

Summit Scientific

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December 29, 2017

Alyssa Beard
Foundation Energy, LLC
15 E 15th St
Tulsa, OK 74103
RE: Hoffman South Pit

Enclosed are the results of analyses for samples received by Summit Scientific on 12/21/17 05:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury
Laboratory Manager



Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Hoffman South Pit
Project Number: [none]
Project Manager: Alyssa Beard

Reported:
12/29/17 15:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Base@6'	1712268-01	Soil	12/20/17 13:00	12/21/17 05:15

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

1712268

Page 1 of 1

Project Manager:	Alyssa Beard
E-Mail:	abeard@foundationenergy.com
Project Name:	Hoffman South Pit
Project Number:	

[illegible]

1712268

Sample Receipt Checklist

S2 Work Order: _____

Client: Foundation Client Project ID: Hoffman South P.I.Shipped Via: 2/u
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

Matrix (check all that apply): Air ✓ Soil/Solid Water Other: _____
(Describe)

Cooler ID					
Temp (°C)	2.6				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	✓			ON ICE
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are short holding time analytes or samples with HTs due within 48 hours present?		✓		
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			✓	
Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			✓	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			✓	

Additional Comments (if any):

⁽¹⁾ If NO then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

Signature or Initials of Custodian

12-21-17 531
Date/Time



Foundation Energy, LLC
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Tulsa OK, 74103

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12/29/17 15:50

Base@6'
1712268-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/20/17 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	6500	50	mg/kg	1	1712299	12/27/17	12/28/17	8015M	

Date Sampled: **12/20/17 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		153 %	30-150		"	"	"	"	S-02

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/17 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	1.6	0.20	mg/kg	100	1712286	12/26/17	12/26/17	EPA 8260B	
Toluene	0.024	0.0050	"	1	"	"	"	"	
Ethylbenzene	5.0	0.50	"	100	"	"	"	"	
Xylenes (total)	45	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1500	50	"	"	"	"	"	"	

Date Sampled: **12/20/17 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		133 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		94.4 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		165 %	21-167		"	"	"	"	

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Tulsa OK, 74103

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Project Number: [none]
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Reported:
12/29/17 15:50

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1712299 - EPA 3550A

Blank (1712299-BLK1)

Prepared & Analyzed: 12/27/17

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 12.2 " 12.5 97.6 30-150

LCS (1712299-BS1)

Prepared & Analyzed: 12/27/17

C10-C28 (DRO) 553 50 mg/kg 499 111 73-134

Surrogate: o-Terphenyl 14.0 " 12.5 112 30-150

Matrix Spike (1712299-MS1)

Source: 1712222-01

Prepared & Analyzed: 12/27/17

C10-C28 (DRO) 557 50 mg/kg 499 8.24 110 50-148

Surrogate: o-Terphenyl 15.0 " 12.5 120 30-150

Matrix Spike Dup (1712299-MSD1)

Source: 1712222-01

Prepared & Analyzed: 12/27/17

C10-C28 (DRO) 533 50 mg/kg 499 8.24 105 50-148 4.33 20

Surrogate: o-Terphenyl 15.2 " 12.5 122 30-150

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Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1712286 - EPA 5030 Soil MS

Blank (1712286-BLK1)

Prepared & Analyzed: 12/26/17

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0465		"	0.0400		116	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	21-167			

LCS (1712286-BS1)

Prepared & Analyzed: 12/26/17

Benzene	0.0890	0.0020	mg/kg	0.100		89.0	58-130			
Toluene	0.0844	0.0050	"	0.100		84.4	61-134			
Ethylbenzene	0.0923	0.0050	"	0.0992		93.1	74-139			
m,p-Xylene	0.187	0.010	"	0.200		93.8	73-137			
o-Xylene	0.0854	0.0050	"	0.0980		87.2	73-141			
Xylenes (total)	0.273	0.0050	"				30-150			
Gasoline Range Hydrocarbons	ND	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0447		"	0.0400		112	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		101	21-167			

Matrix Spike (1712286-MS1)

Source: 1712215-01

Prepared & Analyzed: 12/26/17

Benzene	0.0770	0.0020	mg/kg	0.100	ND	77.0	30-131			
Toluene	0.0811	0.0050	"	0.100	ND	81.1	30-134			
Ethylbenzene	0.0990	0.0050	"	0.0992	ND	99.8	22-153			
m,p-Xylene	0.110	0.010	"	0.200	ND	54.9	10-159			
o-Xylene	0.0817	0.0050	"	0.0980	ND	83.4	31-151			
Xylenes (total)	0.191	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	2.05	0.50	"		1.42		30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0459		"	0.0400		115	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		98.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	21-167			

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Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1712286 - EPA 5030 Soil MS

Matrix Spike Dup (1712286-MSD1)		Source: 1712215-01			Prepared & Analyzed: 12/26/17					
Benzene	0.0871	0.0020	mg/kg	0.100	ND	87.1	30-131	12.2	34	
Toluene	0.0731	0.0050	"	0.100	ND	73.1	30-134	10.4	30	
Ethylbenzene	0.0954	0.0050	"	0.0992	ND	96.2	22-153	3.67	24	
m,p-Xylene	0.0990	0.010	"	0.200	ND	49.6	10-159	10.2	68	
o-Xylene	0.0830	0.0050	"	0.0980	ND	84.6	31-151	1.53	38	
Xylenes (total)	0.173	0.0050	"		ND		30-150	10.1	20	
Gasoline Range Hydrocarbons	2.18	0.50	"		1.42		30-150	5.81	20	
Surrogate: 1,2-Dichloroethane-d4	0.0468		"	0.0400		117	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		103	21-167			

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Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference