



10-Nov-2017

Mike Gardner
Terra Energy Partners, LLC
1058 Country Rd 215
Parachute, CO 81635

Re: **PA 22-6-795 Tank Release**

Work Order: **1711337**

Dear Mike,

ALS Environmental received 4 samples on 04-Nov-2017 09:45 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 28.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton", is written over a light blue horizontal line.

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

Report of Laboratory Analysis

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Environmental ALS

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Client: Terra Energy Partners, LLC
Project: PA 22-6-795 Tank Release
Work Order: 1711337

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1711337-01	PA 22-6: North	Soil		11/3/2017 09:00	11/4/2017 09:45	<input type="checkbox"/>
1711337-02	PA 22-6: Middle	Soil		11/3/2017 09:10	11/4/2017 09:45	<input type="checkbox"/>
1711337-03	PA 22-6: South	Soil		11/3/2017 09:20	11/4/2017 09:45	<input type="checkbox"/>
1711337-04	PA 22-6: Spoil Pile	Soil		11/3/2017 09:30	11/4/2017 09:45	<input type="checkbox"/>

Client: Terra Energy Partners, LLC
Project: PA 22-6-795 Tank Release
Work Order: 1711337

Case Narrative

Batch 110108, Method VOC_8260_S, Sample 1711337-04A: VOC surrogate recovery high due to matrix interference.

Batch 110109, Method GRO_8015_S, Samples 1711337-02A and -04A: GRO surrogate recoveries high due to matrix interference.

Batch 110187, Method CR6_7196_S, Sample 1711337-04A MSD: The RPD between the MS and MSD was outside the control limit for Hexavalent Chromium. The corresponding result in the parent sample should be considered estimated.

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
mg/Kg	Milligrams per Kilogram
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group, USA

Date: 10-Nov-17

Client: Terra Energy Partners, LLC
Project: PA 22-6-795 Tank Release
Sample ID: PA 22-6: North
Collection Date: 11/3/2017 09:00 AM

Work Order: 1711337
Lab ID: 1711337-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW8015C	Prep: SW3546	11/6/17 12:16	Analyst: KB
DRO (C10-C28)	29		5.8	mg/Kg-dry	1	11/7/2017 01:51 AM
<i>Surr: 4-Terphenyl-d14</i>	90.1		34-130	%REC	1	11/7/2017 01:51 AM
GASOLINE RANGE ORGANICS BY GC-FID			SW8015D	Prep: SW5035	11/6/17 11:05	Analyst: KB
GRO (C6-C10)	ND		6.9	mg/Kg	1	11/7/2017 10:22 AM
<i>Surr: Toluene-d8</i>	99.7		71-123	%REC	1	11/7/2017 10:22 AM
MERCURY BY CVAA			SW7471B	Prep: SW7471	11/6/17 16:38	Analyst: RSH
Mercury	0.024		0.018	mg/Kg-dry	1	11/6/2017 05:59 PM
METALS ANALYSIS BY ICP			SW846 6010C	Prep: SW3050B	11/6/17 13:22	Analyst: HBA
Arsenic	8.9		0.42	mg/Kg-dry	1	11/7/2017 02:08 AM
Barium	250		0.42	mg/Kg-dry	1	11/7/2017 02:08 AM
Cadmium	ND		0.84	mg/Kg-dry	1	11/7/2017 02:08 AM
Chromium	15		0.42	mg/Kg-dry	1	11/7/2017 02:08 AM
Copper	11		0.84	mg/Kg-dry	1	11/7/2017 02:08 AM
Lead	15		0.42	mg/Kg-dry	1	11/7/2017 02:08 AM
Nickel	23		0.42	mg/Kg-dry	1	11/7/2017 02:08 AM
Selenium	1.8		0.84	mg/Kg-dry	1	11/7/2017 02:08 AM
Silver	ND		0.42	mg/Kg-dry	1	11/7/2017 02:08 AM
Zinc	84		0.84	mg/Kg-dry	1	11/7/2017 02:08 AM
SODIUM ADSORPTION RATIO			USDA H60 MET	Prep: USDA Method 20B	11/8/17 09:11	Analyst: RH
Sodium Adsorption Ratio	2.8		0.010	none	1	11/8/2017
SOLUBLE CATIONS FOR SAR			SW6020A	Prep: USDA Method 20B	11/8/17 09:11	Analyst: JF
Calcium	5.6		0.50	mg/L	1	11/8/2017 04:21 PM
Magnesium	0.64		0.20	mg/L	1	11/8/2017 04:21 PM
Sodium	26		0.20	mg/L	1	11/8/2017 04:21 PM
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8270D	Prep: SW3546	11/6/17 12:16	Analyst: RM
Acenaphthene	ND		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM
Anthracene	ND		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM
Benzo(a)anthracene	ND		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM
Benzo(a)pyrene	ND		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM
Benzo(b)fluoranthene	ND		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM
Benzo(k)fluoranthene	ND		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM
Chrysene	ND		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM
Dibenzo(a,h)anthracene	ND		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM
Fluoranthene	ND		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 10-Nov-17

Client: Terra Energy Partners, LLC
Project: PA 22-6-795 Tank Release
Sample ID: PA 22-6: North
Collection Date: 11/3/2017 09:00 AM

Work Order: 1711337
Lab ID: 1711337-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM
Indeno(1,2,3-cd)pyrene	ND		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM
Naphthalene	0.14		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM
Pyrene	ND		0.048	mg/Kg-dry	1	11/6/2017 07:10 PM
Surr: 2-Fluorobiphenyl	97.0		20-140	%REC	1	11/6/2017 07:10 PM
Surr: 4-Terphenyl-d14	111		22-172	%REC	1	11/6/2017 07:10 PM
Surr: Nitrobenzene-d5	99.8		28-140	%REC	1	11/6/2017 07:10 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035	11/6/17 11:04	Analyst: AK
Benzene	ND		0.041	mg/Kg	1	11/6/2017 03:47 PM
Ethylbenzene	ND		0.041	mg/Kg	1	11/6/2017 03:47 PM
m,p-Xylene	ND		0.083	mg/Kg	1	11/6/2017 03:47 PM
o-Xylene	ND		0.041	mg/Kg	1	11/6/2017 03:47 PM
Toluene	ND		0.041	mg/Kg	1	11/6/2017 03:47 PM
Xylenes, Total	ND		0.12	mg/Kg	1	11/6/2017 03:47 PM
Surr: 1,2-Dichloroethane-d4	97.6		70-130	%REC	1	11/6/2017 03:47 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	11/6/2017 03:47 PM
Surr: Dibromofluoromethane	94.4		70-130	%REC	1	11/6/2017 03:47 PM
Surr: Toluene-d8	99.3		70-130	%REC	1	11/6/2017 03:47 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 MET	Prep: USDA Method 20B	11/8/17 09:11	Analyst: JB
Electrical Conductivity @ Saturation	1.7		0.10	mmhos/cm @2	20	11/9/2017 09:30 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	15		1.2	mg/Kg-dry	1	11/8/2017 10:45 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A	11/6/17 16:53	Analyst: RP
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	11/7/2017 05:00 PM
MOISTURE			SW3550C			Analyst: NW
Moisture	16		0.050	% of sample	1	11/4/2017 10:00 PM
PH			SW9045D	Prep: EXTRACT	11/6/17 17:52	Analyst: RZM
pH	9.05		0.100	s.u.	1	11/7/2017 10:30 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 10-Nov-17

