

July 11, 2016

Report to:

Richard Miller
Gadeco, LLC
3600 S Yosemite Ste 800
Denver, CO 80237

Bill to:

Richard Miller
Gadeco, LLC
3600 S Yosemite Ste 800
Denver, CO 80237

cc: Carl Colby

Project ID:

ACZ Project ID: L31367

Richard Miller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 30, 2016. This project has been assigned to ACZ's project number, L31367. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L31367. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 10, 2016. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Scott Habermehl has reviewed
and approved this report.



Gadeco, LLC

Project ID:

Sample ID: #27

ACZ Sample ID: **L31367-01**

Date Sampled: 06/29/16 12:36

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: WG405770

Analyst: mmn

Extract Date: 07/05/16 17:08

Analysis Date: 07/05/16 17:08

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4		U	1	*	ug/Kg	1	1
m p Xylene	1330-20-7		U	1	*	ug/Kg	2	2
o Xylene	95-47-6		U	1	*	ug/Kg	1	1
Toluene	108-88-3		U	1	*	ug/Kg	1	1
TVH C6 to C10	TVH		U	1	*	mg/Kg	0.05	0.05
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	89.4		1		%	70	130
Bromofluorobenzene (TVH)	460-00 4	89.3		1		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #27

ACZ Sample ID: **L31367-01**

Date Sampled: 06/29/16 12:36

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG405924

Analyst: itk

Extract Date: 06/30/16 15:50

Analysis Date: 07/07/16 16:46

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		70		66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	91.7		66.7		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #19

ACZ Sample ID: **L31367-02**

Date Sampled: 06/29/16 12:36

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: WG405770

Analyst: mmn

Extract Date: 07/07/16 12:48

Analysis Date: 07/07/16 12:48

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	10	*	ug/Kg	10	10
Ethylbenzene	100-41-4		U	10	*	ug/Kg	10	10
m p Xylene	1330-20-7		U	10	*	ug/Kg	20	20
o Xylene	95-47-6		U	10	*	ug/Kg	10	10
Toluene	108-88-3		U	10	*	ug/Kg	10	10
TVH C6 to C10	TVH	1		10	*	mg/Kg	0.5	0.5
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	89.1		10		%	70	130
Bromofluorobenzene (TVH)	460-00 4	92.2		10		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #19

ACZ Sample ID: **L31367-02**

Date Sampled: 06/29/16 12:36

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: **WG405924**

Analyst: itk

Extract Date: 06/30/16 15:53

Analysis Date: 07/08/16 10:29

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		830		133	*	mg/Kg	10	70
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	102.7		133	*	%	70	130

Gadeco, LLC

Project ID:

Sample ID: #13

ACZ Sample ID: **L31367-03**

Date Sampled: 06/29/16 12:37

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: WG405770

Analyst: mmn

Extract Date: 07/05/16 18:19

Analysis Date: 07/05/16 18:19

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4		U	1	*	ug/Kg	1	1
m p Xylene	1330-20-7		U	1	*	ug/Kg	2	2
o Xylene	95-47-6		U	1	*	ug/Kg	1	1
Toluene	108-88-3		U	1	*	ug/Kg	1	1
TVH C6 to C10	TVH		U	1	*	mg/Kg	0.05	0.05
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	87.7		1		%	70	130
Bromofluorobenzene (TVH)	460-00 4	89.8		1		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #13

ACZ Sample ID: **L31367-03**

Date Sampled: 06/29/16 12:37

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG405924

Analyst: itk

Extract Date: 06/30/16 15:55

Analysis Date: 07/07/16 17:41

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		49		66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	95.7		66.7		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #16

ACZ Sample ID: **L31367-04**

Date Sampled: 06/29/16 12:38

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: WG405770

Analyst: mmn

Extract Date: 07/05/16 18:49

Analysis Date: 07/05/16 18:49

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4		U	1	*	ug/Kg	1	1
m p Xylene	1330-20-7		U	1	*	ug/Kg	2	2
o Xylene	95-47-6		U	1	*	ug/Kg	1	1
Toluene	108-88-3		U	1	*	ug/Kg	1	1
TVH C6 to C10	TVH		U	1	*	mg/Kg	0.05	0.05
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	89.9		1		%	70	130
Bromofluorobenzene (TVH)	460-00-4	87.6		1		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #16

ACZ Sample ID: **L31367-04**

Date Sampled: 06/29/16 12:38

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: **WG405924**

Analyst: itk

Extract Date: 06/30/16 15:58

Analysis Date: 07/07/16 18:08

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		236		66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	97.7		66.7		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #14

ACZ Sample ID: **L31367-05**

Date Sampled: 06/29/16 12:38

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: WG405770

Analyst: mmn

Extract Date: 07/05/16 19:19

Analysis Date: 07/05/16 19:19

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4		U	1	*	ug/Kg	1	1
m p Xylene	1330-20-7		U	1	*	ug/Kg	2	2
o Xylene	95-47-6		U	1	*	ug/Kg	1	1
Toluene	108-88-3		U	1	*	ug/Kg	1	1
TVH C6 to C10	TVH		U	1	*	mg/Kg	0.05	0.05
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	85.3		1		%	70	130
Bromofluorobenzene (TVH)	460-00 4	84.6		1		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #14

ACZ Sample ID: **L31367-05**

Date Sampled: 06/29/16 12:38

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG405924

Analyst: itk

Extract Date: 06/30/16 16:01

Analysis Date: 07/07/16 18:35

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		12	J	66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	94.9		66.7		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #17

ACZ Sample ID: **L31367-06**

Date Sampled: 06/29/16 12:40

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: WG405770

Analyst: mmn

Extract Date: 07/05/16 19:48

Analysis Date: 07/05/16 19:48

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4		U	1	*	ug/Kg	1	1
m p Xylene	1330-20-7		U	1	*	ug/Kg	2	2
o Xylene	95-47-6		U	1	*	ug/Kg	1	1
Toluene	108-88-3		U	1	*	ug/Kg	1	1
TVH C6 to C10	TVH		U	1	*	mg/Kg	0.05	0.05
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	82.5		1		%	70	130
Bromofluorobenzene (TVH)	460-00 4	82.3		1		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #17

ACZ Sample ID: **L31367-06**

Date Sampled: 06/29/16 12:40

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: **WG405924**

Analyst: itk

Extract Date: 06/30/16 16:03

Analysis Date: 07/07/16 19:03

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		29	J	66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	94.1		66.7		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #11

ACZ Sample ID: **L31367-07**

Date Sampled: 06/29/16 12:50

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: WG405770

Analyst: mmn

Extract Date: 07/05/16 20:47

Analysis Date: 07/05/16 20:47

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4		U	1	*	ug/Kg	1	1
m p Xylene	1330-20-7		U	1	*	ug/Kg	2	2
o Xylene	95-47-6		U	1	*	ug/Kg	1	1
Toluene	108-88-3		U	1	*	ug/Kg	1	1
TVH C6 to C10	TVH		U	1	*	mg/Kg	0.05	0.05
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	83.5		1		%	70	130
Bromofluorobenzene (TVH)	460-00 4	82.5		1		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #11

ACZ Sample ID: **L31367-07**

Date Sampled: 06/29/16 12:50

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: **WG405924**

Analyst: itk

Extract Date: 06/30/16 16:06

Analysis Date: 07/07/16 19:57

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		8	J	66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	94		66.7		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #10

ACZ Sample ID: **L31367-08**

Date Sampled: 06/29/16 12:52

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: WG405770

Analyst: mmn

Extract Date: 07/05/16 21:17

Analysis Date: 07/05/16 21:17

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4		U	1	*	ug/Kg	1	1
m p Xylene	1330-20-7		U	1	*	ug/Kg	2	2
o Xylene	95-47-6		U	1	*	ug/Kg	1	1
Toluene	108-88-3		U	1	*	ug/Kg	1	1
TVH C6 to C10	TVH		U	1	*	mg/Kg	0.05	0.05
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	85.4		1		%	70	130
Bromofluorobenzene (TVH)	460-00 4	84.4		1		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #10

ACZ Sample ID: **L31367-08**

Date Sampled: 06/29/16 12:52

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: **WG405924**

Analyst: itk

Extract Date: 06/30/16 16:08

Analysis Date: 07/07/16 20:25

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	100.3		66.7		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #9

ACZ Sample ID: **L31367-09**

Date Sampled: 06/29/16 12:55

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: WG405770

Analyst: mmn

Extract Date: 07/05/16 21:47

Analysis Date: 07/05/16 21:47

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4		U	1	*	ug/Kg	1	1
m p Xylene	1330-20-7		U	1	*	ug/Kg	2	2
o Xylene	95-47-6		U	1	*	ug/Kg	1	1
Toluene	108-88-3		U	1	*	ug/Kg	1	1
TVH C6 to C10	TVH		U	1	*	mg/Kg	0.05	0.05
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	84.3		1		%	70	130
Bromofluorobenzene (TVH)	460-00-4	82.8		1		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #9

ACZ Sample ID: **L31367-09**

Date Sampled: 06/29/16 12:55

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: **WG405924**

Analyst: itk

Extract Date: 06/30/16 16:11

Analysis Date: 07/07/16 20:52

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		125		66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	98.5		66.7		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #8

ACZ Sample ID: **L31367-10**

Date Sampled: 06/29/16 12:55

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: WG405770

Analyst: mmn

Extract Date: 07/05/16 22:16

Analysis Date: 07/05/16 22:16

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4		U	1	*	ug/Kg	1	1
m p Xylene	1330-20-7		U	1	*	ug/Kg	2	2
o Xylene	95-47-6		U	1	*	ug/Kg	1	1
Toluene	108-88-3		U	1	*	ug/Kg	1	1
TVH C6 to C10	TVH		U	1	*	mg/Kg	0.05	0.05
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	84.9		1		%	70	130
Bromofluorobenzene (TVH)	460-00 4	82.1		1		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #8

ACZ Sample ID: **L31367-10**

Date Sampled: 06/29/16 12:55

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: **WG405924**

Analyst: itk

Extract Date: 06/30/16 16:14

Analysis Date: 07/07/16 21:20

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		88		66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	96.8		66.7		%	70	130


Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
O	Analyte concentration is estimated due to result exceeding calibration range.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
J	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
- (3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Gadeco, LLC

ACZ Project ID: **L31367**

BTEX/Gasoline Range Organics (C6-C10)

M8021B/8015D GC/PID/FID

WG405770

AS	Sample ID: L31367-10AS		PCN/SCN: B160705-1-CCV					Analyzed:		07/05/16 22:46	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
BENZENE	50	U	34.8	ug/Kg	70.0	70	130				
ETHYLBENZENE	50	U	27.4	ug/Kg	55.0	70	130			M2	
M P XYLENE	100	U	63.1	ug/Kg	63.0	70	130			M2	
O XYLENE	50	U	37.4	ug/Kg	75.0	70	130				
TOLUENE	50	U	25.9	ug/Kg	52.0	70	130			M2	
TVH C6 TO C10	.5	U	.304	mg/Kg	61.0	70	130			M2	
BROMOFLUOROBENZENE (surr)				%	85.8	70	130				
BROMOFLUOROBENZENE (TVH) (surr)				%	84.7	70	130				

ASD	Sample ID: L31367-10ASD			PCN/SCN: B160705-1-CCV				Analyzed:		07/05/16 23:16	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
BENZENE	50	U	33.6	ug/Kg	67.0	70	130	4	20	M2	
ETHYLBENZENE	50	U	27.4	ug/Kg	55.0	70	130	0	20	M2	
M P XYLENE	100	U	62.4	ug/Kg	62.0	70	130	1	20	M2	
O XYLENE	50	U	36.7	ug/Kg	73.0	70	130	2	20		
TOLUENE	50	U	25.5	ug/Kg	51.0	70	130	2	20	M2	
TVH C6 TO C10	.5	U	.303	mg/Kg	61.0	70	130	0	20	M2	
BROMOFLUOROBENZENE (surr)				%	89.0	70	130				
BROMOFLUOROBENZENE (TVH) (surr)				%	87.9	70	130				

