/02/14 16:00	01/03/14 16:44	7440-02-0	
Selenium	ND	ug/L	75.0	1	01/02/14 16:00	01/03/14 16:44	7782-49-2	
Silver	ND	ug/L	35.0	1	01/02/14 16:00	01/03/14 16:44	7440-22-4	
Thallium	ND	ug/L	100	1	01/02/14 16:00	01/03/14 16:44	7440-28-0	
Zinc	12400	ug/L	1250	5	01/02/14 16:00	01/03/14 16:46	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3700	ug/L	375	1	01/02/14 16:00	01/03/14 13:20	7429-90-5	
Antimony, Dissolved	ND	ug/L	50.0	1	01/02/14 16:00	01/03/14 13:20	7440-36-0	
Arsenic, Dissolved	868	ug/L	50.0	1	01/02/14 16:00	01/03/14 13:20	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	1	01/02/14 16:00	01/03/14 13:20	7440-41-7	
Cadmium, Dissolved	ND	ug/L	25.0	1	01/02/14 16:00	01/03/14 13:20	7440-43-9	
Chromium, Dissolved	233	ug/L	25.0	1	01/02/14 16:00	01/03/14 13:20	7440-47-3	
Cobalt, Dissolved	ND	ug/L	25.0	1	01/02/14 16:00	01/03/14 13:20	7440-48-4	
Copper, Dissolved	ND	ug/L	50.0	1	01/02/14 16:00	01/03/14 13:20	7440-50-8	
Iron, Dissolved	756000	ug/L	250	1	01/02/14 16:00	01/03/14 13:20	7439-89-6	
Lead, Dissolved	101	ug/L	25.0	1	01/02/14 16:00	01/03/14 13:20	7439-92-1	
Nickel, Dissolved	91.8	ug/L	25.0	1	01/02/14 16:00	01/03/14 13:20	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	1	01/02/14 16:00	01/03/14 13:20	7782-49-2	
Silver, Dissolved	ND	ug/L	35.0	1	01/02/14 16:00	01/03/14 13:20	7440-22-4	
Thallium, Dissolved	ND	ug/L	100	1	01/02/14 16:00	01/03/14 13:20	7440-28-0	
Zinc, Dissolved	10100	ug/L	1250	5	01/02/14 16:00	01/03/14 13:27	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	27.7	ug/L	6.0	1	01/02/14 11:45	01/02/14 15:25	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	6.0	1	01/02/14 11:45	01/02/14 15:07	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	50.0	2	01/02/14 00:00	01/03/14 18:34	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	2	01/02/14 00:00	01/03/14 18:34	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	10.0	2	01/02/14 00:00	01/03/14 18:34	77-47-4	
Hexachloroethane	ND	ug/L	10.0	2	01/02/14 00:00	01/03/14 18:34	67-72-1	
Naphthalene	20.4	ug/L	10.0	2	01/02/14 00:00	01/03/14 18:34	91-20-3	
Nitrobenzene	ND	ug/L	10.0	2	01/02/14 00:00	01/03/14 18:34	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

Sample: 316-182		Lab ID: 60160556001	Collected: 12/31/13 11:30	Received: 01/01/14 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		10.0	2	01/02/14 00:00	01/03/14 18:34	87-86-5	
Phenol	106 ug/L		10.0	2	01/02/14 00:00	01/03/14 18:34	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		10.0	2	01/02/14 00:00	01/03/14 18:34	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		10.0	2	01/02/14 00:00	01/03/14 18:34	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	148 %		33-120	2	01/02/14 00:00	01/03/14 18:34	4165-60-0	S0
2-Fluorobiphenyl (S)	95 %		39-120	2	01/02/14 00:00	01/03/14 18:34	321-60-8	
Terphenyl-d14 (S)	98 %		45-120	2	01/02/14 00:00	01/03/14 18:34	1718-51-0	
Phenol-d6 (S)	45 %		11-120	2	01/02/14 00:00	01/03/14 18:34	13127-88-3	
2-Fluorophenol (S)	47 %		17-120	2	01/02/14 00:00	01/03/14 18:34	367-12-4	
2,4,6-Tribromophenol (S)	98 %		39-120	2	01/02/14 00:00	01/03/14 18:34	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	239000 ug/L		2500	250		01/06/14 14:23	67-64-1	N2
Benzene	ND ug/L		200	200		01/03/14 14:24	71-43-2	
Bromodichloromethane	ND ug/L		200	200		01/03/14 14:24	75-27-4	
Bromoform	ND ug/L		200	200		01/03/14 14:24	75-25-2	
Bromomethane	ND ug/L		1000	200		01/03/14 14:24	74-83-9	
2-Butanone (MEK)	119000 ug/L		2000	200		01/03/14 14:24	78-93-3	N2
Carbon tetrachloride	ND ug/L		200	200		01/03/14 14:24	56-23-5	
Chloroethane	ND ug/L		200	200		01/03/14 14:24	75-00-3	
Chloroform	ND ug/L		200	200		01/03/14 14:24	67-66-3	
1,4-Dichlorobenzene	1260 ug/L		200	200		01/03/14 14:24	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		01/03/14 14:24	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		01/03/14 14:24	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		200	200		01/03/14 14:24	156-60-5	
Ethylbenzene	ND ug/L		200	200		01/03/14 14:24	100-41-4	
Methylene chloride	ND ug/L		200	200		01/03/14 14:24	75-09-2	
4-Methyl-2-pentanone (MIBK)	4290 ug/L		2000	200		01/03/14 14:24	108-10-1	N2
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		01/03/14 14:24	79-34-5	N2
Tetrachloroethene	ND ug/L		200	200		01/03/14 14:24	127-18-4	
Toluene	ND ug/L		200	200		01/03/14 14:24	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		01/03/14 14:24	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		01/03/14 14:24	79-00-5	
Trichloroethene	ND ug/L		200	200		01/03/14 14:24	79-01-6	
Vinyl chloride	ND ug/L		200	200		01/03/14 14:24	75-01-4	
Xylene (Total)	687 ug/L		600	200		01/03/14 14:24	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		01/03/14 14:24	460-00-4	
Toluene-d8 (S)	99 %		80-120	200		01/03/14 14:24	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	200		01/03/14 14:24	17060-07-0	
Preservation pH	6.0		1.0	200		01/03/14 14:24		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	1260 mg/L		5.0	1		01/07/14 15:55		M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

Sample: 316-182		Lab ID: 60160556001	Collected: 12/31/13 11:30		Received: 01/01/14 01:30		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	10.2	mg/L	5.0	1		01/07/14 15:52		M1
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1920	mg/L	5.0	1		01/07/14 12:55		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		01/03/14 15:00		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	38200	mg/L	2.0	1	01/02/14 10:07	01/07/14 09:23		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	768	mg/L	50.0	500		01/08/14 11:24	7664-41-7	M1
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	86000	mg/L	10000	1000		01/07/14 12:00		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

Sample: TRIP BLANK		Lab ID: 60160556002	Collected: 12/31/13 11:30	Received: 01/01/14 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Acetone	ND ug/L		10.0	1		01/03/14 14:54	67-64-1	N2
Benzene	ND ug/L		1.0	1		01/03/14 14:54	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		01/03/14 14:54	75-27-4	
Bromoform	ND ug/L		1.0	1		01/03/14 14:54	75-25-2	
Bromomethane	ND ug/L		5.0	1		01/03/14 14:54	74-83-9	
2-Butanone (MEK)	ND ug/L		10.0	1		01/03/14 14:54	78-93-3	N2
Carbon tetrachloride	ND ug/L		1.0	1		01/03/14 14:54	56-23-5	
Chloroethane	ND ug/L		1.0	1		01/03/14 14:54	75-00-3	
Chloroform	ND ug/L		1.0	1		01/03/14 14:54	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		01/03/14 14:54	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		01/03/14 14:54	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		01/03/14 14:54	156-59-2	N2
trans-1,2-Dichloroethene	ND ug/L		1.0	1		01/03/14 14:54	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		01/03/14 14:54	100-41-4	
Methylene chloride	ND ug/L		1.0	1		01/03/14 14:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND ug/L		10.0	1		01/03/14 14:54	108-10-1	N2
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		01/03/14 14:54	79-34-5	N2
Tetrachloroethene	ND ug/L		1.0	1		01/03/14 14:54	127-18-4	
Toluene	ND ug/L		1.0	1		01/03/14 14:54	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		01/03/14 14:54	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		01/03/14 14:54	79-00-5	
Trichloroethene	ND ug/L		1.0	1		01/03/14 14:54	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		01/03/14 14:54	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		01/03/14 14:54	1330-20-7	N2
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	1		01/03/14 14:54	460-00-4	
Toluene-d8 (S)	97 %		80-120	1		01/03/14 14:54	2037-26-5	
1,2-Dichloroethane-d4 (S)	98 %		80-120	1		01/03/14 14:54	17060-07-0	
Preservation pH	6.0		1.0	1		01/03/14 14:54		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

QC Batch:	MERP/8047	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury
Associated Lab Samples:	60160556001		

METHOD BLANK: 1313735 Matrix: Water

Associated Lab Samples: 60160556001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/02/14 15:09	

LABORATORY CONTROL SAMPLE: 1313736

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313737 1313738

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	50.1	150	150	168	173	79	82	70-130	3	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

QC Batch: MERP/8046

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60160556001

METHOD BLANK: 1313731

Matrix: Water

Associated Lab Samples: 60160556001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/02/14 14:42	

LABORATORY CONTROL SAMPLE: 1313732

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.5	110	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313733 1313734

Parameter	Units	60160473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	150	150	104	108	69	72	70-130	5	20	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182
Pace Project No.: 60160556

QC Batch: MPRP/25793 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60160556001

METHOD BLANK: 1313793 Matrix: Water
Associated Lab Samples: 60160556001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	01/03/14 16:11	
Antimony	ug/L	ND	10.0	01/03/14 16:11	
Arsenic	ug/L	ND	10.0	01/03/14 16:11	
Beryllium	ug/L	ND	1.0	01/03/14 16:11	
Cadmium	ug/L	ND	5.0	01/03/14 16:11	
Chromium	ug/L	ND	5.0	01/03/14 16:11	
Cobalt	ug/L	ND	5.0	01/03/14 16:11	
Copper	ug/L	ND	10.0	01/03/14 16:11	
Iron	ug/L	ND	50.0	01/03/14 16:11	
Lead	ug/L	ND	5.0	01/03/14 16:11	
Nickel	ug/L	ND	5.0	01/03/14 16:11	
Selenium	ug/L	ND	15.0	01/03/14 16:11	
Silver	ug/L	ND	7.0	01/03/14 16:11	
Thallium	ug/L	ND	20.0	01/03/14 16:11	
Zinc	ug/L	ND	50.0	01/03/14 16:11	

LABORATORY CONTROL SAMPLE: 1313794

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10200	102	85-115	
Antimony	ug/L	1000	1050	105	85-115	
Arsenic	ug/L	1000	992	99	85-115	
Beryllium	ug/L	1000	1050	105	85-115	
Cadmium	ug/L	1000	1020	102	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1050	105	85-115	
Copper	ug/L	1000	1020	102	85-115	
Iron	ug/L	10000	10700	107	85-115	
Lead	ug/L	1000	1060	106	85-115	
Nickel	ug/L	1000	1060	106	85-115	
Selenium	ug/L	1000	1030	103	85-115	
Silver	ug/L	500	511	102	85-115	
Thallium	ug/L	1000	1060	106	85-115	
Zinc	ug/L	1000	1030	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313795 1313796

Parameter	Units	60160533001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	224	10000	10000	10500	10700	103	104	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313795 1313796											
Parameter	Units	60160533001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony	ug/L	ND	1000	1000	1040	1050	104	105	70-130	1	7
Arsenic	ug/L	ND	1000	1000	1000	1000	99	100	70-130	0	10
Beryllium	ug/L	ND	1000	1000	1040	1060	104	106	70-130	1	7
Cadmium	ug/L	ND	1000	1000	1000	1020	100	102	70-130	1	10
Chromium	ug/L	ND	1000	1000	995	1020	99	101	70-130	2	10
Cobalt	ug/L	ND	1000	1000	1020	1020	101	102	70-130	1	6
Copper	ug/L	ND	1000	1000	1010	1020	100	102	70-130	1	11
Iron	ug/L	549	10000	10000	10900	11100	104	106	70-130	2	10
Lead	ug/L	ND	1000	1000	1000	1020	100	101	70-130	1	10
Nickel	ug/L	ND	1000	1000	1020	1030	102	103	70-130	1	10
Selenium	ug/L	ND	1000	1000	1030	1030	103	103	70-130	1	10
Silver	ug/L	ND	500	500	504	508	101	101	70-130	1	10
Thallium	ug/L	ND	1000	1000	978	987	98	99	70-130	1	6
Zinc	ug/L	ND	1000	1000	1020	1030	101	101	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182
Pace Project No.: 60160556

QC Batch: MPRP/25789 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60160556001

METHOD BLANK: 1313772 Matrix: Water
Associated Lab Samples: 60160556001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	01/03/14 13:09	
Antimony, Dissolved	ug/L	ND	10.0	01/03/14 13:09	
Arsenic, Dissolved	ug/L	ND	10.0	01/03/14 13:09	
Beryllium, Dissolved	ug/L	ND	1.0	01/03/14 13:09	
Cadmium, Dissolved	ug/L	ND	5.0	01/03/14 13:09	
Chromium, Dissolved	ug/L	ND	5.0	01/03/14 13:09	
Cobalt, Dissolved	ug/L	ND	5.0	01/03/14 13:09	
Copper, Dissolved	ug/L	ND	10.0	01/03/14 13:09	
Iron, Dissolved	ug/L	168	50.0	01/03/14 13:09	
Lead, Dissolved	ug/L	ND	5.0	01/03/14 13:09	
Nickel, Dissolved	ug/L	ND	5.0	01/03/14 13:09	
Selenium, Dissolved	ug/L	ND	15.0	01/03/14 13:09	
Silver, Dissolved	ug/L	ND	7.0	01/03/14 13:09	
Thallium, Dissolved	ug/L	ND	20.0	01/03/14 13:09	
Zinc, Dissolved	ug/L	ND	50.0	01/03/14 13:09	

LABORATORY CONTROL SAMPLE: 1313773

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10400	104	85-115	
Antimony, Dissolved	ug/L	1000	1070	107	85-115	
Arsenic, Dissolved	ug/L	1000	1000	100	85-115	
Beryllium, Dissolved	ug/L	1000	1070	107	85-115	
Cadmium, Dissolved	ug/L	1000	1030	103	85-115	
Chromium, Dissolved	ug/L	1000	1030	103	85-115	
Cobalt, Dissolved	ug/L	1000	1070	107	85-115	
Copper, Dissolved	ug/L	1000	1030	103	85-115	
Iron, Dissolved	ug/L	10000	10700	107	85-115	
Lead, Dissolved	ug/L	1000	1070	107	85-115	
Nickel, Dissolved	ug/L	1000	1070	107	85-115	
Selenium, Dissolved	ug/L	1000	1050	105	85-115	
Silver, Dissolved	ug/L	500	516	103	85-115	
Thallium, Dissolved	ug/L	1000	1070	107	85-115	
Zinc, Dissolved	ug/L	1000	1120	112	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313774 1313775

Parameter	Units	60160520001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	10200	10300	102	103	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1313774 1313775											
Parameter	Units	60160520001		MS	MSD	MS		MSD	% Rec		Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1000	1050	1060	105	106	70-130	1
Arsenic, Dissolved	ug/L	ND	1000	1000	1000	1010	1020	101	101	70-130	1
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	1040	1050	104	105	70-130	1
Cadmium, Dissolved	ug/L	ND	1000	1000	1000	1020	1030	102	103	70-130	1
Chromium, Dissolved	ug/L	ND	1000	1000	1000	996	1000	100	100	70-130	1
Cobalt, Dissolved	ug/L	2.7J	1000	1000	1000	1030	1030	102	103	70-130	1
Copper, Dissolved	ug/L	ND	1000	1000	1000	1020	1020	102	102	70-130	0
Iron, Dissolved	ug/L					10600	10600				0
Lead, Dissolved	ug/L	ND	1000	1000	1000	1030	1030	102	103	70-130	1
Nickel, Dissolved	ug/L	42.7	1000	1000	1000	1060	1060	101	102	70-130	1
Selenium, Dissolved	ug/L	ND	1000	1000	1000	1030	1040	103	104	70-130	1
Silver, Dissolved	ug/L	ND	500	500	500	509	511	102	102	70-130	0
Thallium, Dissolved	ug/L	ND	1000	1000	1000	995	1000	100	100	70-130	1
Zinc, Dissolved	ug/L	122	1000	1000	1000	1130	1130	101	101	70-130	0

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

QC Batch:	MSV/58705	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples: 60160556001, 60160556002			

METHOD BLANK: 1314007 Matrix: Water

Associated Lab Samples: 60160556001, 60160556002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	01/03/14 14:09	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	01/03/14 14:09	N2
1,1,2-Trichloroethane	ug/L	ND	1.0	01/03/14 14:09	
1,2-Dichloroethane	ug/L	ND	1.0	01/03/14 14:09	
1,4-Dichlorobenzene	ug/L	ND	1.0	01/03/14 14:09	
Acetone	ug/L	ND	10.0	01/03/14 14:09	N2
Benzene	ug/L	ND	1.0	01/03/14 14:09	
Bromodichloromethane	ug/L	ND	1.0	01/03/14 14:09	
Bromoform	ug/L	ND	1.0	01/03/14 14:09	
Bromomethane	ug/L	ND	5.0	01/03/14 14:09	
Carbon tetrachloride	ug/L	ND	1.0	01/03/14 14:09	
Chloroethane	ug/L	ND	1.0	01/03/14 14:09	
Chloroform	ug/L	ND	1.0	01/03/14 14:09	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/03/14 14:09	N2
Ethylbenzene	ug/L	ND	1.0	01/03/14 14:09	
Methylene chloride	ug/L	ND	1.0	01/03/14 14:09	
Tetrachloroethene	ug/L	ND	1.0	01/03/14 14:09	
Toluene	ug/L	ND	1.0	01/03/14 14:09	
trans-1,2-Dichloroethene	ug/L	ND	1.0	01/03/14 14:09	
Trichloroethene	ug/L	ND	1.0	01/03/14 14:09	
Vinyl chloride	ug/L	ND	1.0	01/03/14 14:09	
Xylene (Total)	ug/L	ND	3.0	01/03/14 14:09	N2
1,2-Dichloroethane-d4 (S)	%	101	80-120	01/03/14 14:09	
4-Bromofluorobenzene (S)	%	97	80-120	01/03/14 14:09	
Toluene-d8 (S)	%	98	80-120	01/03/14 14:09	

LABORATORY CONTROL SAMPLE: 1314008

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.5	97	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	18.7	94	59-138	N2
1,1,2-Trichloroethane	ug/L	20	20.7	103	69-127	
1,2-Dichloroethane	ug/L	20	19.8	99	71-129	
1,4-Dichlorobenzene	ug/L	20	19.8	99	68-124	
Acetone	ug/L	100	85.7	86	40-160	N2
Benzene	ug/L	20	20.4	102	73-129	
Bromodichloromethane	ug/L	20	18.8	94	63-129	
Bromoform	ug/L	20	20.6	103	52-123	
Bromomethane	ug/L	20	20.0	100	10-160	
Carbon tetrachloride	ug/L	20	19.7	99	70-140	
Chloroethane	ug/L	20	19.1	96	42-160	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

LABORATORY CONTROL SAMPLE: 1314008

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	20	20.2	101	60-120	
cis-1,2-Dichloroethene	ug/L	20	19.3	96	70-125	N2
Ethylbenzene	ug/L	20	18.0	90	66-133	
Methylene chloride	ug/L	20	19.6	98	56-135	
Tetrachloroethene	ug/L	20	18.4	92	64-143	
Toluene	ug/L	20	18.2	91	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.5	93	67-149	
Trichloroethene	ug/L	20	20.9	104	71-130	
Vinyl chloride	ug/L	20	17.7	88	41-160	
Xylene (Total)	ug/L	60	55.3	92	67-130	N2
1,2-Dichloroethane-d4 (S)	%			101	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			95	80-120	

MATRIX SPIKE SAMPLE: 1314009

Parameter	Units	60160556001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4100	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4150	104	46-157	N2
1,1,2-Trichloroethane	ug/L	ND	4000	4510	113	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3900	97	49-155	
1,4-Dichlorobenzene	ug/L	1260	4000	5260	100	18-147	
Benzene	ug/L	ND	4000	4030	100	37-151	
Bromodichloromethane	ug/L	ND	4000	3740	93	35-155	
Bromoform	ug/L	ND	4000	3890	97	45-133	
Bromomethane	ug/L	ND	4000	4300	107	10-160	
Carbon tetrachloride	ug/L	ND	4000	4250	106	70-140	
Chloroethane	ug/L	ND	4000	4030	101	14-160	
Chloroform	ug/L	ND	4000	4020	101	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3890	97	19-160	N2
Ethylbenzene	ug/L	ND	4000	4040	97	37-154	
Methylene chloride	ug/L	ND	4000	4210	105	15-156	
Tetrachloroethene	ug/L	ND	4000	3870	97	64-148	
Toluene	ug/L	ND	4000	3910	96	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3840	96	54-156	
Trichloroethene	ug/L	ND	4000	4130	103	71-157	
Vinyl chloride	ug/L	ND	4000	4080	102	10-160	
Xylene (Total)	ug/L	687	12000	12200	96	12-153	N2
1,2-Dichloroethane-d4 (S)	%				97	80-120	
4-Bromofluorobenzene (S)	%				102	80-120	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			6.0		6.0		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

QC Batch:	MSV/58720	Analysis Method:	EPA 624 Low
QC Batch Method:	EPA 624 Low	Analysis Description:	624 MSV
Associated Lab Samples:	60160556001		

METHOD BLANK: 1314407 Matrix: Water

Associated Lab Samples: 60160556001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	01/06/14 13:53	N2
1,2-Dichloroethane-d4 (S)	%	103	80-120	01/06/14 13:53	
4-Bromofluorobenzene (S)	%	97	80-120	01/06/14 13:53	
Toluene-d8 (S)	%	104	80-120	01/06/14 13:53	

LABORATORY CONTROL SAMPLE: 1314408

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	100	83.0	83	40-160	N2
1,2-Dichloroethane-d4 (S)	%			96	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			98	80-120	

MATRIX SPIKE SAMPLE: 1314009

Parameter	Units	60160556001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	239000	25000	262000	91	40-160	N2

MATRIX SPIKE SAMPLE: 1314409

Parameter	Units	60160657001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane-d4 (S)	%				105	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				95	80-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

QC Batch:	OEXT/42154	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60160556001		