Client: Terra Energy Partners, LLC
Project: PA 22-6-795 Tank Release
Sample ID: PA 22-6: Middle
Collection Date: 11/3/2017 09:10 AM

Work Order: 1711337
Lab ID: 1711337-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW8015C	Prep: SW3546	11/6/17 12:16	Analyst: KB
DRO (C10-C28)	31		5.9	mg/Kg-dry	1	11/7/2017 02:20 AM
<i>Surr: 4-Terphenyl-d14</i>	<i>89.1</i>		<i>34-130</i>	<i>%REC</i>	1	11/7/2017 02:20 AM
GASOLINE RANGE ORGANICS BY GC-FID			SW8015D	Prep: SW5035	11/6/17 11:05	Analyst: KB
GRO (C6-C10)	160		6.8	mg/Kg	1	11/7/2017 10:51 AM
<i>Surr: Toluene-d8</i>	<i>124</i>	<i>S</i>	<i>71-123</i>	<i>%REC</i>	1	11/7/2017 10:51 AM
MERCURY BY CVAA			SW7471B	Prep: SW7471	11/6/17 16:38	Analyst: RSH
Mercury	0.024		0.020	mg/Kg-dry	1	11/6/2017 06:01 PM
METALS ANALYSIS BY ICP			SW846 6010C	Prep: SW3050B	11/6/17 13:22	Analyst: HBA
Arsenic	9.3		0.40	mg/Kg-dry	1	11/7/2017 02:13 AM
Barium	250		0.40	mg/Kg-dry	1	11/7/2017 02:13 AM
Cadmium	ND		0.81	mg/Kg-dry	1	11/7/2017 02:13 AM
Chromium	14		0.40	mg/Kg-dry	1	11/7/2017 02:13 AM
Copper	12		0.81	mg/Kg-dry	1	11/7/2017 02:13 AM
Lead	16		0.40	mg/Kg-dry	1	11/7/2017 02:13 AM
Nickel	22		0.40	mg/Kg-dry	1	11/7/2017 02:13 AM
Selenium	1.8		0.81	mg/Kg-dry	1	11/7/2017 02:13 AM
Silver	ND		0.40	mg/Kg-dry	1	11/7/2017 02:13 AM
Zinc	82		0.81	mg/Kg-dry	1	11/7/2017 02:13 AM
SODIUM ADSORPTION RATIO			USDA H60 MET	Prep: USDA Method 20B	11/8/17 09:11	Analyst: RH
Sodium Adsorption Ratio	1.3		0.010	none	1	11/8/2017
SOLUBLE CATIONS FOR SAR			SW6020A	Prep: USDA Method 20B	11/8/17 09:11	Analyst: JF
Calcium	17		0.50	mg/L	1	11/8/2017 04:23 PM
Magnesium	2.0		0.20	mg/L	1	11/8/2017 04:23 PM
Sodium	20		0.20	mg/L	1	11/8/2017 04:23 PM
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8270D	Prep: SW3546	11/6/17 12:16	Analyst: RM
Acenaphthene	ND		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM
Anthracene	ND		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM
Benzo(a)anthracene	ND		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM
Benzo(a)pyrene	ND		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM
Benzo(b)fluoranthene	ND		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM
Benzo(k)fluoranthene	ND		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM
Chrysene	ND		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM
Dibenzo(a,h)anthracene	ND		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM
Fluoranthene	ND		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 10-Nov-17

Client: Terra Energy Partners, LLC
Project: PA 22-6-795 Tank Release
Sample ID: PA 22-6: Middle
Collection Date: 11/3/2017 09:10 AM

Work Order: 1711337
Lab ID: 1711337-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM
Indeno(1,2,3-cd)pyrene	ND		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM
Naphthalene	0.11		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM
Pyrene	ND		0.049	mg/Kg-dry	1	11/6/2017 07:24 PM
Surr: 2-Fluorobiphenyl	105		20-140	%REC	1	11/6/2017 07:24 PM
Surr: 4-Terphenyl-d14	122		22-172	%REC	1	11/6/2017 07:24 PM
Surr: Nitrobenzene-d5	106		28-140	%REC	1	11/6/2017 07:24 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035	11/6/17 11:04	Analyst: AK
Benzene	ND		0.041	mg/Kg	1	11/6/2017 04:03 PM
Ethylbenzene	0.17		0.041	mg/Kg	1	11/6/2017 04:03 PM
m,p-Xylene	2.4		0.081	mg/Kg	1	11/6/2017 04:03 PM
o-Xylene	0.28		0.041	mg/Kg	1	11/6/2017 04:03 PM
Toluene	0.11		0.041	mg/Kg	1	11/6/2017 04:03 PM
Xylenes, Total	2.7		0.12	mg/Kg	1	11/6/2017 04:03 PM
Surr: 1,2-Dichloroethane-d4	98.9		70-130	%REC	1	11/6/2017 04:03 PM
Surr: 4-Bromofluorobenzene	115		70-130	%REC	1	11/6/2017 04:03 PM
Surr: Dibromofluoromethane	93.8		70-130	%REC	1	11/6/2017 04:03 PM
Surr: Toluene-d8	109		70-130	%REC	1	11/6/2017 04:03 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 MET	Prep: USDA Method 20B	11/8/17 09:11	Analyst: JB
Electrical Conductivity @ Saturation	2.1		0.10	mmhos/cm @2	20	11/9/2017 09:30 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	14		1.2	mg/Kg-dry	1	11/8/2017 10:45 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A	11/6/17 16:53	Analyst: RP
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	11/7/2017 05:00 PM
MOISTURE			SW3550C			Analyst: NW
Moisture	15		0.050	% of sample	1	11/4/2017 10:00 PM
PH			SW9045D	Prep: EXTRACT	11/6/17 17:52	Analyst: RZM
pH	8.96		0.100	s.u.	1	11/7/2017 10:30 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 10-Nov-17

Client: Terra Energy Partners, LLC
Project: PA 22-6-795 Tank Release
Sample ID: PA 22-6: South
Collection Date: 11/3/2017 09:20 AM

Work Order: 1711337
Lab ID: 1711337-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW8015C	Prep: SW3546	11/6/17 12:16	Analyst: KB
DRO (C10-C28)	13		5.6	mg/Kg-dry	1	11/7/2017 02:49 AM
<i>Surr: 4-Terphenyl-d14</i>	93.6		34-130	%REC	1	11/7/2017 02:49 AM
GASOLINE RANGE ORGANICS BY GC-FID			SW8015D	Prep: SW5035	11/6/17 11:05	Analyst: KB
GRO (C6-C10)	ND		6.5	mg/Kg	1	11/7/2017 11:21 AM
<i>Surr: Toluene-d8</i>	103		71-123	%REC	1	11/7/2017 11:21 AM
MERCURY BY CVAA			SW7471B	Prep: SW7471	11/6/17 16:38	Analyst: RSH
Mercury	0.072		0.019	mg/Kg-dry	1	11/6/2017 06:04 PM
METALS ANALYSIS BY ICP			SW846 6010C	Prep: SW3050B	11/6/17 13:22	Analyst: HBA
Arsenic	11		0.42	mg/Kg-dry	1	11/7/2017 02:18 AM
Barium	250		0.42	mg/Kg-dry	1	11/7/2017 02:18 AM
Cadmium	ND		0.84	mg/Kg-dry	1	11/7/2017 02:18 AM
Chromium	14		0.42	mg/Kg-dry	1	11/7/2017 02:18 AM
Copper	12		0.84	mg/Kg-dry	1	11/7/2017 02:18 AM
Lead	15		0.42	mg/Kg-dry	1	11/7/2017 02:18 AM
Nickel	22		0.42	mg/Kg-dry	1	11/7/2017 02:18 AM
Selenium	1.5		0.84	mg/Kg-dry	1	11/7/2017 02:18 AM
Silver	ND		0.42	mg/Kg-dry	1	11/7/2017 02:18 AM
Zinc	81		0.84	mg/Kg-dry	1	11/7/2017 02:18 AM
SODIUM ADSORPTION RATIO			USDA H60 MET	Prep: USDA Method 20B	11/8/17 09:11	Analyst: RH
Sodium Adsorption Ratio	1.5		0.010	none	1	11/8/2017
SOLUBLE CATIONS FOR SAR			SW6020A	Prep: USDA Method 20B	11/8/17 09:11	Analyst: JF
Calcium	39		0.50	mg/L	1	11/8/2017 04:26 PM
Magnesium	4.0		0.20	mg/L	1	11/8/2017 04:26 PM
Sodium	37		0.20	mg/L	1	11/8/2017 04:26 PM
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8270D	Prep: SW3546	11/6/17 12:16	Analyst: RM
Acenaphthene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM
Anthracene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM
Benzo(a)anthracene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM
Benzo(a)pyrene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM
Benzo(b)fluoranthene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM
Benzo(k)fluoranthene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM
Chrysene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM
Dibenzo(a,h)anthracene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM
Fluoranthene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 10-Nov-17

Client: Terra Energy Partners, LLC

Project: PA 22-6-795 Tank Release

Work Order: 1711337

Sample ID: PA 22-6: South

Lab ID: 1711337-03

Collection Date: 11/3/2017 09:20 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM
Indeno(1,2,3-cd)pyrene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM
Naphthalene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM
Pyrene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:38 PM
Surr: 2-Fluorobiphenyl	102		20-140	%REC	1	11/6/2017 07:38 PM
Surr: 4-Terphenyl-d14	112		22-172	%REC	1	11/6/2017 07:38 PM
Surr: Nitrobenzene-d5	99.4		28-140	%REC	1	11/6/2017 07:38 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035	11/6/17 11:04	Analyst: AK
Benzene	ND		0.039	mg/Kg	1	11/6/2017 04:18 PM
Ethylbenzene	ND		0.039	mg/Kg	1	11/6/2017 04:18 PM
m,p-Xylene	ND		0.078	mg/Kg	1	11/6/2017 04:18 PM
o-Xylene	ND		0.039	mg/Kg	1	11/6/2017 04:18 PM
Toluene	ND		0.039	mg/Kg	1	11/6/2017 04:18 PM
Xylenes, Total	ND		0.12	mg/Kg	1	11/6/2017 04:18 PM
Surr: 1,2-Dichloroethane-d4	97.8		70-130	%REC	1	11/6/2017 04:18 PM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	11/6/2017 04:18 PM
Surr: Dibromofluoromethane	92.8		70-130	%REC	1	11/6/2017 04:18 PM
Surr: Toluene-d8	101		70-130	%REC	1	11/6/2017 04:18 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 MET	Prep: USDA Method 20B	11/8/17 09:11	Analyst: JB
Electrical Conductivity @ Saturation	4.5		0.10	mmhos/cm @2	20	11/9/2017 09:30 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	14		1.2	mg/Kg-dry	1	11/8/2017 10:45 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A	11/6/17 16:53	Analyst: RP
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	11/7/2017 05:00 PM
MOISTURE			SW3550C			Analyst: NW
Moisture	13		0.050	% of sample	1	11/4/2017 10:00 PM
PH			SW9045D	Prep: EXTRACT	11/6/17 17:52	Analyst: RZM
pH	8.40		0.100	s.u.	1	11/7/2017 10:30 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Terra Energy Partners, LLC
 Project: PA 22-6-795 Tank Release
 Sample ID: PA 22-6: Spoil Pile
 Collection Date: 11/3/2017 09:30 AM

Work Order: 1711337
 Lab ID: 1711337-04
 Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW8015C	Prep: SW3546	11/6/17 12:16	Analyst: KB
DRO (C10-C28)	60		5.7	mg/Kg-dry	1	11/7/2017 03:18 AM
Surr: 4-Terphenyl-d14	92.6		34-130	%REC	1	11/7/2017 03:18 AM
GASOLINE RANGE ORGANICS BY GC-FID			SW8015D	Prep: SW5035	11/6/17 11:05	Analyst: KB
GRO (C6-C10)	2,100		6.5	mg/Kg	1	11/7/2017 11:50 AM
Surr: Toluene-d8	395	S	71-123	%REC	1	11/7/2017 11:50 AM
MERCURY BY CVAA			SW7471B	Prep: SW7471	11/6/17 16:38	Analyst: RSH
Mercury	0.026		0.020	mg/Kg-dry	1	11/6/2017 06:07 PM
METALS ANALYSIS BY ICP			SW846 6010C	Prep: SW3050B	11/6/17 13:22	Analyst: HBA
Arsenic	8.7		0.45	mg/Kg-dry	1	11/7/2017 02:23 AM
Barium	270		0.45	mg/Kg-dry	1	11/7/2017 02:23 AM
Cadmium	ND		0.91	mg/Kg-dry	1	11/7/2017 02:23 AM
Chromium	15		0.45	mg/Kg-dry	1	11/7/2017 02:23 AM
Copper	12		0.91	mg/Kg-dry	1	11/7/2017 02:23 AM
Lead	16		0.45	mg/Kg-dry	1	11/7/2017 02:23 AM
Nickel	22		0.45	mg/Kg-dry	1	11/7/2017 02:23 AM
Selenium	1.9		0.91	mg/Kg-dry	1	11/7/2017 02:23 AM
Silver	ND		0.45	mg/Kg-dry	1	11/7/2017 02:23 AM
Zinc	81		0.91	mg/Kg-dry	1	11/7/2017 02:23 AM
SODIUM ADSORPTION RATIO			USDA H60 MET	Prep: USDA Method 20B	11/8/17 09:11	Analyst: RH
Sodium Adsorption Ratio	2.2		0.010	none	1	11/8/2017
SOLUBLE CATIONS FOR SAR			SW6020A	Prep: USDA Method 20B	11/8/17 09:11	Analyst: JF
Calcium	8.2		0.50	mg/L	1	11/8/2017 04:27 PM
Magnesium	1.1		0.20	mg/L	1	11/8/2017 04:27 PM
Sodium	25		0.20	mg/L	1	11/8/2017 04:27 PM
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8270D	Prep: SW3546	11/6/17 12:16	Analyst: RM
Acenaphthene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM
Anthracene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM
Benzo(a)anthracene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM
Benzo(a)pyrene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM
Benzo(b)fluoranthene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM
Benzo(k)fluoranthene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM
Chrysene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM
Dibenzo(a,h)anthracene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM
Fluoranthene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 10-Nov-17

Client: Terra Energy Partners, LLC
Project: PA 22-6-795 Tank Release
Sample ID: PA 22-6: Spoil Pile
Collection Date: 11/3/2017 09:30 AM

Work Order: 1711337
Lab ID: 1711337-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM
Indeno(1,2,3-cd)pyrene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM
Naphthalene	0.22		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM
Pyrene	ND		0.047	mg/Kg-dry	1	11/6/2017 07:53 PM
Surr: 2-Fluorobiphenyl	95.3		20-140	%REC	1	11/6/2017 07:53 PM
Surr: 4-Terphenyl-d14	112		22-172	%REC	1	11/6/2017 07:53 PM
Surr: Nitrobenzene-d5	105		28-140	%REC	1	11/6/2017 07:53 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035	11/6/17 11:04	Analyst: AK
Benzene	0.18		0.039	mg/Kg	1	11/6/2017 04:34 PM
Ethylbenzene	2.4		0.039	mg/Kg	1	11/6/2017 04:34 PM
m,p-Xylene	63		0.78	mg/Kg	10	11/7/2017 02:16 PM
o-Xylene	5.9		0.039	mg/Kg	1	11/6/2017 04:34 PM
Toluene	5.4		0.039	mg/Kg	1	11/6/2017 04:34 PM
Xylenes, Total	71		1.2	mg/Kg	10	11/7/2017 02:16 PM
Surr: 1,2-Dichloroethane-d4	98.8		70-130	%REC	1	11/6/2017 04:34 PM
Surr: 1,2-Dichloroethane-d4	99.5		70-130	%REC	10	11/7/2017 02:16 PM
Surr: 4-Bromofluorobenzene	112		70-130	%REC	10	11/7/2017 02:16 PM
Surr: 4-Bromofluorobenzene	152	S	70-130	%REC	1	11/6/2017 04:34 PM
Surr: Dibromofluoromethane	96.6		70-130	%REC	1	11/6/2017 04:34 PM
Surr: Dibromofluoromethane	95.5		70-130	%REC	10	11/7/2017 02:16 PM
Surr: Toluene-d8	116		70-130	%REC	10	11/7/2017 02:16 PM
Surr: Toluene-d8	200	S	70-130	%REC	1	11/6/2017 04:34 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 MET	Prep: USDA Method 20B	11/8/17 09:11	Analyst: JB
Electrical Conductivity @ Saturation	1.8		0.10	mmhos/cm @2	20	11/9/2017 09:30 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	15		1.1	mg/Kg-dry	1	11/8/2017 10:45 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A	11/6/17 16:53	Analyst: RP
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	11/7/2017 05:00 PM
MOISTURE			SW3550C			Analyst: NW
Moisture	13		0.050	% of sample	1	11/4/2017 10:00 PM
PH			SW9045D	Prep: EXTRACT	11/6/17 17:52	Analyst: RZM
pH	8.57		0.100	s.u.	1	11/7/2017 10:30 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Terra Energy Partners, LLC
Work Order: 1711337
Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: **110084** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-110084-110084				Units: mg/Kg		Analysis Date: 11/6/2017 02:44 PM		
Client ID:		Run ID: GC8_171106A		SeqNo: 4745387		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	2.3	0	3.33	0	69.1	34-130	0			

LCS		Sample ID: DLCSS1-110084-110084				Units: mg/Kg		Analysis Date: 11/6/2017 03:13 PM		
Client ID:		Run ID: GC8_171106A		SeqNo: 4745388		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	324.6	5.0	333	0	97.5	65-122	0			
<i>Surr: 4-Terphenyl-d14</i>	2.4	0	3.33	0	72.1	34-130	0			

MS		Sample ID: 1711163-02A MS				Units: mg/Kg		Analysis Date: 11/6/2017 04:11 PM		
Client ID:		Run ID: GC8_171106A		SeqNo: 4745390		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	325.8	4.9	324.4	20.61	94.1	65-122	0			
<i>Surr: 4-Terphenyl-d14</i>	2.517	0	3.244	0	77.6	34-130	0			

MSD		Sample ID: 1711163-02A MSD				Units: mg/Kg		Analysis Date: 11/6/2017 04:40 PM		
Client ID:		Run ID: GC8_171106A		SeqNo: 4745391		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	370.6	5.0	332.1	20.61	105	65-122	325.8	12.9	30	
<i>Surr: 4-Terphenyl-d14</i>	2.659	0	3.321	0	80.1	34-130	2.517	5.5	30	

The following samples were analyzed in this batch:

1711337-01A	1711337-02A	1711337-03A
1711337-04A		

Client: Terra Energy Partners, LLC
 Work Order: 1711337
 Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: 110109 Instrument ID GC9 Method: SW8015D

MBLK		Sample ID: MBLK-110109-110109				Units: µg/Kg-dry		Analysis Date: 11/7/2017 05:30 AM		
Client ID:		Run ID: GC9_171106B		SeqNo: 4745246		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	5,000								
<i>Surr: Toluene-d8</i>	4974	0	5000	0	99.5	71-123	0			

LCS		Sample ID: LCS-110109-110109				Units: µg/Kg-dry		Analysis Date: 11/7/2017 04:32 AM		
Client ID:		Run ID: GC9_171106B		SeqNo: 4745245		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	473600	5,000	500000	0	94.7	71-123	0			
<i>Surr: Toluene-d8</i>	5489	0	5000	0	110	71-123	0			

MS		Sample ID: 1711337-01A MS				Units: µg/Kg-dry		Analysis Date: 11/9/2017 05:31 PM		
Client ID: PA 22-6: North		Run ID: GC10_171109A		SeqNo: 4751862		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	748600	6,900	690500	0	108	71-123	0			
<i>Surr: Toluene-d8</i>	7262	0	6905	0	105	71-123	0			

MSD		Sample ID: 1711337-01A MSD				Units: µg/Kg-dry		Analysis Date: 11/9/2017 05:57 PM		
Client ID: PA 22-6: North		Run ID: GC10_171109A		SeqNo: 4751863		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	748500	6,900	690500	0	108	71-123	748600	0.0118	30	
<i>Surr: Toluene-d8</i>	7278	0	6905	0	105	71-123	7262	0.218	30	

The following samples were analyzed in this batch:

1711337-01A	1711337-02A	1711337-03A
1711337-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
 Work Order: 1711337
 Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: **110144** Instrument ID **HG1** Method: **SW7471B**

MBLK	Sample ID: MBLK-110144-110144				Units: mg/Kg		Analysis Date: 11/6/2017 04:58 PM			
Client ID:	Run ID: HG1_171106A			SeqNo: 4743844		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

LCS	Sample ID: LCS-110144-110144				Units: mg/Kg		Analysis Date: 11/6/2017 05:00 PM			
Client ID:	Run ID: HG1_171106A			SeqNo: 4743845		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1742 0.020 0.1665 0 105 80-120 0

MS	Sample ID: 17102049-02BMS				Units: mg/Kg		Analysis Date: 11/6/2017 05:08 PM			
Client ID:	Run ID: HG1_171106A			SeqNo: 4743848		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1361 0.016 0.1308 0.002045 103 75-125 0

MSD	Sample ID: 17102049-02BMSD				Units: mg/Kg		Analysis Date: 11/6/2017 05:10 PM			
Client ID:	Run ID: HG1_171106A			SeqNo: 4743849		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1312 0.016 0.1304 0.002045 99 75-125 0.1361 3.68 35

The following samples were analyzed in this batch:

1711337-01A	1711337-02A	1711337-03A
1711337-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
 Work Order: 1711337
 Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: 110117 Instrument ID ICP2 Method: SW846 6010C

MBLK		Sample ID: MBLK-110117-110117				Units: mg/Kg		Analysis Date: 11/6/2017 11:48 PM		
Client ID:		Run ID: ICP2_171106A			SeqNo: 4744373		Prep Date: 11/6/2017		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	0.0312	0.50								J
Chromium	0.099	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	ND	0.50								

LCS		Sample ID: LCS-110117-110117				Units: mg/Kg		Analysis Date: 11/6/2017 11:53 PM		
Client ID:		Run ID: ICP2_171106A			SeqNo: 4744374		Prep Date: 11/6/2017		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	5.035	0.25	5	0	101	80-120	0			
Barium	4.96	0.25	5	0	99.2	80-120	0			
Cadmium	5.184	0.50	5	0	104	80-120	0			
Chromium	5.623	0.25	5	0	112	80-120	0			
Copper	5.195	0.50	5	0	104	80-120	0			
Lead	5.314	0.25	5	0	106	80-120	0			
Nickel	5.34	0.25	5	0	107	80-120	0			
Selenium	5.066	0.50	5	0	101	80-120	0			
Silver	5.139	0.25	5	0	103	80-120	0			
Zinc	5.428	0.50	5	0	109	80-120	0			

MS		Sample ID: 1711334-02AMS				Units: mg/Kg		Analysis Date: 11/7/2017 01:47 AM		
Client ID:		Run ID: ICP2_171106A			SeqNo: 4744395		Prep Date: 11/6/2017		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	21.82	0.40	8.052	24.06	-27.9	75-125	0			S
Barium	678.9	0.40	8.052	460.4	2710	75-125	0			SO
Cadmium	9.974	0.81	8.052	0.637	116	75-125	0			
Chromium	35.3	0.40	8.052	22.5	159	75-125	0			S
Copper	25.92	0.81	8.052	18.7	89.7	75-125	0			
Lead	19.8	0.40	8.052	12.36	92.4	75-125	0			
Nickel	31.69	0.40	8.052	19.52	151	75-125	0			S
Selenium	9.87	0.81	8.052	2.166	95.7	75-125	0			
Silver	8.555	0.40	8.052	-0.1843	109	75-125	0			
Zinc	88.68	0.81	8.052	71.49	213	75-125	0			SO

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 1711337
Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: **110117** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: 1711334-02AMSD				Units: mg/Kg		Analysis Date: 11/7/2017 01:52 AM			
Client ID:		Run ID: ICP2_171106A			SeqNo: 4744396		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	22.53	0.40	8.052	24.06	-19.1	75-125	21.82	3.2	20	S	
Barium	377.5	0.40	8.052	460.4	-1030	75-125	678.9	57.1	20	SRO	
Cadmium	9.711	0.81	8.052	0.637	113	75-125	9.974	2.67	20		
Chromium	35.86	0.40	8.052	22.5	166	75-125	35.3	1.58	20	S	
Copper	29.39	0.81	8.052	18.7	133	75-125	25.92	12.5	20	S	
Lead	21.84	0.40	8.052	12.36	118	75-125	19.8	9.8	20		
Nickel	32.02	0.40	8.052	19.52	155	75-125	31.69	1.03	20	S	
Selenium	9.428	0.81	8.052	2.166	90.2	75-125	9.87	4.58	20		
Silver	8.332	0.40	8.052	-0.1843	106	75-125	8.555	2.65	20		
Zinc	90.51	0.81	8.052	71.49	236	75-125	88.68	2.04	20	SO	

