

September 26, 2016

Report to:

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Bill to:

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cc: Carl Colby

Project ID:

ACZ Project ID: L32637

Randy Edelen:

Enclosed are revised analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 29, 2016 and originally reported on September 23, 2016. Refer to the case narrative for an explanation of the changes. This project was assigned to ACZ's project number, L32637. Please reference this number in all future inquiries.

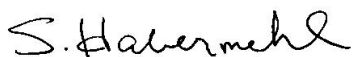
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L32637. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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 October 23, 2016. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/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 reports for five years.

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



Scott Habermehl has reviewed
and approved this report.



Gadeco, LLC

September 26, 2016

Project ID:

ACZ Project ID: L32637

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 6 soil samples from Gadeco, LLC on August 29, 2016. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L32637. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic, organic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. This project has been revised to report a different (extended) sample identification for L32637-06.

Gadeco, LLC

Project ID:

Sample ID: BACKGROUND

ACZ Sample ID: **L32637-05**

Date Sampled: 08/26/16 13:45

Date Received: 08/29/16

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	510	4.5			mg/Kg	0.1	0.5	09/21/16 11:20	enb
Calcium, soluble (Sat. Paste)	M6010B ICP	1	1.55			meq/L	0.005	0.025	09/21/16 14:47	aeb
Magnesium, soluble (Sat. Paste)	M6010B ICP	1	0.494		*	meq/L	0.017	0.082	09/21/16 14:47	aeb
Sodium Adsorption Ratio	Calculation		3.3						09/22/16 0:00	calc
Sodium, soluble (Sat. Paste)	M6010B ICP	1	3.30			meq/L	0.0087	0.0435	09/21/16 14:47	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.438		*	mmhos/cm	0.001	0.01	09/21/16 0:00	rbt
Max Particle Size		1	2000		*	um			09/21/16 0:00	rbt
Temperature		1	22.5		*	C	0.1	0.1	09/21/16 0:00	rbt
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			09/21/16 0:00	rbt
pH		1	8.1		*	units	0.1	0.1	09/21/16 0:00	rbt
Solids, Percent	D2216-80	1	95.5		*	%	0.1	0.5	09/02/16 14:30	rbt

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								09/01/16 14:59	rbt
Digestion - Hot Plate	M3050B ICP-MS								09/16/16 11:30	bcc
Saturated Paste Extraction	USDA No. 60 (2)								09/20/16 14:23	rbt
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								09/08/16 9:15	rbt

Gadeco, LLC

Project ID:

Sample ID: DEHYDRATOR

ACZ Sample ID: **L32637-06**

Date Sampled: 08/26/16 14:00

Date Received: 08/29/16

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	505	5.1			mg/Kg	0.1	0.5	09/21/16 11:24	enb
Barium, total (3050)	M6010B ICP	101	128			mg/Kg	0.3	2	09/20/16 15:48	gss
Boron, total (3050)	M6010B ICP	101	3	B	*	mg/Kg	1	5	09/19/16 17:45	gss
Cadmium, total (3050)	M6010B ICP	101		U		mg/Kg	0.5	2	09/19/16 17:45	gss
Calcium, soluble (Sat. Paste)	M6010B ICP	1	2.07			meq/L	0.005	0.025	09/21/16 14:53	aeb
Chromium, total (3050)	M6010B ICP	101	15		*	mg/Kg	1	5	09/19/16 17:45	gss
Copper, total (3050)	M6010B ICP	101	13		*	mg/Kg	1	5	09/19/16 17:45	gss
Lead, total (3050)	M6010B ICP	101	9	B		mg/Kg	3	20	09/19/16 17:45	gss
Magnesium, soluble (Sat. Paste)	M6010B ICP	1	0.474		*	meq/L	0.017	0.082	09/21/16 14:53	aeb
Mercury by Direct Combustion AA	M7473	1	10.1	B	*	ng/g	2.09	10.45	09/15/16 13:03	pta
Nickel, total (3050)	M6010B ICP	101	10		*	mg/Kg	0.8	4	09/19/16 17:45	gss
Selenium, total (3050)	M6010B ICP	101	11	B		mg/Kg	5	30	09/19/16 17:45	gss
Silver, total (3050)	M6010B ICP	101	2	B		mg/Kg	1	3	09/19/16 17:45	gss
Sodium Adsorption Ratio	Calculation		0.41						09/26/16 0:00	calc
Sodium, soluble (Sat. Paste)	M6010B ICP	1	0.462			meq/L	0.0087	0.0435	09/21/16 14:53	aeb
Zinc, total (3050)	M6010B ICP	101	43			mg/Kg	1	5	09/19/16 17:45	gss

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.303		*	mmhos/cm	0.001	0.01	09/21/16 0:00	rbt
Max Particle Size		1	2000		*	um			09/21/16 0:00	rbt
Temperature		1	22.6		*	C	0.1	0.1	09/21/16 0:00	rbt
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			09/21/16 0:00	rbt
pH		1	7.7		*	units	0.1	0.1	09/21/16 0:00	rbt
Solids, Percent	D2216-80	1	87.6		*	%	0.1	0.5	09/02/16 14:30	rbt

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								09/01/16 14:59	rbt
Digestion - Hot Plate	M3050B ICP								09/16/16 13:15	bcc
Digestion - Hot Plate	M3050B ICP-MS								09/16/16 13:15	bcc
Saturated Paste Extraction	USDA No. 60 (2)								09/20/16 14:40	rbt
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								09/08/16 9:24	rbt


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>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). 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>	Recovered amount of the true value or spike added, 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>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

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.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
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/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (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) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) 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: **L32637**

Arsenic, total (3050)

M6020 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410143													
WG410143ICV	ICV	09/21/16 11:06	MS160920-1	.05		.05044	mg/L	101	90	110			
WG410143ICB	ICB	09/21/16 11:08				U	mg/L		-0.0006	0.0006			
WG409938PBS	PBS	09/21/16 11:15				U	mg/Kg		-0.3	0.3			
WG409938LCSS	LCSS	09/21/16 11:17	PCN51904	97.5		99.9	mg/Kg		75.7	119			
WG409938LCSSD	LCSSD	09/21/16 11:19	PCN51904	97.5		100	mg/Kg		75.7	119	0	20	
L32637-06MS	MS	09/21/16 11:26	MS160803-3	25.3005	5.1	27.35	mg/Kg	88	75	125			
L32637-06MSD	MSD	09/21/16 11:28	MS160803-3	25.3005	5.1	29.37	mg/Kg	96	75	125	7	20	

Barium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410087													
WG410087ICV	ICV	09/20/16 15:14	II160906-1	2		2.013	mg/L	101	90	110			
WG410087ICB	ICB	09/20/16 15:17				U	mg/L		-0.009	0.009			
WG409938PBS	PBS	09/20/16 15:30				U	mg/Kg		-0.9	0.9			
WG409938LCSS	LCSS	09/20/16 15:33	PCN51904	306		321.7	mg/Kg		253	358			
WG409938LCSSD	LCSSD	09/20/16 15:36	PCN51904	306		303.9	mg/Kg		253	358	6	20	
L32637-05MS	MS	09/20/16 15:42	II160831-5	51.051	150	202.57	mg/Kg	103	75	125			
L32637-05MSD	MSD	09/20/16 15:45	II160831-5	51.051	150	207.26	mg/Kg	112	75	125	2	20	

Boron, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410031													
WG410031ICV	ICV	09/19/16 17:11	II160906-1	2		2.066	mg/L	103	90	110			
WG410031ICB	ICB	09/19/16 17:14				U	mg/L		-0.03	0.03			
WG409938PBS	PBS	09/19/16 17:27				U	mg/Kg		-3	3			
WG409938LCSS	LCSS	09/19/16 17:30	PCN51904	116		121.9	mg/Kg		84.7	148			
WG409938LCSSD	LCSSD	09/19/16 17:33	PCN51904	116		117	mg/Kg		84.7	148	4	20	
L32637-05MS	MS	09/19/16 17:39	II160831-5	51.051	6	59.3	mg/Kg	104	75	125			
L32637-05MSD	MSD	09/19/16 17:42	II160831-5	51.051	6	59.1	mg/Kg	104	75	125	0	20	

Cadmium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410031													
WG410031ICV	ICV	09/19/16 17:11	II160906-1	2		1.958	mg/L	98	90	110			
WG410031ICB	ICB	09/19/16 17:14				U	mg/L		-0.015	0.015			
WG409938PBS	PBS	09/19/16 17:27				U	mg/Kg		-1.5	1.5			
WG409938LCSS	LCSS	09/19/16 17:30	PCN51904	76.6		78.33	mg/Kg		63.1	90.1			
WG409938LCSSD	LCSSD	09/19/16 17:33	PCN51904	76.6		73.62	mg/Kg		63.1	90.1	6	20	
L32637-05MS	MS	09/19/16 17:39	II160831-5	51.204	U	43.92	mg/Kg	86	75	125			
L32637-05MSD	MSD	09/19/16 17:42	II160831-5	51.204	U	43.94	mg/Kg	86	75	125	0	20	

Calcium, soluble (Sat. Paste)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410165													
WG410165ICV	ICV	09/21/16 14:32	II160912-1	100		97.2	mg/L	97	90	110			
WG410165ICB	ICB	09/21/16 14:35				U	mg/L		-0.3	0.3			
L32637-05DUP	DUP	09/21/16 14:50			1.55	1.32	meq/L				17	20	

Gadeco, LLC

ACZ Project ID: **L32637**

Chromium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410031													
WG410031ICV	ICV	09/19/16 17:11	II160906-1	2		1.957	mg/L	98	90	110			
WG410031ICB	ICB	09/19/16 17:14				U	mg/L		-0.03	0.03			
WG409938PBS	PBS	09/19/16 17:27				U	mg/Kg		-3	3			
WG409938LCSS	LCSS	09/19/16 17:30	PCN51904	103		106.4	mg/Kg		82.1	125			
WG409938LCSSD	LCSSD	09/19/16 17:33	PCN51904	103		100	mg/Kg		82.1	125	6	20	
L32637-05MS	MS	09/19/16 17:39	II160831-5	51.051	21	74.3	mg/Kg	104	75	125			
L32637-05MSD	MSD	09/19/16 17:42	II160831-5	51.051	21	74.8	mg/Kg	105	75	125	1	20	

Conductivity @25C

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410134													
L32637-05DUP	DUP	09/21/16 9:02			.438	.426	mmhos/cm				3	20	

Copper, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410031													
WG410031ICV	ICV	09/19/16 17:11	II160906-1	2		2.008	mg/L	100	90	110			
WG410031ICB	ICB	09/19/16 17:14				U	mg/L		-0.03	0.03			
WG409938PBS	PBS	09/19/16 17:27				U	mg/Kg		-3	3			
WG409938LCSS	LCSS	09/19/16 17:30	PCN51904	108		110	mg/Kg		87.8	128			
WG409938LCSSD	LCSSD	09/19/16 17:33	PCN51904	108		102.4	mg/Kg		87.8	128	7	20	
L32637-05MS	MS	09/19/16 17:39	II160831-5	51.102	18	64.9	mg/Kg	92	75	125			
L32637-05MSD	MSD	09/19/16 17:42	II160831-5	51.102	18	65.5	mg/Kg	93	75	125	1	20	

Lead, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410031													
WG410031ICV	ICV	09/19/16 17:11	II160906-1	4		3.821	mg/L	96	90	110			
WG410031ICB	ICB	09/19/16 17:14				U	mg/L		-0.09	0.09			
WG409938PBS	PBS	09/19/16 17:27				U	mg/Kg		-9	9			
WG409938LCSS	LCSS	09/19/16 17:30	PCN51904	96.7		87.7	mg/Kg		79	114			
WG409938LCSSD	LCSSD	09/19/16 17:33	PCN51904	96.7		90	mg/Kg		79	114	3	20	
L32637-05MS	MS	09/19/16 17:39	II160831-5	102.102	14	106.3	mg/Kg	90	75	125			
L32637-05MSD	MSD	09/19/16 17:42	II160831-5	102.102	14	108.6	mg/Kg	93	75	125	2	20	

Magnesium, soluble (Sat. Paste)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410165													
WG410165ICV	ICV	09/21/16 14:32	II160912-1	100		96.9	mg/L	97	90	110			
WG410165ICB	ICB	09/21/16 14:35				U	mg/L		-0.6	0.6			
L32637-05DUP	DUP	09/21/16 14:50			0.494	.322	meq/L				42	20	RD

Gadeco, LLC

ACZ Project ID: **L32637**

Mercury by Direct Combustion AA

M7473

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG406800													
WG406800ICV1	ICV	07/26/16 9:46	HG160713-1	100		103	ng/g	103	90	110			
WG406800ICV2	ICV	07/26/16 9:54	HG160713-2	100		94.1	ng/g	94	90	110			
WG406800ICV3	ICV	07/26/16 10:07	HG160713-3	1000		952	ng/g	95	90	110			
WG406800ICV4	ICV	07/26/16 10:13	HG160713-3	1000		944	ng/g	94	90	110			
WG409851													
WG409851ICV1	ICV	09/15/16 9:58	HG160915-1	100		108	ng/g	108	90	110			
WG409851ICV2	ICV	09/15/16 10:08	HG160915-2	100		109	ng/g	109	90	110			
WG409851ICV3	ICV	09/15/16 10:17	HG160915-3	1000		1090	ng/g	109	90	110			
WG409851ICV4	ICV	09/15/16 10:27	HG160915-3	1000		1070	ng/g	107	90	110			
WG409851PBS	PBS	09/15/16 11:47				2.8	ng/g		-6	6			
WG409851LCSS	LCSS	09/15/16 11:53	PCN50110	80		83.2	ng/g		80	120			
WG409851LCSSD	LCSSD	09/15/16 12:00	PCN50110	80		82.4	ng/g		80	120	1	20	
L32637-06DUP	DUP	09/15/16 13:09			10.1	10.3	ng/g				2	20	RA
L32637-06MS	MS	09/15/16 13:16	PCN50110				ng/g	102	80	120			

Nickel, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410031													
WG410031ICV	ICV	09/19/16 17:11	II160906-1	2.002		1.978	mg/L	99	90	110			
WG410031ICB	ICB	09/19/16 17:14				U	mg/L		-0.024	0.024			
WG409938PBS	PBS	09/19/16 17:27				U	mg/Kg		-2.4	2.4			
WG409938LCSS	LCSS	09/19/16 17:30	PCN51904	153		159.4	mg/Kg		126	180			
WG409938LCSSD	LCSSD	09/19/16 17:33	PCN51904	153		150.6	mg/Kg		126	180	6	20	
L32637-05MS	MS	09/19/16 17:39	II160831-5	51.102	13.1	60.5	mg/Kg	93	75	125			
L32637-05MSD	MSD	09/19/16 17:42	II160831-5	51.102	13.1	59.49	mg/Kg	91	75	125	2	20	

pH, Saturated Paste

EPA 600/2-78-054 section 3.2.2

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410134													
WG410134ICV	ICV	09/21/16 8:49	PCN50759	4		4	units	100	3.9	4.1			
L32637-05DUP	DUP	09/21/16 9:02			8.1	8.1	units				0	20	

Selenium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410031													
WG410031ICV	ICV	09/19/16 17:11	II160906-1	4		4.135	mg/L	103	90	110			
WG410031ICB	ICB	09/19/16 17:14				U	mg/L		-0.15	0.15			
WG409938PBS	PBS	09/19/16 17:27				U	mg/Kg		-15	15			
WG409938LCSS	LCSS	09/19/16 17:30	PCN51904	161		166	mg/Kg		125	198			
WG409938LCSSD	LCSSD	09/19/16 17:33	PCN51904	161		158.7	mg/Kg		125	198	4	20	
L32637-05MS	MS	09/19/16 17:39	II160831-5	102.0714	U	92.9	mg/Kg	91	75	125			
L32637-05MSD	MSD	09/19/16 17:42	II160831-5	102.0714	U	93.4	mg/Kg	92	75	125	1	20	

Gadeco, LLC

ACZ Project ID: **L32637**

Silver, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410031													
WG410031ICV	ICV	09/19/16 17:11	II160906-1	1.001		1.038	mg/L	104	90	110			
WG410031ICB	ICB	09/19/16 17:14				U	mg/L		-0.03	0.03			
WG409938PBS	PBS	09/19/16 17:27				U	mg/Kg		-3	3			
WG409938LCSS	LCSS	09/19/16 17:30	PCN51904	49.3		48.5	mg/Kg		37	61.7			
WG409938LCSSD	LCSSD	09/19/16 17:33	PCN51904	49.3		48.6	mg/Kg		37	61.7	0	20	
L32637-05MS	MS	09/19/16 17:39	II160831-5	51.102	2	48.5	mg/Kg	91	75	125			
L32637-05MSD	MSD	09/19/16 17:42	II160831-5	51.102	2	48.2	mg/Kg	90	75	125	1	20	

Sodium, soluble (Sat. Paste)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410165													
WG410165ICV	ICV	09/21/16 14:32	II160912-1	100		96.8	mg/L	97	90	110			
WG410165ICB	ICB	09/21/16 14:35				U	mg/L		-0.6	0.6			
L32637-05DUP	DUP	09/21/16 14:50			3.3	3.26	meq/L				1	20	

Solids, Percent

D2216-80

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG409279													
L32652-01DUP	DUP	09/02/16 14:30			80.5	80.13	%				0	20	
WG409279PBS	PBS	09/02/16 14:30				U	%		-0.1	0.1			

Zinc, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG410031													
WG410031ICV	ICV	09/19/16 17:11	II160906-1	2		1.941	mg/L	97	90	110			
WG410031ICB	ICB	09/19/16 17:14				U	mg/L		-0.03	0.03			
WG409938PBS	PBS	09/19/16 17:27				U	mg/Kg		-3	3			
WG409938LCSS	LCSS	09/19/16 17:30	PCN51904	229		220.9	mg/Kg		188	271			
WG409938LCSSD	LCSSD	09/19/16 17:33	PCN51904	229		216.2	mg/Kg		188	271	2	20	
L32637-05MS	MS	09/19/16 17:39	II160831-5	50.949	60	111.5	mg/Kg	105	75	125			
L32637-05MSD	MSD	09/19/16 17:42	II160831-5	50.949	60	112.1	mg/Kg	106	75	125	1	20	

Gadeco, LLC

ACZ Project ID: **L32637**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L32637-05	WG410165	Magnesium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
L32637-06	WG410031	Boron, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Chromium, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Copper, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG410165	Magnesium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG409851	Mercury by Direct Combustion AA	M7473 M7473	Q6 RA	Sample was received above recommended temperature. 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).
	WG410031	Nickel, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.

Gadeco, LLC

Project ID:

Sample ID: 06

ACZ Sample ID: **L32637-01**

Date Sampled: 08/26/16 13:10

Date Received: 08/29/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG409637

Analyst: wfg

Extract Date: 09/06/16 16:10

Analysis Date: 09/08/16 23:30

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		14	J	66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	80.6		66.7	*	%	70	130

Gadeco, LLC

Project ID:

Sample ID: 19

ACZ Sample ID: **L32637-02**

Date Sampled: 08/26/16 13:20

Date Received: 08/29/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG409637

Analyst: wfg

Extract Date: 09/06/16 16:16

Analysis Date: 09/09/16 0:25

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		5	J	33.3	*	mg/Kg	3	20
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	81.4		33.3	*	%	70	130

Gadeco, LLC

Project ID:

Sample ID: 04

ACZ Sample ID: **L32637-03**

Date Sampled: 08/26/16 13:30

Date Received: 08/29/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG409637

Analyst: wfg

Extract Date: 09/06/16 16:23

Analysis Date: 09/09/16 1:20

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	77.5		66.7	*	%	70	130

Gadeco, LLC

Project ID:

Sample ID: 04B

ACZ Sample ID: **L32637-04**

Date Sampled: 08/26/16 13:35

Date Received: 08/29/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG409637

Analyst: wfg

Extract Date: 09/06/16 16:26

Analysis Date: 09/12/16 10:35

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		5500		2670	*	mg/Kg	300	1000
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	457		2670	*	%	70	130

Gadeco, LLC

Project ID:

Sample ID: DEHYDRATOR

ACZ Sample ID: **L32637-06**

Date Sampled: 08/26/16 14:00

Date Received: 08/29/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

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

Extract Method: **5035A**

Workgroup: WG409545

Analyst: rgt

Extract Date: 09/07/16 14:08

Analysis Date: 09/07/16 14:08

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	79.4		1	*	%	70	130
Bromofluorobenzene (TVH)	460-00-4	78.1		1	*	%	70	130

Gadeco, LLC

Project ID:

Sample ID: DEHYDRATOR

ACZ Sample ID: **L32637-06**

Date Sampled: 08/26/16 14:00

Date Received: 08/29/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG409637

Analyst: wfg

Extract Date: 09/06/16 16:30

Analysis Date: 09/12/16 11:03

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	77.6		66.7	*	%	70	130

Gadeco, LLC

Project ID:

Sample ID: DEHYDRATOR

ACZ Sample ID: **L32637-06**

Date Sampled: 08/26/16 14:00

Date Received: 08/29/16

Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons GC/M

Analysis Method: **M8270C GC/MS**

Extract Method: **M3540**

Workgroup: WG409698

Analyst: itm

Extract Date: 09/07/16 15:42

Analysis Date: 09/12/16 15:37

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
2-Methylnaphthalene	91-57-6		U	66.7	*	ug/Kg	100	700
Acenaphthene	83-32-9		U	66.7	*	ug/Kg	100	700
Acenaphthylene	208-96-8		U	66.7	*	ug/Kg	100	700
Anthracene	120-12-7		U	66.7	*	ug/Kg	100	700
Benzo(a)anthracene	56-55-3		U	66.7	*	ug/Kg	100	700
Benzo(a)pyrene	50-32-8		U	66.7	*	ug/Kg	100	700
Benzo(b)fluoranthene	205-99-2		U	66.7	*	ug/Kg	100	700
Benzo(g,h,i)perylene	191-24-2		U	66.7	*	ug/Kg	100	700
Benzo(k)fluoranthene	207-08-9		U	66.7	*	ug/Kg	100	700
Chrysene	218-01-9		U	66.7	*	ug/Kg	100	700
Dibenzo(a,h)anthracene	53-70-3		U	66.7	*	ug/Kg	100	700
Fluoranthene	206-44-0		U	66.7	*	ug/Kg	100	700
Fluorene	86-73-7		U	66.7	*	ug/Kg	100	700
Indeno(1,2,3-cd)pyrene	193-39-5		U	66.7	*	ug/Kg	100	700
Naphthalene	91-20-3		U	66.7	*	ug/Kg	100	700
Phenanthrene	85-01-8		U	66.7	*	ug/Kg	100	700
Pyrene	129-00-0		U	66.7	*	ug/Kg	100	700
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
2-Fluorobiphenyl	321-60-8	76.6		66.7	*	%	45	105
Nitrobenzene-d5	4165-60-0	72.8		66.7	*	%	35	100
Terphenyl-d14	1718-51-0	107.3		66.7	*	%	30	125


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: **L32637**

BTEX/Gasoline Range Organics (C6-C10)

M8021B/8015D GC/PID/FID

WG409545

AS	Sample ID: L32637-06AS		PCN/SCN: B160705-1-CCV				Analyzed:		09/07/16 15:19	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	50	U	47.4	ug/Kg	95.0	70	130			
ETHYLBENZENE	50	U	49.8	ug/Kg	100.0	70	130			
M P XYLENE	100	U	98	ug/Kg	98.0	70	130			
O XYLENE	50	U	47.5	ug/Kg	95.0	70	130			
TOLUENE	50	U	48.4	ug/Kg	97.0	70	130			
TVH C6 TO C10	.5	U	.496	mg/Kg	99.0	70	130			
BROMOFLUOROBENZENE (surr)				%	84.6	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	86.0	70	130			

ASD	Sample ID: L32637-06ASD		PCN/SCN: B160705-1-CCV				Analyzed:		09/07/16 15:48	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	50	U	46.4	ug/Kg	93.0	70	130	2	20	
ETHYLBENZENE	50	U	49.8	ug/Kg	100.0	70	130	0	20	
M P XYLENE	100	U	97.5	ug/Kg	98.0	70	130	1	20	
O XYLENE	50	U	47.3	ug/Kg	95.0	70	130	0	20	
TOLUENE	50	U	48	ug/Kg	96.0	70	130	1	20	
TVH C6 TO C10	.5	U	.474	mg/Kg	95.0	70	130	5	20	
BROMOFLUOROBENZENE (surr)				%	80.6	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	79.6	70	130			

LCSS	Sample ID: WG409545LCSS		PCN/SCN: B160705-2-ICV				Analyzed:		09/07/16 12:40	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		25.4	ug/Kg	101.0	70	130			
ETHYLBENZENE	25		26.9	ug/Kg	108.0	70	130			
M P XYLENE	50.4		54.7	ug/Kg	109.0	70	130			
O XYLENE	50.3		50.9	ug/Kg	101.0	70	130			
TOLUENE	75.3		77.1	ug/Kg	102.0	70	130			
TVH C6 TO C10	.5		.477	mg/Kg	106.0	70	130			
BROMOFLUOROBENZENE (surr)				%	90.2	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	89.1	70	130			

LCSSD	Sample ID: WG409545LCSSD		PCN/SCN: B160705-2-ICV				Analyzed:		09/07/16 13:09	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		26	ug/Kg	104.0	70	130	2	20	
ETHYLBENZENE	25		27.8	ug/Kg	111.0	70	130	3	20	
M P XYLENE	50.4		56.5	ug/Kg	112.0	70	130	3	20	
O XYLENE	50.3		52.9	ug/Kg	105.0	70	130	4	20	
TOLUENE	75.3		79.5	ug/Kg	106.0	70	130	3	20	
TVH C6 TO C10	.5		.496	mg/Kg	110.0	70	130	4	20	
BROMOFLUOROBENZENE (surr)				%	86.8	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	86.7	70	130			

Gadeco, LLC

ACZ Project ID: **L32637**

PBS	Sample ID: WG409545PBS						Analyzed:		09/07/16 13:38	
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)				%	81.0	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	80.7	70	130			

Gadeco, LLC

ACZ Project ID: **L32637**

Diesel Range Organics (C10-C28)

M8015D GC/FID

WG409637

DUP		Sample ID: L32637-01DUP						Analyzed:		09/08/16 23:58	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
TPH C10 TO C28		14	13.9	mg/Kg				1	20	RA	
OTP (surr)				%	81.6	70	130				

MS		Sample ID: L32637-02MS		PCN/SCN: OPTPH160810-1				Analyzed:		09/09/16 0:53	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
TPH C10 TO C28	2501.2	5	71.4	mg/Kg	80.0	70	130				
OTP (surr)				%	86.7	70	130				

LCSS		Sample ID: WG409348LCSS		PCN/SCN: OPTPH160810-1			Analyzed:		09/08/16 22:35	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2501.2		69.8	mg/Kg	84.0	70	130			
OTP (surr)				%	82.5	70	130			

LCSSD		Sample ID: WG409348LCSSD		PCN/SCN: OPTPH160810-1			Analyzed:		09/08/16 23:03	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2501.2		73.1	mg/Kg	88.0	70	130	5	20	
OTP (surr)				%	84.6	70	130			

PBS		Sample ID: WG409348PBS						Analyzed:		09/08/16 22:08	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
TPH C10 TO C28			U	mg/Kg		-20	20				
OTP (surr)				%	76.3	70	130				

Gadeco, LLC

ACZ Project ID: **L32637**

Polynuclear Aromatic Hydrocarbons GC/MS

M8270C GC/MS

WG409698

DUP	Sample ID: L32637-06DUP						Analyzed:		09/12/16 16:43	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
2-METHYLNAPHTHALENE		U	U	ug/Kg				0	20	RA
ACENAPHTHENE		U	U	ug/Kg				0	20	RA
ACENAPHTHYLENE		U	U	ug/Kg				0	20	RA
ANTHRACENE		U	U	ug/Kg				0	20	RA
BENZO(A)ANTHRACENE		U	U	ug/Kg				0	20	RA
BENZO(A)PYRENE		U	U	ug/Kg				0	20	RA
BENZO(B)FLUORANTHENE		U	U	ug/Kg				0	20	RA
BENZO(G,H,I)PERYLENE		U	U	ug/Kg				0	20	RA
BENZO(K)FLUORANTHENE		U	U	ug/Kg				0	20	RA
CHRYSENE		U	U	ug/Kg				0	20	RA
DIBENZO(A,H)ANTHRACENE		U	U	ug/Kg				0	20	RA
FLUORANTHENE		U	U	ug/Kg				0	20	RA
FLUORENE		U	U	ug/Kg				0	20	RA
INDENO(1,2,3-CD)PYRENE		U	U	ug/Kg				0	20	RA
NAPHTHALENE		U	U	ug/Kg				0	20	RA
PHENANTHRENE		U	U	ug/Kg				0	20	RA
PYRENE		U	U	ug/Kg				0	20	RA
2-FLUOROBIPHENYL (surr)				%	78.1	45	105			RA
NITROBENZENE-D5 (surr)				%	77.9	35	100			RA
TERPHENYL-D14 (surr)				%	104.9	30	125			RA

MS	Sample ID: L32637-06MS		PCN/SCN: OPBNA160810-1				Analyzed:		09/12/16 16:10	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	50007	U	2830	ug/Kg	85.0	45	110			
PYRENE	50003	U	3540	ug/Kg	106.0	45	125			
2,4,6-TRIBROMOPHENOL (surr)				%	81.3	35	125			
2-FLUOROBIPHENYL (surr)				%	77.2	45	105			
2-FLUOROPHENOL (surr)				%	93.4	35	105			
NITROBENZENE-D5 (surr)				%	75.0	35	100			
PHENOL-D6 (surr)				%	92.1	40	100			
TERPHENYL-D14 (surr)				%	103.4	30	125			

LCSS	Sample ID: WG409437LCSS		PCN/SCN: OPBNA160810-1				Analyzed:		09/12/16 14:30	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	50007		1507	ug/Kg	90.0	45	110			
PYRENE	50003		1853	ug/Kg	111.0	45	125			
2,4,6-TRIBROMOPHENOL (surr)				%	111.8	35	125			
2-FLUOROBIPHENYL (surr)				%	84.5	45	105			
2-FLUOROPHENOL (surr)				%	104.6	35	105			
NITROBENZENE-D5 (surr)				%	83.1	35	100			
PHENOL-D6 (surr)				%	100.5	40	100			S14
TERPHENYL-D14 (surr)				%	107.9	30	125			

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ACZ Project ID: **L32637**

LCSSD	Sample ID: WG409437LCSSD		PCN/SCN: OPBNA160810-1				Analyzed:		09/12/16 15:04	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	50007		1501	ug/Kg	90.0	45	110	0	20	
PYRENE	50003		1791	ug/Kg	107.0	45	125	3	20	
2,4,6-TRIBROMOPHENOL (surr)				%	111.1	35	125			
2-FLUOROBIPHENYL (surr)				%	83.8	45	105			
2-FLUOROPHENOL (surr)				%	104.3	35	105			
NITROBENZENE-D5 (surr)				%	82.4	35	100			
PHENOL-D6 (surr)				%	99.2	40	100			
TERPHENYL-D14 (surr)				%	104.7	30	125			

PBS		Sample ID: WG409437PBS				Analyzed:			09/12/16 13:57	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
2-METHYLNAPHTHALENE			U	ug/Kg		-300	300			
ACENAPHTHENE			U	ug/Kg		-300	300			
ACENAPHTHYLENE			U	ug/Kg		-300	300			
ANTHRACENE			U	ug/Kg		-300	300			
BENZO(A)ANTHRACENE			U	ug/Kg		-300	300			
BENZO(A)PYRENE			U	ug/Kg		-300	300			
BENZO(B)FLUORANTHENE			U	ug/Kg		-300	300			
BENZO(G,H,I)PERYLENE			U	ug/Kg		-300	300			
BENZO(K)FLUORANTHENE			U	ug/Kg		-300	300			
CHRYSENE			U	ug/Kg		-300	300			
DIBENZO(A,H)ANTHRACENE			U	ug/Kg		-300	300			
FLUORANTHENE			U	ug/Kg		-300	300			
FLUORENE			U	ug/Kg		-300	300			
INDENO(1,2,3-CD)PYRENE			U	ug/Kg		-300	300			
NAPHTHALENE			U	ug/Kg		-300	300			
PHENANTHRENE			U	ug/Kg		-300	300			
PYRENE			U	ug/Kg		-300	300			
2,4,6-TRIBROMOPHENOL (surr)				%	99.8	35	125			
2-FLUOROBIPHENYL (surr)				%	80.7	45	105			
2-FLUOROPHENOL (surr)				%	99.1	35	105			
NITROBENZENE-D5 (surr)				%	78.3	35	100			
PHENOL-D6 (surr)				%	95.8	40	100			
TERPHENYL-D14 (surr)				%	107.4	30	125			

ACZ Project ID: **L32637**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L32637-01	WG409637	*All Compounds*	M8015D GC/FID	D1	Sample required dilution due to matrix.
			M8015D GC/FID	Q6	Sample was received above recommended temperature.
		TPH C10 to C28	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).
L32637-02	WG409637	*All Compounds*	M8015D GC/FID	Q6	Sample was received above recommended temperature.
		TPH C10 to C28	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).
L32637-03	WG409637	*All Compounds*	M8015D GC/FID	D1	Sample required dilution due to matrix.
			M8015D GC/FID	Q6	Sample was received above recommended temperature.
		TPH C10 to C28	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).
L32637-04	WG409637	*All Compounds*	M8015D GC/FID	Q6	Sample was received above recommended temperature.
		OTP	M8015D GC/FID	S8	The sample required a dilution such that the surrogate recovery calculation does not provide useful information. The recovery for the associated control sample was acceptable.
		TPH C10 to C28	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).
L32637-06	WG409545	*All Compounds*	M8021B/8015D GC/PID/FID	Q6	Sample was received above recommended temperature.
			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.
	WG409637		M8015D GC/FID	D1	Sample required dilution due to matrix.
			M8015D GC/FID	Q6	Sample was received above recommended temperature.
			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).
	WG409698	*All Compounds*	M8270C GC/MS	D1	Sample required dilution due to matrix.
			M8270C GC/MS	Q6	Sample was received above recommended temperature.
			M8270C GC/MS	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: **L32637**

Soil Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Conductivity @25C	SM2510B
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2
Solids, Percent	D2216-80

Gadeco, LLC

ACZ Project ID: L32637

Date Received: 08/29/2016 16:35

Received By: kmo

Date Printed: 8/30/2016

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
4567	14.5	<=6.0	16	No

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: L32637

Date Received: 08/29/2016 16:35

Received By: kmo

Date Printed: 8/30/2016

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).

