



Howard USX A9-10,11,16 Locations

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Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

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September 18, 2015

Paul Henehan
Fremont Environmental
1630 South College Avenue
Ft. Collins, CO 80525

RE: Noble - Howard USX A9-10, 11, 11

Enclosed are the results of analyses for samples received by Summit Scientific on 09/17/15 18:13. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury
President



Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E. VAULT, NORTH WALL 3 FT	1509147-01	Soil	09/17/15 00:00	09/17/15 18:13
E. VAULT, FLOOR 5 FT	1509147-02	Soil	09/17/15 00:00	09/17/15 18:13
CENTER VAULT, NORHT WALL 3 FT	1509147-03	Soil	09/17/15 00:00	09/17/15 18:13
CENTER VAULT, FLOOR 5 FT	1509147-04	Soil	09/17/15 00:00	09/17/15 18:13
W. VAULT, WEST WALL 3 FT	1509147-05	Soil	09/17/15 00:00	09/17/15 18:13
W. VAULT, FLOOR 5 FT	1509147-06	Soil	09/17/15 00:00	09/17/15 18:13

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Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

Summit Scientific 1509147

S₂

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

Page 1 of 1

Client: FREMONT / NOBLE Project Manager: HENEHAN
Address: _____ E-Mail: _____
City/State/Zip: _____
Phone: 303/256 8714 Fax: _____ Project Name: Noble Howard USX A9-10, 11, 11
Sampler Name: HENEHAN Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	GRE/DEO	AM/HTH	SAF	EC	pH	
1	E. VAULT, N. WALL 3FT	9/17/15		1			✓			✓			✓	✓	✓	✓			
2	E. VAULT, FLOOR 5FT			1			✓			✓			✓	✓	✓	✓			
3	CENTER VAULT, N. WALL 3FT			1			✓			✓			✓	✓	✓	✓			
4	CENTER VAULT, FLOOR 5FT			1			✓			✓			✓	✓	✓	✓			
5	W. VAULT, W. WALL 3FT			1			✓			✓			✓	✓	✓	✓			
6	W. VAULT, FLOOR 5FT			1			✓			✓			✓	✓	✓	✓			
7																			
8																			
9																			
10																			

Relinquished by: <u>PH/KE</u>	Date/Time: <u>9/17/15 17:33</u>	Received by: <u>PH</u>	Date/Time: <u>9-17-15 17:33</u>	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/> 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <input type="checkbox"/> Standard	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours <input type="checkbox"/> <u>FR. AMPL. 2.</u>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <u>17.28</u>	
				Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

**E. VAULT, NORTH WALL 3 FT
1509147-01 (Soil)**

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1509167	09/17/15	09/17/15	8015M	

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1509166	09/17/15	09/17/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	21-167		"	"	"	"	

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

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

**E. VAULT, NORTH WALL 3 FT
1509147-01 (Soil)**

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	462	11.0	mg/kg dry	1	1509164	09/17/15	09/17/15	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	120	5.48	"	"	"	"	"	"	
Sodium	17.2	5.48	"	"	"	"	"	"	

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.180		units	"	1509170	09/18/15	09/18/15	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.322	0.0100	mmhos/cm	1	1509168	09/17/15	09/17/15	SM 2510B	

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.95	0.100	pH Units	"	1509169	09/17/15	09/17/15	EPA 9045	

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.2		%	"	1509165	09/17/15	09/18/15	% calculation	

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Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

E. VAULT, FLOOR 5 FT
1509147-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1509167	09/17/15	09/17/15	8015M	

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		112 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1509166	09/17/15	09/17/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	21-167		"	"	"	"	

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Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

**CENTER VAULT, NORHT WALL 3 FT
1509147-03 (Soil)**

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1509167	09/17/15	09/17/15	8015M	

Date Sampled: **09/17/15 00:00**

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: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1509166	09/17/15	09/17/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.2 %	21-167		"	"	"	"	

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

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Ft. Collins CO, 80525

Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

**CENTER VAULT, NORHT WALL 3 FT
1509147-03 (Soil)**

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	626	11.5	mg/kg dry	1	1509164	09/17/15	09/17/15	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	157	5.73	"	"	"	"	"	"	
Sodium	21.4	5.73	"	"	"	"	"	"	

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.200		units	"	1509170	09/18/15	09/18/15	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.424	0.0100	mmhos/cm	1	1509168	09/17/15	09/17/15	SM 2510B	

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.86	0.100	pH Units	"	1509169	09/17/15	09/17/15	EPA 9045	

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.3		%	"	1509165	09/17/15	09/18/15	% calculation	

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Fremont Environmental
1630 South College Avenue
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Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

**CENTER VAULT, FLOOR 5 FT
1509147-04 (Soil)**

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1509167	09/17/15	09/17/15	8015M	

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		115 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1509166	09/17/15	09/17/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

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Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

**W. VAULT, WEST WALL 3 FT
1509147-05 (Soil)**

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1509167	09/17/15	09/17/15	8015M	

Date Sampled: **09/17/15 00:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1509166	09/17/15	09/17/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.6 %	21-167		"	"	"	"	

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

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

**W. VAULT, WEST WALL 3 FT
1509147-05 (Soil)**

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	620	11.2	mg/kg dry	1	1509164	09/17/15	09/17/15	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	232	5.61	"	"	"	"	"	"	
Sodium	28.4	5.61	"	"	"	"	"	"	

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.250		units	"	1509170	09/18/15	09/18/15	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.394	0.0100	mmhos/cm	1	1509168	09/17/15	09/17/15	SM 2510B	

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.78	0.100	pH Units	"	1509169	09/17/15	09/17/15	EPA 9045	

Date Sampled: 09/17/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.1		%	"	1509165	09/17/15	09/18/15	% calculation	

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Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

W. VAULT, FLOOR 5 FT
1509147-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1509167	09/17/15	09/17/15	8015M	

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		109 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1509166	09/17/15	09/17/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **09/17/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.8 %	21-167		"	"	"	"	

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1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1509167 - EPA 3550A

Blank (1509167-BLK1)

Prepared & Analyzed: 09/17/15

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	12.2		"	12.2		99.6	30-150				

LCS (1509167-BS1)

Prepared & Analyzed: 09/17/15

C10-C28 (DRO)	523	50	mg/kg	499		105	73-134				
<i>Surrogate: o-Terphenyl</i>	12.3		"	12.2		101	30-150				

Matrix Spike (1509167-MS1)

Source: 1509146-01

Prepared & Analyzed: 09/17/15

C10-C28 (DRO)	406	50	mg/kg	444	17.7	87.5	50-148				
<i>Surrogate: o-Terphenyl</i>	10.9		"	10.9		100	30-150				

Matrix Spike Dup (1509167-MSD1)

Source: 1509146-01

Prepared: 09/17/15 Analyzed: 09/18/15

C10-C28 (DRO)	428	50	mg/kg	454	17.7	90.2	50-148	5.19		13	
<i>Surrogate: o-Terphenyl</i>	11.6		"	11.1		104	30-150				

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Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

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

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

Batch 1509166 - EPA 5030 Soil MS

Blank (1509166-BLK1)

Prepared & Analyzed: 09/17/15

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	50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0473</i>		<i>"</i>	<i>0.0396</i>		<i>120</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0421</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0430</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>21-167</i>			

LCS (1509166-BS1)

Prepared & Analyzed: 09/17/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.116	0.0020	"	0.100		116	58-130			
Toluene	0.105	0.0050	"	0.100		105	61-134			
Ethylbenzene	0.117	0.0050	"	0.0992		118	74-139			
m,p-Xylene	0.227	0.010	"	0.200		114	73-137			
o-Xylene	0.122	0.0050	"	0.0984		124	73-141			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0471</i>		<i>"</i>	<i>0.0396</i>		<i>119</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0426</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0435</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>21-167</i>			

Matrix Spike (1509166-MS1)

Source: 1509146-01

Prepared & Analyzed: 09/17/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.117	0.0020	"	0.0980	ND	120	30-131			
Toluene	0.103	0.0050	"	0.0980	ND	105	30-134			
Ethylbenzene	0.127	0.0050	"	0.0973	0.00878	121	22-153			
m,p-Xylene	0.231	0.010	"	0.196	0.00794	114	10-159			
o-Xylene	0.123	0.0050	"	0.0965	ND	127	31-151			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0467</i>		<i>"</i>	<i>0.0388</i>		<i>120</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0408</i>		<i>"</i>	<i>0.0392</i>		<i>104</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0429</i>		<i>"</i>	<i>0.0392</i>		<i>110</i>	<i>21-167</i>			

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Project Number: [none]
Project Manager: Paul Henehan

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

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

Batch 1509166 - EPA 5030 Soil MS

Matrix Spike Dup (1509166-MSD1)	Source: 1509146-01			Prepared & Analyzed: 09/17/15						
Naphthalene	ND	0.010	mg/kg	ND	ND	119	10-158	7.41	42	
Benzene	0.109	0.0020	"	0.0919	ND	105	30-131	6.39	30	
Toluene	0.0962	0.0050	"	0.0919	ND	121	30-134	6.29	24	
Ethylbenzene	0.119	0.0050	"	0.0912	0.00878	113	22-153	7.36	68	
m,p-Xylene	0.215	0.010	"	0.183	0.00794	126	10-159	7.05	38	
o-Xylene	0.114	0.0050	"	0.0904	ND	108	31-151			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0445</i>		<i>"</i>	<i>0.0364</i>		<i>122</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0387</i>		<i>"</i>	<i>0.0368</i>		<i>105</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0397</i>		<i>"</i>	<i>0.0368</i>		<i>108</i>	<i>21-167</i>			

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Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

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

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

Batch 1509164 - General Preparation

Blank (1509164-BLK1)

Prepared & Analyzed: 09/17/15

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

LCS (1509164-BS1)

Prepared & Analyzed: 09/17/15

Calcium	581	10.0	mg/kg wet	500	116	82.9-118				
Magnesium	523	5.00	"	500	105	77.1-123				
Sodium	519	5.00	"	500	104	71-129				

Duplicate (1509164-DUP1)

Source: 1509147-01

Prepared & Analyzed: 09/17/15

Calcium	484	11.0	mg/kg dry	462			4.67	200		
Magnesium	117	5.48	"	120			2.41	200		
Sodium	16.5	5.48	"	17.2			4.20	200		

Matrix Spike (1509164-MS1)

Source: 1509147-01

Prepared & Analyzed: 09/17/15

Calcium	905	11.0	mg/kg dry	548	462	80.9	75-125			
Magnesium	594	5.48	"	548	120	86.4	75-125			
Sodium	507	5.48	"	548	17.2	89.3	75-125			

Matrix Spike Dup (1509164-MSD1)

Source: 1509147-01

Prepared & Analyzed: 09/17/15

Calcium	1020	11.0	mg/kg dry	548	462	102	75-125	12.2	25	
Magnesium	646	5.48	"	548	120	95.9	75-125	8.43	25	
Sodium	554	5.48	"	548	17.2	97.9	75-125	8.94	25	

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Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
Project Manager: Paul Henehan

Reported:
09/18/15 07:51

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

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

Batch 1509165 - General Preparation

Duplicate (1509165-DUP1)	Source: 1509147-01			Prepared: 09/17/15 Analyzed: 09/18/15							
% Solids	90.9		%		91.2				0.329	20	

Batch 1509168 - General Preparation

Blank (1509168-BLK1)				Prepared & Analyzed: 09/17/15							
Specific Conductance (EC)	ND	0.0100	mmhos/cm								

LCS (1509168-BS1)				Prepared & Analyzed: 09/17/15							
Specific Conductance (EC)	0.988	0.00200	mmhos/cm	1.00	98.8	90-110					

Duplicate (1509168-DUP1)	Source: 1509147-03			Prepared & Analyzed: 09/17/15							
Specific Conductance (EC)	0.399	0.0100	mmhos/cm		0.424				6.04	20	

Batch 1509169 - General Preparation

LCS (1509169-BS1)				Prepared & Analyzed: 09/17/15							
pH	6.03	0.100	pH Units	6.00	100	95-105					

Duplicate (1509169-DUP1)	Source: 1509147-03			Prepared & Analyzed: 09/17/15							
pH	8.90	0.100	pH Units		8.86				0.450	20	

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Project: Noble - Howard USX A9-10, 11, 11

Project Number: [none]
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Reported:
09/18/15 07:51

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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