The following samples were analyzed in this batch:

1711337-01A	1711337-02A	1711337-03A
1711337-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 1711337
Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: **110243** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 1711337-02ADUP				Units: none		Analysis Date: 11/8/2017		
Client ID: PA 22-6: Middle		Run ID: SAR_171108A				SeqNo: 4752976		Prep Date: 11/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	1.245	0.010	0	0	0		1.251	0.529	50	

The following samples were analyzed in this batch:

1711337-01A	1711337-02A	1711337-03A
1711337-04A		

Batch ID: **110243** Instrument ID **ICPMS3** Method: **SW6020A**

DUP		Sample ID: 1711337-02ADUP				Units: mg/L		Analysis Date: 11/8/2017 04:24 PM		
Client ID: PA 22-6: Middle		Run ID: ICPMS3_171108A				SeqNo: 4749327		Prep Date: 11/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	17.6	0.50	0	0	0	0-0	16.93	3.88		
Magnesium	2.104	0.20	0	0	0	0-0	2.031	3.49		
Sodium	20.75	0.20	0	0	0	0-0	20.46	1.38		

The following samples were analyzed in this batch:

1711337-01A	1711337-02A	1711337-03A
1711337-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
 Work Order: 1711337
 Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: 110083 Instrument ID SVMS6 Method: SW846 8270D

MBLK		Sample ID: SBLKS1-110083-110083				Units: µg/Kg		Analysis Date: 11/6/2017 02:23 PM		
Client ID:		Run ID: SVMS6_171106A		SeqNo: 4745613		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	42								
Anthracene	ND	42								
Benzo(a)anthracene	ND	42								
Benzo(a)pyrene	ND	42								
Benzo(b)fluoranthene	ND	42								
Benzo(k)fluoranthene	ND	42								
Chrysene	ND	42								
Dibenzo(a,h)anthracene	ND	42								
Fluoranthene	ND	42								
Fluorene	ND	42								
Indeno(1,2,3-cd)pyrene	ND	42								
Naphthalene	ND	42								
Pyrene	ND	42								
Surr: 2-Fluorobiphenyl	3615	0	3333	0	108	20-140	0			
Surr: 4-Terphenyl-d14	4167	0	3333	0	125	22-172	0			
Surr: Nitrobenzene-d5	3530	0	3333	0	106	28-140	0			

LCS		Sample ID: SLCSS1-110083-110083				Units: µg/Kg		Analysis Date: 11/6/2017 02:38 PM		
Client ID:		Run ID: SVMS6_171106A		SeqNo: 4745614		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1299	42	1333	0	97.4	40-140	0			
Anthracene	1360	42	1333	0	102	40-140	0			
Benzo(a)anthracene	1298	42	1333	0	97.4	40-140	0			
Benzo(a)pyrene	1333	42	1333	0	100	40-140	0			
Benzo(b)fluoranthene	1478	42	1333	0	111	40-140	0			
Benzo(k)fluoranthene	1191	42	1333	0	89.3	40-140	0			
Chrysene	1313	42	1333	0	98.5	40-140	0			
Dibenzo(a,h)anthracene	883.1	42	1333	0	66.2	40-140	0			
Fluoranthene	1323	42	1333	0	99.3	40-140	0			
Fluorene	1352	42	1333	0	101	40-140	0			
Indeno(1,2,3-cd)pyrene	910.9	42	1333	0	68.3	40-140	0			
Naphthalene	1242	42	1333	0	93.2	40-140	0			
Pyrene	1276	42	1333	0	95.8	40-140	0			
Surr: 2-Fluorobiphenyl	3298	0	3333	0	99	20-140	0			
Surr: 4-Terphenyl-d14	3533	0	3333	0	106	22-172	0			
Surr: Nitrobenzene-d5	3500	0	3333	0	105	28-140	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
 Work Order: 1711337
 Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: 110083 Instrument ID SVMS6 Method: SW846 8270D

MS				Sample ID: 1711163-01A MS			Units: µg/Kg		Analysis Date: 11/6/2017 02:52 PM		
Client ID:		Run ID: SVMS6_171106A		SeqNo: 4745615		Prep Date: 11/6/2017		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1179	41	1317	0	89.5	40-140	0				
Anthracene	1231	41	1317	0	93.4	40-140	0				
Benzo(a)anthracene	1159	41	1317	0	88	40-140	0				
Benzo(a)pyrene	1255	41	1317	0	95.3	40-140	0				
Benzo(b)fluoranthene	1311	41	1317	0	99.5	40-140	0				
Benzo(k)fluoranthene	1119	41	1317	0	84.9	40-140	0				
Chrysene	1248	41	1317	0	94.8	40-140	0				
Dibenzo(a,h)anthracene	907	41	1317	0	68.9	40-140	0				
Fluoranthene	1442	41	1317	0	110	40-140	0				
Fluorene	2010	41	1317	368.1	125	40-140	0				
Indeno(1,2,3-cd)pyrene	873.8	41	1317	0	66.3	40-140	0				
Naphthalene	6536	41	1317	4456	158	40-140	0			S	
Pyrene	1231	41	1317	0	93.4	40-140	0				
Surr: 2-Fluorobiphenyl	3154	0	3293	0	95.8	20-140	0				
Surr: 4-Terphenyl-d14	3330	0	3293	0	101	22-172	0				
Surr: Nitrobenzene-d5	3810	0	3293	0	116	28-140	0				

