

April Stegall  
Dominion Energy Wexpro  
PO Box 458  
Rock Springs, WY 82901

Date: September 5, 2017  
Request Number: 36611R  
Date Received: 8/18/17  
Matrix: Soil

### REPORT OF ANALYSIS

Lab Number: R1802

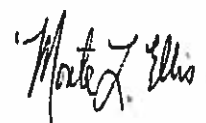
Sample ID: HW Stewart 1 100668 Sample #1 8/17/17 9:30am

	Result	Units	Method	Date Analyzed	Analyst
Nickel	20.0	mg/kg	SW846 EPA 3051/6020	8/30/2017	MLE
Copper	334	mg/kg	SW846 EPA 3051/6020	8/30/2017	MLE
Zinc	138	mg/kg	SW846 EPA 3051/6020	8/30/2017	MLE
Arsenic	4.63	mg/kg	SW846 EPA 3051/6020	8/30/2017	MLE
Selenium	1.44	mg/kg	SW846 EPA 3051/6020	8/30/2017	MLE
Silver	7.16	mg/kg	SW846 EPA 3051/6020	8/30/2017	MLE
Cadmium	1.27	mg/kg	SW846 EPA 3051/6020	8/30/2017	MLE
Barium	699	mg/kg	SW846 EPA 3051/6020	8/30/2017	MLE
Mercury	0.90	mg/kg	SW846 EPA 3051/6020	8/30/2017	MLE
Lead	34.4	mg/kg	SW846 EPA 3051/6020	8/30/2017	MLE
Total Chromium	9.80	mg/kg	SW846 EPA 3051/6020	8/30/2017	MLE
Chromium (VI)	0.19*	mg/kg	EPA 7196A	8/23/2017	CB
Chromium (III)	9.61	mg/kg	Calculated (ttl.Cr-CrVI)	9/4/2017	TB
Soluble, Boron	0.06	mg/L	Hot water ext./6010	8/23/2017	CB
pH	7.20	std. units	USDA 60-2,3/150.1	8/23/2017	CB
Conductivity	713	µmhos/cm	USDA 60-2,3/120.1	8/23/2017	CB
Calcium	166*	mg/L	USDA 60-2,3/6010	8/23/2017	CB
Magnesium	32.2*	mg/L	USDA 60-2,3/6010	8/23/2017	CB
Sodium	33.7*	mg/L	USDA 60-2,3/6010	8/23/2017	CB
Sodium Absorption Ratio	0.63	Ratio	Calculated	9/4/2017	TB

\*Results are the average of 2 runs

BTEX, GRO, DRO & PAH Analyzed by ALS Lab in Fort Collins Colorado. See attached Report.  
ALS Lab Sample ID 1708457-1

End of Report  
MLE/tab



Laboratory Manager



## WYOMING ANALYTICAL LABORATORIES, INC

1660 Harrison Street  
Laramie, WY 82070

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ph: 307-742-7995  
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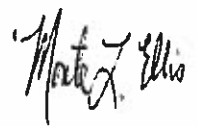
Date: September 5, 2017  
Request Number: 36611R  
Date Received: 8/18/17  
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**QUALITY CONTROL**

	Reference	Expected	Value	% Recovery
Conductivity	QCI-027-12	756	733	97
pH	iv-6.03 pH QC	6.03	5.99	99
Chromium VI	Hach QC	0.50	0.51	102
Nickel	LRAA 1722	127	152	120
Copper	LRAA 1722	258	237	92
Zinc	LRAA 1722	173	146	84
Arsenic	LRAA 1722	161	135	84
Selenium	LRAA 1722	305	187	61
Silver	LRAA 1722	58	44	76
Cadmium	LRAA 1722	190	157	83
Barium	LRAA 1722	351	297	85
Mercury	Sqc001-1755	15.9	14.9	94
Lead	ERA QC P1488	138	158	114
Soluble Boron	ESI QC	1.0	1.04	104
Total Chromium	ERA QC P1488	0.072	0.070	97
Calcium	ESI QC	20.0	20.8	104
Magnesium	ESI QC	50.0	50.5	101
Sodium	ESI QC	50.0	50.3	101

BTEX, GRO, DRO & PAH Analyzed by ALS Lab in Fort Collins Colorado. See attached Report.  
ALS Lab Sample ID 1708457-1

End of QC Report  
MLE/tab



Laboratory Manager



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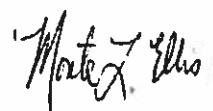
Date: September 5, 2017  
Request Number: 36611R  
Date Received: 8/18/17  
Matrix: Soil

BTEX, GRO, DRO & PAH Analyzed by ALS Lab in Fort Collins Colorado.  
The following pages apply to the samples listed below.

WAL Lab Number	ALS Lab Number	Wexpro Sample ID
R1802	1708457-1	HW Stewart 1 100668 Sample #1 8/17/17 9:30am

BTEX, GRO, & DRO Analyzed by ALS Lab in Fort Collins Colorado.  
The following pages apply to the samples listed below.

WAL Lab Number	ALS Lab Number	Wexpro Sample ID
R1801	1708457-2	HW Stewart 1 100667 Sample #1 8/17/17 10:30am
R1803	1708457-3	HW Stewart 1 100668 Sample #2 8/17/17 10:10am



Laboratory Manager



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Thursday, August 31, 2017

Monte Ellis  
Wyoming Analytical Laboratories, Inc.  
1660 Harrison St.  
Laramie, WY 82070

Re: ALS Workorder: 1708457  
Project Name:  
Project Number: 36611R

Dear Mr. Ellis:

Three soil samples were received from Wyoming Analytical Laboratories, Inc., on 8/22/2017. The samples were scheduled for the following analyses:

GC/MS Semivolatiles

GC/MS Volatiles

Total Extractable Petroleum Hydrocarbons (Diesel)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental  
Shiloh J. Summy  
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
AIHA	214884
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Louisiana (LA)	05057
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280



**1708457**

**GC/MS Volatiles:**

The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The samples were also analyzed for Gasoline Range Organics (GRO).

All acceptance criteria were met.

**GC/MS Semivolatiles:**

The sample was analyzed using GC/MS following the current revision of SOP 506 based on SW-846 Method 8270D.

All surrogate recoveries were within acceptance criteria with the following exception:

Surrogate	Sample	Direction
Nitrobenzene-D <sub>5</sub>	-1	High

The high surrogate recovery is due to obvious matrix interferences in the sample chromatogram. No further action was taken.

All remaining acceptance criteria were met.

**DRO:**

The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All surrogate recoveries were within acceptance criteria with the following exception:

Surrogate	Sample	Direction
O-terphenyl	3	High

The surrogate recovery for sample -3 was outside control limits (high). Inspection of the chromatogram indicated co-elution of the surrogate peak with target component peaks, biasing the surrogate result high. No further action was taken.

All acceptance criteria were met.

## ALS -- Fort Collins

## SAMPLE SUMMARY REPORT

Client: Wyoming Analytical Laboratories, Inc.  
 Project: 36611R  
 Sample ID: R1802  
 Legal Location:  
 Collection Date: 8/17/2017 09:30

Date: 31-Aug-17  
 Work Order: 1708457  
 Lab ID: 1708457-1  
 Matrix: SOIL  
 Percent Moisture: 11.8

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>			<b>SW8015M</b>		Prep Date: 8/28/2017	PrepBy: JFN
Diesel Range Organics	5500	LDMH	56	MG/KG	10	8/28/2017 13:09
Surr: O-TERPHENYL	108		49-114	%REC	10	8/28/2017 13:09
<b>GC/MS Semi-volatiles</b>			<b>SW8270</b>		Prep Date: 8/29/2017	PrepBy: BCH
NAPHTHALENE	2600		1500	UG/KG	1	8/31/2017 13:09
2-METHYLNAPHTHALENE	7800		1500	UG/KG	1	8/31/2017 13:09
ACENAPHTHYLENE	ND		1500	UG/KG	1	8/31/2017 13:09
ACENAPHTHENE	ND		1500	UG/KG	1	8/31/2017 13:09
FLUORENE	860	J	1500	UG/KG	1	8/31/2017 13:09
PHENANTHRENE	1500		1500	UG/KG	1	8/31/2017 13:09
ANTHRACENE	ND		1500	UG/KG	1	8/31/2017 13:09
FLUORANTHENE	ND		1500	UG/KG	1	8/31/2017 13:09
PYRENE	ND		1500	UG/KG	1	8/31/2017 13:09
BENZO(A)ANTHRACENE	ND		1500	UG/KG	1	8/31/2017 13:09
CHRYSENE	ND		1500	UG/KG	1	8/31/2017 13:09
BENZO(B)FLUORANTHENE	ND		1500	UG/KG	1	8/31/2017 13:09
BENZO(K)FLUORANTHENE	ND		1500	UG/KG	1	8/31/2017 13:09
BENZO(A)PYRENE	ND		1500	UG/KG	1	8/31/2017 13:09
INDENO(1,2,3-CD)PYRENE	ND		1500	UG/KG	1	8/31/2017 13:09
DIBENZO(A,H)ANTHRACENE	ND		1500	UG/KG	1	8/31/2017 13:09
BENZO(G,H,I)PERYLENE	ND		1500	UG/KG	1	8/31/2017 13:09
Surr: NITROBENZENE-D5	121	*	32-110	%REC	1	8/31/2017 13:09
Surr: 2-FLUOROBIPHENYL	80		41-111	%REC	1	8/31/2017 13:09
Surr: TERPHENYL-D14	102		23-159	%REC	1	8/31/2017 13:09
<b>GC/MS Volatiles</b>			<b>SW8260</b>		Prep Date: 8/24/2017	PrepBy: JXK
BENZENE	ND		5.6	UG/KG	1	8/24/2017 16:57
TOLUENE	ND		5.6	UG/KG	1	8/24/2017 16:57
ETHYLBENZENE	ND		5.6	UG/KG	1	8/24/2017 16:57
M+P-XYLENE	5.3	J	5.6	UG/KG	1	8/24/2017 16:57
O-XYLENE	99		5.6	UG/KG	1	8/24/2017 16:57
TOTAL XYLENES	100	J	5	UG/KG	1	8/24/2017 16:57
Surr: DIBROMOFLUOROMETHANE	101		61-134	%REC	1	8/24/2017 16:57
Surr: DIBROMOFLUOROMETHANE	102		61-134	%REC	50	8/25/2017 13:52
Surr: TOLUENE-D8	93		57-135	%REC	50	8/25/2017 13:52
Surr: TOLUENE-D8	89		57-135	%REC	1	8/24/2017 16:57
Surr: 4-BROMOFLUOROBENZENE	113		52-151	%REC	50	8/25/2017 13:52
Surr: 4-BROMOFLUOROBENZENE	106		52-151	%REC	1	8/24/2017 16:57
GASOLINE RANGE ORGANICS	360000		27000	UG/KG	50	8/25/2017 13:52

**ALS -- Fort Collins**
**SAMPLE SUMMARY REPORT**

**Client:** Wyoming Analytical Laboratories, Inc.  
**Project:** 36611R  
**Sample ID:** R1801  
**Legal Location:**  
**Collection Date:** 8/17/2017 10:30

**Date:** 31-Aug-17  
**Work Order:** 1708457  
**Lab ID:** 1708457-2  
**Matrix:** SOIL  
**Percent Moisture:** 13.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>			<b>SW8015M</b>		<b>Prep Date: 8/28/2017</b>	<b>PrepBy: JFN</b>
Diesel Range Organics	3700	L	57	MG/KG	10	8/28/2017 13:29
Surr: O-TERPHENYL	83		49-114	%REC	10	8/28/2017 13:29
<b>GC/MS Volatiles</b>			<b>SW8260</b>		<b>Prep Date: 8/24/2017</b>	<b>PrepBy: JXK</b>
BENZENE	ND		2900	UG/KG	500	8/24/2017 19:27
TOLUENE	160000		29000	UG/KG	5000	8/24/2017 19:03
ETHYLBENZENE	140000		29000	UG/KG	5000	8/24/2017 19:03
M+P-XYLENE	590000		29000	UG/KG	5000	8/24/2017 19:03
O-XYLENE	180000		29000	UG/KG	5000	8/24/2017 19:03
TOTAL XYLENES	770000		5	UG/KG	1	8/24/2017 19:03
Surr: DIBROMOFLUOROMETHANE	100		61-134	%REC	500	8/24/2017 19:27
Surr: DIBROMOFLUOROMETHANE	100		61-134	%REC	5000	8/24/2017 19:03
Surr: TOLUENE-D8	89		57-135	%REC	500	8/24/2017 19:27
Surr: TOLUENE-D8	82		57-135	%REC	5000	8/24/2017 19:03
Surr: 4-BROMOFLUOROBENZENE	113		52-151	%REC	500	8/24/2017 19:27
Surr: 4-BROMOFLUOROBENZENE	112		52-151	%REC	5000	8/24/2017 19:03
GASOLINE RANGE ORGANICS	1.8E+07		2900000	UG/KG	5000	8/24/2017 19:03



**ALS -- Fort Collins**
**SAMPLE SUMMARY REPORT**

**Client:** Wyoming Analytical Laboratories, Inc.  
**Project:** 36611R  
**Sample ID:** R1803  
**Legal Location:**  
**Collection Date:** 8/17/2017 10:10

**Date:** 31-Aug-17  
**Work Order:** 1708457  
**Lab ID:** 1708457-3  
**Matrix:** SOIL  
**Percent Moisture:** 11.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>			<b>SW8015M</b>			
					Prep Date: 8/28/2017	PrepBy: JFN
Diesel Range Organics	8000	DMH	84	MG/KG	15	8/28/2017 13:49
Surr: O-TERPHENYL	140	*	49-114	%REC	15	8/28/2017 13:49
<b>GC/MS Volatiles</b>			<b>SW8260</b>			
					Prep Date: 8/24/2017	PrepBy: JXK
BENZENE	ND		5.6	UG/KG	1	8/24/2017 16:03
TOLUENE	ND		22	UG/KG	1	8/24/2017 18:11
ETHYLBENZENE	ND		22	UG/KG	1	8/24/2017 18:11
M+P-XYLENE	6.1		5.6	UG/KG	1	8/24/2017 16:03
O-XYLENE	21	J	22	UG/KG	1	8/24/2017 18:11
TOTAL XYLENES	14		5	UG/KG	1	8/24/2017 16:03
Surr: DIBROMOFLUOROMETHANE	101		61-134	%REC	1	8/24/2017 18:11
Surr: DIBROMOFLUOROMETHANE	101		61-134	%REC	1	8/24/2017 16:03
Surr: TOLUENE-D8	98		57-135	%REC	1	8/24/2017 18:11
Surr: TOLUENE-D8	100		57-135	%REC	1	8/24/2017 16:03
Surr: 4-BROMOFLUOROBENZENE	95		52-151	%REC	1	8/24/2017 18:11
Surr: 4-BROMOFLUOROBENZENE	94		52-151	%REC	1	8/24/2017 16:03
GASOLINE RANGE ORGANICS	8900		560	UG/KG	1	8/24/2017 18:11

Client: Wyoming Analytical Laboratories, Inc.  
 Project: 36611R  
 Sample ID: R1803  
 Legal Location:  
 Collection Date: 8/17/2017 10:10

Date: 31-Aug-17  
 Work Order: 1708457  
 Lab ID: 1708457-3  
 Matrix: SOIL  
 Percent Moisture: 11.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
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### Explanation of Qualifiers

#### Radiochemistry:

U or ND - Result is less than the sample specific MDC.  
 Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.  
 Y2 - Chemical Yield outside default limits.  
 W - DER is greater than Warning Limit of 1.42  
 \* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.  
 # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.  
 G - Sample density differs by more than 15% of LCS density.  
 D - DER is greater than Control Limit  
 M - Requested MDC not met.  
 LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.  
 L - LCS Recovery below lower control limit.  
 H - LCS Recovery above upper control limit.  
 P - LCS, Matrix Spike Recovery within control limits.  
 N - Matrix Spike Recovery outside control limits  
 NC - Not Calculated for duplicate results less than 5 times MDC  
 B - Analyte concentration greater than MDC.  
 B3 - Analyte concentration greater than MDC but less than Requested MDC.

#### Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).  
 U or ND - Indicates that the compound was analyzed for but not detected.  
 E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.  
 M - Duplicate Injection precision was not met.  
 N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.  
 Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.  
 \* - Duplicate analysis (relative percent difference) not within control limits.  
 S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

#### Organics:

U or ND - Indicates that the compound was analyzed for but not detected.  
 B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.  
 E - Analyte concentration exceeds the upper level of the calibration range.  
 J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).  
 A - A tentatively identified compound is a suspected aldol-condensation product.  
 X - The analyte was diluted below an accurate quantitation level.  
 \* - The spike recovery is equal to or outside the control criteria used.  
 +- The relative percent difference (RPD) equals or exceeds the control criteria.  
 G - A pattern resembling gasoline was detected in this sample.  
 D - A pattern resembling diesel was detected in this sample.  
 M - A pattern resembling motor oil was detected in this sample.  
 C - A pattern resembling crude oil was detected in this sample.  
 4 - A pattern resembling JP-4 was detected in this sample.  
 5 - A pattern resembling JP-5 was detected in this sample.  
 H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.  
 L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.  
 Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:  
 - gasoline  
 - JP-8  
 - diesel  
 - mineral spirits  
 - motor oil  
 - Stoddard solvent  
 - bunker C

## ALS -- Fort Collins

Date: 8/31/2017 6:06:

Client: Wyoming Analytical Laboratories, Inc.

## QC BATCH REPORT

Work Order: 1708457

Project: 36611R

Batch ID: HC170828-100-1 Instrument ID: FUELS-1 Method: SW8015M

LCS	Sample ID: HC170828-100			Units: MG/KG		Analysis Date: 8/28/2017 12:49					
Client ID:	Run ID: HC170828-8A			Prep Date: 8/28/2017			DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	185	5	188		99	81-129				20	
Surr: O-TERPHENYL	8.49		12.5		68	49-114					

LCSD	Sample ID: HC170828-100			Units: MG/KG			Analysis Date: 8/28/2017 18:31				
Client ID:	Run ID: HC170828-8A			Prep Date: 8/28/2017			DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	200	5	188		106	81-129		185	8	20	
Sum: O-TERPHENYL	9.55		12.5		76	49-114			12		

MB		Sample ID: HC170828-100			Units: MG/KG		Analysis Date: 8/28/2017 12:24					
Client ID:		Run ID: HC170828-8A			Prep Date: 8/28/2017		DF: 1					
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics		ND	5									
Sum: O-TERPHENYL		8.99		12.5		72	49-114					

The following samples were analyzed in this batch:

1708457-1	1708457-2	1708457-3
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Client: Wyoming Analytical Laboratories, Inc.  
 Work Order: 1708457  
 Project: 36611R

## QC BATCH REPORT

Batch ID: EX170829-1-3 Instrument ID: HPSV4 Method: SW8270

LCS Sample ID: EX170829-1 Units: UG/KG Analysis Date: 8/31/2017 09:02  
 Client ID: Run ID: SV170831-4 Prep Date: 8/29/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
NAPHTHALENE	1520	333	1670		91	51-100				30	
2-METHYLNAPHTHALENE	1610	333	1670		97	51-100				30	
ACENAPHTHYLENE	1590	333	1670		96	60-109				30	
ACENAPHTHENE	1490	333	1670		89	38-103				30	
FLUORENE	1600	333	1670		96	65-106				30	
PHENANTHRENE	1630	333	1670		98	66-107				30	
ANTHRACENE	1630	333	1670		98	65-108				30	
FLUORANTHENE	1660	333	1670		100	64-109				30	
PYRENE	1680	333	1670		101	48-118				30	
BENZO(A)ANTHRACENE	1640	333	1670		98	64-107				30	
CHRYSENE	1550	333	1670		93	65-108				30	
BENZO(B)FLUORANTHENE	1690	333	1670		102	60-111				30	
BENZO(K)FLUORANTHENE	1580	333	1670		94	62-111				30	
BENZO(A)PYRENE	1610	333	1670		97	63-109				30	
INDENO(1,2,3-CD)PYRENE	1630	333	1670		98	55-117				30	
DIBENZO(A,H)ANTHRACENE	1590	333	1670		96	55-120				30	
BENZO(G,H,I)PERYLENE	1380	333	1670		82	37-123				30	
Surr: NITROBENZENE-D5	1690		1670		101	32-110					
Surr: 2-FLUOROBIPHENYL	1580		1670		95	41-111					
Surr: TERPHENYL-D14	1730		1670		104	23-159					

Client: Wyoming Analytical Laboratories, Inc.  
 Work Order: 1708457  
 Project: 36611R

## QC BATCH REPORT

Batch ID: EX170829-1-3 Instrument ID: HPSV4 Method: SW8270

LCSD Sample ID: EX170829-1 Units: UG/KG Analysis Date: 8/31/2017 09:21  
 Client ID: Run ID: SV170831-4 Prep Date: 8/29/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
NAPHTHALENE	1500	333	1670		90	51-100		1520	2	30	
2-METHYLNAPHTHALENE	1590	333	1670		95	51-100		1610	2	30	
ACENAPHTHYLENE	1620	333	1670		97	60-109		1590	1	30	
ACENAPHTHENE	1510	333	1670		90	38-103		1490	1	30	
FLUORENE	1590	333	1670		96	65-106		1600	0	30	
PHENANTHRENE	1570	333	1670		94	66-107		1630	4	30	
ANTHRACENE	1570	333	1670		94	65-108		1630	4	30	
FLUORANTHENE	1600	333	1670		96	64-109		1660	4	30	
PYRENE	1650	333	1670		99	48-118		1680	1	30	
BENZO(A)ANTHRACENE	1630	333	1670		98	64-107		1640	0	30	
CHRYSENE	1510	333	1670		90	65-108		1550	3	30	
BENZO(B)FLUORANTHENE	1590	333	1670		96	60-111		1690	6	30	
BENZO(K)FLUORANTHENE	1660	333	1670		99	62-111		1560	6	30	
BENZO(A)PYRENE	1600	333	1670		96	63-109		1610	1	30	
INDENO(1,2,3-CD)PYRENE	1580	333	1670		95	55-117		1630	3	30	
DIBENZO(A,H)ANTHRACENE	1570	333	1670		94	55-120		1590	1	30	
BENZO(G,H,I)PERYLENE	1310	333	1670		79	37-123		1360	4	30	
Surr: NITROBENZENE-D5	1680		1670		101	32-110			0		
Surr: 2-FLUOROBIPHENYL	1550		1670		93	41-111			2		
Surr: TERPHENYL-D14	1650		1670		99	23-159			5		

Client: Wyoming Analytical Laboratories, Inc.  
 Work Order: 1708457  
 Project: 36611R

## QC BATCH REPORT

Batch ID: EX170829-1-3 Instrument ID: HPSV4 Method: SW8270

MB Sample ID: EX170829-1 Units: UG/KG Analysis Date: 8/31/2017 08:44  
 Client ID: Run ID: SV170831-4 Prep Date: 8/29/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
NAPHTHALENE	ND	330									
2-METHYLNAPHTHALENE	ND	330									
ACENAPHTHYLENE	ND	330									
ACENAPHTHENE	ND	330									
FLUORENE	ND	330									
PHENANTHRENE	ND	330									
ANTHRACENE	ND	330									
FLUORANTHENE	ND	330									
PYRENE	ND	330									
BENZO(A)ANTHRACENE	ND	330									
CHRYSENE	ND	330									
BENZO(B)FLUORANTHENE	ND	330									
BENZO(K)FLUORANTHENE	ND	330									
BENZO(A)PYRENE	ND	330									
INDENO(1,2,3-CD)PYRENE	ND	330									
DIBENZO(A,H)ANTHRACENE	ND	330									
BENZO(G,H,I)PERYLENE	ND	330									
Surr: NITROBENZENE-D5	1570		1670		94	32-110					
Surr: 2-FLUOROBIPHENYL	1430		1670		86	41-111					
Surr: TERPHENYL-D14	1650		1670		99	23-159					

The following samples were analyzed in this batch:

1708457-1

Client: Wyoming Analytical Laboratories, Inc.  
 Work Order: 1708457  
 Project: 36611R

## QC BATCH REPORT

Batch ID: VL170824-2-1 Instrument ID: HPV2 Method: SW8260

LCS Sample ID: VL170824-2 Units: UG/KG Analysis Date: 8/24/2017 10:11  
 Client ID: Run ID: VL170824-2A Prep Date: 8/24/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	45.3	5	40		113	73-126				30	
TOLUENE	40.6	5	40		102	71-127				30	
ETHYLBENZENE	40.7	5	40		102	74-127				30	
M+P-XYLENE	85.1	5	80		106	79-126				30	
O-XYLENE	42.1	5	40		105	77-125				30	
Surr: DIBROMOFLUOROMETHANE	50.8		50		102	61-134					
Surr: TOLUENE-D8	47.1		50		94	57-135					
Surr: 4-BROMOFLUOROBENZENE	57.2		50		114	52-151					

LCSD Sample ID: VL170824-2 Units: UG/KG Analysis Date: 8/24/2017 10:33  
 Client ID: Run ID: VL170824-2A Prep Date: 8/24/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	43.7	5	40		109	73-126		45.3	4	30	
TOLUENE	39.6	5	40		99	71-127		40.6	3	30	
ETHYLBENZENE	39.4	5	40		99	74-127		40.7	3	30	
M+P-XYLENE	84.5	5	80		106	79-126		85.1	1	30	
O-XYLENE	41.8	5	40		105	77-125		42.1	1	30	
Surr: DIBROMOFLUOROMETHANE	50.7		50		101	61-134				0	
Surr: TOLUENE-D8	48.1		50		96	57-135				2	
Surr: 4-BROMOFLUOROBENZENE	58.8		50		118	52-151				3	

MB Sample ID: VL170824-2 Units: UG/KG Analysis Date: 8/24/2017 13:37  
 Client ID: Run ID: VL170824-2A Prep Date: 8/24/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	5									
TOLUENE	ND	5									
ETHYLBENZENE	ND	5									
M+P-XYLENE	ND	5									
O-XYLENE	ND	5									
TOTAL XYLENES	ND	5									
Surr: DIBROMOFLUOROMETHANE	51.2		50		102	61-134					
Surr: TOLUENE-D8	45.6		50		91	57-135					
Surr: 4-BROMOFLUOROBENZENE	57.4		50		115	52-151					

Client: Wyoming Analytical Laboratories, Inc.  
Work Order: 1708457  
Project: 36611R

## QC BATCH REPORT

Batch ID: VL170824-2-1 Instrument ID: HPV2 Method: SW8260

MB Sample ID: VL170824-2M Units: UG/KG Analysis Date: 8/24/2017 14:00

Client ID: Run ID: VL170824-2A Prep Date: 8/24/2017 DF: 50

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	250									
TOLUENE	ND	250									
ETHYLBENZENE	ND	250									
M+P-XYLENE	ND	250									
O-XYLENE	ND	250									
TOTAL XYLENES	ND	5									
Surr: DIBROMOFLUOROMETHANE	2520		2500		101	61-134					
Surr: TOLUENE-D8	2310		2500		92	57-135					
Surr: 4-BROMOFLUOROBENZENE	2780		2500		111	52-151					

The following samples were analyzed in this batch:

1708457-1 1708457-2 1708457-3



Client: Wyoming Analytical Laboratories, Inc.  
Work Order: 1708457  
Project: 36611R

## QC BATCH REPORT

Batch ID: VL170824-2-4 Instrument ID: HPV2 Method: SW8260

LCS	Sample ID: VL170824-5			Units: UG/KG			Analysis Date: 8/24/2017 11:18				
Client ID:	Run ID: VL170824-2A						Prep Date: 8/24/2017		DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2100	500	2000		105	80-120				20	

LCSD	Sample ID: VL170824-5			Units: UG/KG			Analysis Date: 8/24/2017 12:52				
Client ID:	Run ID: VL170824-2A						Prep Date: 8/24/2017		DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2270	495	1980		115	80-120		2100	8	20	

MB	Sample ID: VL170824-2				Units: UG/KG		Analysis Date: 8/24/2017 13:37				
Client ID:	Run ID: VL170824-2A				Prep Date: 8/24/2017			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	500									

MB	Sample ID: VL170824-2M				Units: UG/KG		Analysis Date: 8/24/2017 14:00				
Client ID:	Run ID: VL170824-2A				Prep Date: 8/24/2017			DF: 50			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	25000									

The following samples were analyzed in this batch:

1708457-1	1708457-2	1708457-3
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Client: Wyoming Analytical Laboratories, Inc.  
 Work Order: 1708457  
 Project: 36611R

## QC BATCH REPORT

Batch ID: VL170825-2-1 Instrument ID: HPV2 Method: SW8260

LCS Sample ID: VL170825-2 Units: UG/KG Analysis Date: 8/25/2017 10:51  
 Client ID: Run ID: VL170825-2A Prep Date: 8/25/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	46.3	5	40		116	73-126				30	
TOLUENE	39	5	40		98	71-127				30	
ETHYLBENZENE	39.3	5	40		98	74-127				30	
M+P-XYLENE	83.9	5	80		105	79-126				30	
O-XYLENE	41.8	5	40		104	77-125				30	
Surr: DIBROMOFLUOROMETHANE	62.9		50		106	61-134					
Surr: TOLUENE-D8	45.9		50		92	57-135					
Surr: 4-BROMOFLUOROBENZENE	56.4		50		113	52-151					

LCSD Sample ID: VL170825-2 Units: UG/KG Analysis Date: 8/25/2017 11:14  
 Client ID: Run ID: VL170825-2A Prep Date: 8/25/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	43.8	5	40		109	73-126		46.3	5	30	
TOLUENE	38.3	5	40		96	71-127		39	2	30	
ETHYLBENZENE	38.9	5	40		97	74-127		39.3	1	30	
M+P-XYLENE	81	5	80		101	79-126		83.9	4	30	
O-XYLENE	40.4	5	40		101	77-125		41.8	3	30	
Surr: DIBROMOFLUOROMETHANE	51.6		50		103	61-134			3		
Surr: TOLUENE-D8	48.9		50		94	57-135			2		
Surr: 4-BROMOFLUOROBENZENE	57.3		50		115	52-151			2		

MB Sample ID: VL170825-2 Units: UG/KG Analysis Date: 8/25/2017 13:07  
 Client ID: Run ID: VL170825-2A Prep Date: 8/25/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	5									
TOLUENE	ND	5									
ETHYLBENZENE	ND	5									
M+P-XYLENE	ND	5									
O-XYLENE	ND	5									
TOTAL XYLENES	ND	5									
Surr: DIBROMOFLUOROMETHANE	61.7		50		103	61-134					
Surr: TOLUENE-D8	45.7		50		91	57-135					
Surr: 4-BROMOFLUOROBENZENE	55.8		50		112	52-151					

Client: Wyoming Analytical Laboratories, Inc.  
Work Order: 1708457  
Project: 36611R

## QC BATCH REPORT

Batch ID: VL170825-2-1 Instrument ID: HPV2 Method: SW8260

MB Sample ID: VL170825-2M Units: UG/KG Analysis Date: 8/25/2017 13:29

Client ID: Run ID: VL170825-2A Prep Date: 8/25/2017 DF: 50

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	250									
TOLUENE	ND	250									
ETHYLBENZENE	ND	250									
M+P-XYLENE	ND	250									
O-XYLENE	ND	250									
TOTAL XYLENES	ND	5									
Surr: DIBROMOFLUOROMETHANE	2500		2500		100	61-134					
Surr: TOLUENE-D8	2300		2500		92	57-135					
Surr: 4-BROMOFLUOROBENZENE	2830		2500		113	52-151					

The following samples were analyzed in this batch:

1708457-1

Client: Wyoming Analytical Laboratories, Inc.  
 Work Order: 1708457  
 Project: 36611R

## QC BATCH REPORT

Batch ID: VL170825-2-4 Instrument ID: HPV2 Method: SW8260

LCS Sample ID: VL170825-5 Units: UG/KG Analysis Date: 8/25/2017 11:59  
 Client ID: Run ID: VL170825-2A Prep Date: 8/25/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1920	500	2000		96	80-120				20	

LCSD Sample ID: VL170825-5 Units: UG/KG Analysis Date: 8/25/2017 12:22  
 Client ID: Run ID: VL170825-2A Prep Date: 8/25/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2020	500	2000		101	80-120		1920	5	20	

MB Sample ID: VL170825-2 Units: UG/KG Analysis Date: 8/25/2017 13:07  
 Client ID: Run ID: VL170825-2A Prep Date: 8/25/2017 DF: 1

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	500									

MB Sample ID: VL170825-2M Units: UG/KG Analysis Date: 8/25/2017 13:29  
 Client ID: Run ID: VL170825-2A Prep Date: 8/25/2017 DF: 50

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	25000									

The following samples were analyzed in this batch: 1708457-1