

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

July 03, 2016

Zan Svendsen
Symmetry Oilfield Solutions
1 Industrial Pkwy
Johnstown, CO 80534
RE: Wasco

Enclosed are the results of analyses for samples received by Summit Scientific on 07/01/16 12:30. 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
President



Symmetry Oilfield Solutions
1 Industrial Pkwy
Johnstown CO, 80534

Project: Wasco
Project Number: [none]
Project Manager: Zan Svendsen

Reported:
07/03/16 13:05

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Thin	1607009-01	Soil	06/30/16 00:00	07/01/16 12:30
Dark	1607009-02	Soil	06/30/16 00:00	07/01/16 12:30
Thick	1607009-03	Soil	06/30/16 00:00	07/01/16 12:30

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Symmetry Oilfield Solutions
1 Industrial Pkwy
Johnstown CO, 80534

Project: Wasco
Project Number: [none]
Project Manager: Zan Svendsen

Reported:
07/03/16 13:05

Summit Scientific

1607009

S₂

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

Page 1 of 1

Client: Symmetry Project Manager: Zan
Address: _____ E-Mail: _____
City/State/Zip: _____
Phone: _____ Fax: _____ Project Name: Wasco
Sampler Name: Zan Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	SAR	TPH			
1	Thin	6/30	11	1			X							X	X		
2	Dark		11	1			X							X	X		
3	Thick		11	1			X							X	X		
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours _____ 24 hours _____ Standard _____ 48 hours _____	Notes: _____
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	Sample Integrity: Temperature Upon Receipt: <u>17.6</u> Intact: Yes No	
Relinquished by: _____	Date/Time: _____	Received by: <u>[Signature]</u>	Date/Time: <u>7-1-16 1230</u>		

www.s2scientific.com

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Symmetry Oilfield Solutions
1 Industrial Pkwy
Johnstown CO, 80534

Project: Wasco
Project Number: [none]
Project Manager: Zan Svendsen

Reported:
07/03/16 13:05

Sample Receipt Checklist

S2 Work Order: 1667006

Client: Summit

Client Project ID: Wasco

Shipped Via: 1/u
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Cooler ID					
Temp (°C)	<u>17.6</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Paul Shrewsbury
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

6-30-16
Date/Time



Symmetry Oilfield Solutions
1 Industrial Pkwy
Johnstown CO, 80534

Project: Wasco
Project Number: [none]
Project Manager: Zan Svendsen

Reported:
07/03/16 13:05

Thin
1607009-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 06/30/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	490	50	mg/kg	1	1607013	07/01/16	07/02/16	8015M	
C28-C36 (ORO)	6600	50	"	"	"	"	"	"	

Date Sampled: 06/30/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	70-130		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 06/30/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Gasoline Range Hydrocarbons	0.565	0.500	mg/kg	1	1607012	07/01/16	07/01/16	EPA 8260B	

Date Sampled: 06/30/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.4 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 06/30/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	329	11.1	mg/kg dry	1	1607006	07/01/16	07/01/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	534	5.57	"	"	"	"	"	"	
Sodium	110	5.57	"	"	"	"	"	"	

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Symmetry Oilfield Solutions
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Johnstown CO, 80534

Project: Wasco
Project Number: [none]
Project Manager: Zan Svendsen

Reported:
07/03/16 13:05

Thin
1607009-01 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.870		units	1	1607017	07/03/16	07/03/16	EPA 6020/Mod. USDA60 6(2, 3A)	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.8		%	1	1607005	07/01/16	07/03/16	% calculation	

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Symmetry Oilfield Solutions
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Project: Wasco
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Reported:
07/03/16 13:05

Dark
1607009-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	9400	50	mg/kg	1	1607013	07/01/16	07/02/16	8015M	
C28-C36 (ORO)	110000	50	"	"	"	"	"	"	

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		172 %	70-130		"	"	"	"	S-02

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Gasoline Range Hydrocarbons	113	5.00	mg/kg	10	1607012	07/01/16	07/01/16	EPA 8260B	

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	ND	10.2	mg/kg dry	1	1607006	07/01/16	07/01/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	ND	5.11	"	"	"	"	"	"	
Sodium	ND	5.11	"	"	"	"	"	"	

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Symmetry Oilfield Solutions
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Johnstown CO, 80534

Project: Wasco
Project Number: [none]
Project Manager: Zan Svendsen

Reported:
07/03/16 13:05

Dark
1607009-02 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.00		units	1	1607017	07/03/16	07/03/16	EPA 6020/Mod. USDA60 6(2, 3A)	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.8		%	1	1607005	07/01/16	07/03/16	% calculation	

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Project Number: [none]
Project Manager: Zan Svendsen

Reported:
07/03/16 13:05

Thick
1607009-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1607013	07/01/16	07/02/16	8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		106 %	70-130		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Gasoline Range Hydrocarbons	ND	0.500	mg/kg	1	1607012	07/01/16	07/01/16	EPA 8260B	

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	914	10.7	mg/kg dry	1	1607006	07/01/16	07/01/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	335	5.36	"	"	"	"	"	"	
Sodium	32.5	5.36	"	"	"	"	"	"	

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Project: Wasco
Project Number: [none]
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Reported:
07/03/16 13:05

Thick
1607009-03 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.230		units	1	1607017	07/03/16	07/03/16	EPA 6020/Mod. USDA60 6(2, 3A)	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/30/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	1	1607005	07/01/16	07/03/16	% calculation	

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Project: Wasco
Project Number: [none]
Project Manager: Zan Svendsen

Reported:
07/03/16 13:05

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 1607013 - EPA 3550A

Blank (1607013-BLK1)

Prepared & Analyzed: 07/01/16

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

Surrogate: o-Terphenyl	11.9	"	12.5	95.1	70-130
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LCS (1607013-BS1)

Prepared & Analyzed: 07/01/16

C10-C28 (DRO)	429	50	mg/kg	499	86.1	50-150
C28-C36 (ORO)	291	50	"			50-150

Surrogate: o-Terphenyl	11.8	"	12.5	94.2	70-130
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Matrix Spike (1607013-MS1)

Source: 1607012-01

Prepared & Analyzed: 07/01/16

C10-C28 (DRO)	468	50	mg/kg	499	26.4	88.5	50-150
C28-C36 (ORO)	280	50	"		399		50-150

Surrogate: o-Terphenyl	12.7	"	12.5	102	70-130
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Matrix Spike Dup (1607013-MSD1)

Source: 1607012-01

Prepared & Analyzed: 07/01/16

C10-C28 (DRO)	433	50	mg/kg	499	26.4	81.5	50-150	7.71	20	
C28-C36 (ORO)	353	50	"		399		50-150	23.0	20	QM-07

Surrogate: o-Terphenyl	11.6	"	12.5	92.7	70-130
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Symmetry Oilfield Solutions
1 Industrial Pkwy
Johnstown CO, 80534

Project: Wasco
Project Number: [none]
Project Manager: Zan Svendsen

Reported:
07/03/16 13:05

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 1607012 - EPA 5030 Soil MS

Blank (1607012-BLK1)

Prepared & Analyzed: 07/01/16

Gasoline Range Hydrocarbons	ND	0.500	mg/kg							
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.7	21-167			

LCS (1607012-BS1)

Prepared & Analyzed: 07/01/16

Gasoline Range Hydrocarbons	3.76	0.500	mg/kg				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0400		99.8	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	21-167			

Matrix Spike (1607012-MS1)

Source: 1607012-01

Prepared & Analyzed: 07/01/16

Gasoline Range Hydrocarbons	4.15	0.500	mg/kg		ND		30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0420		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	21-167			

Matrix Spike Dup (1607012-MSD1)

Source: 1607012-01

Prepared & Analyzed: 07/01/16

Gasoline Range Hydrocarbons	4.30	0.500	mg/kg		ND		30-150	3.57	20	
Surrogate: 1,2-Dichloroethane-d4	0.0425		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

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1 Industrial Pkwy
Johnstown CO, 80534

Project: Wasco
Project Number: [none]
Project Manager: Zan Svendsen

Reported:
07/03/16 13:05

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis - Quality Control
Summit Scientific

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

Batch 1607006 - General Preparation

Blank (1607006-BLK1)

Prepared & Analyzed: 07/01/16

Calcium	ND	10.0	mg/kg wet
Magnesium	ND	5.00	"
Sodium	ND	5.00	"

LCS (1607006-BS1)

Prepared & Analyzed: 07/01/16

Calcium	444	10.0	mg/kg wet	500	88.9	82.9-118
Magnesium	506	5.00	"	500	101	77.1-123
Sodium	519	5.00	"	500	104	71-129

Duplicate (1607006-DUP1)

Source: 1607009-01

Prepared & Analyzed: 07/01/16

Calcium	368	11.1	mg/kg dry	329	11.1	200
Magnesium	555	5.57	"	534	3.94	200
Sodium	103	5.57	"	110	6.24	200

Matrix Spike (1607006-MS1)

Source: 1607009-01

Prepared & Analyzed: 07/01/16

Calcium	761	11.1	mg/kg dry	557	329	77.5	75-125
Magnesium	1110	5.57	"	557	534	103	75-125
Sodium	680	5.57	"	557	110	102	75-125

Matrix Spike Dup (1607006-MSD1)

Source: 1607009-01

Prepared & Analyzed: 07/01/16

Calcium	760	11.1	mg/kg dry	557	329	77.3	75-125	0.0884	25
Magnesium	1080	5.57	"	557	534	97.5	75-125	2.81	25
Sodium	675	5.57	"	557	110	101	75-125	0.803	25

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1 Industrial Pkwy
Johnstown CO, 80534

Project: Wasco
Project Number: [none]
Project Manager: Zan Svendsen

Reported:
07/03/16 13:05

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

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

Batch 1607005 - General Preparation

Duplicate (1607005-DUP1) **Source: 1607009-01** Prepared: 07/01/16 Analyzed: 07/03/16

% Solids	90.2	%	89.8	0.444	20
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Symmetry Oilfield Solutions
1 Industrial Pkwy
Johnstown CO, 80534

Project: Wasco
Project Number: [none]
Project Manager: Zan Svendsen

Reported:
07/03/16 13:05

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.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.

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

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