



17-Aug-2021

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

Re: **Terra Energy - Gov 26-1 - South Exc**

Work Order: **21081126**

Dear Mike,

ALS Environmental received 2 samples on 12-Aug-2021 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland 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 13.

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

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Alex J. Cszaszar

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Terra Energy Partners, LLC
Project: Terra Energy - Gov 26-1 - South Exc
Work Order: 21081126

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>
21081126-01	South Half - West Wall	Soil		8/10/2021 11:00	8/12/2021 08:15	<input type="checkbox"/>
21081126-02	South Half - East Wall	Soil		8/10/2021 11:30	8/12/2021 08:15	<input type="checkbox"/>

Client: Terra Energy Partners, LLC
Project: Terra Energy - Gov 26-1 - South Exc
Work Order: 21081126

Case Narrative

Samples for the above noted Work Order were received on 08/12/2021. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

All sample analyses achieved analytical criteria.

Client: Terra Energy Partners, LLC
Project: Terra Energy - Gov 26-1 - South Exc
WorkOrder: 21081126

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	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
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
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.

<u>Acronym</u>	<u>Description</u>
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

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group, USA

Date: 17-Aug-21

Client: Terra Energy Partners, LLC
Project: Terra Energy - Gov 26-1 - South Exc
Sample ID: South Half - West Wall
Collection Date: 8/10/2021 11:00 AM

Work Order: 21081126
Lab ID: 21081126-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS) Method: SW8270E Prep: SW3546 / 8/16/21 Analyst: EEW							
Benzo(a)pyrene	U		4.1	5.1	µg/Kg-dry	1	8/17/2021 13:23
Surr: 2-Fluorobiphenyl	77.8			20-140	%REC	1	8/17/2021 13:23
Surr: 4-Terphenyl-d14	59.7			22-172	%REC	1	8/17/2021 13:23
Surr: Nitrobenzene-d5	115			28-140	%REC	1	8/17/2021 13:23
MOISTURE Method: SW3550C Analyst: ALG							
Moisture	21		0.10	0.10	% of sample	1	8/13/2021 12:14

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

ALS Group, USA**Date:** 17-Aug-21

Client: Terra Energy Partners, LLC
Project: Terra Energy - Gov 26-1 - South Exc
Sample ID: South Half - East Wall
Collection Date: 8/10/2021 11:30 AM

Work Order: 21081126
Lab ID: 21081126-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
METALS ANALYSIS BY ICP			Method: SW6010D		Prep: SW3050B / 8/13/21		Analyst: ABL
Arsenic	9.0		0.12	0.45	mg/Kg-dry	1	8/16/2021 16:07
MOISTURE			Method: SW3550C				Analyst: ALG
Moisture	16		0.10	0.10	% of sample	1	8/13/2021 12:14

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

Client: Terra Energy Partners, LLC
Work Order: 21081126
Project: Terra Energy - Gov 26-1 - South Exc

QC BATCH REPORT

Batch ID: **181944** Instrument ID **ICP2** Method: **SW6010D**

MBLK		Sample ID: MBLK-181944-181944				Units: mg/Kg		Analysis Date: 8/13/2021 03:01 PM			
Client ID:		Run ID: ICP2_210813A				SeqNo: 7666949		Prep Date: 8/13/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.065	0.25								

LCS		Sample ID: LCS-181944-181944				Units: mg/Kg		Analysis Date: 8/13/2021 03:06 PM			
Client ID:		Run ID: ICP2_210813A				SeqNo: 7666950		Prep Date: 8/13/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	5.041	0.065	0.25	5	0	101	80-120	0			

MS		Sample ID: 21081126-02AMS				Units: mg/Kg		Analysis Date: 8/16/2021 07:13 PM			
Client ID: South Half - East Wall		Run ID: ICP2_210816A				SeqNo: 7669359		Prep Date: 8/13/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	14.61	0.097	0.37	7.496	7.619	93.3	75-125	0			

MSD		Sample ID: 21081126-02AMSD				Units: mg/Kg		Analysis Date: 8/16/2021 07:18 PM			
Client ID: South Half - East Wall		Run ID: ICP2_210816A				SeqNo: 7669360		Prep Date: 8/13/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	14.22	0.097	0.37	7.496	7.619	88	75-125	14.61	2.76	20	