METHOD BLANK: 1313825 Matrix: Water

Associated Lab Samples: 60160556001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	01/03/14 17:32	
2,4,6-Trichlorophenol	ug/L	ND	5.0	01/03/14 17:32	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	01/03/14 17:32	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	01/03/14 17:32	
Hexachlorocyclopentadiene	ug/L	ND	5.0	01/03/14 17:32	
Hexachloroethane	ug/L	ND	5.0	01/03/14 17:32	
Naphthalene	ug/L	ND	5.0	01/03/14 17:32	
Nitrobenzene	ug/L	ND	5.0	01/03/14 17:32	
Pentachlorophenol	ug/L	ND	5.0	01/03/14 17:32	
Phenol	ug/L	ND	5.0	01/03/14 17:32	
2,4,6-Tribromophenol (S)	%	83	39-120	01/03/14 17:32	
2-Fluorobiphenyl (S)	%	84	39-120	01/03/14 17:32	
2-Fluorophenol (S)	%	43	17-120	01/03/14 17:32	
Nitrobenzene-d5 (S)	%	82	33-120	01/03/14 17:32	
Phenol-d6 (S)	%	29	11-120	01/03/14 17:32	
Terphenyl-d14 (S)	%	89	45-120	01/03/14 17:32	

LABORATORY CONTROL SAMPLE: 1313826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	40.8	82	46-120	
2,4,6-Trichlorophenol	ug/L	50	44.3	89	49-120	
4,6-Dinitro-2-methylphenol	ug/L	50	48.0	96	40-133	
Hexachloro-1,3-butadiene	ug/L	50	37.4	75	44-116	
Hexachlorocyclopentadiene	ug/L	100	70.2	70	24-120	
Hexachloroethane	ug/L	50	38.4	77	43-113	
Naphthalene	ug/L	50	41.9	84	48-120	
Nitrobenzene	ug/L	50	42.2	84	48-120	
Pentachlorophenol	ug/L	50	45.3	91	47-120	
Phenol	ug/L	50	17.8	36	16-112	
2,4,6-Tribromophenol (S)	%			96	39-120	
2-Fluorobiphenyl (S)	%			91	39-120	
2-Fluorophenol (S)	%			47	17-120	
Nitrobenzene-d5 (S)	%			87	33-120	
Phenol-d6 (S)	%			32	11-120	
Terphenyl-d14 (S)	%			96	45-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

MATRIX SPIKE SAMPLE:		1313827					
Parameter	Units	60160556001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	40.7	81	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	47.9	96	50-120	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	47.3J	95	10-160	
Hexachloro-1,3-butadiene	ug/L	ND	50	39.3	79	39-116	
Hexachlorocyclopentadiene	ug/L	ND	100	87.2	87	11-120	
Hexachloroethane	ug/L	ND	50	42.5	85	40-113	
Naphthalene	ug/L	20.4	50	57.2	74	45-120	
Nitrobenzene	ug/L	ND	50	42.4	85	38-120	
Pentachlorophenol	ug/L	ND	50	60.5	121	43-135	
Phenol	ug/L	106	50	118	25	13-112	
2,4,6-Tribromophenol (S)	%				99	39-120	
2-Fluorobiphenyl (S)	%				94	39-120	
2-Fluorophenol (S)	%				50	17-120	
Nitrobenzene-d5 (S)	%				141	33-120	S0
Phenol-d6 (S)	%				47	11-120	
Terphenyl-d14 (S)	%				101	45-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

QC Batch:	WET/45510	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60160556001		

METHOD BLANK: 1314747 Matrix: Water

Associated Lab Samples: 60160556001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	01/07/14 15:55	

LABORATORY CONTROL SAMPLE: 1314748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.0	100	78-114	

MATRIX SPIKE SAMPLE: 1314749

Parameter	Units	60160556001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	1260	164	1300	24	78-114	M1

SAMPLE DUPLICATE: 1314750

Parameter	Units	60160556001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	1260	1260	0	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

QC Batch: WET/45511

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60160556001

METHOD BLANK: 1314755

Matrix: Water

Associated Lab Samples: 60160556001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	01/07/14 15:52	

LABORATORY CONTROL SAMPLE: 1314756

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.1	100	64-132	

MATRIX SPIKE SAMPLE: 1314757

Parameter	Units	60160556001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	10.2	82	29.1	23	64-132	M1

SAMPLE DUPLICATE: 1314758

Parameter	Units	60160556001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	10.2	10	2	34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

QC Batch: WET/45504

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60160556001

METHOD BLANK: 1314665

Matrix: Water

Associated Lab Samples: 60160556001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	01/07/14 12:52	

SAMPLE DUPLICATE: 1314666

Parameter	Units	60160546001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	54.0	56.0	4	25	

SAMPLE DUPLICATE: 1314667

Parameter	Units	60160562002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	388	410	6	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

QC Batch: WET/45477 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60160556001

SAMPLE DUPLICATE: 1314088

Parameter	Units	60159968004 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.9	1	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

QC Batch: WET/45447

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60160556001

METHOD BLANK: 1313676

Matrix: Water

Associated Lab Samples: 60160556001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	01/07/14 09:01	

LABORATORY CONTROL SAMPLE: 1313677

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	213	108	85-115	

SAMPLE DUPLICATE: 1313678

Parameter	Units	60160555003 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	1660	1660	0	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

QC Batch: WETA/27764

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60160556001

METHOD BLANK: 1314836

Matrix: Water

Associated Lab Samples: 60160556001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	01/08/14 11:22	

LABORATORY CONTROL SAMPLE: 1314837

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	106	90-110	

MATRIX SPIKE SAMPLE: 1314838

Parameter	Units	60160556001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	768	1000	1980	121	90-110	M1

SAMPLE DUPLICATE: 1314839

Parameter	Units	60160608001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	855	885	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

QC Batch:	WETA/27743	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60160556001		

METHOD BLANK: 1314484 Matrix: Water

Associated Lab Samples: 60160556001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	01/07/14 11:55	

LABORATORY CONTROL SAMPLE: 1314485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	47.7	95	90-110	

MATRIX SPIKE SAMPLE: 1314486

Parameter	Units	60160372001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	102000	50000	162000	120	90-110	M1

SAMPLE DUPLICATE: 1314487

Parameter	Units	60160608001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	80400	81000	1	25	

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QUALIFIERS

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-182

Pace Project No.: 60160556

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60160556001	316-182	EPA 200.7	MPRP/25793	EPA 200.7	ICP/19777
60160556001	316-182	EPA 200.7	MPRP/25789	EPA 200.7	ICP/19776
60160556001	316-182	EPA 245.1	MERP/8047	EPA 245.1	MERC/8003
60160556001	316-182	EPA 245.1	MERP/8046	EPA 245.1	MERC/8002
60160556001	316-182	EPA 625	OEXT/42154	EPA 625	MSSV/13409
60160556001	316-182	EPA 624 Low	MSV/58705		
60160556001	316-182	EPA 624 Low	MSV/58720		
60160556002	TRIP BLANK	EPA 624 Low	MSV/58705		
60160556001	316-182	EPA 1664A	WET/45510		
60160556001	316-182	EPA 1664A	WET/45511		
60160556001	316-182	SM 2540D	WET/45504		
60160556001	316-182	SM 4500-H+B	WET/45477		
60160556001	316-182	SM 5210B	WET/45447	SM 5210B	WET/45503
60160556001	316-182	EPA 350.1	WETA/27764		
60160556001	316-182	EPA 410.4	WETA/27743		

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Sample Condition Upon Receipt

WO#: 60160556



60160556

Client Name: Barr

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ Xpress

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ 2PIL

Thermometer Used: T-239 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.0

Date and initials of person examining contents: 12/11/13 PVI/1/4

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody filled out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler name & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BoD pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	9.
Pace containers used:	☒ Yes ☐ No ☐ N/A	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>WT</u>		15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☒ No ☐ N/A	17.
Exceptions (VOA) coliform, TOC O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>603013-3</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Barr for ALO

Date: 1/2

