



Sater C23-28D Water Vault Location

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

June 18, 2015

Dan Wade
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Noble: Sater UPV

Enclosed are the results of analyses for samples received by Summit Scientific on 06/17/15 17:45. 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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble: Sater UPV

Project Number: [none]
Project Manager: Dan Wade

Reported:
06/18/15 07:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@6.5'	1506153-01	Soil	06/17/15 13:27	06/17/15 17:45
SS02@2.5'	1506153-02	Soil	06/17/15 12:39	06/17/15 17:45

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble: Sater UPV

Project Number: [none]
Project Manager: Dan Wade

Reported:
06/18/15 07:02

741 Corporate Circle Suite I Golden, Colorado 80401
303-277-9310 303-374-5933 Fax

Client: Noble/Tasman

Page 1 of 1

Address:

City/State/Zip: _____

Phone:

Bay:

Sampler Name:

Matt Petersen

Project Manager:

Dan Wade, Invoice:

Raul Sanchez

E-Mail:

San Mateo, invoice.	1990
Noble email	114

Project Name:

Noble: Sater UPV

Project Number:

[illegible]



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble: Sater UPV

Project Number: [none]
Project Manager: Dan Wade

Reported:
06/18/15 07:02

SS01@6.5'
1506153-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/17/15 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1506221	06/17/15	06/17/15	8015M	

Date Sampled: **06/17/15 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/17/15 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1506222	06/17/15	06/17/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/17/15 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

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Project: Noble: Sater UPV
Project Number: [none]
Project Manager: Dan Wade

Reported:
06/18/15 07:02

SS02@2.5'
1506153-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/17/15 12:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1506221	06/17/15	06/17/15	8015M	

Date Sampled: **06/17/15 12:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		117 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/17/15 12:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1506222	06/17/15	06/17/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/17/15 12:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

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

Date Sampled: **06/17/15 12:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
06/18/15 07:02

SS02@2.5'
1506153-02 (Soil)

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

Calcium	710	10.9 mg/kg dry	1	1506215	06/17/15	06/17/15	EPA 6020/Mod. USDA60 6(2, 3A)
Magnesium	527	5.45	"	"	"	"	"
Sodium	200	5.45	"	"	"	"	"

Date Sampled: 06/17/15 12:39

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.39		units	"	1506228	06/18/15	06/18/15	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 06/17/15 12:39

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.97	0.0100	mmhos/cm	1	1506227	06/17/15	06/17/15	SM 2510B	

Date Sampled: 06/17/15 12:39

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.45	0.100	pH Units	"	1506224	06/17/15	06/17/15	EPA 9045	

Date Sampled: 06/17/15 12:39

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.1		%	"	1506229	06/18/15	06/18/15	% calculation	

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Project: Noble: Sater UPV
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Reported:
06/18/15 07:02

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 1506221 - EPA 3550A

Blank (1506221-BLK1)

Prepared & Analyzed: 06/17/15

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 12.7 " 12.2 104 30-150

LCS (1506221-BS1)

Prepared & Analyzed: 06/17/15

C10-C28 (DRO) 464 50 mg/kg 501 92.6 73-134

Surrogate: o-Terphenyl 13.2 " 12.2 108 30-150

Matrix Spike (1506221-MS1)

Source: 1506148-01

Prepared & Analyzed: 06/17/15

C10-C28 (DRO) 485 50 mg/kg 469 45.0 93.8 50-148

Surrogate: o-Terphenyl 12.6 " 11.4 110 30-150

Matrix Spike Dup (1506221-MSD1)

Source: 1506148-01

Prepared & Analyzed: 06/17/15

C10-C28 (DRO) 471 50 mg/kg 475 45.0 89.7 50-148 2.85 13

Surrogate: o-Terphenyl 13.5 " 11.6 117 30-150

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Project: Noble: Sater UPV
Project Number: [none]
Project Manager: Dan Wade

Reported:
06/18/15 07:02

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 1506222 - EPA 5030 Soil MS

Blank (1506222-BLK1)

Prepared & Analyzed: 06/17/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0460		"	0.0396	116	23-173				
Surrogate: Toluene-d8	0.0388		"	0.0400	96.9	20-170				
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400	104	21-167				

LCS (1506222-BS1)

Prepared & Analyzed: 06/17/15

Naphthalene	ND	0.010	mg/kg			66-138				
Benzene	0.108	0.0020	"	0.100	108	58-130				
Toluene	0.115	0.0050	"	0.100	115	61-134				
Ethylbenzene	0.129	0.0050	"	0.0992	130	74-139				
m,p-Xylene	0.253	0.010	"	0.200	127	73-137				
o-Xylene	0.130	0.0050	"	0.0984	133	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0447		"	0.0396	113	23-173				
Surrogate: Toluene-d8	0.0399		"	0.0400	99.8	20-170				
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400	103	21-167				

Matrix Spike (1506222-MS1)

Source: 1506153-01

Prepared & Analyzed: 06/17/15

Naphthalene	ND	0.010	mg/kg		ND	10-158				
Benzene	0.111	0.0020	"	0.0988	ND	113	30-131			
Toluene	0.119	0.0050	"	0.0988	ND	120	30-134			
Ethylbenzene	0.131	0.0050	"	0.0980	ND	134	22-153			
m,p-Xylene	0.258	0.010	"	0.197	ND	131	10-159			
o-Xylene	0.134	0.0050	"	0.0972	ND	138	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0458		"	0.0391	117	23-173				
Surrogate: Toluene-d8	0.0402		"	0.0395	102	20-170				
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0395	104	21-167				

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Volatile Organic Compounds by EPA Method 8260B - Quality Control
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Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1506222 - EPA 5030 Soil MS

Matrix Spike Dup (1506222-MSD1)		Source: 1506153-01			Prepared & Analyzed: 06/17/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.100	0.0020	"	0.0912	ND	110	30-131	10.1	34	
Toluene	0.106	0.0050	"	0.0912	ND	116	30-134	11.6	30	
Ethylbenzene	0.120	0.0050	"	0.0905	ND	133	22-153	8.85	24	
m,p-Xylene	0.236	0.010	"	0.182	ND	130	10-159	8.80	68	
o-Xylene	0.122	0.0050	"	0.0898	ND	136	31-151	8.81	38	
Surrogate: 1,2-Dichloroethane-d4		0.0425	"	0.0361		118	23-173			
Surrogate: Toluene-d8		0.0361	"	0.0365		99.0	20-170			
Surrogate: 4-Bromofluorobenzene		0.0373	"	0.0365		102	21-167			

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Project Number: [none]
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Reported:
06/18/15 07:02

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis - Quality Control
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Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1506215 - EPA 3050B

Blank (1506215-BLK1)

Prepared & Analyzed: 06/17/15

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

LCS (1506215-BS1)

Prepared & Analyzed: 06/17/15

Calcium	493	10.0	mg/kg wet	500	98.5	82.9-118
Magnesium	538	5.00	"	500	108	77.1-123
Sodium	558	5.00	"	500	112	71-129

Duplicate (1506215-DUP1)

Source: 1506149-02

Prepared & Analyzed: 06/17/15

Calcium	84.3	10.0	mg/kg wet	70.5	17.8	200
Magnesium	81.7	5.00	"	67.0	19.7	200
Sodium	42.6	5.00	"	41.8	1.92	200

Matrix Spike (1506215-MS1)

Source: 1506149-02

Prepared & Analyzed: 06/17/15

Calcium	630	10.0	mg/kg wet	500	70.5	112	75-125
Magnesium	556	5.00	"	500	67.0	97.7	75-125
Sodium	526	5.00	"	500	41.8	96.9	75-125

Matrix Spike Dup (1506215-MSD1)

Source: 1506149-02

Prepared & Analyzed: 06/17/15

Calcium	559	10.0	mg/kg wet	500	70.5	97.6	75-125	11.9	25
Magnesium	558	5.00	"	500	67.0	98.3	75-125	0.465	25
Sodium	528	5.00	"	500	41.8	97.3	75-125	0.443	25

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Denver CO, 80221

Project: Noble: Sater UPV
Project Number: [none]
Project Manager: Dan Wade

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06/18/15 07:02

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 1506224 - General Preparation

LCS (1506224-BS1)

Prepared & Analyzed: 06/17/15

pH	7.95	0.100	pH Units	8.00	99.4	95-105
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Duplicate (1506224-DUP1)

Source: 1506153-02

Prepared & Analyzed: 06/17/15

pH	7.62	0.100	pH Units	7.45	2.26	20
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Batch 1506227 - General Preparation

Blank (1506227-BLK1)

Prepared & Analyzed: 06/17/15

Specific Conductance (EC)	ND	0.0100	mmhos/cm
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LCS (1506227-BS1)

Prepared & Analyzed: 06/17/15

Specific Conductance (EC)	481	0.0100	mmhos/cm	500	96.2	90-110
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Duplicate (1506227-DUP1)

Source: 1506153-02

Prepared & Analyzed: 06/17/15

Specific Conductance (EC)	1.85	0.0100	mmhos/cm	1.97	6.67	20
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Batch 1506229 - General Preparation

Duplicate (1506229-DUP1)

Source: 1506153-02

Prepared & Analyzed: 06/18/15

% Solids	77.8		%	79.1	1.66	20
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6899 Pecos Street
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Project: Noble: Sater UPV

Project Number: [none]
Project Manager: Dan Wade

Reported:
06/18/15 07:02

Notes and Definitions

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