The following samples were analyzed in this batch: 21081126-02A

Client: Terra Energy Partners, LLC
 Work Order: 21081126
 Project: Terra Energy - Gov 26-1 - South Exc

QC BATCH REPORT

Batch ID: 182057 Instrument ID SVMS6 Method: SW8270E

MBLK Sample ID: SBLKS1-182057-182057					Units: µg/Kg		Analysis Date: 8/17/2021 11:19 AM				
Client ID:		Run ID: SVMS6_210817A			SeqNo: 7671962		Prep Date: 8/16/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)pyrene	U	3.3	4.2								
Surr: 2-Fluorobiphenyl	3202	0	0	3333	0	96.1	20-140	0			
Surr: 4-Terphenyl-d14	3396	0	0	3333	0	102	22-172	0			
Surr: Nitrobenzene-d5	3726	0	0	3333	0	112	28-140	0			

LCS Sample ID: SLCSS1-182057-182057					Units: µg/Kg		Analysis Date: 8/17/2021 11:34 AM				
Client ID:		Run ID: SVMS6_210817A			SeqNo: 7671964		Prep Date: 8/16/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)pyrene	1111	3.3	4.2	1333	0	83.4	40-140	0			
Surr: 2-Fluorobiphenyl	3225	0	0	3333	0	96.8	20-140	0			
Surr: 4-Terphenyl-d14	3555	0	0	3333	0	107	22-172	0			
Surr: Nitrobenzene-d5	2813	0	0	3333	0	84.4	28-140	0			

LCS Sample ID: AVM IDC#2-182057					Units: µg/Kg		Analysis Date: 8/17/2021 11:50 AM				
Client ID:		Run ID: SVMS6_210817A			SeqNo: 7671966		Prep Date: 8/16/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)pyrene	1158	3.3	4.2	1333	0	86.9	40-140	0			
Surr: 2-Fluorobiphenyl	3135	0	0	3333	0	94.1	20-140	0			
Surr: 4-Terphenyl-d14	3458	0	0	3333	0	104	22-172	0			
Surr: Nitrobenzene-d5	2814	0	0	3333	0	84.4	28-140	0			

LCS Sample ID: AVM IDC#3-182057					Units: µg/Kg		Analysis Date: 8/17/2021 12:05 PM				
Client ID:		Run ID: SVMS6_210817A			SeqNo: 7671969		Prep Date: 8/16/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)pyrene	1144	3.3	4.2	1333	0	85.8	40-140	0			
Surr: 2-Fluorobiphenyl	3115	0	0	3333	0	93.5	20-140	0			
Surr: 4-Terphenyl-d14	3471	0	0	3333	0	104	22-172	0			
Surr: Nitrobenzene-d5	2817	0	0	3333	0	84.5	28-140	0			

LCS Sample ID: AVM IDC#4-182057					Units: µg/Kg		Analysis Date: 8/17/2021 12:21 PM				
Client ID:		Run ID: SVMS6_210817A			SeqNo: 7671971		Prep Date: 8/16/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)pyrene	1175	3.3	4.2	1333	0	88.2	40-140	0			
Surr: 2-Fluorobiphenyl	3205	0	0	3333	0	96.2	20-140	0			
Surr: 4-Terphenyl-d14	3538	0	0	3333	0	106	22-172	0			
Surr: Nitrobenzene-d5	2830	0	0	3333	0	84.9	28-140	0			

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

Client: Terra Energy Partners, LLC
Work Order: 21081126
Project: Terra Energy - Gov 26-1 - South Exc

QC BATCH REPORT

Batch ID: **182057** Instrument ID **SVMS6** Method: **SW8270E**

MS					Units: µg/Kg			Analysis Date: 8/17/2021 12:36 PM			
Client ID:		Run ID: SVMS6_210817A			SeqNo: 7671973		Prep Date: 8/16/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)pyrene	900.3	3.3	4.1	1314	64.82	63.6	40-140	0			
Surr: 2-Fluorobiphenyl	2948	0	0	3285	0	89.7	20-140	0			
Surr: 4-Terphenyl-d14	3446	0	0	3285	0	105	22-172	0			
Surr: Nitrobenzene-d5	3076	0	0	3285	0	93.6	28-140	0			

MSD					Units: µg/Kg			Analysis Date: 8/17/2021 12:52 PM			
Client ID:		Run ID: SVMS6_210817A			SeqNo: 7671975		Prep Date: 8/16/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)pyrene	1077	3.3	4.1	1326	64.82	76.3	40-140	900.3	17.8	30	
Surr: 2-Fluorobiphenyl	3131	0	0	3316	0	94.4	20-140	2948	6.03	30	
Surr: 4-Terphenyl-d14	3611	0	0	3316	0	109	22-172	3446	4.66	30	
Surr: Nitrobenzene-d5	3173	0	0	3316	0	95.7	28-140	3076	3.11	30	

The following samples were analyzed in this batch:

21081126-01A

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

Client: Terra Energy Partners, LLC
 Work Order: 21081126
 Project: Terra Energy - Gov 26-1 - South Exc

QC BATCH REPORT

Batch ID: **R324414** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R324414				Units: % of sample			Analysis Date: 8/13/2021 12:14 PM		
Client ID:		Run ID: MOIST_210813A				SeqNo: 7666627			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.1	0.10								

LCS		Sample ID: LCS-R324414				Units: % of sample			Analysis Date: 8/13/2021 12:14 PM		
Client ID:		Run ID: MOIST_210813A				SeqNo: 7666626			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	99.99	0.1	0.10	100	0	100	98-102	0			

DUP		Sample ID: 21081132-01B DUP				Units: % of sample			Analysis Date: 8/13/2021 12:14 PM		
Client ID:		Run ID: MOIST_210813A				SeqNo: 7666623			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	6.96	0.1	0.10	0	0	0	0-0	6.69	3.96	10	

DUP		Sample ID: 21081137-01A DUP				Units: % of sample			Analysis Date: 8/13/2021 12:14 PM		
Client ID:		Run ID: MOIST_210813A				SeqNo: 7666625			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	18.64	0.1	0.10	0	0	0	0-0	15.06	21.2	10	R

The following samples were analyzed in this batch:

21081126-01A 21081126-02A

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



ALS Laboratory Group

3352 128th Avenue, Holland, MI 49424
TF: 616 399 6070 FX: 616 399 6185

Chain-of-Custody

Form 202r8

WORKORDER
#

21081126

PROJECT NAME		Terra Energy - Gov 26-1 - South Exc		SAMPLER		Kris Rowe		DATE		8/10/2021		PAGE		1 of 2	
PROJECT No.				SITE ID		Gov 26-1		TURNAROUND		24 HR		DISPOSAL		By Lab or Return to Client	
COMPANY NAME		Terra Energy		BILL TO COMPANY		Terra Energy		Benzo(a)pyrene Arsenic							
SEND REPORT TO		Mike Gardner & Kris Rowe (HRL)		INVOICE ATTN TO		Mike Gardner / Tammi Gose									
ADDRESS		1058 CR 215		ADDRESS		1058 CR 215									
CITY / STATE / ZIP		Parachute, CO 81635		CITY / STATE / ZIP		Parachute CO, 81635									
PHONE		970-263-2760		PHONE		970-263-2760									
FAX				FAX											
E-MAIL				E-MAIL		mgardner@terraep.com									
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC								
	South Half - West Wall	S	8/10/2021	11:00	1	8		X							
	South Half - East Wall	S	8/10/2021	11:30	1	8			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:	4.2°C 1R3	QC PACKAGE (check below)
		LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		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
<i>[Signature]</i>	Kris Rowe	8/10/2021	12:30
<i>[Signature]</i>	Wm	8/10/21	12:30
<i>[Signature]</i>	Wm	8/10/21	18:30
<i>[Signature]</i>	KEITH W. FERNANDEZ	8/12/21	08:15
RELINQUISHED BY			
RECEIVED BY			
RELINQUISHED BY			
RECEIVED BY			

Sample Receipt Checklist

Client Name: **TERRAENERGY**

Date/Time Received: **12-Aug-21 08:15**

Work Order: **21081126**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

12-Aug-21
Date

Reviewed by: Chad Whelton
eSignature

12-Aug-21
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>4.2/5.2 C</u>		<u>IR3</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>8/12/2021 2:49:13 PM</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: