ANALYTICAL REPORT

September 11, 2015

WPX Energy

Sample Delivery Group:	L786347
Samples Received:	09/02/2015
Project Number:	
Description:	Grand Valley Pit Sampling

Report To:

Mr. Ryan Smith
1058 County Road 215
Parachute, CO 81635

Entire Report Reviewed By:

T. Alan Harvill
Technical Service Representative

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STARKEY GULTCH PIT L786347-01 WW

Collected by: Ryan Smith

Collected date/time: 09/01/15 09:34

Received date/time: 09/02/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Gravimetric Analysis by Method 2540 C-2011	WG813102	1	09/03/15 13:17	09/04/15 13:34	MF
Mercury by Method 245.1	WG813214	1	09/03/15 10:41	09/03/15 15:09	CHM
Metals (ICP) by Method 200.7	WG813400	5	09/07/15 15:22	09/08/15 23:12	ST
Semi Volatile Organic Compounds (GC/MS) by Method 625	WG813193	1	09/03/15 18:38	09/04/15 13:24	ADF
Semi Volatile Organic Compounds (GC/MS) by Method 625	WG813193	10	09/03/15 18:38	09/08/15 15:09	ADF
Volatile Organic Compounds (GC/MS) by Method 624	WG813630	25	09/06/15 19:03	09/06/15 19:03	KLO
Wet Chemistry by Method 120.1	WG813092	1	09/03/15 10:22	09/03/15 10:22	JER
Wet Chemistry by Method 130.1	WG813062	10	09/03/15 12:06	09/03/15 12:06	ASK
Wet Chemistry by Method 2320 B-2011	WG813299	5	09/08/15 08:03	09/08/15 08:03	MCG
Wet Chemistry by Method 300.0	WG813065	1	09/02/15 19:25	09/02/15 19:25	DJD
Wet Chemistry by Method 300.0	WG813758	200	09/09/15 18:09	09/09/15 18:09	DJD
Wet Chemistry by Method 300.0	WG813764	1	09/10/15 11:16	09/10/15 11:16	DJD
Wet Chemistry by Method 4500H+ B-2011	WG813370	1	09/04/15 14:50	09/04/15 14:50	JEH

All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

T. Alan Harvill
Technical Service Representative

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID	Project Sample ID	Method
L786347-01	STARKEY GULTCH PIT	4500H+ B-2011

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	17300		10.0	1	09/04/2015 13:34	WG813102

Wet Chemistry by Method 120.1

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	umhos/cm			date / time	
Specific Conductance	29300		1	09/03/2015 10:22	WG813092

Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hardness, Total (mg/L as CaCO3)	854		300	10	09/03/2015 12:06	WG813062

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Alkalinity	692		100	5	09/08/2015 08:03	WG813299

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Bromide	86.5		1.00	1	09/02/2015 19:25	WG813065
Chloride	10500		200	200	09/09/2015 18:09	WG813758
Fluoride	ND		0.100	1	09/10/2015 11:16	WG813764
Nitrate	ND		0.100	1	09/02/2015 19:25	WG813065
Nitrite	ND		0.100	1	09/02/2015 19:25	WG813065
Sulfate	ND		5.00	1	09/02/2015 19:25	WG813065

Wet Chemistry by Method 4500H+ B-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	6.85		1	09/04/2015 14:50	WG813370

Sample Narrative:

4500H+ B-2011 L786347-01 WG813370: 6.85 at 13.5c

Mercury by Method 245.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury,Dissolved	ND	J3 J6 O1	0.000200	1	09/03/2015 15:09	WG813214

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Arsenic,Dissolved	ND		0.0500	5	09/08/2015 23:12	WG813400
Barium,Dissolved	53.8		0.0250	5	09/08/2015 23:12	WG813400
Cadmium,Dissolved	ND		0.0100	5	09/08/2015 23:12	WG813400
Chromium,Dissolved	ND		0.0500	5	09/08/2015 23:12	WG813400
Lead,Dissolved	ND		0.0250	5	09/08/2015 23:12	WG813400
Selenium,Dissolved	ND		0.0500	5	09/08/2015 23:12	WG813400
Silver,Dissolved	ND		0.0250	5	09/08/2015 23:12	WG813400

Volatile Organic Compounds (GC/MS) by Method 624

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	1.86		0.0250	25	09/06/2015 19:03	WG813630
Bromodichloromethane	ND		0.0250	25	09/06/2015 19:03	WG813630
Bromoform	ND		0.0250	25	09/06/2015 19:03	WG813630
Bromomethane	ND		0.125	25	09/06/2015 19:03	WG813630
Carbon tetrachloride	ND		0.0250	25	09/06/2015 19:03	WG813630
Chlorobenzene	ND		0.0250	25	09/06/2015 19:03	WG813630
Chlorodibromomethane	ND		0.0250	25	09/06/2015 19:03	WG813630
Chloroethane	ND		0.125	25	09/06/2015 19:03	WG813630
2-Chloroethyl vinyl ether	ND		1.25	25	09/06/2015 19:03	WG813630
Chloroform	ND		0.125	25	09/06/2015 19:03	WG813630
Chloromethane	ND		0.0625	25	09/06/2015 19:03	WG813630
1,2-Dichlorobenzene	ND		0.0250	25	09/06/2015 19:03	WG813630
1,3-Dichlorobenzene	ND		0.0250	25	09/06/2015 19:03	WG813630
1,4-Dichlorobenzene	ND		0.0250	25	09/06/2015 19:03	WG813630
Dichlorodifluoromethane	ND		0.125	25	09/06/2015 19:03	WG813630
1,1-Dichloroethane	ND		0.0250	25	09/06/2015 19:03	WG813630
1,2-Dichloroethane	ND		0.0250	25	09/06/2015 19:03	WG813630
1,1-Dichloroethene	ND		0.0250	25	09/06/2015 19:03	WG813630
trans-1,2-Dichloroethene	ND		0.0250	25	09/06/2015 19:03	WG813630
1,2-Dichloropropane	ND		0.0250	25	09/06/2015 19:03	WG813630
cis-1,3-Dichloropropene	ND		0.0250	25	09/06/2015 19:03	WG813630
trans-1,3-Dichloropropene	ND		0.0250	25	09/06/2015 19:03	WG813630
Ethylbenzene	0.121		0.0250	25	09/06/2015 19:03	WG813630
Methylene Chloride	ND		0.125	25	09/06/2015 19:03	WG813630
Methyl tert-butyl ether	ND		0.125	25	09/06/2015 19:03	WG813630
Naphthalene	ND	J3 J4	0.125	25	09/06/2015 19:03	WG813630
1,1,2,2-Tetrachloroethane	ND		0.0250	25	09/06/2015 19:03	WG813630
Tetrachloroethene	ND		0.0250	25	09/06/2015 19:03	WG813630
Toluene	3.75		0.125	25	09/06/2015 19:03	WG813630
1,1,1-Trichloroethane	ND		0.0250	25	09/06/2015 19:03	WG813630
1,1,2-Trichloroethane	ND		0.0250	25	09/06/2015 19:03	WG813630
Trichloroethene	ND		0.0250	25	09/06/2015 19:03	WG813630
Trichlorofluoromethane	ND		0.125	25	09/06/2015 19:03	WG813630
Vinyl chloride	ND		0.0250	25	09/06/2015 19:03	WG813630
Xylenes, Total	2.53		0.0750	25	09/06/2015 19:03	WG813630
(S) Toluene-d8	*106*		*90.0-115*		*09/06/2015 19:03*	WG813630
(S) Dibromofluoromethane	*95.5*		*79.0-121*		*09/06/2015 19:03*	WG813630
(S) a,a,a-Trifluorotoluene	*103*		*90.4-116*		*09/06/2015 19:03*	WG813630
(S) 4-Bromofluorobenzene	*102*		*80.1-120*		*09/06/2015 19:03*	WG813630

Semi Volatile Organic Compounds (GC/MS) by Method 625

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acenaphthene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
Acenaphthylene	ND		0.00100	1	09/04/2015 13:24	WG813193
Anthracene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
Benzidine	ND		0.0100	1	09/04/2015 13:24	WG813193
Benzo(a)anthracene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
Benzo(b)fluoranthene	ND		0.00100	1	09/04/2015 13:24	WG813193
Benzo(k)fluoranthene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
Benzo(g,h,i)perylene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
Benzo(a)pyrene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
Bis(2-chlorethoxy)methane	ND		0.0100	1	09/04/2015 13:24	WG813193
Bis(2-chloroethyl)ether	ND		0.0100	1	09/04/2015 13:24	WG813193
Bis(2-chloroisopropyl)ether	ND	J4	0.0100	1	09/04/2015 13:24	WG813193
4-Bromophenyl-phenylether	ND		0.0100	1	09/04/2015 13:24	WG813193

Semi Volatile Organic Compounds (GC/MS) by Method 625

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
2-Chloronaphthalene	ND		0.00100	1	09/04/2015 13:24	WG813193
4-Chlorophenyl-phenylether	ND	J3	0.0100	1	09/04/2015 13:24	WG813193
Chrysene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
Dibenz(a,h)anthracene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
3,3-Dichlorobenzidine	ND		0.0100	1	09/04/2015 13:24	WG813193
2,4-Dinitrotoluene	ND		0.0100	1	09/04/2015 13:24	WG813193
2,6-Dinitrotoluene	ND		0.0100	1	09/04/2015 13:24	WG813193
1,2-Diphenylhydrazine	ND	J3	0.0100	1	09/04/2015 13:24	WG813193
Fluoranthene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
Fluorene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
Hexachlorobenzene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
Hexachloro-1,3-butadiene	ND		0.0100	1	09/04/2015 13:24	WG813193
Hexachlorocyclopentadiene	ND		0.0100	1	09/04/2015 13:24	WG813193
Hexachloroethane	ND		0.0100	1	09/04/2015 13:24	WG813193
Indeno(1,2,3-cd)pyrene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
Isophorone	ND		0.0100	1	09/04/2015 13:24	WG813193
Naphthalene	0.0216		0.00100	1	09/04/2015 13:24	WG813193
Nitrobenzene	ND		0.0100	1	09/04/2015 13:24	WG813193
n-Nitrosodimethylamine	ND		0.0100	1	09/04/2015 13:24	WG813193
n-Nitrosodiphenylamine	ND	J3	0.0100	1	09/04/2015 13:24	WG813193
n-Nitrosodi-n-propylamine	ND	J4	0.0100	1	09/04/2015 13:24	WG813193
Phenanthrene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
Benzylbutyl phthalate	ND	J3	0.00300	1	09/04/2015 13:24	WG813193
Bis(2-ethylhexyl)phthalate	ND		0.00300	1	09/04/2015 13:24	WG813193
Di-n-butyl phthalate	ND	J3	0.00300	1	09/04/2015 13:24	WG813193
Diethyl phthalate	ND	J3	0.00300	1	09/04/2015 13:24	WG813193
Dimethyl phthalate	ND	J3	0.00300	1	09/04/2015 13:24	WG813193
Di-n-octyl phthalate	ND		0.00300	1	09/04/2015 13:24	WG813193
Pyrene	ND	J3	0.00100	1	09/04/2015 13:24	WG813193
1,2,4-Trichlorobenzene	ND		0.0100	1	09/04/2015 13:24	WG813193
4-Chloro-3-methylphenol	ND		0.0100	1	09/04/2015 13:24	WG813193
2-Chlorophenol	ND		0.0100	1	09/04/2015 13:24	WG813193
2,4-Dichlorophenol	ND		0.0100	1	09/04/2015 13:24	WG813193
2,4-Dimethylphenol	0.180		0.0100	1	09/04/2015 13:24	WG813193
4,6-Dinitro-2-methylphenol	ND		0.0100	1	09/04/2015 13:24	WG813193
2,4-Dinitrophenol	ND		0.0100	1	09/04/2015 13:24	WG813193
2-Nitrophenol	ND		0.0100	1	09/04/2015 13:24	WG813193
4-Nitrophenol	ND		0.0100	1	09/04/2015 13:24	WG813193
Pentachlorophenol	ND		0.0100	1	09/04/2015 13:24	WG813193
Phenol	0.295		0.100	10	09/08/2015 15:09	WG813193
2,4,6-Trichlorophenol	ND		0.0100	1	09/04/2015 13:24	WG813193
(S) Nitrobenzene-d5	*103*		*21.8-123*		*09/04/2015 13:24*	WG813193
(S) 2-Fluorobiphenyl	*66.8*		*29.5-131*		*09/04/2015 13:24*	WG813193
(S) p-Terphenyl-d14	*76.4*		*29.3-137*		*09/04/2015 13:24*	WG813193
(S) Phenol-d5	*63.7*		*5.00-70.1*		*09/04/2015 13:24*	WG813193
(S) 2-Fluorophenol	*76.6*		*10.0-77.9*		*09/04/2015 13:24*	WG813193
(S) 2,4,6-Tribromophenol	*85.9*		*11.2-130*		*09/04/2015 13:24*	WG813193

Method Blank (MB)

(MB) 09/04/15 13:36

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Dissolved Solids	ND		10.0

L786345-01 Original Sample (OS) • Duplicate (DUP)

(OS) 09/04/15 13:35 • (DUP) 09/04/15 13:36

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1540	1590	1	3.20		5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/04/15 13:37 • (LCSD) 09/04/15 13:37

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Dissolved Solids	8800	8600	8680	97.7	98.6	85.0-115			0.926	5

Method Blank (MB)

(MB) 09/03/15 10:22

Analyte	MB Result umhos/cm	MB Qualifier	MB RDL umhos/cm
Specific Conductance	1.02		

L786146-23 Original Sample (OS) • Duplicate (DUP)

(OS) 09/03/15 10:22 • (DUP) 09/03/15 10:22

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	660	660	1	0.15		20

L786437-05 Original Sample (OS) • Duplicate (DUP)

(OS) 09/03/15 10:22 • (DUP) 09/03/15 10:22

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	3100	3100	1	0.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/03/15 10:22 • (LCSD) 09/03/15 10:22

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCSD Result umhos/cm	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Specific Conductance	873	896	896	103	103	90.0-110			0.000	20

Method Blank (MB)

(MB) 09/03/15 11:33

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Hardness	ND		30.0

L786037-01 Original Sample (OS) • Duplicate (DUP)

(OS) 09/03/15 11:41 • (DUP) 09/03/15 11:42

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hardness	61	65	1	6.2		20

L786200-05 Original Sample (OS) • Duplicate (DUP)

(OS) 09/03/15 11:53 • (DUP) 09/03/15 11:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hardness	60	60	1	1.0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/03/15 11:35 • (LCSD) 09/03/15 11:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hardness	200	215	211	108	106	85.0-115			1.88	20

L786037-02 Original Sample (OS) • Matrix Spike (MS)

(OS) 09/03/15 11:43 • (MS) 09/03/15 11:44

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hardness	150	62.1	175	75.3	1	80.0-120	J6

L786200-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/03/15 11:55 • (MS) 09/03/15 11:56 • (MSD) 09/03/15 11:56

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hardness	150	38.0	172	174	89.3	90.7	1	80.0-120			1.16	20

Method Blank (MB)

(MB) 09/08/15 08:03

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Alkalinity	ND		20.0

L786344-02 Original Sample (OS) • Duplicate (DUP)

(OS) 09/08/15 08:03 • (DUP) 09/08/15 08:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	390	380	5	2.1		20

L786347-01 Original Sample (OS) • Duplicate (DUP)

(OS) 09/08/15 08:03 • (DUP) 09/08/15 08:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	690	680	5	2.0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/08/15 08:03 • (LCSD) 09/08/15 08:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Alkalinity	100	111	108	111	108	85.0-115			2.74	20

L786368-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/08/15 08:03 • (MS) 09/08/15 08:03 • (MSD) 09/08/15 08:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Alkalinity	100	438	940	958	100	104	5	80.0-120			1.90	20

Method Blank (MB)

(MB) 09/02/15 07:30

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Bromide	ND		1.00
Nitrate	ND		0.100
Nitrite	ND		0.100
Sulfate	ND		5.00

L786299-01 Original Sample (OS) • Duplicate (DUP)

(OS) 09/02/15 15:29 • (DUP) 09/02/15 15:42

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	0.0344	0.000	1	0		20
Nitrate	0.335	0.310	1	8		20
Nitrite	ND	0.000	1	0		20
Sulfate	44.5	43.7	1	2		20

L786365-01 Original Sample (OS) • Duplicate (DUP)

(OS) 09/02/15 20:20 • (DUP) 09/02/15 20:34

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	0.135	0.124	1	0		20
Nitrate	ND	0.000	1	0		20
Nitrite	ND	0.000	1	0		20
Sulfate	16.5	16.2	1	1		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/02/15 07:44 • (LCSD) 09/02/15 07:57

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromide	40.0	40.8	41.0	102	103	90-110			0	20
Nitrate	8.00	8.47	8.55	106	107	90-110			1	20
Nitrite	8.00	7.90	7.96	99	99	90-110			1	20
Sulfate	40.0	39.2	39.5	98	99	90-110			1	20

L786299-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/02/15 15:56 • (MS) 09/02/15 16:10 • (MSD) 09/02/15 16:24

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromide	50.0	ND	52.2	52.6	104	105	1	80-120			1	20
Nitrate	5.00	0.354	5.76	5.79	108	109	1	80-120			1	20
Nitrite	5.00	ND	5.34	5.39	107	108	1	80-120			1	20
Sulfate	50.0	0.124	53.9	54.2	107	108	1	80-120			1	20

Method Blank (MB)

(MB) 09/09/15 09:15

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Chloride	ND		1.00

L786146-10 Original Sample (OS) • Duplicate (DUP)

(OS) 09/09/15 11:20 • (DUP) 09/09/15 11:33

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	36.9	35.3	10	4		20

L786344-10 Original Sample (OS) • Duplicate (DUP)

(OS) 09/09/15 16:59 • (DUP) 09/09/15 17:13

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	45.0	45.0	1	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/09/15 09:29 • (LCSD) 09/09/15 09:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	40.0	39.8	39.5	100	99	90-110			1	20

L786146-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/09/15 11:47 • (MS) 09/09/15 12:01 • (MSD) 09/09/15 12:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	5.00	8.68	505	519	99	102	10	80-120			3	20

Method Blank (MB)

(MB) 09/10/15 09:25

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Fluoride	ND		0.100

L786624-08 Original Sample (OS) • Duplicate (DUP)

(OS) 09/10/15 13:09 • (DUP) 09/10/15 13:23

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	ND	0.000	10	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/10/15 09:39 • (LCSD) 09/10/15 09:53

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Fluoride	8.00	7.92	7.89	99	99	90-110			0	20

L786346-02 Original Sample (OS) • Duplicate (DUP)

(OS) 09/04/15 14:50 • (DUP) 09/04/15 14:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.2	7.2	1	0.14		1

L786820-04 Original Sample (OS) • Duplicate (DUP)

(OS) 09/04/15 14:50 • (DUP) 09/04/15 14:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.0	8.0	1	0.25		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/04/15 14:50 • (LCSD) 09/04/15 14:50

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.37	6.39	6.38	100	100	98.2-102			0.157	20

Method Blank (MB)

(MB) 09/03/15 15:03

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Mercury,Dissolved	ND		0.000200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/03/15 15:05 • (LCSD) 09/03/15 15:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury,Dissolved	0.00300	0.00288	0.00261	96	87	85-115			10	20

L786347-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/03/15 15:09 • (MS) 09/03/15 15:12 • (MSD) 09/03/15 15:14

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury,Dissolved	0.00300	ND	0.000256	0.000198	9	7	1	70-130	J6	J3 J6	25	20

Method Blank (MB)

(MB) 09/08/15 21:46

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Arsenic,Dissolved	ND		0.0100
Barium,Dissolved	ND		0.00500
Cadmium,Dissolved	ND		0.00200
Chromium,Dissolved	ND		0.0100
Lead,Dissolved	ND		0.00500
Selenium,Dissolved	ND		0.0100
Silver,Dissolved	ND		0.00500

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/08/15 23:09 • (LCSD) 09/08/15 21:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic,Dissolved	1.00	1.06	1.06	106	106	85-115			0	20
Barium,Dissolved	1.00	1.05	1.05	105	105	85-115			0	20
Cadmium,Dissolved	1.00	1.08	1.07	108	107	85-115			1	20
Chromium,Dissolved	1.00	1.05	1.05	105	105	85-115			0	20
Lead,Dissolved	1.00	1.10	1.08	110	108	85-115			1	20
Selenium,Dissolved	1.00	1.13	1.13	113	113	85-115			0	20
Silver,Dissolved	1.00	1.07	1.07	107	107	85-115			0	20

L786138-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/08/15 22:00 • (MS) 09/08/15 22:06 • (MSD) 09/08/15 22:08

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic,Dissolved	1.00	0.0785	1.14	1.15	106	107	1	75-125			1	20
Barium,Dissolved	1.00	0.946	1.93	1.94	99	100	1	75-125			1	20
Cadmium,Dissolved	1.00	ND	1.06	1.07	106	107	1	75-125			1	20
Chromium,Dissolved	1.00	ND	1.02	1.03	102	103	1	75-125			1	20
Lead,Dissolved	1.00	0.000617	1.09	1.10	109	109	1	75-125			1	20
Selenium,Dissolved	1.00	0.00326	1.13	1.14	113	114	1	75-125			1	20
Silver,Dissolved	1.00	ND	1.06	1.07	106	107	1	75-125			1	20

Method Blank (MB)

(MB) 09/06/15 07:21

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Benzene	ND		0.00100
Bromodichloromethane	ND		0.00100
Bromoform	ND		0.00100
Bromomethane	ND		0.00500
Carbon tetrachloride	ND		0.00100
Chlorobenzene	ND		0.00100
Chlorodibromomethane	ND		0.00100
Chloroethane	ND		0.00500
2-Chloroethyl vinyl ether	ND		0.0500
Chloroform	ND		0.00500
Chloromethane	ND		0.00250
1,2-Dichlorobenzene	ND		0.00100
1,3-Dichlorobenzene	ND		0.00100
1,4-Dichlorobenzene	ND		0.00100
Dichlorodifluoromethane	ND		0.00500
1,1-Dichloroethane	ND		0.00100
1,2-Dichloroethane	ND		0.00100
1,1-Dichloroethene	ND		0.00100
trans-1,2-Dichloroethene	ND		0.00100
1,2-Dichloropropane	ND		0.00100
cis-1,3-Dichloropropene	ND		0.00100
trans-1,3-Dichloropropene	ND		0.00100
Ethylbenzene	ND		0.00100
Methylene Chloride	ND		0.00500
Methyl tert-butyl ether	ND		0.00500
Naphthalene	ND		0.00500
1,1,2,2-Tetrachloroethane	ND		0.00100
Tetrachloroethene	ND		0.00100
Toluene	ND		0.00500
1,1,1-Trichloroethane	ND		0.00100
1,1,2-Trichloroethane	ND		0.00100
Trichloroethene	ND		0.00100
Trichlorofluoromethane	ND		0.00500
Vinyl chloride	ND		0.00100
Xylenes, Total	ND		0.00300
(S) Toluene-d8	*107*		*90.0-115*

Method Blank (MB)

(MB) 09/06/15 07:21

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
(S) Dibromofluoromethane	*98.4*		*79.0-121*
(S) α,α,α-Trifluorotoluene	*103*		*90.4-116*
(S) 4-Bromofluorobenzene	*100*		*80.1-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/06/15 04:24 • (LCSD) 09/06/15 10:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0212	0.0205	84.8	81.9	73.0-122			3.44	20
Bromodichloromethane	0.0250	0.0253	0.0242	101	96.8	75.5-121			4.48	20
Bromoform	0.0250	0.0258	0.0254	103	101	71.5-131			1.54	20
Bromomethane	0.0250	0.0192	0.0184	76.8	73.5	22.4-187			4.39	20
Carbon tetrachloride	0.0250	0.0208	0.0198	83.2	79.2	70.9-129			4.89	20
Chlorobenzene	0.0250	0.0216	0.0212	86.2	84.8	79.7-122			1.65	20
Chlorodibromomethane	0.0250	0.0237	0.0231	94.7	92.3	78.2-124			2.49	20
Chloroethane	0.0250	0.0198	0.0189	79.2	75.7	41.2-153			4.47	20
2-Chloroethyl vinyl ether	0.125	0.118	0.116	94.1	92.4	23.4-162			1.83	23.5
Chloroform	0.0250	0.0220	0.0215	88.1	86.0	73.2-125			2.46	20
Chloromethane	0.0250	0.0215	0.0207	85.8	82.8	55.8-134			3.58	20
1,2-Dichlorobenzene	0.0250	0.0240	0.0233	96.2	93.2	84.7-118			3.11	20
1,3-Dichlorobenzene	0.0250	0.0251	0.0243	100	97.3	77.6-127			3.00	20
1,4-Dichlorobenzene	0.0250	0.0222	0.0222	89.0	88.8	82.2-114			0.240	20
Dichlorodifluoromethane	0.0250	0.0181	0.0183	72.2	73.0	56.0-134			1.13	20
1,1-Dichloroethane	0.0250	0.0227	0.0222	90.9	88.8	71.7-127			2.37	20
1,2-Dichloroethane	0.0250	0.0239	0.0237	95.5	94.9	65.3-126			0.610	20
1,1-Dichloroethene	0.0250	0.0215	0.0208	86.1	83.2	59.9-137			3.42	20
trans-1,2-Dichloroethene	0.0250	0.0202	0.0195	80.7	77.9	72.6-125			3.48	20
1,2-Dichloropropane	0.0250	0.0257	0.0250	103	100	77.4-125			2.69	20
cis-1,3-Dichloropropene	0.0250	0.0250	0.0245	99.8	97.9	77.7-124			1.96	20
trans-1,3-Dichloropropene	0.0250	0.0230	0.0225	92.0	90.2	73.5-127			1.99	20
Ethylbenzene	0.0250	0.0212	0.0205	84.7	82.1	80.9-121			3.15	20
Methylene Chloride	0.0250	0.0210	0.0197	84.0	78.8	69.5-120			6.44	20
Methyl tert-butyl ether	0.0250	0.0228	0.0224	91.4	89.5	70.1-125			2.08	20
Naphthalene	0.0250	0.0216	0.0170	86.5	68.0	69.7-134		J3 J4	23.9	20
1,1,2,2-Tetrachloroethane	0.0250	0.0246	0.0236	98.4	94.2	79.3-123			4.38	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/06/15 04:24 • (LCSD) 09/06/15 10:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Tetrachloroethene	0.0250	0.0208	0.0198	83.0	79.3	73.5-130			4.65	20
Toluene	0.0250	0.0218	0.0211	87.2	84.4	77.9-116			3.35	20
1,1,1-Trichloroethane	0.0250	0.0208	0.0200	83.1	80.0	71.1-129			3.86	20
1,1,2-Trichloroethane	0.0250	0.0226	0.0221	90.3	88.4	81.6-120			2.23	20
Trichloroethene	0.0250	0.0222	0.0214	88.9	85.7	79.5-121			3.71	20
Trichlorofluoromethane	0.0250	0.0197	0.0193	78.8	77.2	49.1-157			2.10	20
Vinyl chloride	0.0250	0.0199	0.0195	79.7	77.9	61.5-134			2.26	20
Xylenes, Total	0.0750	0.0636	0.0619	84.8	82.6	79.2-122			2.67	20
(S) Toluene-d8				*107*	*107*	*90.0-115*				
(S) Dibromofluoromethane				*97.3*	*97.6*	*79.0-121*				
(S) a,a,a-Trifluorotoluene				*104*	*104*	*90.4-116*				
(S) 4-Bromofluorobenzene				*99.8*	*99.0*	*80.1-120*				

L786225-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/06/15 13:29 • (MS) 09/06/15 12:11 • (MSD) 09/06/15 12:30

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	ND	0.0212	0.0226	84.7	90.3	1	58.6-133			6.42	20
Bromodichloromethane	0.0250	ND	0.0255	0.0272	102	109	1	69.2-127			6.43	20
Bromoform	0.0250	ND	0.0274	0.0301	109	120	1	66.3-140			9.42	20
Bromomethane	0.0250	ND	0.0191	0.0202	76.4	80.9	1	16.6-183			5.81	20.5
Carbon tetrachloride	0.0250	ND	0.0209	0.0224	83.6	89.7	1	60.6-139			7.05	20
Chlorobenzene	0.0250	ND	0.0217	0.0232	86.9	92.7	1	70.1-130			6.44	20
Chlorodibromomethane	0.0250	ND	0.0245	0.0266	97.9	106	1	71.6-132			8.29	20
Chloroethane	0.0250	ND	0.0198	0.0203	79.0	81.3	1	33.3-155			2.85	20
2-Chloroethyl vinyl ether	0.125	ND	0.114	0.103	91.2	82.4	1	5.00-149			10.1	40
Chloroform	0.0250	ND	0.0222	0.0238	88.8	95.1	1	66.1-133			6.86	20
Chloromethane	0.0250	ND	0.0213	0.0224	85.3	89.6	1	40.7-139			4.95	20
1,2-Dichlorobenzene	0.0250	ND	0.0247	0.0258	98.9	103	1	77.4-127			4.07	20
1,3-Dichlorobenzene	0.0250	ND	0.0255	0.0270	102	108	1	67.9-136			5.82	20
1,4-Dichlorobenzene	0.0250	ND	0.0228	0.0240	91.3	96.1	1	74.4-123			5.11	20
Dichlorodifluoromethane	0.0250	ND	0.0186	0.0191	74.4	76.5	1	42.2-146			2.77	20
1,1-Dichloroethane	0.0250	ND	0.0230	0.0243	91.9	97.2	1	64.0-134			5.53	20
1,2-Dichloroethane	0.0250	ND	0.0245	0.0268	98.1	107	1	60.7-132			8.67	20
1,1-Dichloroethene	0.0250	ND	0.0215	0.0227	85.8	90.9	1	48.8-144			5.70	20

L786225-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/06/15 13:29 • (MS) 09/06/15 12:11 • (MSD) 09/06/15 12:30

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
trans-1,2-Dichloroethene	0.0250	ND	0.0204	0.0214	81.7	85.6	1	61.0-132			4.67	20
1,2-Dichloropropane	0.0250	ND	0.0263	0.0278	105	111	1	69.7-130			5.31	20
cis-1,3-Dichloropropene	0.0250	ND	0.0259	0.0275	104	110	1	71.1-129			5.77	20
trans-1,3-Dichloropropene	0.0250	ND	0.0273	0.0291	109	116	1	66.3-136			6.36	20
Ethylbenzene	0.0250	ND	0.0211	0.0223	84.4	89.2	1	62.7-136			5.55	20
Methylene Chloride	0.0250	0.000517	0.0207	0.0222	80.6	86.9	1	61.5-125			7.38	20
Methyl tert-butyl ether	0.0250	ND	0.0243	0.0266	97.0	107	1	61.4-136			9.37	20
Naphthalene	0.0250	ND	0.0202	0.0227	81.0	90.7	1	61.8-143			11.4	20
1,1,2,2-Tetrachloroethane	0.0250	ND	0.0258	0.0282	103	113	1	64.9-145			8.85	20
Tetrachloroethene	0.0250	1.10	0.798	0.755	0.000	0.000	1	57.4-141	J6	J6	5.58	20
Toluene	0.0250	ND	0.0218	0.0234	87.0	93.4	1	67.8-124			7.12	20
1,1,1-Trichloroethane	0.0250	ND	0.0210	0.0225	84.1	89.9	1	58.7-134			6.63	20
1,1,2-Trichloroethane	0.0250	ND	0.0232	0.0253	93.0	101	1	74.1-130			8.34	20
Trichloroethene	0.0250	0.0103	0.0304	0.0313	80.2	84.0	1	48.9-148			3.06	20
Trichlorofluoromethane	0.0250	ND	0.0198	0.0208	79.4	83.1	1	39.9-165			4.57	20
Vinyl chloride	0.0250	ND	0.0201	0.0211	80.2	84.6	1	44.3-143			5.32	20
Xylenes, Total	0.0750	ND	0.0637	0.0676	85.0	90.2	1	65.6-133			5.96	20
(S) Toluene-d8					*105*	*107*		*90.0-115*				
(S) Dibromofluoromethane					*97.3*	*98.7*		*79.0-121*				
(S) a,a,a-Trifluorotoluene					*103*	*104*		*90.4-116*				
(S) 4-Bromofluorobenzene					*99.4*	*100*		*80.1-120*				

Method Blank (MB)

(MB) 09/04/15 06:06

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Acenaphthene	ND		0.00100
Acenaphthylene	ND		0.00100
Anthracene	ND		0.00100
Benzidine	ND		0.0100
Benzo(a)anthracene	ND		0.00100
Benzo(b)fluoranthene	ND		0.00100
Benzo(k)fluoranthene	ND		0.00100
Benzo(g,h,i)perylene	ND		0.00100
Benzo(a)pyrene	ND		0.00100
Bis(2-chlorethoxy)methane	ND		0.0100
Bis(2-chloroethyl)ether	ND		0.0100
Bis(2-chloroisopropyl)ether	ND		0.0100
4-Bromophenyl-phenylether	ND		0.0100
2-Chloronaphthalene	ND		0.00100
4-Chlorophenyl-phenylether	ND		0.0100
Chrysene	ND		0.00100
Dibenz(a,h)anthracene	ND		0.00100
3,3-Dichlorobenzidine	ND		0.0100
2,4-Dinitrotoluene	ND		0.0100
2,6-Dinitrotoluene	ND		0.0100
Fluoranthene	ND		0.00100
Fluorene	ND		0.00100
Hexachlorobenzene	ND		0.00100
Hexachloro-1,3-butadiene	ND		0.0100
Hexachlorocyclopentadiene	ND		0.0100
Hexachloroethane	ND		0.0100
Indeno(1,2,3-cd)pyrene	ND		0.00100
Isophorone	ND		0.0100
Naphthalene	ND		0.00100
Nitrobenzene	ND		0.0100
n-Nitrosodimethylamine	ND		0.0100
1,2-Diphenylhydrazine	ND		0.0100
n-Nitrosodiphenylamine	ND		0.0100
n-Nitrosodi-n-propylamine	ND		0.0100
Phenanthrene	ND		0.00100
Benzylbutyl phthalate	ND		0.00300

Method Blank (MB)

(MB) 09/04/15 06:06

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Bis(2-ethylhexyl)phthalate	ND		0.00300
Di-n-butyl phthalate	ND		0.00300
Diethyl phthalate	ND		0.00300
Dimethyl phthalate	ND		0.00300
Di-n-octyl phthalate	ND		0.00300
Pyrene	ND		0.00100
1,2,4-Trichlorobenzene	ND		0.0100
4-Chloro-3-methylphenol	ND		0.0100
2-Chlorophenol	ND		0.0100
2,4-Dichlorophenol	ND		0.0100
2,4-Dimethylphenol	ND		0.0100
4,6-Dinitro-2-methylphenol	ND		0.0100
2,4-Dinitrophenol	ND		0.0100
2-Nitrophenol	ND		0.0100
4-Nitrophenol	ND		0.0100
Pentachlorophenol	ND		0.0100
Phenol	ND		0.0100
2,4,6-Trichlorophenol	ND		0.0100
(S) Nitrobenzene-d5	*43.4*		*21.8-123*
(S) 2-Fluorobiphenyl	*48.5*		*29.5-131*
(S) p-Terphenyl-d14	*73.3*		*29.3-137*
(S) Phenol-d5	*29.6*		*5.00-70.1*
(S) 2-Fluorophenol	*36.6*		*10.0-77.9*
(S) 2,4,6-Tribromophenol	*58.7*		*11.2-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/04/15 05:19 • (LCSD) 09/04/15 05:42

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0500	0.0319	0.0257	63.8	51.4	38.7-109		J3	21.6	21.5
Acenaphthylene	0.0500	0.0336	0.0273	67.2	54.6	36.0-106			20.8	21
Anthracene	0.0500	0.0399	0.0325	79.9	64.9	43.6-113		J3	20.7	18.8
Benzo(a)anthracene	0.0500	0.0392	0.0320	78.4	64.1	51.2-112		J3	20.1	20
Benzidine	0.0500	0.0236	0.0247	47.3	49.3	10.0-165			4.23	40
Benzo(b)fluoranthene	0.0500	0.0386	0.0320	77.2	64.1	47.6-111			18.5	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/04/15 05:19 • (LCSD) 09/04/15 05:42

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzo(k)fluoranthene	0.0500	0.0393	0.0316	78.5	63.2	49.4-114		J3	21.6	20
Benzo(g,h,i)perylene	0.0500	0.0428	0.0325	85.6	65.0	45.2-117		J3	27.4	20
Benzo(a)pyrene	0.0500	0.0408	0.0329	81.6	65.7	45.6-106		J3	21.6	20
Bis(2-chlorethoxy)methane	0.0500	0.0252	0.0208	50.3	41.6	37.2-111			19.0	24.1
Bis(2-chloroethyl)ether	0.0500	0.0166	0.0141	33.2	28.2	22.6-108			16.5	27.9
Bis(2-chloroisopropyl)ether	0.0500	0.0195	0.0164	39.0	32.8	32.9-100		J4	17.4	25.1
4-Bromophenyl-phenylether	0.0500	0.0383	0.0317	76.6	63.4	40.7-116			18.9	21
2-Chloronaphthalene	0.0500	0.0295	0.0235	59.0	47.1	33.6-105			22.5	23
1,2-Diphenylhydrazine	0.0500	0.0371	0.0299	74.2	59.7	37.6-111		J3	21.6	21.1
4-Chlorophenyl-phenylether	0.0500	0.0382	0.0302	76.4	60.4	39.0-113		J3	23.4	20.9
Chrysene	0.0500	0.0376	0.0306	75.2	61.2	54.6-120		J3	20.5	20
Dibenz(a,h)anthracene	0.0500	0.0420	0.0322	84.1	64.4	42.8-118		J3	26.6	20
3,3-Dichlorobenzidine	0.0500	0.0415	0.0340	82.9	68.0	27.2-142			19.8	22.3
2,4-Dinitrotoluene	0.0500	0.0407	0.0337	81.5	67.5	31.2-105			18.8	22
2,6-Dinitrotoluene	0.0500	0.0369	0.0309	73.8	61.8	30.6-106			17.7	23.1
Fluoranthene	0.0500	0.0427	0.0340	85.3	68.0	45.9-115		J3	22.6	20
Fluorene	0.0500	0.0380	0.0304	76.0	60.8	41.0-112		J3	22.3	20.2
Hexachlorobenzene	0.0500	0.0379	0.0306	75.8	61.2	38.5-116		J3	21.4	20.1
Hexachloro-1,3-butadiene	0.0500	0.0187	0.0151	37.4	30.2	16.1-104			21.4	31.2
Hexachlorocyclopentadiene	0.0500	0.0134	0.0110	26.8	22.0	10.0-121			20.0	27.9
Hexachloroethane	0.0500	0.0134	0.0110	26.9	22.0	16.5-89.8			20.1	30.7
Indeno(1,2,3-cd)pyrene	0.0500	0.0433	0.0328	86.7	65.7	45.0-116		J3	27.6	20
Isophorone	0.0500	0.0325	0.0273	65.0	54.5	35.4-112			17.5	21.5
Naphthalene	0.0500	0.0200	0.0163	40.0	32.5	32.2-101			20.6	23.8
Nitrobenzene	0.0500	0.0204	0.0173	40.8	34.6	31.4-106			16.4	25.7
n-Nitrosodiphenylamine	0.0500	0.0371	0.0303	74.2	60.5	44.4-113		J3	20.3	20
n-Nitrosodi-n-propylamine	0.0500	0.0164	0.0200	32.8	40.1	33.2-106	J4		19.9	23.7
n-Nitrosodimethylamine	0.0500	0.00641	0.00663	12.8	13.3	10.0-80.1			3.44	37.5
Phenanthrene	0.0500	0.0361	0.0290	72.2	58.1	46.4-113		J3	21.7	20
Benzylbutyl phthalate	0.0500	0.0384	0.0311	76.8	62.1	31.8-123		J3	21.1	20.7
Bis(2-ethylhexyl)phthalate	0.0500	0.0367	0.0303	73.3	60.5	36.9-134			19.1	23.6
Di-n-butyl phthalate	0.0500	0.0389	0.0308	77.9	61.6	41.8-120		J3	23.3	20.2
Diethyl phthalate	0.0500	0.0432	0.0350	86.4	70.0	36.5-129		J3	21.0	20
Dimethyl phthalate	0.0500	0.0401	0.0323	80.2	64.5	35.3-128		J3	21.6	20.8
Di-n-octyl phthalate	0.0500	0.0382	0.0316	76.5	63.2	39.7-112			19.0	21.1
Pyrene	0.0500	0.0412	0.0327	82.4	65.3	46.3-117		J3	23.1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/04/15 05:19 • (LCSD) 09/04/15 05:42

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,2,4-Trichlorobenzene	0.0500	0.0186	0.0154	37.3	30.8	22.9-96.1			19.0	27.5
4-Chloro-3-methylphenol	0.0500	0.0362	0.0293	72.3	58.6	35.7-100			21.0	22.9
2-Chlorophenol	0.0500	0.0177	0.0147	35.4	29.4	26.2-91.5			18.8	26.5
2,4-Dichlorophenol	0.0500	0.0270	0.0224	54.0	44.7	31.4-103			18.8	24.9
2,4-Dimethylphenol	0.0500	0.0268	0.0221	53.5	44.1	31.9-107			19.3	25.7
4,6-Dinitro-2-methylphenol	0.0500	0.0370	0.0315	74.0	62.9	18.4-148			16.1	24.4
2,4-Dinitrophenol	0.0500	0.0314	0.0268	62.8	53.7	24.2-128			15.7	20.5
2-Nitrophenol	0.0500	0.0244	0.0192	48.7	38.4	25.9-106			23.7	26.9
4-Nitrophenol	0.0500	0.0243	0.0197	48.6	39.3	10.0-52.7			21.2	40
Pentachlorophenol	0.0500	0.0370	0.0293	74.0	58.7	10.9-97.4			23.2	35.1
Phenol	0.0500	0.0125	0.0104	25.0	20.8	10.0-57.9			18.2	35
2,4,6-Trichlorophenol	0.0500	0.0358	0.0289	71.7	57.8	29.8-107			21.4	24.1
(S) Nitrobenzene-d5				*39.3*	*32.8*	*21.8-123*				
(S) 2-Fluorobiphenyl				*56.2*	*47.1*	*29.5-131*				
(S) p-Terphenyl-d14				*75.1*	*58.6*	*29.3-137*				
(S) Phenol-d5				*24.9*	*20.6*	*5.00-70.1*				
(S) 2-Fluorophenol				*25.0*	*20.6*	*10.0-77.9*				
(S) 2,4,6-Tribromophenol				*78.6*	*61.6*	*11.2-130*				

L786033-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/04/15 06:29 • (MS) 09/04/15 06:52 • (MSD) 09/04/15 07:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0500	ND	0.0321	0.0331	64.3	66.2	1	30.7-124			2.89	22.6
Acenaphthylene	0.0500	ND	0.0337	0.0344	67.3	68.8	1	29.0-122			2.13	23.9
Anthracene	0.0500	ND	0.0381	0.0393	76.2	78.6	1	34.2-135			3.07	20
Benzo(a)anthracene	0.0500	ND	0.0385	0.0382	76.9	76.4	1	35.7-138			0.660	20
Benzidine	0.0500	0.00695	0.0264	0.0259	38.9	37.8	1	10.0-159			2.03	40
Benzo(b)fluoranthene	0.0500	ND	0.0396	0.0364	79.1	72.8	1	23.0-145			8.25	20
Benzo(k)fluoranthene	0.0500	ND	0.0371	0.0365	74.3	73.1	1	29.5-143			1.63	20
Benzo(g,h,i)perylene	0.0500	ND	0.0389	0.0381	77.9	76.2	1	10.0-148			2.15	21
Benzo(a)pyrene	0.0500	ND	0.0399	0.0398	79.9	79.7	1	23.3-135			0.240	20
Bis(2-chlorethoxy)methane	0.0500	ND	0.0266	0.0289	53.2	57.8	1	26.4-127			8.25	25.8
1,2-Diphenylhydrazine	0.0500	ND	0.0359	0.0355	71.7	71.1	1	25.2-135			0.920	20
Bis(2-chloroethyl)ether	0.0500	ND	0.0154	0.0166	30.7	33.2	1	10.0-154			7.87	40

L786033-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/04/15 06:29 • (MS) 09/04/15 06:52 • (MSD) 09/04/15 07:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bis(2-chloroisopropyl)ether	0.0500	ND	0.0196	0.0212	39.3	42.4	1	19.4-126			7.62	37.2
4-Bromophenyl-phenylether	0.0500	ND	0.0375	0.0380	75.1	75.9	1	34.3-135			1.08	23.2
2-Chloronaphthalene	0.0500	ND	0.0305	0.0324	61.0	64.8	1	29.7-114			6.08	24.2
4-Chlorophenyl-phenylether	0.0500	ND	0.0376	0.0366	75.1	73.3	1	35.6-127			2.46	20
Chrysene	0.0500	ND	0.0374	0.0364	74.8	72.8	1	37.0-145			2.82	20
Dibenz(a,h)anthracene	0.0500	ND	0.0386	0.0381	77.2	76.1	1	10.0-147			1.41	22.3
3,3-Dichlorobenzidine	0.0500	ND	0.0409	0.0406	81.8	81.2	1	10.0-162			0.770	26.9
2,4-Dinitrotoluene	0.0500	ND	0.0396	0.0400	79.2	79.9	1	16.2-135			0.960	20.6
2,6-Dinitrotoluene	0.0500	ND	0.0360	0.0359	72.1	71.9	1	25.2-124			0.250	22.2
Fluoranthene	0.0500	ND	0.0416	0.0410	83.3	82.1	1	37.1-139			1.50	20
Fluorene	0.0500	ND	0.0369	0.0366	73.8	73.3	1	10.0-162			0.710	20
Hexachlorobenzene	0.0500	ND	0.0364	0.0371	72.9	74.2	1	31.9-135			1.85	20
Hexachloro-1,3-butadiene	0.0500	ND	0.0200	0.0206	40.0	41.2	1	15.7-109			2.90	37.6
Hexachlorocyclopentadiene	0.0500	ND	0.0148	0.0160	29.5	32.0	1	10.0-123			8.19	27.8
Hexachloroethane	0.0500	ND	0.00958	0.00867	19.2	17.3	1	10.4-105			9.90	40
Indeno(1,2,3-cd)pyrene	0.0500	ND	0.0395	0.0388	79.0	77.6	1	10.0-145			1.86	20
Isophorone	0.0500	ND	0.0314	0.0345	62.8	68.9	1	25.9-133			9.26	22.9
Naphthalene	0.0500	ND	0.0218	0.0241	43.6	48.1	1	20.2-114			9.72	27.5
Nitrobenzene	0.0500	ND	0.0217	0.0246	43.4	49.2	1	23.1-121			12.3	29
n-Nitrosodiphenylamine	0.0500	ND	0.0360	0.0367	72.0	73.3	1	20.6-150			1.88	20
n-Nitrosodi-n-propylamine	0.0500	ND	0.0239	0.0264	47.7	52.7	1	23.9-125			10.0	29.7
n-Nitrosodimethylamine	0.0500	0.000175	0.00450	0.00330	8.64	6.26	1	10.0-94.5	J6	J6	30.6	40
Phenanthrene	0.0500	ND	0.0346	0.0351	69.2	70.3	1	33.0-139			1.46	20
Benzylbutyl phthalate	0.0500	ND	0.0373	0.0376	74.6	75.1	1	13.3-159			0.700	21.2
Bis(2-ethylhexyl)phthalate	0.0500	0.00112	0.0347	0.0346	67.1	66.9	1	15.5-152			0.310	27.6
Di-n-butyl phthalate	0.0500	0.00132	0.0361	0.0373	69.6	72.0	1	26.0-152			3.18	20
Diethyl phthalate	0.0500	ND	0.0424	0.0409	84.7	81.7	1	21.6-154			3.63	20
Dimethyl phthalate	0.0500	ND	0.0384	0.0382	76.7	76.4	1	10.0-157			0.380	20
Di-n-octyl phthalate	0.0500	ND	0.0361	0.0359	72.1	71.7	1	12.3-145			0.580	22.9
Pyrene	0.0500	ND	0.0399	0.0392	79.7	78.5	1	35.5-139			1.59	20
1,2,4-Trichlorobenzene	0.0500	ND	0.0202	0.0220	40.3	44.0	1	21.4-101			8.67	31.3
4-Chloro-3-methylphenol	0.0500	ND	0.0353	0.0363	70.6	72.5	1	35.7-110			2.70	20
2-Chlorophenol	0.0500	ND	0.0168	0.0165	33.7	33.0	1	13.9-105			2.17	32.4
2,4-Dichlorophenol	0.0500	ND	0.0298	0.0317	59.5	63.3	1	34.7-107			6.14	27.3
2,4-Dimethylphenol	0.0500	ND	0.0281	0.0312	56.2	62.4	1	10.0-152			10.5	35.4
4,6-Dinitro-2-methylphenol	0.0500	ND	0.0317	0.0296	63.4	59.1	1	10.0-151			6.89	37.4

L786033-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/04/15 06:29 • (MS) 09/04/15 06:52 • (MSD) 09/04/15 07:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-Dinitrophenol	0.0500	ND	0.0282	0.0243	56.3	48.6	1	10.0-136			14.7	40
2-Nitrophenol	0.0500	ND	0.0241	0.0278	48.3	55.5	1	26.7-114			14.0	34
4-Nitrophenol	0.0500	ND	0.0161	0.0146	32.2	29.2	1	10.0-130			9.98	40
Pentachlorophenol	0.0500	ND	0.0309	0.0297	61.8	59.4	1	10.0-108			3.96	40
Phenol	0.0500	ND	0.0127	0.0130	25.4	26.1	1	10.0-64.1			2.47	40
2,4,6-Trichlorophenol	0.0500	ND	0.0339	0.0348	67.7	69.6	1	19.1-114			2.63	29.9
(S) Nitrobenzene-d5					*40.2*	*47.5*		*21.8-123*				
(S) 2-Fluorobiphenyl					*58.0*	*62.2*		*29.5-131*				
(S) p-Terphenyl-d14					*68.1*	*67.9*		*29.3-137*				
(S) Phenol-d5					*23.7*	*25.4*		*5.00-70.1*				
(S) 2-Fluorophenol					*16.2*	*14.7*		*10.0-77.9*				
(S) 2,4,6-Tribromophenol					*68.0*	*74.8*		*11.2-130*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

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[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

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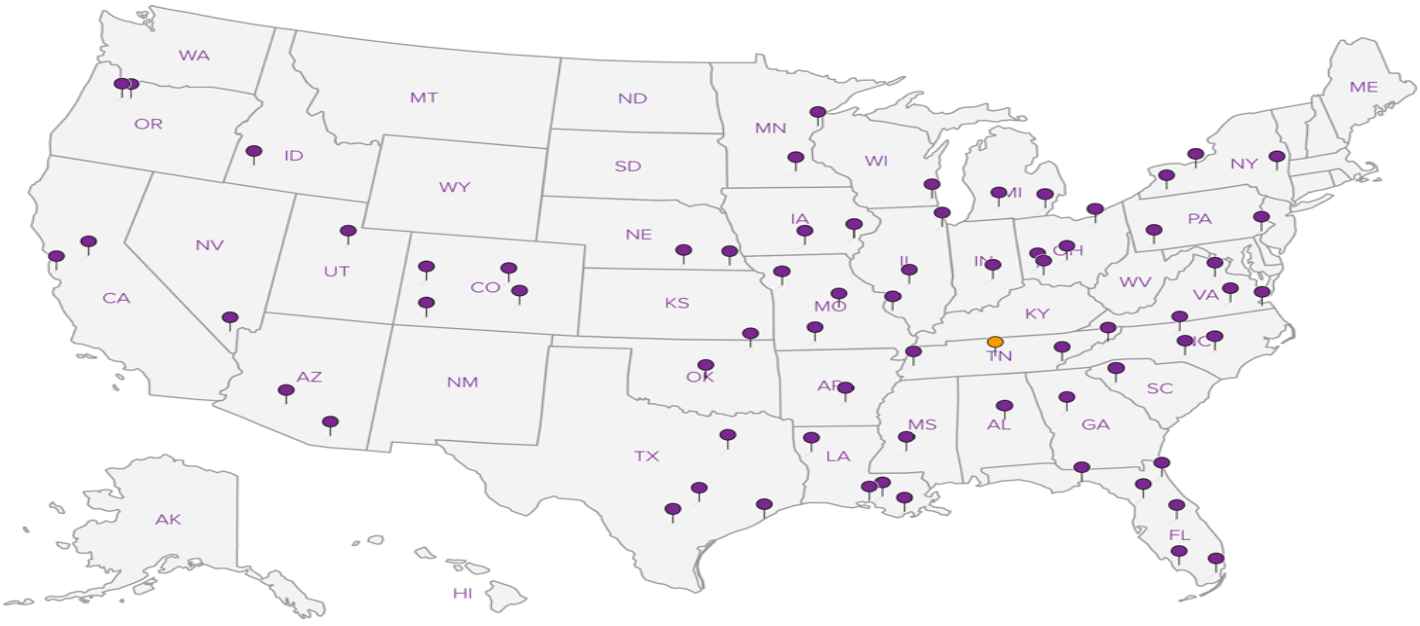
A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
WPX Energy Rocky Mountain
1058 County Road 215
Parachute CO, 81635

Billing Information:
WILPCO043015B

Report to:
Ryan Smith

Email To:
phillip.smith@wpxenergy.com

Project Description: Grand Valley Pit Sampling

City/State Collected: CO

Phone: 970-210-9950
Fax:

Client Project #

Lab Project #

Collected by (print):
Ryan Smith

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ✓ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No ✓Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	See Attached	Analysis / Container / Preservative	Rem./Contaminant	Sample # (lab only)
Starkey gulch Pit	Grab	WW		09/01/2015	09:34 am	12	X			-01

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

6436713599 03

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	09.01.15	1100	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	09.01.15	1330	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____

Temp: 3.8 °C Bottles Received: 12

Date: 9/1/15 Time: 0900

Hold #

Condition: 75 OK (lab use only)

COC Seal Intact: ___Y ___N ___NA

pH Checked: L2 NCF:

Chain of Custody Page ___ of ___

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # L786347

G133

Acctnum:
Template:
Prelogin:
TSR:
Cooler:
Shipped Via:

L786347

Blaney, Karolina

Subject: FW: please help
Attachments: Pond water transfer sample.xls

*	VOLATILE ORGANIC COMPOUNDS	EPA METHOD 624 (GC/MS)
*	SEMI-VOLATILE ORGANIC COMPOUNDS (GC/MS)	EPA METHOD 625
*	DISSOLVED METALS (ICP)	EPA METHOD 200.7
*	DISSOLVED INORGANICS (NON-METALS) (IC)	EPA METHOD 300.0
o	Br,Cl,F,Nitrate/Nitrite, Sulfate	
*	GENERAL WATER QUALITY PARAMETERS	
o	SPECIFIC CONDUCTANCE	EPA METHOD 300.0 (IC)
o	HARDNESS	EPA METHOD 130.1
o	TOTAL DISSOLVED SOLIDS	EPA METHOD 160.1
o	pH	EPA METHOD 150.2
o	ALKALINITY	EPA METHOD 310.1
*	GROSS ALPHA AND BETA RADIOACTIVITY	EPA METHOD 900.1

L-786347

Organics in Water
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon Tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
2-Chloroethly vinyl ether
Chloroform
Chloromethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
Methylene Chloride
Methyl tert-butyl ether
Napthalene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
Total Xylenes
Vinyl chloride

Additional Organics in Water
Acenaphthene
Acenaphthylene
Anthracene
Benzidine
Benzo (a) anthracene
Benzo (b) fluoranthene
Benzo (k) fluoranthene
Benzo (g,h,i) perylene
Benzo (a) pyrene
Bis (2-chlorethoxy) methane
Bis (2-chloroethyl) ethyl
Bis (2--chloroisopropyl) ether
4-Bromophenyl-phenylether
2-Chloronaphthalene
4-Chlorophenyl-phenylether
Chrysene
Dibenz (a,h) anthracene
3,3-Dichlorobenzidine
2,4-Dinitrotoluene
2,6-Dinitrotoluene
1,2-Diphenylhydrazine
Fluoranthene
Fluorene

L786347

Hexachlorobenzene
Hexachloro-1,3-butadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno (1,2,3-cd) pyrene
Isophorone
Napthalene
Nitrobenzene
n-Nitrosodimethylamine
n-Nitrosodiphenylamine
n-Nitrosodi-n-propylamine
Phenanthrene
Benzylbutyl phthalate
Bis (2-ethylhexyl) phthalate
Di-n-butyl phthalate
Diethyl phthalate
Dimethyl phthalate
Di-n-octyl phthalate
Pyrene
1,2,4-Trichlorobenzene
4-Chloro-3-methylphenol
2-Chlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
4,6-Dinitro-2-methylphenol
2,4-Dinitrophenol
2-Nitrophenol
4-Nitrophenol
Pentachlorophenol
Phenol
2,4,6-Trichlorophenol
Inorganics in Water
Alkalinity
Bromide
Chloride
Conductivity
Fluoride
Nitrate
Nitrite
pH
Sulfate
Total Dissolved Solids
Total Hardness
Dissolved Metals in Water
Arsenic
Barium (LDNR True Total)
Cadmium
Chromium
Lead
Mercury
Selenium
Silver
Radionuclides
Gross Alpha
Gross Beta

ANALYTICAL REPORT

September 23, 2015

WPX Energy

Sample Delivery Group:	L786351
Samples Received:	09/02/2015
Project Number:	
Description:	Grand Valley Pit Sampling

Report To:

Mr. Ryan Smith
1058 County Road 215
Parachute, CO 81635

Entire Report Reviewed By:

T. Alan Harvill
Technical Service Representative

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

T. Alan Harvill
Technical Service Representative

Project Narrative

L786351-01 contains subout data that is included after the chain of custody.

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

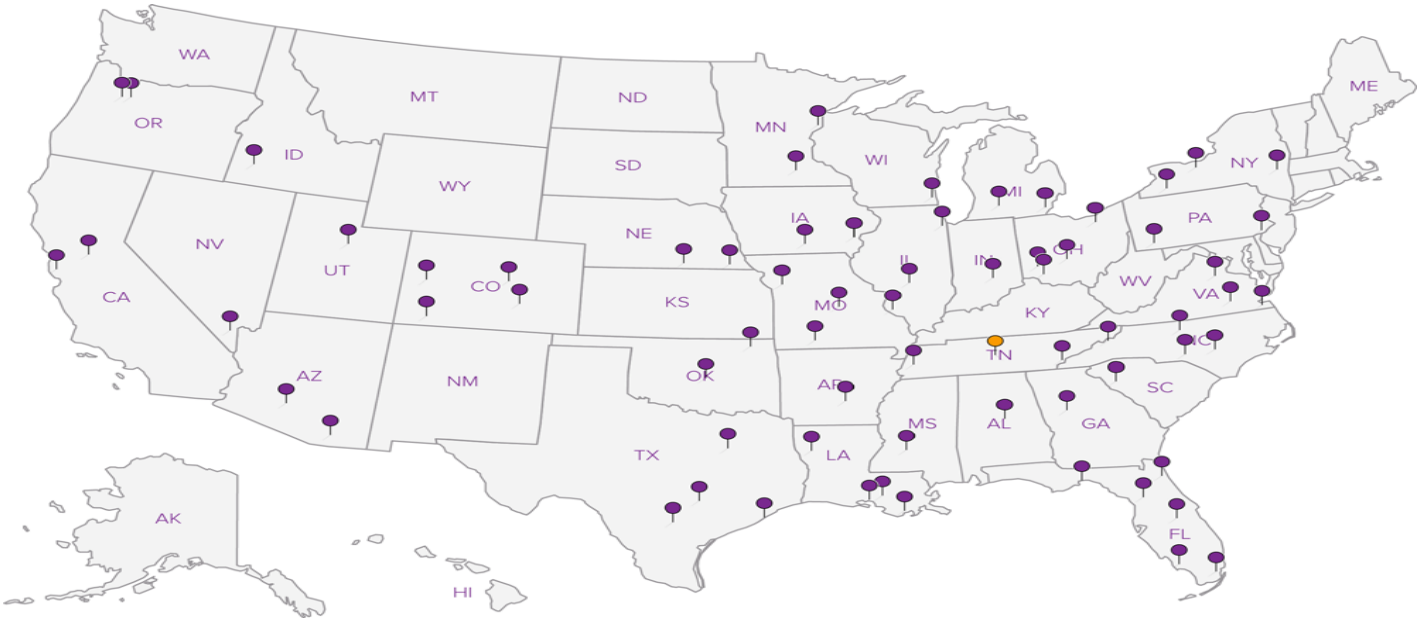
[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
WPX Energy Rocky Mountain
1058 County Road 215
Parachute CO, 81635

Billing Information:
WILPCO043015B

Report to:
Ryan Smith

Email To:
phillip.smith@wpxenergy.com

Project Description: Grand Valley Pit Sampling

City/State Collected: CO

Phone: 970-210-9950
Fax:

Client Project #

Lab Project #

Collected by (print):
Ryan Smith

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ✓ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No ✓Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	See Attached
Starkey gulch Pit	Grab	WW		09/01/2015	09:34 am	12	X

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

ESC LABS
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L786347

G133

Acctnum:
Template: L786351
Prelogin:
TSR:
Cooler:
Shipped Via:

Rem./Contaminant	Sample # (lab only)
	-01

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

6436713599 03

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	09.01.15	1100	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	09.01.15	1230	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ _____

Temp: 3.8 °C Bottles Received: 12

Date: 9/1/15 Time: 0900

Condition: 75 (lab use only)

COC Seal Intact: ___Y ___N ___NA

pH Checked: 12

NCF:

~~L186947~~
L786351

Blaney, Karolina

Subject: FW: please help
Attachments: Pond water transfer sample.xls

*	VOLATILE ORGANIC COMPOUNDS	EPA METHOD 624 (GC/MS)
*	SEMI-VOLATILE ORGANIC COMPOUNDS (GC/MS)	EPA METHOD 625
*	DISSOLVED METALS (ICP)	EPA METHOD 200.7
*	DISSOLVED INORGANICS (NON-METALS) (IC)	EPA METHOD 300.0
o	Br,Cl,F,Nitrate/Nitrite, Sulfate	
*	GENERAL WATER QUALITY PARAMETERS	
o	SPECIFIC CONDUCTANCE	EPA METHOD 300.0 (IC)
o	HARDNESS	EPA METHOD 130.1
o	TOTAL DISSOLVED SOLIDS	EPA METHOD 160.1
o	pH	EPA METHOD 150.2
o	ALKALINITY	EPA METHOD 310.1
*	GROSS ALPHA AND BETA RADIOACTIVITY	EPA METHOD 900.1

L786347
L786351

Organics in Water
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon Tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
2-Chloroethly vinyl ether
Chloroform
Chloromethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
Methylene Chloride
Methyl tert-butyl ether
Napthalene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
Total Xylenes
Vinyl chloride

Additional Organics in Water
Acenaphthene
Acenaphthylene
Anthracene
Benzidine
Benzo (a) anthracene
Benzo (b) fluoranthene
Benzo (k) fluoranthene
Benzo (g,h,I) perylene
Benzo (a) pyrene
Bis (2-chlorethoxy) methane
Bis (2-chloroethyl) ethyl
Bis (2--chloroisopropyl) ether
4-Bromophenyl-phenylether
2-Chloronaphthalene
4-Chlorophenyl-phenylether
Chrysene
Dibenz (a,h) anthracene
3,3-Dichlorobenzidine
2,4-Dinitrotoluene
2,6-Dinitrotoluene
1,2-Diphenylhydrazine
Fluoranthene
Fluorene

L786347
L786351

Hexachlorobenzene
Hexachloro-1,3-butadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno (1,2,3-cd) pyrene
Isophorone
Napthalene
Nitrobenzene
n-Nitrosodimethylamine
n-Nitrosodiphenylamine
n-Nitrosodi-n-propylamine
Phenanthrene
Benzylbutyl phthalate
Bis (2-ethylhexyl) phthalate
Di-n-butyl phthalate
Diethyl phthalate
Dimethyl phthalate
Di-n-octyl phthalate
Pyrene
1,2,4-Trichlorobenzene
4-Chloro-3-methylphenol
2-Chlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
4,6-Dinitro-2-methylphenol
2,4-Dinitrophenol
2-Nitrophenol
4-Nitrophenol
Pentachlorophenol
Phenol
2,4,6-Trichlorophenol
Inorganics in Water
Alkalinity
Bromide
Chloride
Conductivity
Fluoride
Nitrate
Nitrite
pH
Sulfate
Total Dissolved Solids
Total Hardness
Dissolved Metals in Water
Arsenic
Barium (LDNR True Total)
Cadmium
Chromium
Lead
Mercury
Selenium
Silver
Radionuclides
Gross Alpha
Gross Beta

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

September 17, 2015

Ms. Janice Cozby
Environmental Science Corporation
12065 Lebanon Road
Mount Juliet, Tennessee 37122

Re: Radiochemistry Analysis
Work Order: 380510

Dear Ms. Cozby:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on September 03, 2015. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4289.

Sincerely,

Julie Robinson

Julie Robinson
Project Manager

Purchase Order: S22468
Chain of Custody: WG813016
Enclosures

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 − (843) 556−8171 − www.gel.com

Certificate of Analysis Report
for

ENVL001 Environmental Science Corporation

Client SDG: 380510 GEL Work Order: 380510

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a Tracer compound

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Julie Robinson.

Reviewed by Julie Roberson

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: September 17, 2015

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Radiochemistry Analysis

Client Sample ID:	L786351-01	Project:	ENVL00307
Sample ID:	380510001	Client ID:	ENVL001
Matrix:	Waste Water		
Collect Date:	01-SEP-15 09:34		
Receive Date:	03-SEP-15		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, liquid "As Received"												
Alpha	U	7.13	+/-35.9	62.5	5.00	pCi/L		KXB2	09/16/15	1905	1506041	1
Beta		40.1	+/-22.2	35.8	5.00	pCi/L						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310	

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: September 17, 2015

Environmental Science Corporation
12065 Lebanon Road
Mount Juliet, Tennessee

Contact: **Ms. Janice Cozby**

Workorder: **380510**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 1506041										
QC1203388948 380460001 DUP										
Alpha	U	-0.318	U	0.907	pCi/L	N/A		N/A	KXB2	09/16/15 17:33
	Uncertainty	+/-1.62		+/-2.37						
Beta	U	1.71	U	-2.31	pCi/L	N/A		N/A		
	Uncertainty	+/-2.31		+/-1.85						
QC1203388951 LCS										
Alpha	120			122	pCi/L		102	(75%-125%)		09/16/15 17:33
	Uncertainty			+/-12.8						
Beta	435			512	pCi/L		118	(75%-125%)		
	Uncertainty			+/-19.7						
QC1203388947 MB										
Alpha			U	-0.421	pCi/L					09/16/15 17:33
	Uncertainty			+/-1.63						
Beta			U	-1.72	pCi/L					
	Uncertainty			+/-1.65						
QC1203388949 380460001 MS										
Alpha	479 U	-0.318		484	pCi/L		101	(75%-125%)		09/16/15 17:33
	Uncertainty	+/-1.62		+/-52.0						
Beta	1740 U	1.71		2020	pCi/L		116	(75%-125%)		
	Uncertainty	+/-2.31		+/-77.8						
QC1203388950 380460001 MSD										
Alpha	479 U	-0.318		495	pCi/L	2.1	103	(0%-20%)		09/16/15 17:33
	Uncertainty	+/-1.62		+/-50.7						
Beta	1740 U	1.71		2050	pCi/L	1.75	118	(0%-20%)		
	Uncertainty	+/-2.31		+/-75.8						

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- BD Results are either below the MDC or tracer recovery is low
- FA Failed analysis.
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD

QC Summary

Workorder: **380510**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

M	REMP Result > MDC/CL and < RDL
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

There are no "Data Exception Reports" associated with this analytical report.

380510

Sub-Contract Chain of Custody

Environmental Science Corp
12065 Lebanon Road
Mt. Juliet, TN 37122
(615) 773-9756 (615) 758-5859 fax

Sub-Contract Lab : __GEL____
City / State : _____Charleston, SC_____
Results Needed by : ___10/2/15_____
ESC Purchase Order # : __S22468_____

Send Reports To : ____Janice Cozby jcozby@esclabsciences.com____

WORKGROUP	WG813016
Date Created :	09/02/15

SAMPLENO / Container #	MATRIX	Date / Time Collected	PARAMETER	Code	METHOD	Comments
L786351-01	WW	090115 0934	Gross Alpha	GA	7110 B-1996	CO wastewater
19091633 19091632						
L786351-01	WW		Gross Beta	GB	900.0	CO wastewater
19091633 19091632						

Relinquished by _____ Date: 090215
Received by : B. Luthman Date: 9/3/15 0855
Relinquished by _____ Date: _____
Received by : _____ Date: _____

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: ENVC	**SDG/AR/COC/Work Order:** 380510
Received By: Brielle Luthman	**Date Received:** 9/3/15 0855

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		/	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): Ø
Classified Radioactive II or III by RSO?		/	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?		/	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		/	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		/	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		/	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		/		Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 6.0°
2a	Daily check performed and passed on IR temperature gun?	/			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): IR-032015835
3	Chain of custody documents included with shipment?	/			
4	Sample containers intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	/			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	Do Low Level Perchlorate samples have headspace as required?		/		Sample ID's and containers affected:
7	VOA vials contain acid preservation?		/		(If unknown, select No)
8	VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected:
9	Are Encore containers present?			/	(If yes, immediately deliver to Volatiles laboratory)
10	Samples received within holding time?	/			ID's and tests affected:
11	Sample ID's on COC match ID's on bottles?	/			Sample ID's and containers affected:
12	Date & time on COC match date & time on bottles?	/			Sample ID's affected:
13	Number of containers received match number indicated on COC?	/			Sample ID's affected:
14	Are sample containers identifiable as GEL provided?			/	
15	COC form is properly signed in relinquished/received sections?	/			
16	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 6443 1367 5730

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials GK Date 9-3-15 Page 1 of 1 GL-CHL-SR-001 Rev 2

List of current GEL Certifications as of 17 September 2015

State	Certification
Alaska	UST−110
Arkansas	88−0651
CLIA	42D0904046
California	2940 Interim
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC000122013−10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−12−00283, P330−12−00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013−10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA150001
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC000122013−10
Nebraska	NE−OS−26−13
Nevada	SC000122016−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
Plant Material Permit	PDEP−12−00260
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−15−10
Utah NELAP	SC000122015−18
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404