LCSS	Sample ID: WG405770LCSS		PCN/SCN: B160705-2-ICV				Analyzed:		07/05/16 12:45	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		24.2	ug/Kg	96.0	70	130			
ETHYLBENZENE	25		24.5	ug/Kg	98.0	70	130			
M P XYLENE	50.4		51	ug/Kg	101.0	70	130			
O XYLENE	50.3		49	ug/Kg	98.0	70	130			
TOLUENE	75.3		72	ug/Kg	96.0	70	130			
TVH C6 TO C10	.5		.414	mg/Kg	92.0	70	130			
BROMOFLUOROBENZENE (surr)				%	97.7	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	98.3	70	130			

LCSSD	Sample ID: WG405770LCSSD		PCN/SCN: B160705-2-ICV				Analyzed:		07/05/16 13:36	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		24	ug/Kg	96.0	70	130	1	20	
ETHYLBENZENE	25		24.1	ug/Kg	96.0	70	130	2	20	
M P XYLENE	50.4		50	ug/Kg	99.0	70	130	2	20	
O XYLENE	50.3		48.6	ug/Kg	97.0	70	130	1	20	
TOLUENE	75.3		71.3	ug/Kg	95.0	70	130	1	20	
TVH C6 TO C10	.5		.414	mg/Kg	92.0	70	130	0	20	
BROMOFLUOROBENZENE (surr)				%	97.4	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	98.2	70	130			

Gadeco, LLC

ACZ Project ID: **L31367**

PBS		Sample ID: WG405770PBS						Analyzed: 07/05/16 14:06		
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE			U	ug/Kg		-1	1			
ETHYLBENZENE			U	ug/Kg		-1	1			
M P XYLENE			U	ug/Kg		-2	2			
O XYLENE			U	ug/Kg		-1	1			
TOLUENE			U	ug/Kg		-1	1			
TVH C6 TO C10			U	mg/Kg		-.05	.05			
BROMOFLUOROBENZENE (surr)				%	91.8	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	91.0	70	130			

Gadeco, LLC

ACZ Project ID: **L31367**

Diesel Range Organics (C10-C28)

M8015D GC/FID

WG405924

DUP		Sample ID: L31369-04DUP						Analyzed: 07/07/16 23:36		
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28		13	U	mg/Kg				200	20	RA
OTP (surr)				%	90.8	70	130			

MS	Sample ID: L31369-04MS		PCN/SCN: OPTPH160509-2				Analyzed:		07/08/16 0:04	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2502.7	13	166.1	mg/Kg	92.0	70	130			
OTP (surr)				%	95.5	70	130			

LCSS	Sample ID: WG405571LCSS		PCN/SCN: OPTPH160509-2				Analyzed: 07/07/16 15:24			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2502.7		84	mg/Kg	101.0	70	130			
OTP (surr)				%	101.1	70	130			

LCSSD	Sample ID: WG405571LCSSD		PCN/SCN: OPTPH160509-2				Analyzed: 07/07/16 15:51			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2502.7		83.5	mg/Kg	100.0	70	130	1	20	
OTP (surr)				%	99.6	70	130			

PBS		Sample ID: WG405571PBS						Analyzed: 07/07/16 14:57		
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28			U	mg/Kg		-20	20			
OTP (surr)				%	90.0	70	130			

ACZ Project ID: **L31367**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L31367-01	WG405770	Benzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
	WG405924	TPH C10 to C28	M8015D GC/FID	D1	Sample required dilution due to matrix.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L31367-02	WG405770	Benzene	M8021B/8015D GC/PID/FID	DD	Sample required dilution due to matrix color or odor.
			M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	DD	Sample required dilution due to matrix color or odor.
			M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	DD	Sample required dilution due to matrix color or odor.
			M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	DD	Sample required dilution due to matrix color or odor.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	DD	Sample required dilution due to matrix color or odor.
			M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	DD	Sample required dilution due to matrix color or odor.
			M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

ACZ Project ID: **L31367**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG405924	*All Compounds*	M8015D GC/FID	D2	Sample required dilution. Target analyte exceeded calibration range.
		TPH C10 to C28	M8015D GC/FID	D1	Sample required dilution due to matrix.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L31367-03	WG405770	Benzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
	WG405924	TPH C10 to C28	M8015D GC/FID	D1	Sample required dilution due to matrix.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L31367-04	WG405770	Benzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ

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ACZ Project ID: **L31367**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG405924	TPH C10 to C28	M8015D GC/FID	D1	does not have a closed-system purge and trap as described in method 5035.
			M8015D GC/FID	RA	Sample required dilution due to matrix.
				RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L31367-05	WG405770	Benzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
	WG405924	TPH C10 to C28	M8015D GC/FID	D1	Sample required dilution due to matrix.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L31367-06	WG405770	Benzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ

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ACZ Project ID: **L31367**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG405924	TPH C10 to C28	M8015D GC/FID	D1	does not have a closed-system purge and trap as described in method 5035.
			M8015D GC/FID	RA	Sample required dilution due to matrix.
				RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L31367-07	WG405770	Benzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
	WG405924	TPH C10 to C28	M8015D GC/FID	D1	Sample required dilution due to matrix.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L31367-08	WG405770	Benzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ

REPAD.15.06.05.01

ACZ Project ID: **L31367**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG405924	TPH C10 to C28	M8015D GC/FID	D1	does not have a closed-system purge and trap as described in method 5035.
			M8015D GC/FID	RA	Sample required dilution due to matrix.
				RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L31367-09	WG405770	Benzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
	WG405924	TPH C10 to C28	M8015D GC/FID	D1	Sample required dilution due to matrix.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L31367-10	WG405770	Benzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ

REPAD.15.06.05.01

ACZ Project ID: **L31367**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					does not have a closed-system purge and trap as described in method 5035.
	WG405924	TPH C10 to C28	M8015D GC/FID	D1	Sample required dilution due to matrix.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Gadeco, LLC

ACZ Project ID: **L31367**

No certification qualifiers associated with this analysis

Gadeco, LLC

ACZ Project ID: L31367

Date Received: 06/30/2016 12:52

Received By: ddp

Date Printed: 6/30/2016

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Is the Chain of Custody form or other directive shipping papers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Does this project require special handling procedures such as CLP protocol?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Are any samples NRC licensable material?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) If samples are received past hold time, proceed with requested short hold time analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is the Chain of Custody form complete and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A change was made in the Copy of Report to: and Analyses Requested section prior to ACZ custody.			

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are all labels on containers and are they intact and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) For preserved bottle types, was the pH checked and within limits? ¹	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12) Is there sufficient sample volume to perform all requested work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Is the custody seal intact on all containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14) Are samples that require zero headspace acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15) Are all sample containers appropriate for analytical requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16) Is there an Hg-1631 trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17) Is there a VOA trip blank present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
18) Were all samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
4305	2.4	<=6.0	14	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Gadeco, LLC

ACZ Project ID: L31367

Date Received: 06/30/2016 12:52

Received By: ddp

Date Printed: 6/30/2016

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Richard Miller
Company: Gaderco LLC
E-mail: r.miller@grynberg.com

Address: 3600 S. Yosemite St 800
Denver CO 80237
Telephone: 303-850-7490

Copy of Report to:

Name: Carl Colby
Company: Wild West oilfield

E-mail: wildwestexcavating@gmail.com
Telephone: 303-850-970-326-5776

Invoice to:

Name: Richard Miller
Company: Gaderco
E-mail: r.miller@grynberg.com

Address: 3600 S Yosemite St 800
Denver CO 80237
Telephone: 303-850-7490

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES ☒
NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring?

Yes ☐ No ☐

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Carl Sampler's Site Information State CO Zip code 81625 Time Zone MT

*Sampler's Signature: [Signature]

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:	PO#:	Reporting state for compliance testing:	Check box if samples include NRC licensed material?	SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers												
				# 27	6-29-16 12:36	SO	2	TPH	BTX										
				# 19	6-29-16 12:36	SO	2	TPH	BTX										
				# 13	6-29-16 12:37	SO	2	TPH	BTX										
				# 16	6-29-16 12:38	SO	2	TPH	BTX										
				# 14	6-29-16 12:38	SO	2	TPH	BTX										
				# 17	6-29-16 12:46	SO	2	TPH	BTX										
				# 11	6-29-16 12:50	SO	2	TPH	BTX										
				# 10	6-29-16 12:52	SO	2	TPH	BTX										
				# 9	6-29-16 12:55	SO	2	TPH	BTX										
				# 8	6-29-16 12:55	SO	2	TPH	BTX										

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Carl Colby

6-29-16 3PM

Richard Miller

6-29-16