MSD				Sample ID: 1711163-01A MSD			Units: µg/Kg		Analysis Date: 11/6/2017 03:06 PM		
Client ID:		Run ID: SVMS6_171106A		SeqNo: 4745616		Prep Date: 11/6/2017		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1112	41	1307	0	85.1	40-140	1179	5.82	30		
Anthracene	1350	41	1307	0	103	40-140	1231	9.25	30		
Benzo(a)anthracene	1334	41	1307	0	102	40-140	1159	14.1	30		
Benzo(a)pyrene	1361	41	1307	0	104	40-140	1255	8.16	30		
Benzo(b)fluoranthene	1367	41	1307	0	105	40-140	1311	4.2	30		
Benzo(k)fluoranthene	1328	41	1307	0	102	40-140	1119	17.1	30		
Chrysene	1314	41	1307	0	101	40-140	1248	5.14	30		
Dibenzo(a,h)anthracene	997.1	41	1307	0	76.3	40-140	907	9.46	30		
Fluoranthene	1594	41	1307	0	122	40-140	1442	10	30		
Fluorene	1950	41	1307	368.1	121	40-140	2010	3.04	30		
Indeno(1,2,3-cd)pyrene	960	41	1307	0	73.4	40-140	873.8	9.4	30		
Naphthalene	6595	41	1307	4456	164	40-140	6536	0.9	30	SE	
Pyrene	1347	41	1307	0	103	40-140	1231	9.05	30		
Surr: 2-Fluorobiphenyl	2917	0	3269	0	89.3	20-140	3154	7.79	0		
Surr: 4-Terphenyl-d14	3685	0	3269	0	113	22-172	3330	10.1	0		
Surr: Nitrobenzene-d5	3727	0	3269	0	114	28-140	3810	2.19	0		

The following samples were analyzed in this batch:

1711337-01A	1711337-02A	1711337-03A
1711337-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
 Work Order: 1711337
 Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: 110108 Instrument ID VMS10 Method: SW8260B

MBLK		Sample ID: MBLK-110108-110108				Units: µg/Kg-dry		Analysis Date: 11/6/2017 12:05 PM		
Client ID:		Run ID: VMS10_171106A		SeqNo: 4744663		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30	0	0	0	0-0	0			
Ethylbenzene	ND	30	0	0	0	0-0	0			
m,p-Xylene	ND	60	0	0	0	0-0	0			
o-Xylene	ND	30	0	0	0	0-0	0			
Toluene	ND	30	0	0	0	0-0	0			
Xylenes, Total	ND	90	0	0	0	0-0	0			
Surr: 1,2-Dichloroethane-d4	1001	0	1000	0	100	70-130	0			
Surr: 4-Bromofluorobenzene	989.5	0	1000	0	99	70-130	0			
Surr: Dibromofluoromethane	985.5	0	1000	0	98.6	70-130	0			
Surr: Toluene-d8	989	0	1000	0	98.9	70-130	0			

LCS		Sample ID: LCS-110108-110108				Units: µg/Kg-dry		Analysis Date: 11/6/2017 11:17 AM		
Client ID:		Run ID: VMS10_171106A		SeqNo: 4744662		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	911.5	30	1000	0	91.2	75-125	0			
Ethylbenzene	919.5	30	1000	0	92	75-125	0			
m,p-Xylene	1853	60	2000	0	92.6	80-125	0			
o-Xylene	923.5	30	1000	0	92.4	75-125	0			
Toluene	873	30	1000	0	87.3	70-125	0			
Xylenes, Total	2776	90	3000	0	92.6	75-125	0			
Surr: 1,2-Dichloroethane-d4	987	0	1000	0	98.7	70-130	0			
Surr: 4-Bromofluorobenzene	1005	0	1000	0	100	70-130	0			
Surr: Dibromofluoromethane	1024	0	1000	0	102	70-130	0			
Surr: Toluene-d8	1008	0	1000	0	101	70-130	0			

MS		Sample ID: 1711337-01A MS				Units: µg/Kg-dry		Analysis Date: 11/6/2017 06:19 PM		
Client ID: PA 22-6: North		Run ID: VMS10_171106A		SeqNo: 4744698		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1188	41	1381	0	86	75-125	0			
Ethylbenzene	1195	41	1381	3.452	86.3	75-125	0			
m,p-Xylene	2392	83	2762	26.93	85.6	80-125	0			
o-Xylene	1198	41	1381	4.143	86.4	75-125	0			
Toluene	1130	41	1381	0	81.8	70-125	0			
Xylenes, Total	3590	120	4143	27	86	75-125	0			
Surr: 1,2-Dichloroethane-d4	1333	0	1381	0	96.6	70-130	0			
Surr: 4-Bromofluorobenzene	1391	0	1381	0	101	70-130	0			
Surr: Dibromofluoromethane	1354	0	1381	0	98	70-130	0			
Surr: Toluene-d8	1366	0	1381	0	98.9	70-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
 Work Order: 1711337
 Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: 110108 Instrument ID VMS10 Method: SW8260B

MSD		Sample ID: 1711337-01A MSD				Units: $\mu\text{g/Kg-dry}$		Analysis Date: 11/6/2017 06:34 PM		
Client ID: PA 22-6: North		Run ID: VMS10_171106A		SeqNo: 4744699		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1277	41	1381	0	92.4	75-125	1188	7.17	30	
Ethylbenzene	1291	41	1381	3.452	93.2	75-125	1195	7.72	30	
m,p-Xylene	2622	83	2762	26.93	94	80-125	2392	9.17	30	
o-Xylene	1293	41	1381	4.143	93.3	75-125	1198	7.6	30	
Toluene	1219	41	1381	0	88.2	70-125	1130	7.59	30	
Xylenes, Total	3915	120	4143	27	93.8	75-125	3590	8.65	30	
Surr: 1,2-Dichloroethane-d4	1354	0	1381	0	98	70-130	1333	1.54	30	
Surr: 4-Bromofluorobenzene	1412	0	1381	0	102	70-130	1391	1.48	30	
Surr: Dibromofluoromethane	1324	0	1381	0	95.8	70-130	1354	2.27	30	
Surr: Toluene-d8	1373	0	1381	0	99.4	70-130	1366	0.555	30	

The following samples were analyzed in this batch:

1711337-01A	1711337-02A	1711337-03A
1711337-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 1711337
Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: **110155** Instrument ID **WETCHEM** Method: **SW9045D**

LCS	Sample ID: LCS-110155-110155		Units: s.u.		Analysis Date: 11/7/2017 10:30 AM					
Client ID:	Run ID: WETCHEM_171107A		SeqNo: 4744783		Prep Date: 11/6/2017 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.93	0.10	4	0	98.2	90-110	0			

DUP	Sample ID: 1711227-03A DUP		Units: s.u.		Analysis Date: 11/7/2017 10:30 AM					
Client ID:	Run ID: WETCHEM_171107A		SeqNo: 4744785		Prep Date: 11/6/2017 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.39	0.10	0	0	0	0-0	8.37	0.239	20	

The following samples were analyzed in this batch:

