

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-141
Revised August 8, 2011

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company ARP Production Company, LLC	Contact Randy L. Madison
Address 309 Silver St., Raton, NM 87740	Telephone No. Office 575-445-6706 Cell 575-420-1120
Facility Name: D-67	Facility Type: Gas Well

Surface Owner Vermejo Park Ranch	Mineral Owner APR Production Company, LLC	API No. 30-007-20277
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	26	31N	17E	2,630	North	1265.44	West	Colfax

Latitude N 36.892685 Longitude W 105.111456

NATURE OF RELEASE

Type of Release : Produced Water	Volume of Release 8 Barrels	Volume Recovered : 0 Barrels
Source of Release: D-67 Stuffing Box	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 8/14/14 @ 1130
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Daniel Sanchez	
By Whom? Randy Madison	Date and Hour: 8/14/14 @ 1230	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

OIL CONS. DIV DIST. 3

OCT 29 2014

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The stuffing box was leaking on the well head due to loose packings. The packings were tightened and lubricated. The spill did not leave the well pad.

Describe Area Affected and Cleanup Action Taken.*

The area will be monitored for staining and vegetation kill. Soil Characterization was done and no remarkable quantities were found. No remediation is needed. See Attached Soil Characterization.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Randy L. Madison</i>	OIL CONSERVATION DIVISION	
Printed Name: Randy L. Madison	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: EHS Specialist	Approval Date: <i>11/4/14</i>	Expiration Date:
E-mail Address: rmadison@atlasenergy.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 10/23/14	Phone: 575-445-6706	

* Attach Additional Sheets If Necessary

#H05 1430837177

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-60687-1
Client Project/Site: Soil Hydrocarbon Characterization

For:
Atlas Energy
309 Silver Street
Raton, New Mexico 87740

Attn: Mr. Randy Madison

DiLea R. Bindel

Authorized for release by:
10/15/2014 10:32:02 AM

DiLea Bindel, Project Manager I
(303)736-0173
dilea.bindel@testamericainc.com

LINKS

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results through
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Have a Question?

? Ask
The
Expert

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Atlas Energy
Project/Site: Soil Hydrocarbon Characterization

TestAmerica Job ID: 280-60687-1

Job ID: 280-60687-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Atlas Energy

Project: Soil Hydrocarbon Characterization

Report Number: 280-60687-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 10/02/2014; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 5.9 C.

GASOLINE RANGE ORGANICS (GRO) - METHOD 8015C

Gasoline Range Organics (GRO)-C6-C10 was detected in method blank MB 280-247591/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Surrogate a,a,a-Trifluorotoluene was recovered above the QC control limits in sample D-67.1-6 (280-60687-3). This anomaly is due to obvious matrix interferences; therefore, corrective action is deemed unnecessary. Sample data should be considered biased high.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with prep batch 280-247618. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOLATILE ORGANIC COMPOUNDS (GC) - METHOD 8021B

Benzene was detected in method blank MB 280-247593/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL RANGE ORGANICS - METHOD 8015C

Matrix spikes were not requested and therefore, were not reported. The acceptable LCS analyte recoveries provide evidence that the laboratory is performing the method within acceptable guidelines.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GENERAL CHEMISTRY

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: Atlas Energy

TestAmerica Job ID: 280-60687-1

Project/Site: Soil Hydrocarbon Characterization

Qualifiers

GC VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: Atlas Energy
 Project/Site: Soil Hydrocarbon Characterization

TestAmerica Job ID: 280-60687-1

Client Sample ID: A-575.1-6

Lab Sample ID: 280-60687-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C10	1.1	B	0.95	0.26	mg/Kg	1		8015C	Total/NA
Diesel Range Organics [C10-C28]	6.2		3.9	0.66	mg/Kg	1		8015C	Total/NA
Chloride	8.5	J	29	1.9	mg/Kg	1		9056	Soluble

Client Sample ID: B-26.1-6

Lab Sample ID: 280-60687-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C10	1.7	B	1.0	0.27	mg/Kg	1		8015C	Total/NA
m-Xylene & p-Xylene	12	J	49	5.9	ug/Kg	1		8021B	Total/NA
Diesel Range Organics [C10-C28]	28		3.9	0.66	mg/Kg	1		8015C	Total/NA
Chloride	700		29	1.9	mg/Kg	1		9056	Soluble

Client Sample ID: D-67.1-6

Lab Sample ID: 280-60687-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C10	4.9	B	0.98	0.26	mg/Kg	1		8015C	Total/NA
Diesel Range Organics [C10-C28]	13		3.9	0.66	mg/Kg	1		8015C	Total/NA
Chloride	38		28	1.9	mg/Kg	1		9056	Soluble

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Method Summary

Client: Atlas Energy

TestAmerica Job ID: 280-60687-1

Project/Site: Soil Hydrocarbon Characterization

Method	Method Description	Protocol	Laboratory
8015C	Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)	SW846	TAL DEN
8021B	Volatile Organic Compounds (GC)	SW846	TAL DEN
8015C	Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)	SW846	TAL DEN
9056	Chloride	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Atlas Energy

TestAmerica Job ID: 280-60687-1

Project/Site: Soil Hydrocarbon Characterization

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-60687-1	A-575.1-6	Solid	10/01/14 09:55	10/02/14 09:20
280-60687-2	B-26.1-6	Solid	10/01/14 09:56	10/02/14 09:20
280-60687-3	D-67.1-6	Solid	10/01/14 09:57	10/02/14 09:20

Client Sample Results

Client: Atlas Energy
Project/Site: Soil Hydrocarbon Characterization

TestAmerica Job ID: 280-60687-1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Client Sample ID: A-575.1-6							Lab Sample ID: 280-60687-1		
Date Collected: 10/01/14 09:55							Matrix: Solid		
Date Received: 10/02/14 09:20									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	1.1	B	0.95	0.26	mg/Kg		10/01/14 09:55	10/13/14 15:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	104		77 - 123				10/01/14 09:55	10/13/14 15:46	1

Client Sample ID: B-26.1-6							Lab Sample ID: 280-60687-2		
Date Collected: 10/01/14 09:56							Matrix: Solid		
Date Received: 10/02/14 09:20									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	1.7	B	1.0	0.27	mg/Kg		10/01/14 09:56	10/13/14 16:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	91		77 - 123				10/01/14 09:56	10/13/14 16:19	1

Client Sample ID: D-67.1-6							Lab Sample ID: 280-60687-3		
Date Collected: 10/01/14 09:57							Matrix: Solid		
Date Received: 10/02/14 09:20									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	4.9	B	0.98	0.26	mg/Kg		10/01/14 09:57	10/13/14 16:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	135	X	77 - 123				10/01/14 09:57	10/13/14 16:51	1

Method: 8021B - Volatile Organic Compounds (GC)

Client Sample ID: A-575.1-6							Lab Sample ID: 280-60687-1		
Date Collected: 10/01/14 09:55							Matrix: Solid		
Date Received: 10/02/14 09:20									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		50	7.0	ug/Kg		10/13/14 11:43	10/13/14 17:36	1
Ethylbenzene	ND		50	7.5	ug/Kg		10/13/14 11:43	10/13/14 17:36	1
Toluene	ND		50	8.8	ug/Kg		10/13/14 11:43	10/13/14 17:36	1
m-Xylene & p-Xylene	ND		50	6.1	ug/Kg		10/13/14 11:43	10/13/14 17:36	1
o-Xylene	ND		50	3.3	ug/Kg		10/13/14 11:43	10/13/14 17:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	94		82 - 115				10/13/14 11:43	10/13/14 17:36	1

Client Sample ID: B-26.1-6							Lab Sample ID: 280-60687-2		
Date Collected: 10/01/14 09:56							Matrix: Solid		
Date Received: 10/02/14 09:20									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		49	6.8	ug/Kg		10/13/14 11:43	10/13/14 19:04	1
Ethylbenzene	ND		49	7.3	ug/Kg		10/13/14 11:43	10/13/14 19:04	1
Toluene	ND		49	8.6	ug/Kg		10/13/14 11:43	10/13/14 19:04	1
m-Xylene & p-Xylene	12	J	49	5.9	ug/Kg		10/13/14 11:43	10/13/14 19:04	1
o-Xylene	ND		49	3.2	ug/Kg		10/13/14 11:43	10/13/14 19:04	1

Client Sample Results

Client: Atlas Energy
 Project/Site: Soil Hydrocarbon Characterization

TestAmerica Job ID: 280-60687-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	91		82 - 115	10/13/14 11:43	10/13/14 19:04	1

Client Sample ID: D-67.1-6				Lab Sample ID: 280-60687-3					
Date Collected: 10/01/14 09:57				Matrix: Solid					
Date Received: 10/02/14 09:20									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		50	7.0	ug/Kg		10/13/14 11:43	10/13/14 19:34	1
Ethylbenzene	ND		50	7.5	ug/Kg		10/13/14 11:43	10/13/14 19:34	1
Toluene	ND		50	8.8	ug/Kg		10/13/14 11:43	10/13/14 19:34	1
m-Xylene & p-Xylene	ND		50	6.1	ug/Kg		10/13/14 11:43	10/13/14 19:34	1
o-Xylene	ND		50	3.3	ug/Kg		10/13/14 11:43	10/13/14 19:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	90		82 - 115	10/13/14 11:43	10/13/14 19:34	1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Client Sample ID: A-575.1-6				Lab Sample ID: 280-60687-1					
Date Collected: 10/01/14 09:55				Matrix: Solid					
Date Received: 10/02/14 09:20									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	6.2		3.9	0.66	mg/Kg		10/06/14 18:30	10/09/14 13:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	68		49 - 115	10/06/14 18:30	10/09/14 13:27	1

Client Sample ID: B-26.1-6				Lab Sample ID: 280-60687-2					
Date Collected: 10/01/14 09:56				Matrix: Solid					
Date Received: 10/02/14 09:20									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	28		3.9	0.66	mg/Kg		10/06/14 18:30	10/09/14 13:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	63		49 - 115	10/06/14 18:30	10/09/14 13:03	1

Client Sample ID: D-67.1-6				Lab Sample ID: 280-60687-3					
Date Collected: 10/01/14 09:57				Matrix: Solid					
Date Received: 10/02/14 09:20									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	13		3.9	0.66	mg/Kg		10/06/14 18:30	10/09/14 12:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	56		49 - 115	10/06/14 18:30	10/09/14 12:39	1

General Chemistry - Soluble

Client Sample ID: A-575.1-6				Lab Sample ID: 280-60687-1					
Date Collected: 10/01/14 09:55				Matrix: Solid					
Date Received: 10/02/14 09:20									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.5	J	29	1.9	mg/Kg		10/08/14 18:59	10/08/14 18:59	1

Client Sample Results

Client: Atlas Energy
Project/Site: Soil Hydrocarbon Characterization

TestAmerica Job ID: 280-60687-1

General Chemistry - Soluble

Client Sample ID: B-26.1-6
Date Collected: 10/01/14 09:56
Date Received: 10/02/14 09:20

Lab Sample ID: 280-60687-2
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	700		29	1.9	mg/Kg			10/08/14 19:16	1

Client Sample ID: D-67.1-6
Date Collected: 10/01/14 09:57
Date Received: 10/02/14 09:20

Lab Sample ID: 280-60687-3
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	38		28	1.9	mg/Kg			10/08/14 19:34	1

QC Sample Results

Client: Atlas Energy
 Project/Site: Soil Hydrocarbon Characterization

TestAmerica Job ID: 280-60687-1

Method: 8015C - Nonhalogenated Organics using GC/FID - Modified (Gasoline Range Organics)

Lab Sample ID: MB 280-247591/1-A

Matrix: Solid

Analysis Batch: 247618

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 247591

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline Range Organics (GRO) -C6-C10	0.547	J	1.2	0.33	mg/Kg		10/13/14 11:39	10/13/14 14:09	1
Surrogate	MB MB		Limits			D	Prepared	Analyzed	Dil Fac
%Recovery	Qualifier								
a,a,a-Trifluorotoluene	95		77 - 123				10/13/14 11:39	10/13/14 14:09	1

Lab Sample ID: LCS 280-247591/2-A

Matrix: Solid

Analysis Batch: 247618

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 247591

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits		
		Result	Qualifier						
Gasoline Range Organics (GRO) -C6-C10	5.50	6.37		mg/Kg		116	85 - 153		
Surrogate	LCS LCS		Limits			D	Prepared	Analyzed	Dil Fac
%Recovery	Qualifier								
a,a,a-Trifluorotoluene	93		77 - 123						

Lab Sample ID: LCSD 280-247591/3-A

Matrix: Solid

Analysis Batch: 247618

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 247591

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. Limits		RPD	Limit
		Result	Qualifier							
Gasoline Range Organics (GRO) -C6-C10	5.50	6.51		mg/Kg		118	85 - 153	2	30	
Surrogate	LCSD LCSD		Limits			D	Prepared	Analyzed	Dil Fac	
%Recovery	Qualifier									
a,a,a-Trifluorotoluene	95		77 - 123							

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 280-247593/1-A

Matrix: Solid

Analysis Batch: 247638

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 247593

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	7.50	J	50	7.0	ug/Kg		10/13/14 11:43	10/13/14 16:08	1
Ethylbenzene	ND		50	7.5	ug/Kg		10/13/14 11:43	10/13/14 16:08	1
Toluene	ND		50	8.8	ug/Kg		10/13/14 11:43	10/13/14 16:08	1
m-Xylene & p-Xylene	ND		50	6.1	ug/Kg		10/13/14 11:43	10/13/14 16:08	1
o-Xylene	ND		50	3.3	ug/Kg		10/13/14 11:43	10/13/14 16:08	1
Surrogate	MB MB		Limits			D	Prepared	Analyzed	Dil Fac
%Recovery	Qualifier								
a,a,a-Trifluorotoluene	98		82 - 115				10/13/14 11:43	10/13/14 16:08	1

TestAmerica Denver

QC Sample Results

Client: Atlas Energy
Project/Site: Soil Hydrocarbon Characterization

TestAmerica Job ID: 280-60687-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCS 280-247593/2-A

Matrix: Solid

Analysis Batch: 247638

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 247593

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Benzene	1000	1130		ug/Kg		113	85 - 115
Ethylbenzene	1000	1070		ug/Kg		107	85 - 115
Toluene	1000	1080		ug/Kg		108	85 - 115
m-Xylene & p-Xylene	2000	2160		ug/Kg		108	85 - 115
o-Xylene	1000	1090		ug/Kg		109	85 - 115

Surrogate	LCS		Limits
	%Recovery	Qualifier	
a,a,a-Trifluorotoluene	101		82 - 115

Lab Sample ID: LCSD 280-247593/3-A

Matrix: Solid

Analysis Batch: 247638

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 247593

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec. Limits	RPD	
		Result	Qualifier					RPD	Limit
Benzene	1000	1060		ug/Kg		106	85 - 115	6	15
Ethylbenzene	1000	1020		ug/Kg		102	85 - 115	6	17
Toluene	1000	1020		ug/Kg		102	85 - 115	6	15
m-Xylene & p-Xylene	2000	2050		ug/Kg		103	85 - 115	5	15
o-Xylene	1000	1030		ug/Kg		103	85 - 115	6	15

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
a,a,a-Trifluorotoluene	96		82 - 115

Lab Sample ID: 280-60687-1 MS

Matrix: Solid

Analysis Batch: 247638

Client Sample ID: A-575.1-6

Prep Type: Total/NA

Prep Batch: 247593

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Benzene	ND		977	1010		ug/Kg		104	85 - 115
Ethylbenzene	ND		977	972		ug/Kg		99	85 - 115
Toluene	ND		977	981		ug/Kg		100	85 - 115
m-Xylene & p-Xylene	8.7		1950	1950		ug/Kg		100	85 - 115
o-Xylene	ND		977	981		ug/Kg		100	85 - 115

Surrogate	MS		Limits
	%Recovery	Qualifier	
a,a,a-Trifluorotoluene	93		82 - 115

Lab Sample ID: 280-60687-1 MSD

Matrix: Solid

Analysis Batch: 247638

Client Sample ID: A-575.1-6

Prep Type: Total/NA

Prep Batch: 247593

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec. Limits	RPD	
				Result	Qualifier					RPD	Limit
Benzene	ND		993	1020		ug/Kg		103	85 - 115	1	15
Ethylbenzene	ND		993	983		ug/Kg		99	85 - 115	1	17
Toluene	ND		993	987		ug/Kg		99	85 - 115	1	15
m-Xylene & p-Xylene	8.7		1990	1970		ug/Kg		99	85 - 115	1	15
o-Xylene	ND		993	993		ug/Kg		100	85 - 115	1	15

TestAmerica Denver

QC Sample Results

Client: Atlas Energy
 Project/Site: Soil Hydrocarbon Characterization

TestAmerica Job ID: 280-60687-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 280-60687-1 MSD
 Matrix: Solid
 Analysis Batch: 247638

Client Sample ID: A-575.1-6
 Prep Type: Total/NA
 Prep Batch: 247593

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
a,a,a-Trifluorotoluene	92		82 - 115

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Lab Sample ID: MB 280-246421/1-A
 Matrix: Solid
 Analysis Batch: 246910

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 246421

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics [C10-C28]	ND		3.7	0.62	mg/Kg		10/06/14 18:30	10/09/14 10:37	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
o-Terphenyl (Surr)	75		49 - 115	10/06/14 18:30	10/09/14 10:37	1

Lab Sample ID: LCS 280-246421/2-A
 Matrix: Solid
 Analysis Batch: 246910

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 246421

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	
Diesel Range Organics [C10-C28]	64.1	59.4		mg/Kg		93	53 - 115	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
o-Terphenyl (Surr)	74		49 - 115

Method: 9056 - Chloride

Lab Sample ID: MRL 280-246865/3
 Matrix: Solid
 Analysis Batch: 246865

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	MRL MRL		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	
Chloride	2.50	2.49	J	mg/L		99	50 - 150	

Lab Sample ID: MB 280-246967/3-A
 Matrix: Solid
 Analysis Batch: 246865

Client Sample ID: Method Blank
 Prep Type: Soluble

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		30	2.0	mg/Kg			10/08/14 18:41	1

Lab Sample ID: LCS 280-246967/1-A
 Matrix: Solid
 Analysis Batch: 246865

Client Sample ID: Lab Control Sample
 Prep Type: Soluble

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	
Chloride	1000	969		mg/Kg		97	90 - 110	

TestAmerica Denver

QC Sample Results

Client: Atlas Energy
 Project/Site: Soil Hydrocarbon Characterization

TestAmerica Job ID: 280-60687-1

Method: 9056 - Chloride (Continued)

Lab Sample ID: LCSD 280-246967/2-A
Matrix: Solid
Analysis Batch: 246865

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1000	967		mg/Kg	-	97	90 - 110	0	10

Lab Sample ID: 280-60687-3 MS
Matrix: Solid
Analysis Batch: 246865

Client Sample ID: D-67.1-6
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	38		240	261		mg/Kg	-	93	80 - 120	-	-

Lab Sample ID: 280-60687-3 MSD
Matrix: Solid
Analysis Batch: 246865

Client Sample ID: D-67.1-6
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	38		240	260		mg/Kg	-	93	80 - 120	0	20

Lab Sample ID: 280-60687-3 DU
Matrix: Solid
Analysis Batch: 246865

Client Sample ID: D-67.1-6
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	38		37.7		mg/Kg	-	0.1	10

QC Association Summary

Client: Atlas Energy
 Project/Site: Soil Hydrocarbon Characterization

TestAmerica Job ID: 280-60687-1

GC VOA

Prep Batch: 247591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-60687-1	A-575.1-6	Total/NA	Solid	5035	
280-60687-2	B-26.1-6	Total/NA	Solid	5035	
280-60687-3	D-67.1-6	Total/NA	Solid	5035	
LCS 280-247591/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 280-247591/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	
MB 280-247591/1-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 247593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-60687-1	A-575.1-6	Total/NA	Solid	5030B	
280-60687-1 MS	A-575.1-6	Total/NA	Solid	5030B	
280-60687-1 MSD	A-575.1-6	Total/NA	Solid	5030B	
280-60687-2	B-26.1-6	Total/NA	Solid	5030B	
280-60687-3	D-67.1-6	Total/NA	Solid	5030B	
LCS 280-247593/2-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 280-247593/3-A	Lab Control Sample Dup	Total/NA	Solid	5030B	
MB 280-247593/1-A	Method Blank	Total/NA	Solid	5030B	

Analysis Batch: 247618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-60687-1	A-575.1-6	Total/NA	Solid	8015C	247591
280-60687-2	B-26.1-6	Total/NA	Solid	8015C	247591
280-60687-3	D-67.1-6	Total/NA	Solid	8015C	247591
LCS 280-247591/2-A	Lab Control Sample	Total/NA	Solid	8015C	247591
LCSD 280-247591/3-A	Lab Control Sample Dup	Total/NA	Solid	8015C	247591
MB 280-247591/1-A	Method Blank	Total/NA	Solid	8015C	247591

Analysis Batch: 247638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-60687-1	A-575.1-6	Total/NA	Solid	8021B	247593
280-60687-1 MS	A-575.1-6	Total/NA	Solid	8021B	247593
280-60687-1 MSD	A-575.1-6	Total/NA	Solid	8021B	247593
280-60687-2	B-26.1-6	Total/NA	Solid	8021B	247593
280-60687-3	D-67.1-6	Total/NA	Solid	8021B	247593
LCS 280-247593/2-A	Lab Control Sample	Total/NA	Solid	8021B	247593
LCSD 280-247593/3-A	Lab Control Sample Dup	Total/NA	Solid	8021B	247593
MB 280-247593/1-A	Method Blank	Total/NA	Solid	8021B	247593

GC Semi VOA

Prep Batch: 246421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-60687-1	A-575.1-6	Total/NA	Solid	3546	
280-60687-2	B-26.1-6	Total/NA	Solid	3546	
280-60687-3	D-67.1-6	Total/NA	Solid	3546	
LCS 280-246421/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 280-246421/1-A	Method Blank	Total/NA	Solid	3546	

QC Association Summary

Client: Atlas Energy
 Project/Site: Soil Hydrocarbon Characterization

TestAmerica Job ID: 280-60687-1

GC Semi VOA (Continued)

Analysis Batch: 246910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-60687-1	A-575.1-6	Total/NA	Solid	8015C	246421
280-60687-2	B-26.1-6	Total/NA	Solid	8015C	246421
280-60687-3	D-67.1-6	Total/NA	Solid	8015C	246421
LCS 280-246421/2-A	Lab Control Sample	Total/NA	Solid	8015C	246421
MB 280-246421/1-A	Method Blank	Total/NA	Solid	8015C	246421

General Chemistry

Analysis Batch: 246865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-60687-1	A-575.1-6	Soluble	Solid	9056	246967
280-60687-2	B-26.1-6	Soluble	Solid	9056	246967
280-60687-3	D-67.1-6	Soluble	Solid	9056	246967
280-60687-3 DU	D-67.1-6	Soluble	Solid	9056	246967
280-60687-3 MS	D-67.1-6	Soluble	Solid	9056	246967
280-60687-3 MSD	D-67.1-6	Soluble	Solid	9056	246967
LCS 280-246967/1-A	Lab Control Sample	Soluble	Solid	9056	246967
LCSD 280-246967/2-A	Lab Control Sample Dup	Soluble	Solid	9056	246967
MB 280-246967/3-A	Method Blank	Soluble	Solid	9056	246967
MRL 280-246865/3	Lab Control Sample	Total/NA	Solid	9056	246967

Leach Batch: 246967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-60687-1	A-575.1-6	Soluble	Solid	DI Leach	
280-60687-2	B-26.1-6	Soluble	Solid	DI Leach	
280-60687-3	D-67.1-6	Soluble	Solid	DI Leach	
280-60687-3 DU	D-67.1-6	Soluble	Solid	DI Leach	
280-60687-3 MS	D-67.1-6	Soluble	Solid	DI Leach	
280-60687-3 MSD	D-67.1-6	Soluble	Solid	DI Leach	
LCS 280-246967/1-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 280-246967/2-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
MB 280-246967/3-A	Method Blank	Soluble	Solid	DI Leach	

Lab Chronicle

Client: Atlas Energy
 Project/Site: Soil Hydrocarbon Characterization

TestAmerica Job ID: 280-60687-1

Client Sample ID: A-575.1-6

Lab Sample ID: 280-60687-1

Date Collected: 10/01/14 09:55

Matrix: Solid

Date Received: 10/02/14 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.31 g	5 mL	247591	10/01/14 09:55	TEM	TAL DEN
Total/NA	Analysis	8015C		1	6.31 g	5 mL	247618	10/13/14 15:46	TEM	TAL DEN
Total/NA	Prep	5030B			9.96 g	10 mL	247593	10/13/14 11:43	TEM	TAL DEN
Total/NA	Analysis	8021B		1	9.96 g	10 mL	247638	10/13/14 17:36	TEM	TAL DEN
Total/NA	Prep	3546			30.8 g	1 mL	246421	10/06/14 18:30	EJP	TAL DEN
Total/NA	Analysis	8015C		1	30.8 g	1 mL	246910	10/09/14 13:27	TDJ	TAL DEN
Soluble	Leach	DI Leach			10.38 g	100 mL	246967	10/08/14 15:11	TLP	TAL DEN
Soluble	Analysis	9056		1	5 mL	5 mL	246865	10/08/14 18:59	DAW	TAL DEN

Client Sample ID: B-26.1-6

Lab Sample ID: 280-60687-2

Date Collected: 10/01/14 09:56

Matrix: Solid

Date Received: 10/02/14 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.993 g	5 mL	247591	10/01/14 09:56	TEM	TAL DEN
Total/NA	Analysis	8015C		1	5.993 g	5 mL	247618	10/13/14 16:19	TEM	TAL DEN
Total/NA	Prep	5030B			10.25 g	10 mL	247593	10/13/14 11:43	TEM	TAL DEN
Total/NA	Analysis	8021B		1	10.25 g	10 mL	247638	10/13/14 19:04	TEM	TAL DEN
Total/NA	Prep	3546			30.8 g	1 mL	246421	10/06/14 18:30	EJP	TAL DEN
Total/NA	Analysis	8015C		1	30.8 g	1 mL	246910	10/09/14 13:03	TDJ	TAL DEN
Soluble	Leach	DI Leach			10.29 g	100 mL	246967	10/08/14 15:11	TLP	TAL DEN
Soluble	Analysis	9056		1	5 mL	5 mL	246865	10/08/14 19:16	DAW	TAL DEN

Client Sample ID: D-67.1-6

Lab Sample ID: 280-60687-3

Date Collected: 10/01/14 09:57

Matrix: Solid

Date Received: 10/02/14 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.133 g	5 mL	247591	10/01/14 09:57	TEM	TAL DEN
Total/NA	Analysis	8015C		1	6.133 g	5 mL	247618	10/13/14 16:51	TEM	TAL DEN
Total/NA	Prep	5030B			10.00 g	10 mL	247593	10/13/14 11:43	TEM	TAL DEN
Total/NA	Analysis	8021B		1	10.00 g	10 mL	247638	10/13/14 19:34	TEM	TAL DEN
Total/NA	Prep	3546			30.7 g	1 mL	246421	10/06/14 18:30	EJP	TAL DEN
Total/NA	Analysis	8015C		1	30.7 g	1 mL	246910	10/09/14 12:39	TDJ	TAL DEN
Soluble	Leach	DI Leach			10.58 g	100 mL	246967	10/08/14 15:11	TLP	TAL DEN
Soluble	Analysis	9056		1	5 mL	5 mL	246865	10/08/14 19:34	DAW	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Login Sample Receipt Checklist

Client: Atlas Energy

Job Number: 280-60687-1

Login Number: 60687

List Source: TestAmerica Denver

List Number: 1

Creator: Conquest, Tyler W

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	Analyses listed on COC; Sample D-67.2 not designated for specific analyses
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