1711337-01A	1711337-02A	1711337-03A
1711337-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
 Work Order: 1711337
 Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: 110187 Instrument ID WETCHEM Method: SW7196A

MBLK		Sample ID: MBLK-110187-110187				Units: mg/Kg		Analysis Date: 11/7/2017 05:00 PM		
Client ID:		Run ID: WETCHEM_171107Q		SeqNo: 4746597		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.99

LCS		Sample ID: LCS-110187-110187				Units: mg/Kg		Analysis Date: 11/7/2017 05:00 PM		
Client ID:		Run ID: WETCHEM_171107Q		SeqNo: 4746598		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.56 1.0 5 0 91.2 80-120 0

MS		Sample ID: 1711337-04A MS				Units: mg/Kg		Analysis Date: 11/7/2017 05:00 PM		
Client ID: PA 22-6: Spoil Pile		Run ID: WETCHEM_171107Q		SeqNo: 4746607		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.5 1.0 5 0.04 29.2 75-125 0 S

MS		Sample ID: 1711337-04A MSI				Units: mg/Kg		Analysis Date: 11/7/2017 05:00 PM		
Client ID: PA 22-6: Spoil Pile		Run ID: WETCHEM_171107Q		SeqNo: 4746609		Prep Date: 11/6/2017		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1594 100 1689 0.04 94.4 75-125 0

MSD		Sample ID: 1711337-04A MSD				Units: mg/Kg		Analysis Date: 11/7/2017 05:00 PM		
Client ID: PA 22-6: Spoil Pile		Run ID: WETCHEM_171107Q		SeqNo: 4746608		Prep Date: 11/6/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.99 1.0 5 0.04 39 75-125 1.5 28.1 20 SR

The following samples were analyzed in this batch:

1711337-01A	1711337-02A	1711337-03A
1711337-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 1711337
Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: **110243** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP	Sample ID: 1711337-02A DUP		Units: mmhos/cm @25°		Analysis Date: 11/9/2017 09:30 AM					
Client ID: PA 22-6: Middle	Run ID: WETCHEM_171109A		SeqNo: 4749885		Prep Date: 11/8/2017 DF: 20					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	2.266	0.10	0	0	0		2.07	9.04	50	

The following samples were analyzed in this batch:

1711337-01A	1711337-02A	1711337-03A
1711337-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
 Work Order: 1711337
 Project: PA 22-6-795 Tank Release

QC BATCH REPORT

Batch ID: **R223851** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R223851				Units: % of sample			Analysis Date: 11/4/2017 10:00 PM		
Client ID:		Run ID: MOIST_171104A				SeqNo: 4741417		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture ND 0.050

LCS		Sample ID: LCS-R223851				Units: % of sample			Analysis Date: 11/4/2017 10:00 PM		
Client ID:		Run ID: MOIST_171104A				SeqNo: 4741416		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP		Sample ID: 1711272-02A DUP				Units: % of sample			Analysis Date: 11/4/2017 10:00 PM		
Client ID:		Run ID: MOIST_171104A				SeqNo: 4741402		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 15.72 0.050 0 0 0 0-0 15.43 1.86 5

DUP		Sample ID: 1711337-03A DUP				Units: % of sample			Analysis Date: 11/4/2017 10:00 PM		
Client ID: PA 22-6: South		Run ID: MOIST_171104A				SeqNo: 4741414		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 13.34 0.050 0 0 0 0-0 13.39 0.374 5

The following samples were analyzed in this batch:

1711337-01A	1711337-02A	1711337-03A
1711337-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 2026

WORKORDER #

1711337

PROJECT NAME: PA 22-6-795 Tank Release		SAMPLER: Mike Gardner		DATE: 11/3/2017		PAGE: 1 of 1	
PROJECT No.		SITE ID: PA 22-6-795		TURNAROUND: ASAP		DISPOSAL: By Lab or Return to Client	
COMPANY NAME: TEP		PURCHASE ORDER		COGCC 910-1 Full List			
SEND REPORT TO: Mike Gardner		INVOICE ATTN TO: Mike Gardner, Dusty Richards					
ADDRESS:		ADDRESS: 1058 Co Rd 215					
CITY/STATE/ZIP:		CITY/STATE/ZIP: Parachute CO 81635					
PHONE:		PHONE: 970-263-2760					
FAX:		FAX:					
E-MAIL: mgardner@terraep.com		E-MAIL: mgardner@terraep.com; dnichards@terraep.com					
E-MAIL:		E-MAIL:					
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
1	PA 22-6: North	Soil	11/3/2017	9:00	2		X
2	PA 22-6: Middle	Soil	11/3/2017	9:10	2		X
3	PA 22-6: South	Soil	11/3/2017	9:20	2		X
4	PA 22-6: Spoil Pile	Soil	11/3/2017	9:30	2		X

*Time Zone (Circle): EST CST MST PST Matrix O=oil S=soil NS=non-soil solid W=water L=liquid E=extract F=filter

For metals or anions, please detail analytes below.

Comments: SD2 3.2c 	QC PACKAGE (check below)	
	<input checked="" type="checkbox"/>	LEVEL II (Standard QC)
	<input type="checkbox"/>	LEVEL III (Std QC + forms)
	<input type="checkbox"/>	LEVEL IV (Std QC + forms + raw data)
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Mike Gardner	11/3/2017	
RECEIVED BY		M. Moitra	11-3-17	1500
RELINQUISHED BY		M. Moitra	11/3/17	1530
RECEIVED BY		Diane F. Shan	11/4/17	0945
RELINQUISHED BY				
RECEIVED BY				

Sample Receipt Checklist

Client Name: **TERRAENERGY**

Date/Time Received: **04-Nov-17 09:45**

Work Order: **1711337**

Received by: **DS**

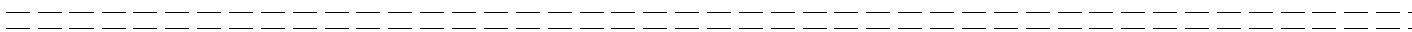
Checklist completed by Diane Shaw 04-Nov-17
eSignature Date

Reviewed by: Chad Whelton 06-Nov-17
eSignature Date

Matrices: Soil
 Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.2/3.2 c</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u> </u>		
Date/Time sample(s) sent to storage:	<u>11/4/2017 10:55:45 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u> </u>		

Login Notes:



Client Contacted: _____ Date Contacted: _____ Person Contacted: _____

Contacted By: _____ Regarding: _____

Comments:

CorrectiveAction: