

State of Colorado
Oil and Gas Conservation Commission



1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax: (303)894-2109

FOR OGCC USE ONLY

REM 8692
Received 10/24/2015
Document 2315739

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☒ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☐ Other (describe): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10112

Name of Operator: Foundation Energy Management, LLC

Address: 16000 Dallas Parkway #875

City: Dallas State: TX Zip: 75248

Contact Name and Telephone:

Rachel Grant

No: 918-526-5592

Fax: 918-585-1660

API Number: 05-057-61240

County: Jackson

Facility Name: Allard 30-8-5

Facility Number: 115269

Well Name: Allard 30-8-5

Well Number: 30-8-5

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SENE Sec 30 T10N R79W Latitude: 40.812241 Longitude: -106.301789

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Crude Oil

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Grazing Land

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Dobrow Loam

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Irrigation channel approximately 100' northwest of tank battery; intermittent surface water ponding northeast of pit depending on season and precipitation

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):

- ☒ Soils
☐ Vegetation
☐ Groundwater
☐ Surface Water

Extent of Impact:

East side of pit, base of pit.

How Determined:

Soil samples collected May 2013; re-sampled October 2014

REMEDIALATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

DOC dug out pit in late 2012, but impacted soils were present around the perimeter of the pit. As a result, Foundation Energy arranged for the excavation, treatment, and reclamation of the pit location in October 2014.

Describe how source is to be removed:

Water was initially present in the pit and was removed using a submersible pump, then containerized in the produced water tank at the location. After the pit was sufficiently de-watered, excavation of the pit base and sidewalls proceeded, although the continuous infiltration of water at the excavation base necessitated pumping. Impacted soil was treated with hydrogen peroxide solution and replaced into the pit after analytical samples confirmed that petroleum impacts had been successfully removed. Approximately 20 yards of wet soil dredged from the pit bottom was placed in a rolloff container. The rolloff was disposed of by Twin Enviro Services. Per instruction of the COGCC, activated carbon was not used during pit closure activities.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Pit closure activities began October 20th, 2014. The pit was de-watered prior to and during excavation activities due to ongoing water infiltration. Pumped water was containerized and disposed of by Foundation Energy. Tasman Geosciences excavated the base and perimeter of the pit. Impacted soils were physically mixed with hydrogen peroxide to remove hydrocarbon contamination. Approximately 300 cubic yards (yd3) of impacted soil was treated using an excavator. Three soil samples (SP1-1, SP2-1, and SP3-1) were collected subsequent to treatment and analyzed for BTEX, TPH, EC, SAR, and pH. Sidewall samples were collected from the north, south, east and west pit walls at 3.5' bgs after excavating and treating impacted sidewall soils. The sidewall samples were below the Table 910-1 standard for BTEX and TPH. After a site visit from Kris Neidel with the COGCC, it was determined that a sample did not need to be collected from beneath the produced water tank, as mentioned in the Form 27 COA's. A groundwater sample was also collected from the water infiltrating the pit. The sample (GW02) was below the Table 910-1 standard for BTEX. A soil sample was not collected from the base of the pit due to the presence of groundwater. The groundwater sample GW02 was collected in lieu of the base soil sample.

Submit Page 2 with Page 1



REMEDIATION WORKPLAN (Cont.)

Tracking Number: _____

Name of Operator: Foundation EnergyOGCC Operator No: 10112Received Date: 12/11/14Well Name & No: Allard 1Facility Name & No: Pit 115269 Rem 8692

OGCC Employee: _____

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

A groundwater sample (GW02) was collected from the water which infiltrated the pit subsequent to dewatering. Sample results were below the Table 910-1 standard for BTEX. Surface water located northeast of the pit was not impacted during the excavation activities.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

Analytical results of the treated soil (SP1-1, SP2-1, and SP3-1) were below the COGCC Table 910-1 standards. Sidewall samples after excavation were below the Table 910-1 standard for BTEX and TPH. Treated soil was replaced in the base of the pit. The pit was then backfilled to grade with clean fill provided by Corkle Construction, compacted and recontoured as much as possible (the soil in the center of the excavation required additional drying time). Kris Neidel of the COGCC suggested re-seeding the excavation in the spring of 2015. A seed bed will be prepared, amended as necessary, and the area reseeded with a weed free mix conforming with surrounding area.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☒ Y ☐ N If yes, describe:

No further site investigation is required as sidewall samples and the groundwater sample were in compliance with the Table 910-1 standard for BTEX and TPH. Soil sample data from 2013 is included to show that metals did not exceed the Table 910-1 standards in pit samples collected at that time.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Water pumped from the pit during de-watering activities was disposed of by Foundation Energy. Approximately 20 cubic yards of soil that was mucked from the base of the pit was placed in a 20-cubic yard rolloff, and disposed of at the Twin Enviro Services facility in Milner, CO. Per the request of the COGCC, absorbent polymer was not used to solidify the soil further in either the pit or the rolloff container.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: May 2013 Date Site Investigation Completed: _____ Date Remediation Plan Submitted: 9/24/14Remediation Start Date: October 15, 2014 Anticipated Completion Date: October 31, 2014 Actual Completion Date: 10/24/14

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Rachel Grant

Signed: _____

Title: Sr. HSE/Regulatory TechDate: 10/13/2014OGCC Approved: Kris NeidelTitle: EPSDate: 10/28/15

Foundation Energy
Allard 30-8-5
Pit Closure
10/24/14

View Looking
North

Latitude:
 $40^{\circ}48'38.47''$ N
Longitude:
 $106^{\circ}17'59.04''$ W



View Looking East

Latitude:
 $40^{\circ}48'38.69''$ N
Longitude:
 $106^{\circ}17'59.54''$ W



Foundation Energy
Allard 30-8-5
Pit Closure
10/24/14

View Looking
South

Latitude:
40°48'39.39" N
Longitude:
106°17'59.59" W



View Looking West

Latitude:
40°48'38.90" N
Longitude:
106°17'58.98" W





PROJECT NO:
DRAWN BY: AMB
DATE: 11/5/14

Facility
Foundation Energy
Allard 30-8-5
Jackson County, CO

LEGEND:
— — — Excavation Extent
● Soil Sample Location
● Groundwater Sample Location



Excavation Extent &
Sample Locations

TABLE 1
ALLARD 30-8-5
BTEX TPH SOIL SAMPLE RESULTS SUMMARY TABLE
FOUNDATION ENERGY MANAGEMENT LLC

Sample ID	Date Sampled	Depth (Feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVPH - GRO (mg/kg)	TEPH - DRO (mg/kg)
SSN-3.5	10/20/2014	3.5	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50
SSE-3.5	10/20/2014	3.5	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50
SSS-3.5	10/20/2014	3.5	<0.0018	<0.0044	<0.0044	<0.0044	<0.44	<50
SSW-3.5	10/22/2014	3.5	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50
SP1-1	10/22/2014	Comp	<0.0020	<0.0050	<0.0050	<0.0050	2.1	<50
SP2-1	10/22/2014	Comp	<0.0020	<0.0050	<0.0050	<0.0050	3.7	<50
SP3-1	10/23/2014	Comp	<0.0018	<0.0045	<0.0045	<0.0045	1.2	<50
COGCC standards for soil (mg/kg)			0.17	85	100	175	500	

Notes:

TVPH - GRO: Total volatile petroleum hydrocarbons - Gasoline Range Organics

TEPH - DRO: Total extractable petroleum hydrocarbons - Diesel Range Organics

TEPH - ORO: Total extractable petroleum hydrocarbons - Oil Range Organics

mg/kg= Milligrams per kilogram bgs - Below ground surface

Bold values indicate an exceedance of the COGCC soil standards for the Site.

Comp = Composite sample

TABLE 2
ALLARD 30-8-5
PARAMETERS SOIL SAMPLE RESULTS SUMMARY TABLE
FOUNDATION ENERGY MANAGEMENT LLC

Sample ID	Date Sampled	Depth (Feet bgs)	SAR	Specific Conductance (mmhos/cm)	pH
SSN-3.5	10/20/2014	3.5	2.72	1.54	9.61
SSE-3.5	10/20/2014	3.5	1.33	0.189	7.98
SSS-3.5	10/20/2014	3.5	0.561	0.0986	7.8
SSW-3.5	10/22/2014	3.5	1.03	0.736	8.51
SP1-1	10/22/2014	Comp	1.92	1.32	8.82
SP2-1	10/22/2014	Comp	1.2	0.906	8.24
COGCC standards for soil			<12⁵	<4	6-9

Notes:

bgs - Below ground surface.

Bold values indicate an exceedance of the COGCC soil standards for the Site.

TABLE 3
ALLARD 30-8-5
GROUNDWATER SAMPLE RESULTS
FOUNDATION ENERGY MANAGEMENT LLC

Sample ID	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
GW02	10/21/2014	<1.0	<1.0	1.7	<1.0
CGWQS (ug/L)		5	560	700	1,400

Notes:

CGWQS = Colorado Groundwater Quality Standards

Bold values indicate an exceedance of the CGWQS groundwater standards for the Site.

ug/L= Micrograms per liter.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 24, 2014

Mike Lindstrom
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Allard 30-8-5

Enclosed are the results of analyses for samples received by Summit Scientific on 10/21/14 17:50. 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: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SSN-3.5	1410181-01	Soil	10/20/14 18:00	10/21/14 17:50
SSE-3.5	1410181-02	Soil	10/20/14 18:19	10/21/14 17:50
SSS-3.5	1410181-03	Soil	10/21/14 11:00	10/21/14 17:50
GW02	1410181-04	Water	10/21/14 12:30	10/21/14 17:50

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

Summit Scientific 1410181

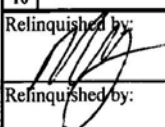
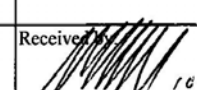
S₂

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

Page 1 of 1

Client: Tasman Geosciences Project Manager: Mike Lindstrom
Address: _____ E-Mail: _____
City/State/Zip: _____
Phone: _____ Fax: _____ Project Name: _____
Sampler Name: _____ 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)	G-BTEX	ORO	SAR/EC/PH	BTEX		
1	SSN-3.5	10/20/14	1800	1			X			X				X	X	X		
2	SSE-3.5	10/20/14	1819	1			X			X				X	X	X		
3	SSS-3.5	10/21/14	1100	2			X			X				X	X	X		
4	G-WO2	10/21/14	1230	3	X				X								X	
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: 	Date/Time: 10/21/14 1750	Received by: _____	Date/Time: _____	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours _____ 24 hours _____ Standard _____ 48 hours _____ Sample Integrity: Temperature Upon Receipt: 4.1 Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes:
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____		
Relinquished by: _____	Date/Time: _____	Received by: 	Date/Time: 10-21-14 1750		

www.s2scientific.com

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

SSN-3.5
1410181-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/20/14 18:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1410225	10/21/14	10/21/14	8015M	

Date Sampled: 10/20/14 18:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/20/14 18:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1410224	10/21/14	10/21/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/20/14 18:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		86.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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

Date Sampled: 10/20/14 18:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

SSN-3.5
1410181-01 (Soil)

Summit Scientific

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

Calcium	2200	11.5 mg/kg dry	1	1410229	10/22/14	10/23/14	EPA 6020/Mod. USDA60 6(2, 3A)
Magnesium	509	5.73	"	"	"	"	"
Sodium	545	5.73	"	"	"	"	"

Date Sampled: 10/20/14 18:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.72		units	"	1410271	10/24/14	10/24/14	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/20/14 18:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.54	0.0100 mmhos/cm		1	1410232	10/22/14	10/22/14	SM 2510B	

Date Sampled: 10/20/14 18:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.61	0.100 pH Units		"	1410231	10/22/14	10/22/14	EPA 9045	

Date Sampled: 10/20/14 18:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.8		%	"	1410221	10/21/14	10/22/14	% calculation	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

SSE-3.5
1410181-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/20/14 18:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1410225	10/21/14	10/21/14	8015M	

Date Sampled: 10/20/14 18:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		106 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/20/14 18:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1410224	10/21/14	10/21/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/20/14 18:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		82.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.6 %	21-167		"	"	"	"	

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

Date Sampled: 10/20/14 18:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

SSE-3.5
1410181-02 (Soil)

Summit Scientific

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

Calcium	20.7	9.78 mg/kg dry	1	1410229	10/22/14	10/23/14	EPA 6020/Mod. USDA60 6(2, 3A)
Magnesium	52.3	4.89	"	"	"	"	"
Sodium	49.9	4.89	"	"	"	"	"

Date Sampled: 10/20/14 18:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.33		units	"	1410271	10/24/14	10/24/14	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/20/14 18:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.189	0.0100 mmhos/cm		1	1410232	10/22/14	10/22/14	SM 2510B	

Date Sampled: 10/20/14 18:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.98	0.100 pH Units		"	1410231	10/22/14	10/22/14	EPA 9045	

Date Sampled: 10/20/14 18:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.5		%	"	1410221	10/21/14	10/22/14	% calculation	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

SSS-3.5
1410181-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/21/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1410225	10/21/14	10/21/14	8015M	

Date Sampled: 10/21/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/21/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0018	mg/kg	1	1410224	10/21/14	10/21/14	EPA 8260B	
Toluene	ND	0.0044	"	"	"	"	"	"	
Ethylbenzene	ND	0.0044	"	"	"	"	"	"	
Xylenes (total)	ND	0.0044	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.44	"	"	"	"	"	"	

Date Sampled: 10/21/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		83.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	21-167		"	"	"	"	

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

Date Sampled: 10/21/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

SSS-3.5
1410181-03 (Soil)

Summit Scientific

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.7	11.3	mg/kg dry	1	1410229	10/22/14	10/23/14	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	24.4	5.64	"	"	"	"	"	"	
Sodium	16.8	5.64	"	"	"	"	"	"	

Date Sampled: 10/21/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.561		units	"	1410271	10/24/14	10/24/14	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/21/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0986	0.0100	mmhos/cm	1	1410232	10/22/14	10/22/14	SM 2510B	

Date Sampled: 10/21/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.80	0.100	pH Units	"	1410231	10/22/14	10/22/14	EPA 9045	

Date Sampled: 10/21/14 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.7		%	"	1410221	10/21/14	10/22/14	% calculation	

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

GW02
1410181-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/14 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1410226	10/21/14	10/21/14	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	1.7	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: **10/21/14 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		85.8 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		94.9 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.2 %		45-146		"	"	"	"	

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

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 1410225 - EPA 3550A

Blank (1410225-BLK1)

Prepared & Analyzed: 10/21/14

C10-C28 (DRO) ND 50 mg/kg

LCS (1410225-BS1)

Prepared & Analyzed: 10/21/14

C10-C28 (DRO) 641 50 mg/kg 501 128 73-134

Matrix Spike (1410225-MS1)

Source: 1410179-01

Prepared & Analyzed: 10/21/14

C10-C28 (DRO) 560 50 mg/kg 477 38.5 109 50-148

Matrix Spike Dup (1410225-MSD1)

Source: 1410179-01

Prepared & Analyzed: 10/21/14

C10-C28 (DRO) 567 50 mg/kg 472 38.5 112 50-148 1.20 13

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

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 1410224 - EPA 5030 Soil MS

Blank (1410224-BLK1)

Prepared & Analyzed: 10/21/14

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	0.0317		"	0.0396		80.2	23-173			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	21-167			

LCS (1410224-BS1)

Prepared & Analyzed: 10/21/14

Benzene	0.115	0.0020	mg/kg	0.100		115	58-130			
Toluene	0.126	0.0050	"	0.100		126	61-134			
Ethylbenzene	0.126	0.0050	"	0.0992		127	74-139			
m,p-Xylene	0.247	0.010	"	0.200		124	73-137			
o-Xylene	0.122	0.0050	"	0.0984		124	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0319		"	0.0396		80.5	23-173			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		93.9	21-167			

Matrix Spike (1410224-MS1)

Source: 1410179-01

Prepared & Analyzed: 10/21/14

Benzene	0.107	0.0020	mg/kg	0.0914	ND	117	30-131			
Toluene	0.119	0.0050	"	0.0914	ND	130	30-134			
Ethylbenzene	0.116	0.0050	"	0.0907	ND	128	22-153			
m,p-Xylene	0.229	0.010	"	0.182	ND	126	10-159			
o-Xylene	0.117	0.0050	"	0.0899	ND	130	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0312		"	0.0362		86.2	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0366		108	20-170			
Surrogate: 4-Bromofluorobenzene	0.0354		"	0.0366		96.9	21-167			

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

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 1410224 - EPA 5030 Soil MS

Matrix Spike Dup (1410224-MSD1)				Source: 1410179-01		Prepared & Analyzed: 10/21/14				
Benzene	0.105	0.0018	mg/kg	0.0904	ND	116	30-131	2.17	34	
Toluene	0.116	0.0045	"	0.0904	ND	129	30-134	1.88	30	
Ethylbenzene	0.118	0.0045	"	0.0897	ND	131	22-153	1.24	24	
m,p-Xylene	0.232	0.0090	"	0.180	ND	128	10-159	1.24	68	
o-Xylene	0.118	0.0045	"	0.0890	ND	133	31-151	0.950	38	
Surrogate: 1,2-Dichloroethane-d4	0.0298		"	0.0358		83.1	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0362		112	20-170			
Surrogate: 4-Bromofluorobenzene	0.0352		"	0.0362		97.4	21-167			

Batch 1410226 - EPA 5030 Water MS

Blank (1410226-BLK1)				Prepared & Analyzed: 10/21/14						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.4		"	13.2		86.5	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.0	45-149			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.5	45-146			
LCS (1410226-BS1)				Prepared & Analyzed: 10/21/14						
Benzene	40.6	1.0	ug/l	33.3		122	51-132			
Toluene	40.5	1.0	"	33.3		122	51-138			
Ethylbenzene	41.4	1.0	"	33.1		125	58-146			
m,p-Xylene	82.4	2.0	"	66.5		124	57-144			
o-Xylene	41.8	1.0	"	32.8		127	53-146			
Surrogate: 1,2-Dichloroethane-d4	11.2		"	13.2		84.9	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		96.8	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.6	45-146			

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

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 1410226 - EPA 5030 Water MS

Matrix Spike (1410226-MS1)		Source: 1410181-04			Prepared & Analyzed: 10/21/14					
Benzene	40.9	1.0	ug/l	33.3	ND	123	34-141			
Toluene	39.7	1.0	"	33.3	ND	119	27-151			
Ethylbenzene	43.6	1.0	"	33.1	1.72	127	29-160			
m,p-Xylene	84.2	2.0	"	66.5	1.92	124	20-166			
o-Xylene	41.9	1.0	"	32.8	ND	128	33-159			
Surrogate: 1,2-Dichloroethane-d4	11.1		"	13.2		84.3	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.2	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.2	45-146			
Matrix Spike Dup (1410226-MSD1)		Source: 1410181-04			Prepared & Analyzed: 10/22/14					
Benzene	40.6	1.0	ug/l	33.3	ND	122	34-141	0.761	32	
Toluene	40.3	1.0	"	33.3	ND	121	27-151	1.55	25	
Ethylbenzene	43.6	1.0	"	33.1	1.72	127	29-160	0.0688	50	
m,p-Xylene	83.9	2.0	"	66.5	1.92	123	20-166	0.369	36	
o-Xylene	41.7	1.0	"	32.8	ND	127	33-159	0.550	26	
Surrogate: 1,2-Dichloroethane-d4	11.3		"	13.2		85.5	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		97.0	45-149			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.0	45-146			

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

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 1410229 - General Preparation

Blank (1410229-BLK1)

Prepared: 10/22/14 Analyzed: 10/23/14

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

LCS (1410229-BS1)

Prepared: 10/22/14 Analyzed: 10/23/14

Calcium	416	10.0	mg/kg wet	500	83.1	80-120
Magnesium	484	5.00	"	500	96.8	80-120
Sodium	441	5.00	"	500	88.2	80-120

Duplicate (1410229-DUP1)

Source: 1410160-01

Prepared: 10/22/14 Analyzed: 10/23/14

Calcium	1980	10.9	mg/kg dry	1870	5.57	200
Magnesium	170	5.45	"	146	15.4	200
Sodium	395	5.45	"	354	11.0	200

Matrix Spike (1410229-MS1)

Source: 1410160-01

Prepared: 10/22/14 Analyzed: 10/23/14

Calcium	2530	12.4	mg/kg dry	604	1870	109	75-125
Magnesium	886	6.19	"	604	146	122	75-125
Sodium	963	6.19	"	604	354	101	75-125

Matrix Spike Dup (1410229-MSD1)

Source: 1410160-01

Prepared: 10/22/14 Analyzed: 10/23/14

Calcium	2550	12.4	mg/kg dry	575	1870	118	75-125	0.661	25
Magnesium	796	6.19	"	575	146	113	75-125	10.7	25
Sodium	977	6.19	"	575	354	108	75-125	1.40	25

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

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 1410221 - General Preparation

Duplicate (1410221-DUP1) **Source: 1410160-01** Prepared: 10/21/14 Analyzed: 10/22/14

% Solids	78.8		%		80.8			2.51	20	
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Batch 1410231 - General Preparation

LCS (1410231-BS1) Prepared & Analyzed: 10/22/14

pH	7.95	0.100	pH Units	8.00		99.4	0-200			
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Duplicate (1410231-DUP1) **Source: 1410181-01** Prepared & Analyzed: 10/22/14

pH	9.62	0.100	pH Units		9.61			0.104	20	
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Batch 1410232 - General Preparation

Blank (1410232-BLK1) Prepared & Analyzed: 10/22/14

Specific Conductance (EC)	ND	0.0100	mmhos/cm							
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LCS (1410232-BS1) Prepared & Analyzed: 10/22/14

Specific Conductance (EC)	5.00	0.0100	mmhos/cm	5.00		100	90-110			
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Duplicate (1410232-DUP1) **Source: 1410181-01** Prepared & Analyzed: 10/22/14

Specific Conductance (EC)	2.07	0.0100	mmhos/cm		1.54			29.3	20	
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Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/24/14 16:01

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

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.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 29, 2014

Mike Lindstrom
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Allard 30-8-5

Enclosed are the results of analyses for samples received by Summit Scientific on 10/22/14 18:00. 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: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SSW-3.5	1410199-01	Soil	10/22/14 14:56	10/22/14 18:00
SP1-1	1410199-02	Soil	10/22/14 16:10	10/22/14 18:00
SP2-1	1410199-03	Soil	10/22/14 16:30	10/22/14 18:00

Summit Scientific

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.

Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

Summit Scientific 1410199

S₂

741 Corporate Circle, Suite J&K • Golden, Colorado 80401
303-277-9310 • 303-374-5933

Page 1 of 1

Client: TASMAN Project Manager: _____
Address: 6899 Pecos St. Denver Co 80221 E-Mail: _____
City/State/Zip: _____
Phone: _____ Fax: _____
Project Name: ALLARD 30-8-5
Project Number: ALLARD 30-8-5
Sampler Name: Gr. L. endo m

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)	BTEX	GRO/PRO		EC	PH
1	SSA-3.5	10/28/14	1456	1		X			X								
2	SP1-1	10/28/14	1610	1		X			X								
3	SP2-1	10/28/14	1630	1		X			X								
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: GDY Date/Time: 10/28/1800 Received by: M. Lindstrom Date/Time: 10/28/14 1800
 Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____
 Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____

Turn Around Time (Check)
 Same Day ☒ 72 hours ☐
 24 hours ☐ 48 hours ☐
 Sample Integrity: ☒ Intact: ☒ Yes ☐ No
 Temperature Upon Receipt: 12°C
 Notes: _____

www.s2scientific.com





Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

SSW-3.5
1410199-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/22/14 14:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1410243	10/22/14	10/23/14	8015M	

Date Sampled: 10/22/14 14:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		122 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/22/14 14:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1410242	10/22/14	10/22/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/22/14 14:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.9 %	21-167		"	"	"	"	

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

Date Sampled: 10/22/14 14:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

SSW-3.5
1410199-01 (Soil)

Summit Scientific

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

Calcium	274	10.6 mg/kg dry	1	1410229	10/23/14	10/23/14	EPA 6020/Mod. USDA60 6(2, 3A)
Magnesium	221	5.29	"	"	"	"	"
Sodium	94.3	5.29	"	"	"	"	"

Date Sampled: 10/22/14 14:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.03		units	"	1410311	10/29/14	10/29/14	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/22/14 14:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.736	0.0100	mmhos/cm	1	1410252	10/23/14	10/23/14	SM 2510B	

Date Sampled: 10/22/14 14:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.51	0.100	pH Units	"	1410250	10/23/14	10/23/14	EPA 9045	

Date Sampled: 10/22/14 14:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.6		%	"	1410300	10/28/14	10/28/14	% calculation	

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

SP1-1
1410199-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/22/14 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1410243	10/22/14	10/23/14	8015M	

Date Sampled: 10/22/14 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/22/14 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1410242	10/22/14	10/22/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.1	0.50	"	"	"	"	"	"	

Date Sampled: 10/22/14 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		80.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.9 %	21-167		"	"	"	"	

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

Date Sampled: 10/22/14 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

SP1-1
1410199-02 (Soil)

Summit Scientific

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

Calcium	3840	11.2 mg/kg dry	1	1410229	10/23/14	10/23/14	EPA 6020/Mod. USDA60 6(2, 3A)
Magnesium	696	5.61	"	"	"	"	"
Sodium	492	5.61	"	"	"	"	"

Date Sampled: 10/22/14 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.92		units	"	1410311	10/29/14	10/29/14	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/22/14 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.32	0.0100 mmhos/cm		1	1410252	10/23/14	10/23/14	SM 2510B	

Date Sampled: 10/22/14 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.82	0.100 pH Units		"	1410250	10/23/14	10/23/14	EPA 9045	

Date Sampled: 10/22/14 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.1		%	"	1410300	10/28/14	10/28/14	% calculation	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

SP2-1
1410199-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/22/14 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1410243	10/22/14	10/23/14	8015M	

Date Sampled: 10/22/14 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		121 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/22/14 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1410242	10/22/14	10/22/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	3.7	0.50	"	"	"	"	"	"	

Date Sampled: 10/22/14 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		82.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.6 %	21-167		"	"	"	"	

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

Date Sampled: 10/22/14 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

SP2-1
1410199-03 (Soil)

Summit Scientific

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1480	11.0	mg/kg dry	1	1410229	10/23/14	10/23/14	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	677	5.52	"	"	"	"	"	"	
Sodium	222	5.52	"	"	"	"	"	"	

Date Sampled: 10/22/14 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.20		units	"	1410311	10/29/14	10/29/14	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/22/14 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.906	0.0100	mmhos/cm	1	1410252	10/23/14	10/23/14	SM 2510B	

Date Sampled: 10/22/14 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.24	0.100	pH Units	"	1410250	10/23/14	10/23/14	EPA 9045	

Date Sampled: 10/22/14 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.6		%	"	1410300	10/28/14	10/28/14	% calculation	

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

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 1410243 - EPA 3550A

Blank (1410243-BLK1)

Prepared: 10/22/14 Analyzed: 10/23/14

C10-C28 (DRO) ND 50 mg/kg

LCS (1410243-BS1)

Prepared: 10/22/14 Analyzed: 10/23/14

C10-C28 (DRO) 529 50 mg/kg 501 106 73-134

Matrix Spike (1410243-MS1)

Source: 1410199-01

Prepared: 10/22/14 Analyzed: 10/23/14

C10-C28 (DRO) 435 50 mg/kg 440 ND 98.9 50-148

Matrix Spike Dup (1410243-MSD1)

Source: 1410199-01

Prepared: 10/22/14 Analyzed: 10/23/14

C10-C28 (DRO) 430 50 mg/kg 441 ND 97.6 50-148 1.13 13

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

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 1410242 - EPA 5030 Soil MS

Blank (1410242-BLK1)

Prepared & Analyzed: 10/22/14

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	0.0317		"	0.0396		80.2	23-173			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.0	21-167			

LCS (1410242-BS1)

Prepared & Analyzed: 10/22/14

Benzene	0.119	0.0020	mg/kg	0.100		119	58-130			
Toluene	0.129	0.0050	"	0.100		129	61-134			
Ethylbenzene	0.128	0.0050	"	0.0992		129	74-139			
m,p-Xylene	0.254	0.010	"	0.200		127	73-137			
o-Xylene	0.125	0.0050	"	0.0984		127	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0317		"	0.0396		80.0	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		93.9	21-167			

Matrix Spike (1410242-MS1)

Source: 1410199-01

Prepared & Analyzed: 10/22/14

Benzene	0.100	0.0018	mg/kg	0.0879	ND	114	30-131			
Toluene	0.112	0.0044	"	0.0879	ND	127	30-134			
Ethylbenzene	0.111	0.0044	"	0.0872	ND	128	22-153			
m,p-Xylene	0.221	0.0088	"	0.175	ND	126	10-159			
o-Xylene	0.109	0.0044	"	0.0865	ND	127	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0292		"	0.0348		83.9	23-173			
Surrogate: Toluene-d8	0.0353		"	0.0351		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0336		"	0.0351		95.6	21-167			

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

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 1410242 - EPA 5030 Soil MS

Matrix Spike Dup (1410242-MSD1)		Source: 1410199-01			Prepared & Analyzed: 10/22/14					
Benzene	0.108	0.0020	mg/kg	0.0917	ND	117	30-131	7.31	34	
Toluene	0.117	0.0050	"	0.0917	ND	127	30-134	4.29	30	
Ethylbenzene	0.118	0.0050	"	0.0910	ND	129	22-153	5.44	24	
m,p-Xylene	0.233	0.010	"	0.183	ND	127	10-159	5.39	68	
o-Xylene	0.116	0.0050	"	0.0903	ND	129	31-151	6.17	38	
Surrogate: 1,2-Dichloroethane-d4	0.0296		"	0.0363		81.4	23-173			
Surrogate: Toluene-d8	0.0368		"	0.0367		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0346		"	0.0367		94.3	21-167			

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

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 1410229 - General Preparation

Blank (1410229-BLK1)

Prepared: 10/22/14 Analyzed: 10/23/14

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

LCS (1410229-BS1)

Prepared: 10/22/14 Analyzed: 10/23/14

Calcium	416	10.0	mg/kg wet	500	83.1	80-120
Magnesium	484	5.00	"	500	96.8	80-120
Sodium	441	5.00	"	500	88.2	80-120

Duplicate (1410229-DUP1)

Source: 1410160-01

Prepared: 10/22/14 Analyzed: 10/23/14

Calcium	1980	10.9	mg/kg dry	1870	5.57	200
Magnesium	170	5.45	"	146	15.4	200
Sodium	395	5.45	"	354	11.0	200

Matrix Spike (1410229-MS1)

Source: 1410160-01

Prepared: 10/22/14 Analyzed: 10/23/14

Calcium	2530	12.4	mg/kg dry	604	1870	109	75-125
Magnesium	886	6.19	"	604	146	122	75-125
Sodium	963	6.19	"	604	354	101	75-125

Matrix Spike Dup (1410229-MSD1)

Source: 1410160-01

Prepared: 10/22/14 Analyzed: 10/23/14

Calcium	2550	12.4	mg/kg dry	575	1870	118	75-125	0.661	25
Magnesium	796	6.19	"	575	146	113	75-125	10.7	25
Sodium	977	6.19	"	575	354	108	75-125	1.40	25

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

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 1410250 - General Preparation

LCS (1410250-BS1)

Prepared & Analyzed: 10/23/14

pH	7.99	0.100	pH Units	8.00	99.9	0-200
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Duplicate (1410250-DUP1)

Source: 1410199-01

Prepared & Analyzed: 10/23/14

pH	8.28	0.100	pH Units	8.51	2.74	20
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Batch 1410252 - General Preparation

Blank (1410252-BLK1)

Prepared & Analyzed: 10/23/14

Specific Conductance (EC)	ND	0.0100	mmhos/cm
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LCS (1410252-BS1)

Prepared & Analyzed: 10/23/14

Specific Conductance (EC)	4.90	0.0100	mmhos/cm	5.00	98.0	90-110
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Duplicate (1410252-DUP1)

Source: 1410199-01

Prepared & Analyzed: 10/23/14

Specific Conductance (EC)	0.659	0.0100	mmhos/cm	0.736	11.0	20
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Batch 1410300 - General Preparation

Duplicate (1410300-DUP1)

Source: 1410199-01

Prepared & Analyzed: 10/28/14

% Solids	92.9		%	94.6	1.81	20
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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/29/14 08:21

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

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.

Summit Scientific

741 Corporate Circle – Suite J ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.374.5933 - fax

October 31, 2014

Mike Lindstrom
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Allard 30-8-5

Enclosed are the results of analyses for samples received by Summit Scientific on 10/23/14 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Joseph J Egry IV". The signature is stylized with a large, bold "J" and "E", and a superscript "IV" at the end.

Joseph J Egry IV
Laboratory/Technical Director

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SP3-1	1410205-01	Soil	10/23/14 14:10	10/23/14 17:00
DISPOSAL-1	1410205-02	Soil	10/23/14 14:15	10/23/14 17:00

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

Summit Scientific 1410205

S₂

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

Page (1) of ()

Client: Tasman Geosciences Project Manager: Mike Lindstrom
Address: _____ E-Mail: _____
City/State/Zip: _____
Phone: _____ Fax: _____ Project Name: _____
Sampler Name: Grant Linder Project Number: Allard 30-8-5

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)	Deo	GC/MS	ECAT	VOC TAP	PH	Fresh Point	
1	SP3-1	10-23	1410	1															
2	Disposal 1		1415	2															
3	Disposal 2		1417	1															
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by: <u>[Signature]</u>	Date/Time: <u>10/23/14 1700</u>	Received by: _____	Date/Time: _____	Turn Around Time (Check)	Notes:
				Same Day <input checked="" type="checkbox"/> 72 hours <input checked="" type="checkbox"/>	
				24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
				48 hours <input type="checkbox"/>	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	Sample Integrity:	
				Temperature Upon Receipt: <u>44</u>	
Relinquished by: _____	Date/Time: _____	Received by: <u>[Signature]</u>	Date/Time: <u>10-23-14 1700</u>	Intact: <input checked="" type="checkbox"/> No <input type="checkbox"/>	

www.s2scientific.com

Soil samples reported on a wet-weight basis unless otherwise indicated on results page.

Summit Scientific

Joseph J Egry IV TV

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

SP3-1
1410205-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/23/14 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1410257	10/23/14	10/23/14 21:41	8015M	

Date Sampled: **10/23/14 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl	118 %	30-150			"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/23/14 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0018	mg/kg	1	1410258	10/23/14	10/23/14 20:35	EPA 8260B	
Toluene	ND	0.0045	"	"	"	"	"	"	
Ethylbenzene	ND	0.0045	"	"	"	"	"	"	
Xylenes (total)	ND	0.0045	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.2	0.45	"	"	"	"	"	"	

Date Sampled: **10/23/14 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	105 %	23-173			"	"	"	"	
Surrogate: Toluene-d8	95.8 %	20-170			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.1 %	21-167			"	"	"	"	

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

DISPOSAL-1
1410205-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/23/14 14:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.00200	mg/kg	1	1410290	10/27/14	10/28/14 02:16	EPA 8260B	
Bromobenzene	ND	0.00500	"	"	"	"	"	"	
Bromochloromethane	ND	0.00500	"	"	"	"	"	"	
Bromodichloromethane	ND	0.00500	"	"	"	"	"	"	
Bromoform	ND	0.00500	"	"	"	"	"	"	
Bromomethane	ND	0.0100	"	"	"	"	"	"	
n-Butylbenzene	ND	0.00500	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.00500	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.00500	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.00500	"	"	"	"	"	"	
Chlorobenzene	ND	0.00500	"	"	"	"	"	"	
Chloroethane	ND	0.00500	"	"	"	"	"	"	
Chloroform	ND	0.00500	"	"	"	"	"	"	
Chloromethane	ND	0.0150	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.00500	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.00500	"	"	"	"	"	"	
Chlorodibromomethane	ND	0.0100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0150	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.00500	"	"	"	"	"	"	
Dibromomethane	ND	0.00500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.00500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.00500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.00500	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.00500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.00500	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	0.00500	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.00500	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.00500	"	"	"	"	"	"	

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

DISPOSAL-1
1410205-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

			mg/kg	1	1410290	10/27/14	10/28/14 02:16	EPA 8260B
Tert-butyl alcohol	ND	0.0200						
cis-1,2-Dichloroethene	ND	0.00500	"	"	"	"	"	"
Ethyl tert-butyl ether	ND	0.0100	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	0.00500	"	"	"	"	"	"
Di-isopropyl ether	ND	0.00500	"	"	"	"	"	"
Methyl tert-butyl ether	ND	0.0150	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.00500	"	"	"	"	"	"
1,3-Dichloropropane	ND	0.00500	"	"	"	"	"	"
2,2-Dichloropropane	ND	0.0100	"	"	"	"	"	"
1,1-Dichloropropene	ND	0.00500	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.00500	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.00500	"	"	"	"	"	"
Ethylbenzene	ND	0.00500	"	"	"	"	"	"
Hexachlorobutadiene	ND	0.00500	"	"	"	"	"	"
Isopropylbenzene	ND	0.00500	"	"	"	"	"	"
p-Isopropyltoluene	ND	0.0100	"	"	"	"	"	"
Methylene Chloride	ND	0.0150	"	"	"	"	"	"
Naphthalene	0.0112	0.0100	"	"	"	"	"	"
n-Propylbenzene	ND	0.00500	"	"	"	"	"	"
Styrene	ND	0.0100	"	"	"	"	"	"
1,1,2,2-Tetrachloroethane	ND	0.00500	"	"	"	"	"	"
1,1,1,2-Tetrachloroethane	ND	0.00500	"	"	"	"	"	"
Tetrachloroethene	ND	0.00500	"	"	"	"	"	"
Toluene	ND	0.00500	"	"	"	"	"	"
1,2,3-Trichlorobenzene	ND	0.00500	"	"	"	"	"	"
1,2,4-Trichlorobenzene	ND	0.00500	"	"	"	"	"	"
1,1,2-Trichloroethane	ND	0.00500	"	"	"	"	"	"
1,1,1-Trichloroethane	ND	0.00500	"	"	"	"	"	"
Trichloroethene	ND	0.00500	"	"	"	"	"	"
Trichlorofluoromethane	ND	0.00500	"	"	"	"	"	"
1,2,3-Trichloropropane	ND	0.0100	"	"	"	"	"	"

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

DISPOSAL-1
1410205-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

1,3,5-Trimethylbenzene	ND	0.00500	mg/kg	1	1410290	10/27/14	10/28/14 02:16	EPA 8260B
1,2,4-Trimethylbenzene	0.0278	0.00500	"	"	"	"	"	"
Vinyl chloride	ND	0.00500	"	"	"	"	"	"
m,p-Xylene	ND	0.0100	"	"	"	"	"	"
o-Xylene	ND	0.00500	"	"	"	"	"	"

Date Sampled: **10/23/14 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	113 %	23-173			"	"	"	"	
Surrogate: Toluene-d8	93.5 %	20-170			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	117 %	21-167			"	"	"	"	

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **10/23/14 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.36	0.107	mg/kg dry	1	1410279	10/27/14	10/27/14 23:49	EPA 6020A	
Barium	112	0.107	"	"	"	"	"	"	
Cadmium	0.197	0.107	"	"	"	"	"	"	
Chromium	12.5	0.536	"	"	"	"	"	"	
Lead	8.39	0.107	"	"	"	"	"	"	
Selenium	0.157	0.0536	"	"	"	"	"	"	
Silver	ND	0.107	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470/245.1

Date Sampled: **10/23/14 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0536	mg/kg dry	1	1410288	10/27/14	10/28/14 11:49	EPA 7471	

Physical Parameters by APHA/ASTM/EPA Methods

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

DISPOSAL-1
1410205-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/23/14 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.36	0.100	pH Units	1	1410283	10/27/14	10/27/14 13:16	EPA 9045	

Date Sampled: **10/23/14 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	"	1410300	10/28/14	10/28/14 16:31	% calculation	

Accutest Laboratories

Date Sampled: **10/23/14 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Flashpoint @ 620 mm Hg	No Flash Detected		°F	1	1410312	10/29/14	10/31/14 15:45	EPA 1010	F-01

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

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 1410257 - EPA 3550A

Blank (1410257-BLK1)

Prepared & Analyzed: 10/23/14

C10-C28 (DRO) ND 50 mg/kg

LCS (1410257-BS1)

Prepared & Analyzed: 10/23/14

C10-C28 (DRO) 559 50 mg/kg 501 112 73-134

Matrix Spike (1410257-MS1)

Source: 1410200-01

Prepared & Analyzed: 10/23/14

C10-C28 (DRO) 581 50 mg/kg 486 ND 119 50-148

Matrix Spike Dup (1410257-MSD1)

Source: 1410200-01

Prepared & Analyzed: 10/23/14

C10-C28 (DRO) 547 50 mg/kg 498 ND 110 50-148 5.96 13

Summit Scientific

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

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 1410258 - EPA 5030 Soil MS

Blank (1410258-BLK1)

Prepared & Analyzed: 10/23/14

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	0.0320		"	0.0396	80.8	23-173				
Surrogate: Toluene-d8	0.0401		"	0.0400	100	20-170				
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400	96.4	21-167				

LCS (1410258-BS1)

Prepared & Analyzed: 10/23/14

Benzene	0.118	0.0020	mg/kg	0.100	118	58-130				
Toluene	0.129	0.0050	"	0.100	129	61-134				
Ethylbenzene	0.128	0.0050	"	0.0992	129	74-139				
m,p-Xylene	0.256	0.010	"	0.200	128	73-137				
o-Xylene	0.126	0.0050	"	0.0984	128	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0324		"	0.0396	81.7	23-173				
Surrogate: Toluene-d8	0.0409		"	0.0400	102	20-170				
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400	95.7	21-167				

Matrix Spike (1410258-MS1)

Source: 1410200-01

Prepared & Analyzed: 10/23/14

Benzene	0.110	0.0020	mg/kg	0.0931	ND	119	30-131			
Toluene	0.118	0.0050	"	0.0931	ND	127	30-134			
Ethylbenzene	0.119	0.0050	"	0.0924	ND	128	22-153			
m,p-Xylene	0.237	0.010	"	0.186	ND	127	10-159			
o-Xylene	0.117	0.0050	"	0.0916	ND	127	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0303		"	0.0369		82.3	23-173			
Surrogate: Toluene-d8	0.0376		"	0.0372		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0357		"	0.0372		95.8	21-167			

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

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 1410258 - EPA 5030 Soil MS

Matrix Spike Dup (1410258-MSD1)		Source: 1410200-01			Prepared & Analyzed: 10/23/14					
Benzene	0.111	0.0020	mg/kg	0.0929	ND	120	30-131	0.946	34	
Toluene	0.119	0.0050	"	0.0929	ND	128	30-134	0.521	30	
Ethylbenzene	0.119	0.0050	"	0.0922	ND	130	22-153	0.752	24	
m,p-Xylene	0.236	0.010	"	0.186	ND	127	10-159	0.0916	68	
o-Xylene	0.119	0.0050	"	0.0914	ND	130	31-151	1.64	38	
Surrogate: 1,2-Dichloroethane-d4	0.0302		"	0.0368		82.0	23-173			
Surrogate: Toluene-d8	0.0377		"	0.0372		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0355		"	0.0372		95.5	21-167			

Batch 1410290 - EPA 5030 Soil MS

Blank (1410290-BLK1)		Prepared: 10/27/14 Analyzed: 10/28/14								
Benzene	ND	0.00200	mg/kg							
Bromobenzene	ND	0.00500	"							
Bromochloromethane	ND	0.00500	"							
Bromodichloromethane	ND	0.00500	"							
Bromoform	ND	0.00500	"							
Bromomethane	ND	0.0100	"							
n-Butylbenzene	ND	0.00500	"							
sec-Butylbenzene	ND	0.00500	"							
tert-Butylbenzene	ND	0.00500	"							
Carbon tetrachloride	ND	0.00500	"							
Chlorobenzene	ND	0.00500	"							
Chloroethane	ND	0.00500	"							
Chloroform	ND	0.00500	"							
Chloromethane	ND	0.0150	"							
2-Chlorotoluene	ND	0.00500	"							
4-Chlorotoluene	ND	0.00500	"							
Chlorodibromomethane	ND	0.0100	"							
1,2-Dibromo-3-chloropropane	ND	0.0150	"							
1,2-Dibromoethane (EDB)	ND	0.00500	"							
Dibromomethane	ND	0.00500	"							
1,2-Dichlorobenzene	ND	0.00500	"							
1,3-Dichlorobenzene	ND	0.00500	"							
1,4-Dichlorobenzene	ND	0.00500	"							
Dichlorodifluoromethane	ND	0.00500	"							
Tert-amyl methyl ether	ND	0.00500	"							

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

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 1410290 - EPA 5030 Soil MS

Blank (1410290-BLK1)

Prepared: 10/27/14 Analyzed: 10/28/14

1,1-Dichloroethane	ND	0.00500	mg/kg
1,2-Dichloroethane (EDC)	ND	0.00500	"
Tert-butyl alcohol	ND	0.0200	"
1,1-Dichloroethene	ND	0.00500	"
Ethyl tert-butyl ether	ND	0.0100	"
cis-1,2-Dichloroethene	ND	0.00500	"
Di-isopropyl ether	ND	0.00500	"
trans-1,2-Dichloroethene	ND	0.00500	"
Methyl tert-butyl ether	ND	0.0150	"
1,2-Dichloropropane	ND	0.00500	"
1,3-Dichloropropane	ND	0.00500	"
2,2-Dichloropropane	ND	0.0100	"
1,1-Dichloropropene	ND	0.00500	"
cis-1,3-Dichloropropene	ND	0.00500	"
trans-1,3-Dichloropropene	ND	0.00500	"
Ethylbenzene	ND	0.00500	"
Hexachlorobutadiene	ND	0.00500	"
Isopropylbenzene	ND	0.00500	"
p-Isopropyltoluene	ND	0.0100	"
Methylene Chloride	ND	0.0150	"
Naphthalene	ND	0.0100	"
n-Propylbenzene	ND	0.00500	"
Styrene	ND	0.0100	"
1,1,2,2-Tetrachloroethane	ND	0.00500	"
1,1,1,2-Tetrachloroethane	ND	0.00500	"
Tetrachloroethene	ND	0.00500	"
Toluene	ND	0.00500	"
1,2,3-Trichlorobenzene	ND	0.00500	"
1,2,4-Trichlorobenzene	ND	0.00500	"
1,1,2-Trichloroethane	ND	0.00500	"
1,1,1-Trichloroethane	ND	0.00500	"
Trichloroethene	ND	0.00500	"
Trichlorofluoromethane	ND	0.00500	"
1,2,3-Trichloropropane	ND	0.0100	"
1,3,5-Trimethylbenzene	ND	0.00500	"
1,2,4-Trimethylbenzene	ND	0.00500	"

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

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 1410290 - EPA 5030 Soil MS

Blank (1410290-BLK1)

Prepared: 10/27/14 Analyzed: 10/28/14

Vinyl chloride	ND	0.00500	mg/kg
m,p-Xylene	ND	0.0100	"
o-Xylene	ND	0.00500	"

Surrogate: 1,2-Dichloroethane-d4	0.0443		"	0.0396	112	23-173
Surrogate: Toluene-d8	0.0406		"	0.0400	101	20-170
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400	102	21-167

LCS (1410290-BS1)

Prepared: 10/27/14 Analyzed: 10/28/14

Benzene	0.152	0.00200	mg/kg	0.150	101	58-130
Bromobenzene	0.151	0.00500	"	0.150	101	87-115
Bromochloromethane	0.150	0.00500	"	0.150	99.8	82-122
Bromodichloromethane	0.142	0.00500	"	0.150	95.0	84-119
Bromoform	0.133	0.00500	"	0.150	88.8	76-119
Bromomethane	0.155	0.0100	"	0.150	103	39-152
n-Butylbenzene	0.159	0.00500	"	0.150	106	70-131
sec-Butylbenzene	0.154	0.00500	"	0.150	102	74-124
tert-Butylbenzene	0.154	0.00500	"	0.150	103	77-121
Carbon tetrachloride	0.145	0.00500	"	0.150	96.9	66-127
Chlorobenzene	0.160	0.00500	"	0.150	107	82-120
Chloroethane	0.153	0.00500	"	0.150	102	63-126
Chloroform	0.151	0.00500	"	0.150	100	82-120
Chloromethane	0.132	0.0150	"	0.150	88.1	57-133
2-Chlorotoluene	0.149	0.00500	"	0.150	99.4	82-117
4-Chlorotoluene	0.153	0.00500	"	0.150	102	81-119
Chlorodibromomethane	0.145	0.0100	"	0.150	96.4	82-124
1,2-Dibromo-3-chloropropane	0.114	0.0150	"	0.150	76.2	62-128
1,2-Dibromoethane (EDB)	0.155	0.00500	"	0.150	103	86-122
Dibromomethane	0.160	0.00500	"	0.150	107	83-124
1,2-Dichlorobenzene	0.156	0.00500	"	0.150	104	84-120
1,3-Dichlorobenzene	0.155	0.00500	"	0.150	103	81-118
1,4-Dichlorobenzene	0.152	0.00500	"	0.150	101	80-118
Dichlorodifluoromethane	0.103	0.00500	"	0.150	68.8	25-141
Tert-amyl methyl ether	0.140	0.00500	"	0.149	93.4	50-147
1,1-Dichloroethane	0.129	0.00500	"	0.150	86.2	78-120
1,2-Dichloroethane (EDC)	0.145	0.00500	"	0.150	96.5	81-125
Tert-butyl alcohol	0.567	0.0200	"	0.747	75.9	64-127

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Tasman Geosciences
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Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

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 1410290 - EPA 5030 Soil MS

LCS (1410290-BS1)

Prepared: 10/27/14 Analyzed: 10/28/14

1,1-Dichloroethene	0.148	0.00500	mg/kg	0.150	98.8	71-122
cis-1,2-Dichloroethene	0.157	0.00500	"	0.150	104	84-121
Ethyl tert-butyl ether	0.142	0.0100	"	0.150	94.6	80-122
Di-isopropyl ether	0.128	0.00500	"	0.150	85.3	78-120
trans-1,2-Dichloroethene	0.151	0.00500	"	0.150	101	77-125
Methyl tert-butyl ether	0.142	0.0150	"	0.150	94.7	77-124
1,2-Dichloropropane	0.152	0.00500	"	0.150	102	88-114
1,3-Dichloropropane	0.153	0.00500	"	0.150	102	86-122
2,2-Dichloropropane	0.135	0.0100	"	0.150	89.9	32-150
1,1-Dichloropropene	0.153	0.00500	"	0.150	102	71-123
cis-1,3-Dichloropropene	0.143	0.00500	"	0.150	95.5	74-125
trans-1,3-Dichloropropene	0.141	0.00500	"	0.150	93.9	72-126
Ethylbenzene	0.160	0.00500	"	0.150	106	74-139
Hexachlorobutadiene	0.156	0.00500	"	0.150	104	56-144
Isopropylbenzene	0.160	0.00500	"	0.150	107	72-124
p-Isopropyltoluene	0.153	0.0100	"	0.150	102	72-123
Methylene Chloride	0.133	0.0150	"	0.150	88.5	10-183
Naphthalene	0.150	0.0100	"	0.150	99.8	66-138
n-Propylbenzene	0.155	0.00500	"	0.150	103	76-121
Styrene	0.161	0.0100	"	0.150	107	76-133
1,1,2,2-Tetrachloroethane	0.144	0.00500	"	0.150	95.7	60-137
1,1,1,2-Tetrachloroethane	0.153	0.00500	"	0.150	102	86-121
Tetrachloroethene	0.165	0.00500	"	0.150	110	69-131
Toluene	0.156	0.00500	"	0.150	104	61-134
1,2,3-Trichlorobenzene	0.157	0.00500	"	0.150	105	63-142
1,2,4-Trichlorobenzene	0.159	0.00500	"	0.150	106	63-141
1,1,2-Trichloroethane	0.153	0.00500	"	0.150	102	75-136
1,1,1-Trichloroethane	0.144	0.00500	"	0.150	96.3	71-126
Trichloroethene	0.154	0.00500	"	0.150	103	86-118
Trichlorofluoromethane	0.139	0.00500	"	0.150	92.9	62-128
1,2,3-Trichloropropane	0.144	0.0100	"	0.150	96.0	80-118
1,3,5-Trimethylbenzene	0.155	0.00500	"	0.150	103	72-121
1,2,4-Trimethylbenzene	0.153	0.00500	"	0.150	102	78-126
Vinyl chloride	0.127	0.00500	"	0.150	84.9	63-134
m,p-Xylene	0.319	0.0100	"	0.300	106	73-137
o-Xylene	0.159	0.00500	"	0.150	106	73-141

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

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 1410290 - EPA 5030 Soil MS

LCS (1410290-BS1)

Prepared: 10/27/14 Analyzed: 10/28/14

Surrogate: 1,2-Dichloroethane-d4	0.0400		mg/kg	0.0396		101	23-173
Surrogate: Toluene-d8	0.0410		"	0.0400		102	20-170
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	21-167

Matrix Spike (1410290-MS1)

Source: 1410205-02

Prepared: 10/27/14 Analyzed: 10/28/14

Benzene	0.137	0.00200	mg/kg	0.139	ND	98.9	30-131
Bromobenzene	0.132	0.00500	"	0.139	ND	95.5	39-124
Bromochloromethane	0.158	0.00500	"	0.139	ND	114	62-121
Bromodichloromethane	0.133	0.00500	"	0.139	ND	95.9	51-120
Bromoform	0.139	0.00500	"	0.139	ND	100	52-125
Bromomethane	0.139	0.0100	"	0.139	ND	100	10-152
n-Butylbenzene	0.103	0.00500	"	0.139	ND	74.4	10-144
sec-Butylbenzene	0.104	0.00500	"	0.139	ND	74.8	10-140
tert-Butylbenzene	0.121	0.00500	"	0.139	ND	87.0	16-132
Carbon tetrachloride	0.133	0.00500	"	0.139	ND	96.3	46-125
Chlorobenzene	0.140	0.00500	"	0.139	ND	101	42-125
Chloroethane	0.145	0.00500	"	0.139	ND	105	46-125
Chloroform	0.144	0.00500	"	0.139	ND	104	57-118
Chloromethane	0.127	0.0150	"	0.139	ND	91.7	33-132
2-Chlorotoluene	0.125	0.00500	"	0.139	ND	90.4	30-125
4-Chlorotoluene	0.126	0.00500	"	0.139	ND	91.0	29-127
Chlorodibromomethane	0.139	0.0100	"	0.139	ND	99.9	54-124
1,2-Dibromo-3-chloropropane	0.127	0.0150	"	0.139	ND	91.3	10-175
1,2-Dibromoethane (EDB)	0.159	0.00500	"	0.139	ND	115	65-125
Dibromomethane	0.164	0.00500	"	0.139	ND	118	64-127
1,2-Dichlorobenzene	0.128	0.00500	"	0.139	ND	92.1	24-134
1,3-Dichlorobenzene	0.129	0.00500	"	0.139	ND	93.3	22-130
1,4-Dichlorobenzene	0.130	0.00500	"	0.139	ND	94.1	21-131
Dichlorodifluoromethane	0.104	0.00500	"	0.139	ND	75.4	47-117
Tert-amyl methyl ether	0.145	0.00500	"	0.138	ND	105	60-124
1,1-Dichloroethane	0.149	0.00500	"	0.139	ND	108	55-119
1,2-Dichloroethane (EDC)	0.152	0.00500	"	0.139	ND	109	65-124
Tert-butyl alcohol	0.698	0.0200	"	0.690	ND	101	64-131
1,1-Dichloroethene	0.141	0.00500	"	0.139	ND	102	42-145
cis-1,2-Dichloroethene	0.148	0.00500	"	0.139	ND	107	56-121
Ethyl tert-butyl ether	0.150	0.0100	"	0.139	ND	108	60-119

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

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 1410290 - EPA 5030 Soil MS

Matrix Spike (1410290-MS1)	Source: 1410205-02			Prepared: 10/27/14		Analyzed: 10/28/14	
trans-1,2-Dichloroethene	0.142	0.00500	mg/kg	0.139	ND	103	52-126
Di-isopropyl ether	0.150	0.00500	"	0.139	ND	108	40-132
Methyl tert-butyl ether	0.154	0.0150	"	0.139	ND	111	64-124
1,2-Dichloropropane	0.140	0.00500	"	0.139	ND	101	61-115
1,3-Dichloropropane	0.159	0.00500	"	0.139	ND	115	66-123
2,2-Dichloropropane	0.129	0.0100	"	0.139	ND	92.9	35-127
1,1-Dichloropropene	0.136	0.00500	"	0.139	ND	98.0	52-119
cis-1,3-Dichloropropene	0.127	0.00500	"	0.139	ND	91.4	47-122
trans-1,3-Dichloropropene	0.130	0.00500	"	0.139	ND	93.8	51-119
Ethylbenzene	0.134	0.00500	"	0.139	0.00482	92.9	22-153
Hexachlorobutadiene	0.0698	0.00500	"	0.139	ND	50.4	10-149
Isopropylbenzene	0.120	0.00500	"	0.139	0.00318	84.2	18-135
p-Isopropyltoluene	0.122	0.0100	"	0.139	0.00794	82.3	12-132
Methylene Chloride	0.126	0.0150	"	0.139	ND	91.0	10-167
Naphthalene	0.0597	0.0100	"	0.139	0.0112	35.0	10-158
n-Propylbenzene	0.102	0.00500	"	0.139	0.00442	70.2	15-134
Styrene	0.132	0.0100	"	0.139	ND	95.2	33-135
1,1,2,2-Tetrachloroethane	0.0927	0.00500	"	0.139	ND	66.9	10-166
1,1,1,2-Tetrachloroethane	0.139	0.00500	"	0.139	ND	100	49-123
Tetrachloroethene	0.146	0.00500	"	0.139	ND	105	33-134
Toluene	0.135	0.00500	"	0.139	ND	97.7	30-134
1,2,3-Trichlorobenzene	0.115	0.00500	"	0.139	ND	83.0	10-155
1,2,4-Trichlorobenzene	0.114	0.00500	"	0.139	ND	82.3	10-152
1,1,2-Trichloroethane	0.154	0.00500	"	0.139	ND	111	46-139
1,1,1-Trichloroethane	0.138	0.00500	"	0.139	ND	99.3	51-124
Trichloroethene	0.187	0.00500	"	0.139	ND	135	16-187
Trichlorofluoromethane	0.137	0.00500	"	0.139	ND	98.7	53-125
1,2,3-Trichloropropane	0.158	0.0100	"	0.139	ND	114	69-118
1,3,5-Trimethylbenzene	0.116	0.00500	"	0.139	0.00293	81.4	20-128
1,2,4-Trimethylbenzene	0.139	0.00500	"	0.139	0.0278	80.6	17-142
Vinyl chloride	0.125	0.00500	"	0.139	ND	90.1	50-134
m,p-Xylene	0.249	0.0100	"	0.277	0.00542	87.7	10-159
o-Xylene	0.137	0.00500	"	0.139	ND	99.1	31-151
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0366		109	23-173
Surrogate: Toluene-d8	0.0344		"	0.0370		92.9	20-170
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0370		108	21-167

Summit Scientific

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.

Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

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 1410290 - EPA 5030 Soil MS

Matrix Spike Dup (1410290-MSD1)	Source: 1410205-02			Prepared: 10/27/14		Analyzed: 10/28/14				
Benzene	0.147	0.00200	mg/kg	0.146	ND	101	30-131	7.16	34	
Bromobenzene	0.144	0.00500	"	0.146	ND	98.8	39-124	8.32	21	
Bromochloromethane	0.165	0.00500	"	0.146	ND	113	62-121	4.04	20	
Bromodichloromethane	0.140	0.00500	"	0.146	ND	96.5	51-120	5.49	22	
Bromoform	0.147	0.00500	"	0.146	ND	101	52-125	5.62	22	
Bromomethane	0.155	0.0100	"	0.146	ND	107	10-152	11.2	90	
n-Butylbenzene	0.107	0.00500	"	0.146	ND	73.7	10-144	3.90	52	
sec-Butylbenzene	0.108	0.00500	"	0.146	ND	74.4	10-140	4.33	45	
tert-Butylbenzene	0.131	0.00500	"	0.146	ND	89.8	16-132	8.04	33	
Carbon tetrachloride	0.141	0.00500	"	0.146	ND	97.0	46-125	5.69	22	
Chlorobenzene	0.148	0.00500	"	0.146	ND	102	42-125	5.44	18	
Chloroethane	0.154	0.00500	"	0.146	ND	106	46-125	6.04	24	
Chloroform	0.151	0.00500	"	0.146	ND	103	57-118	4.50	19	
Chloromethane	0.130	0.0150	"	0.146	ND	89.3	33-132	2.25	18	
2-Chlorotoluene	0.136	0.00500	"	0.146	ND	93.4	30-125	8.19	24	
4-Chlorotoluene	0.138	0.00500	"	0.146	ND	95.0	29-127	9.22	24	
Chlorodibromomethane	0.148	0.0100	"	0.146	ND	102	54-124	6.83	22	
1,2-Dibromo-3-chloropropane	0.144	0.0150	"	0.146	ND	98.8	10-175	12.8	39	
1,2-Dibromoethane (EDB)	0.174	0.00500	"	0.146	ND	120	65-125	9.03	22	
Dibromomethane	0.178	0.00500	"	0.146	ND	122	64-127	8.32	19	
1,2-Dichlorobenzene	0.137	0.00500	"	0.146	ND	94.3	24-134	7.32	26	
1,3-Dichlorobenzene	0.137	0.00500	"	0.146	ND	94.4	22-130	6.07	27	
1,4-Dichlorobenzene	0.141	0.00500	"	0.146	ND	97.0	21-131	7.98	25	
Dichlorodifluoromethane	0.112	0.00500	"	0.146	ND	76.6	47-117	6.55	36	
1,1-Dichloroethane	0.150	0.00500	"	0.146	ND	103	55-119	0.0583	22	
Tert-amyl methyl ether	0.154	0.00500	"	0.145	ND	107	60-124	6.21	40	
1,2-Dichloroethane (EDC)	0.157	0.00500	"	0.146	ND	108	65-124	3.73	19	
1,1-Dichloroethene	0.151	0.00500	"	0.146	ND	103	42-145	6.27	22	
Tert-butyl alcohol	0.774	0.0200	"	0.725	ND	107	64-131	10.2	24	
cis-1,2-Dichloroethene	0.157	0.00500	"	0.146	ND	108	56-121	5.85	21	
Ethyl tert-butyl ether	0.155	0.0100	"	0.146	ND	106	60-119	3.38	38	
trans-1,2-Dichloroethene	0.151	0.00500	"	0.146	ND	104	52-126	6.24	22	
Di-isopropyl ether	0.147	0.00500	"	0.146	ND	101	40-132	1.93	108	
Methyl tert-butyl ether	0.163	0.0150	"	0.146	ND	112	64-124	5.32	28	
1,2-Dichloropropane	0.146	0.00500	"	0.146	ND	100	61-115	4.41	17	
1,3-Dichloropropane	0.171	0.00500	"	0.146	ND	118	66-123	7.18	24	

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

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 1410290 - EPA 5030 Soil MS

Matrix Spike Dup (1410290-MSD1)	Source: 1410205-02			Prepared: 10/27/14		Analyzed: 10/28/14				
2,2-Dichloropropane	0.136	0.0100	mg/kg	0.146	ND	93.2	35-127	5.22	29	
1,1-Dichloropropene	0.149	0.00500	"	0.146	ND	102	52-119	9.00	21	
cis-1,3-Dichloropropene	0.133	0.00500	"	0.146	ND	91.6	47-122	5.08	40	
trans-1,3-Dichloropropene	0.138	0.00500	"	0.146	ND	94.8	51-119	6.01	52	
Ethylbenzene	0.143	0.00500	"	0.146	0.00482	94.7	22-153	6.65	24	
Hexachlorobutadiene	0.0610	0.00500	"	0.146	ND	41.9	10-149	13.4	59	
Isopropylbenzene	0.125	0.00500	"	0.146	0.00318	83.9	18-135	4.37	33	
p-Isopropyltoluene	0.127	0.0100	"	0.146	0.00794	82.0	12-132	4.29	38	
Methylene Chloride	0.136	0.0150	"	0.146	ND	93.5	10-167	7.63	102	
Naphthalene	0.0856	0.0100	"	0.146	0.0112	51.1	10-158	35.6	42	
n-Propylbenzene	0.112	0.00500	"	0.146	0.00442	74.0	15-134	9.78	37	
Styrene	0.142	0.0100	"	0.146	ND	97.4	33-135	7.14	22	
1,1,2,2-Tetrachloroethane	0.117	0.00500	"	0.146	ND	80.2	10-166	22.9	45	
1,1,1,2-Tetrachloroethane	0.149	0.00500	"	0.146	ND	102	49-123	6.82	21	
Tetrachloroethene	0.156	0.00500	"	0.146	ND	107	33-134	6.26	26	
Toluene	0.143	0.00500	"	0.146	ND	97.9	30-134	5.19	30	
1,2,3-Trichlorobenzene	0.117	0.00500	"	0.146	ND	80.0	10-155	1.34	40	
1,2,4-Trichlorobenzene	0.114	0.00500	"	0.146	ND	78.1	10-152	0.339	42	
1,1,2-Trichloroethane	0.167	0.00500	"	0.146	ND	114	46-139	7.85	34	
1,1,1-Trichloroethane	0.147	0.00500	"	0.146	ND	101	51-124	6.18	22	
Trichloroethene	0.194	0.00500	"	0.146	ND	133	16-187	3.45	19	
Trichlorofluoromethane	0.147	0.00500	"	0.146	ND	101	53-125	6.91	20	
1,2,3-Trichloropropane	0.176	0.0100	"	0.146	ND	121	69-118	11.2	23	
1,3,5-Trimethylbenzene	0.125	0.00500	"	0.146	0.00293	83.9	20-128	7.76	31	
1,2,4-Trimethylbenzene	0.155	0.00500	"	0.146	0.0278	87.4	17-142	10.6	40	
Vinyl chloride	0.132	0.00500	"	0.146	ND	90.7	50-134	5.68	22	
m,p-Xylene	0.263	0.0100	"	0.291	0.00542	88.6	10-159	5.76	68	
o-Xylene	0.144	0.00500	"	0.146	ND	98.8	31-151	4.56	38	
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0384		109	23-173			
Surrogate: Toluene-d8	0.0361		"	0.0388		93.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0388		108	21-167			

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

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

Batch 1410279 - EPA 3050B

Blank (1410279-BLK1)

Prepared & Analyzed: 10/27/14

Arsenic	ND	0.100	mg/kg wet
Barium	ND	0.100	"
Cadmium	ND	0.100	"
Chromium	ND	0.500	"
Lead	ND	0.100	"
Selenium	ND	0.0500	"
Silver	ND	0.100	"

LCS (1410279-BS1)

Prepared & Analyzed: 10/27/14

Arsenic	131	0.250	mg/kg wet	158	83.2	78.4-140
Barium	183	0.250	"	203	90.4	82.8-127
Cadmium	97.0	0.250	"	96.0	101	81.7-127
Chromium	117	1.25	"	115	102	78.7-129
Lead	135	0.250	"	133	101	82-128
Selenium	198	0.125	"	248	79.8	77.4-132
Silver	32.3	0.250	"	40.2	80.3	74.9-134

Duplicate (1410279-DUP1)

Source: 1410207-01

Prepared & Analyzed: 10/27/14

Arsenic	4.14	0.124	mg/kg dry	4.12	0.611	20
Barium	54.6	0.124	"	53.8	1.48	20
Cadmium	0.109	0.124	"	0.111	2.15	20
Chromium	11.5	0.620	"	11.4	1.58	20
Lead	10.7	0.124	"	10.4	2.63	20
Selenium	0.0770	0.0620	"	0.0694	10.4	20
Silver	0.0518	0.124	"	0.0506	2.30	20

Matrix Spike (1410279-MS1)

Source: 1410207-01

Prepared & Analyzed: 10/27/14

Arsenic	44.4	0.124	mg/kg dry	49.4	4.12	81.5	75-125
Barium	97.2	0.124	"	49.4	53.8	87.9	75-125
Cadmium	2.36	0.124	"	2.47	0.111	91.0	75-125
Chromium	52.3	0.620	"	49.4	11.4	83.0	75-125
Lead	31.3	0.124	"	24.7	10.4	84.5	75-125
Selenium	4.13	0.0620	"	4.94	0.0694	82.2	75-125
Silver	2.31	0.124	"	2.47	0.0506	91.7	75-125

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

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

Batch 1410279 - EPA 3050B

Matrix Spike Dup (1410279-MSD1)	Source: 1410207-01			Prepared & Analyzed: 10/27/14						
Arsenic	51.2	0.124	mg/kg dry	47.5	4.12	99.0	75-125	14.2	25	
Barium	113	0.124	"	47.5	53.8	124	75-125	14.9	25	
Cadmium	2.78	0.124	"	2.38	0.111	112	75-125	16.4	25	
Chromium	60.1	0.620	"	47.5	11.4	103	75-125	13.8	25	
Lead	37.0	0.124	"	23.8	10.4	112	75-125	16.7	25	
Selenium	4.94	0.0620	"	4.75	0.0694	103	75-125	18.0	25	
Silver	2.63	0.124	"	2.38	0.0506	109	75-125	12.8	25	

Summit Scientific

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

Total Mercury by EPA Method 7471/7470/245.1 - Quality Control
Summit Scientific

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

Batch 1410288 - EPA 7471A

Blank (1410288-BLK1)				Prepared: 10/27/14 Analyzed: 10/28/14						
Mercury	ND	0.0500	mg/kg wet							
LCS (1410288-BS1)				Prepared: 10/27/14 Analyzed: 10/28/14						
Mercury	0.540	0.0500	mg/kg wet	0.500		108	80-120			
Duplicate (1410288-DUP1)				Source: 1410207-01		Prepared: 10/27/14 Analyzed: 10/28/14				
Mercury	ND	0.0620	mg/kg dry		ND				20	
Matrix Spike (1410288-MS1)				Source: 1410207-01		Prepared: 10/27/14 Analyzed: 10/28/14				
Mercury	0.578	0.0523	mg/kg dry	0.523	ND	111	80-120			
Matrix Spike Dup (1410288-MSD1)				Source: 1410207-01		Prepared: 10/27/14 Analyzed: 10/28/14				
Mercury	0.582	0.0489	mg/kg dry	0.489	ND	119	80-120	0.713	20	

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5

Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

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 1410283 - General Preparation

LCS (1410283-BS1)				Prepared & Analyzed: 10/27/14						
pH	8.05	0.100	pH Units	8.00	101	0-200				

Duplicate (1410283-DUP1)				Source: 1410207-01		Prepared & Analyzed: 10/27/14				
pH	7.63	0.100	pH Units	7.82	2.46	20				

Batch 1410300 - General Preparation

Duplicate (1410300-DUP1)				Source: 1410199-01		Prepared & Analyzed: 10/28/14				
% Solids	92.9		%	94.6	1.81	20				

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Joseph J Egry IV, Laboratory/Technical Director



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Allard 30-8-5
Project Number: [none]
Project Manager: Mike Lindstrom

Reported:
10/31/14 15:51

Notes and Definitions

NO	No Flash Detected
F-01	No flash detected up to 60 °C (140 °F).
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

Summit Scientific

A handwritten signature in black ink, appearing to read 'Joseph J Egry IV'.

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.

Joseph J Egry IV, Laboratory/Technical Director

TWIN ENVIRO SERVICES

Twin Enviro Serv
(Twin Landfill Corporat
20650 Routt Cty. Road 2
Milner, CO. 804
Phone: (970) 879-69
www.twinenviro.co

NON- HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Doc. No. 6604	2. Page 1 of 1	M-142010	
3. Generator's Name and Mailing Address FOUNDATION ENERGY MANAGEMENT 16000 DALLAS PARKWAY SUITE 875, DALLAS TX 75248						
4. Generator's Phone () 918 526 5592						
5. Transporter 1 Company Name TWIN ENVIRO SERVICES						
7. Transporter 2 Company Name			8. US EPA ID Number		B. Transporter's Phone 970 879 6985	
9. Designated Facility Name and Site Address Milner Landfill Twin Landfill Corporation 20650 Routt Cty. Road 205 Milner, Colorado 80487			10. US EPA ID Number C0R000211979		C. Facility's Phone 970-879-6985	
11. Waste Shipping Name and Description E+P SOIL			12. Containers		13. Total Quantity	14. Unit Wt./Vc
			No.	Type		
			a.	1	Roll OFF	20YD
			b.			
			c.			
D. Additional Descriptions for Materials Listed Above			E. Handling Codes for Waste Listed Above			
15. Special Handling Instructions and Additional Information						
16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.						
Print/Typed Name AMY A BEARD			Signature [Signature]		Month 10	Day 22
17. Transporter 1 Acknowledgement of Receipt of Materials			Truck # 367		Year 14	
Print/Typed Name SCOTTY TAYLOR			Signature [Signature]		Month 11	Day 18
18. Transporter 2 Acknowledgement of Receipt of Materials					Year 14	
Print/Typed Name			Signature		Month	Day
19. Discrepancy Indication Space TICKET 27105						
20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19. Twin Landfill Corporation Time of Delivery: 327pm						
Print/Typed Name KIM ANDRICH			Signature [Signature]		Month 11	Day 18

**MILNER LANDFILL
TWIN ENVIRO SERVICES**

P.O. Box 774362
STEAMBOAT SPRINGS, CO 80477
(970) 879-6985

21765

P/U
(2) 20YD
NO RETURN

TICKET NUMBER 23745

AURED 30-8-5

CUSTOMER'S NAME FOUNDATION ENERGY

ADDRESS WALDEN

COMMODITY 409/424 20YD

CARRIER TE 367 Scott

Alyssa Beard 720-257-2302

INBOUND 66040 lb
LOOP ID 472

INBOUND DATE	11-18-14	TIME	3:27PM
OUTBOUND DATE	11-18-14	TIME	5:07PM

M-142010
#6604

66040	lb	GROSS
31100	lb	TARE
34940	lb	NET

20yd (min.)

LOOP ID 472

DRIVER ON ITAF OFF 1000⁰⁰
Bermin 20yd

Customer Certifies Load Contains No Toxic, Hazardous, Volatile Or
Liquid Materials And Agrees To Pay Costs Of Removal And Damages If
Such Materials Are Discovered In Customer's Load.

SHIPPER [Signature]

WEIGHER [Signature]

TABLE 1
ALLARD 30-8-5
VOC SOIL SAMPLE RESULTS SUMMARY TABLE
FOUNDATION ENERGY MANAGEMENT LLC

Sample ID	Date Sampled	Depth (Feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVPH - GRO (mg/kg)	TEPH - DRO (mg/kg)
BASE 3'	5/6/2013	3	<0.005	<0.005	0.018	0.021	240	<50
EAST 1'	5/6/2013	1	<0.005	<0.005	0.043	0.14	1100	71
COGCC standards for soil (mg/kg)			0.17	85	100	175	500	

Notes:

TVPH - GRO: Total volatile petroleum hydrocarbons - Gasoline Range Organics

TEPH - DRO: Total extractable petroleum hydrocarbons - Diesel Range Organics

TEPH - ORO: Total extractable petroleum hydrocarbons - Oil Range Organics

mg/kg= Milligrams per kilogram. bgs - Below ground surface.

Bold values indicate an exceedance of the COGCC soil standards for the Site.

TABLE 2
ALLARD 30-8-5
SEMIVOLATILE ORGANIC COMPOUNDS SOIL SAMPLE RESULTS SUMMARY TABLE
FOUNDATION ENERGY MANAGEMENT LLC

Sample ID	Date Sampled	Depth (Feet bgs)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Benzo(a)pyrene (mg/kg)	Chrysene (mg/kg)	Dibenz(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Pyrene (mg/kg)
BASE 3'	5/6/2013	3	0.0192	<0.005	0.00528	<0.005	<0.005	<0.005	0.0407	<0.010	<0.005	0.139	<0.010	0.0988	0.0337
EAST 1'	5/6/2013	1	0.0584	0.0148	0.0193	<0.005	<0.005	<0.005	0.127	<0.010	0.00985	0.404	<0.010	0.431	0.134
COGCC standards for soil (mg/kg)			1,000	1,000	0.22	0.22	2.2	0.022	22	0.022	1000	1000	0.22	23	1000

Notes:

TVPH - GRO: Total volatile petroleum hydrocarbons - Gasoline Range Organics

TEPH - DRO: Total extractable petroleum hydrocarbons - Diesel Range Organics

TEPH - ORO: Total extractable petroleum hydrocarbons - Oil Range Organics

mg/kg= Milligrams per kilogram. bgs - Below ground surface.

Bold values indicate an exceedance of the COGCC soil standards for the Site.

TABLE 3
ALLARD 30-8-5
METALS SOIL SAMPLE RESULTS SUMMARY TABLE
FOUNDATION ENERGY MANAGEMENT LLC

Sample ID	Date Sampled	Depth (Feet bgs)	Arsenic	Barium	Cadmium	Chromium III	Chromium IV	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
BASE 3'	5/6/2013	3	3.09	184	0.373	21.7	<1.92	15.2	18.4	<0.0512	18.5	<0.192	<0.192	66.0
EAST 1'	5/6/2013	1	1.49	64.6	0.159	7.56	<1.21	4.75	6.11	<0.0446	8.43	<0.121	<0.121	30.5
COGCC standards for soil (mg/kg)			0.39	15,000	70	120,000	23	3100	400	23	1600	390	390	23,000

Notes:

All units are milligrams per kilogram (mg/kg) bgs - Below ground surface.

Bold values indicate an exceedance of the COGCC soil standards for the Site.

TABLE 4
ALLARD 30-8-5
PARAMETERS SOIL SAMPLE RESULTS SUMMARY TABLE
FOUNDATION ENERGY MANAGEMENT LLC

Sample ID	Date Sampled	Depth (Feet bgs)	SAR	Specific Conductance (mmhos/cm)	pH
BASE 3'	5/6/2013	3	6.88	2.16	9.4
EAST 1'	5/6/2013	1	9.55	2.77	9.68
COGCC standards for soil			<12	<4	6-9

Notes:

bgs - Below ground surface.

Bold values indicate an exceedance of the COGCC soil standards for the Site.



PROJECT NO:

DRAWN BY: AMB

DATE: 11/5/14

Facility
 Foundation Energy
 Allard 30-8-5
 Jackson County, CO

LEGEND:

- Excavation Extent
- Soil Sample Location
- Groundwater Sample Location
- May 2013 Soil Sample Location



Excavation Extent &
 Sample Locations

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 14, 2013

Alyssa Beard
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: FEM Allard 30-8-5

Enclosed are the results of analyses for samples received by Summit Scientific on 05/07/13 10:26. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Joseph J Egry IV
Laboratory Director

This report shall not be reproduced, except in its entirety, without the written approval of Summit Scientific. Test results relate only to samples analyzed.

Summit Scientific is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BASE 3'	R305066-01	Soil	05/06/13 12:00	05/07/13 10:26
EAST 1'	R305066-02	Soil	05/06/13 12:15	05/07/13 10:26
PIT	R305066-07	Water	05/06/13 12:40	05/07/13 10:26
SW-01	R305066-08	Water	05/06/13 13:00	05/07/13 10:26
SW-02	R305066-09	Water	05/06/13 12:45	05/07/13 10:26

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

Summit Scientific
R305066

5

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

Page 1 of 1

Client: **HUMAN GEOMETRICS**

Project Manager: HUSHA BARN

E-Mail:

Project Name:

Project Number:

Sample Description		Date Sampled	Time Sampled	Number of Containers	HCl	HNO ₃	Zone	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	Table 410 Summary	Analyze For:	Matrix	Special Instructions
PAUSE 3'	5/6/13	1200	2		X								X			
PAUSE 1'	1	1215	2										X			
SOUTH 1'		1220	2										X			
NWEST 1'		1226	2										X			
NORTH 1'		1235	2										X			
CANAL 1.5		1245	2										X			
PT		1246	3										X			
SIN-01		1300	3										X			
SIN-02		1245	3										X			

* HOLD FOR TABLE 410 RESULTS

Notes:
TABLE 410 RESULTS ON SOUTH + EAST W/LOC DETERMINING WHAT REMAINING SAMPLES ARE ANALYZED FOR

Turn Around Time (Check):
72 Hours ☐
Standard ☒
48 Hours ☐
24 Hours ☐
Same Day ☐

Sample Integrity:
Temperature Upon Receipt: 4.7
Intact: Yes ☐ No ☒

Received by: [Signature] Date Time: 5/13/13 09:50
Received by: [Signature] Date Time: 5/13/13 10:26
Received in Lab by: [Signature] Date Time: 5/6/13 10:26

www.s2scientific.com

Summit Scientific

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.

Carol Myers IV



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

BASE 3'
R305066-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	3050710	05/07/13	05/08/13	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		103 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3050711	05/07/13	05/08/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.018	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.021	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	240	5.0	"	10	"	"	05/08/13	"	

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.7 %	23-173		"	"	05/08/13	"	
Surrogate: Toluene-d8		88.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	19.2	5.00	ug/kg	1	3051011	05/10/13	05/12/13	EPA 8270D SIM	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

BASE 3'
R305066-01 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Acenaphthylene	12.0	5.00	ug/kg	1	3051011	05/10/13	05/12/13	EPA 8270D SIM
Anthracene	ND	5.00	"	"	"	"	"	"
Benzo (a) anthracene	5.28	5.00	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"
Chrysene	40.7	5.00	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"
Fluoranthene	ND	5.00	"	"	"	"	"	"
Fluorene	139	5.00	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"
Naphthalene	98.8	5.00	"	"	"	"	"	"
Phenanthrene	190	5.00	"	"	"	"	"	"
Pyrene	33.7	5.00	"	"	"	"	"	"

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		135 %	50-150		"	"	"	"	
Surrogate: Fluoranthene-d10		104 %	50-150		"	"	"	"	

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.09	0.192	mg/kg dry	1	3051301	05/13/13	05/13/13	EPA 6020A	
Barium	184	0.192	"	"	"	"	"	"	
Cadmium	0.373	0.192	"	"	"	"	"	"	
Chromium	23.6	0.192	"	"	"	"	"	"	
Copper	15.2	0.960	"	"	"	"	"	"	
Lead	18.4	0.192	"	"	"	"	"	"	
Nickel	18.5	0.192	"	"	"	"	"	"	
Selenium	ND	0.192	"	"	"	"	"	"	
Silver	ND	0.192	"	"	"	"	"	"	
Zinc	66.0	19.2	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

BASE 3'
R305066-01 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Total Mercury by EPA Method 7471/7470/245.1

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0512	mg/kg dry	1	3050806	05/08/13	05/08/13	EPA 7471	

Hexavalent Chromium by EPA 7199

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1.92	mg/kg dry	1	3051307	05/13/13	05/13/13	EPA 7199	

Calculated Analytes

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	21.7	1.00	mg/kg	1	3051408	05/14/13	05/14/13	Calculation	

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

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	882	2.50	mg/kg	1	3050803	05/08/13	05/08/13	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	244	1.00	"	"	"	"	"	"	
Sodium	895	5.00	"	"	"	"	"	"	

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.88		units	"	3051306	05/13/13	05/14/13	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

BASE 3'
R305066-01 (Soil)

Summit Scientific

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

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.16	0.00100	mmhos/cm	1	3050812	05/08/13	05/09/13	SM 2510B	

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.400	0.1000	pH Units	"	3050809	05/08/13	05/08/13	EPA 9045	

Date Sampled: **05/06/13 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	52.1		%	"	3050907	05/09/13	05/09/13	% calculation	

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

EAST 1'
R305066-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	71	50	mg/kg	1	3050710	05/07/13	05/08/13	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		103 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3050711	05/07/13	05/08/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.043	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.14	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1100	5.0	"	10	"	"	05/08/13	"	

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	05/08/13	"	
Surrogate: Toluene-d8		93.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.4 %	21-167		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	58.4	5.00	ug/kg	1	3051011	05/10/13	05/12/13	EPA 8270D SIM	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

EAST 1'
R305066-02 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Acenaphthylene	36.2	5.00	ug/kg	1	3051011	05/10/13	05/12/13	EPA 8270D SIM	
Anthracene	14.8	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	19.3	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Chrysene	127	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	9.85	5.00	"	"	"	"	"	"	
Fluorene	404	5.00	"	"	"	"	"	"	E
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
Naphthalene	431	5.00	"	"	"	"	"	"	E
Phenanthrene	842	5.00	"	"	"	"	"	"	E
Pyrene	134	5.00	"	"	"	"	"	"	

Date Sampled: 05/06/13 12:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		141 %	50-150		"	"	"	"	
Surrogate: Fluoranthene-d10		113 %	50-150		"	"	"	"	

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 05/06/13 12:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.49	0.121	mg/kg dry	1	3051301	05/13/13	05/13/13	EPA 6020A	
Barium	64.6	0.121	"	"	"	"	"	"	
Cadmium	0.159	0.121	"	"	"	"	"	"	
Chromium	8.77	0.121	"	"	"	"	"	"	
Copper	4.75	0.604	"	"	"	"	"	"	
Lead	6.11	0.121	"	"	"	"	"	"	
Nickel	8.43	0.121	"	"	"	"	"	"	
Selenium	ND	0.121	"	"	"	"	"	"	
Silver	ND	0.121	"	"	"	"	"	"	
Zinc	30.5	12.1	"	"	"	"	"	"	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

EAST 1'
R305066-02 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Total Mercury by EPA Method 7471/7470/245.1

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0446	mg/kg dry	1	3050806	05/08/13	05/08/13	EPA 7471	

Hexavalent Chromium by EPA 7199

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1.21	mg/kg dry	1	3051307	05/13/13	05/13/13	EPA 7199	

Calculated Analytes

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	7.56	1.00	mg/kg	1	3051408	05/14/13	05/14/13	Calculation	

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

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	63.1	2.50	mg/kg	1	3050803	05/08/13	05/08/13	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	25.3	1.00	"	"	"	"	"	"	
Sodium	355	5.00	"	"	"	"	"	"	

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.55		units	"	3051306	05/13/13	05/14/13	"	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

EAST 1'
R305066-02 (Soil)

Summit Scientific

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

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.77	0.00100	mmhos/cm	1	3050812	05/08/13	05/09/13	SM 2510B	

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.680	0.1000	pH Units	"	3050809	05/08/13	05/08/13	EPA 9045	

Date Sampled: **05/06/13 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.8		%	"	3050907	05/09/13	05/09/13	% calculation	

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6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

PIT
R305066-07 (Water)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/06/13 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	5.0	mg/L	1	3051106	05/11/13	05/13/13	8015M	
C28-C36 (ORO)	ND	5.0	"	"	"	"	"	"	

Date Sampled: **05/06/13 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		104 %	47.2-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/06/13 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	3051108	05/13/13	05/13/13	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	500	"	"	"	"	"	"	

Date Sampled: **05/06/13 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		122 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	45-146		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

SW-01
R305066-08 (Water)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/06/13 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	5.0	mg/L	1	3051106	05/11/13	05/13/13	8015M	
C28-C36 (ORO)	ND	5.0	"	"	"	"	"	"	

Date Sampled: **05/06/13 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		114 %	47.2-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/06/13 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	3051108	05/13/13	05/13/13	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	500	"	"	"	"	"	"	

Date Sampled: **05/06/13 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		100 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	45-146		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

SW-02
R305066-09 (Water)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/06/13 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	5.0	mg/L	1	3051106	05/11/13	05/13/13	8015M	
C28-C36 (ORO)	ND	5.0	"	"	"	"	"	"	

Date Sampled: **05/06/13 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		112 %	47.2-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/06/13 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	3051108	05/13/13	05/13/13	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	500	"	"	"	"	"	"	

Date Sampled: **05/06/13 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		100 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	45-146		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

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 3050710 - EPA 3550A

Blank (3050710-BLK1)

Prepared & Analyzed: 05/07/13

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

LCS (3050710-BS1)

Prepared & Analyzed: 05/07/13

C10-C28 (TEPH-DRO)	482	50	mg/kg	501		96.3	73-134			
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LCS Dup (3050710-BS1)

Prepared & Analyzed: 05/07/13

C10-C28 (TEPH-DRO)	479	50	mg/kg	501		95.6	73-134	0.701	11	
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Matrix Spike (3050710-MS1)

Source: R305052-01

Prepared & Analyzed: 05/07/13

C10-C28 (TEPH-DRO)	471	50	mg/kg	501	ND	94.0	50-148			
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Matrix Spike Dup (3050710-MSD1)

Source: R305052-01

Prepared & Analyzed: 05/07/13

C10-C28 (TEPH-DRO)	489	50	mg/kg	501	ND	97.6	50-148	3.77	13	
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Batch 3051106 - EPA 3520B

Blank (3051106-BLK1)

Prepared: 05/11/13 Analyzed: 05/13/13

C10-C28 (DRO)	ND	5.0	mg/L							
C28-C36 (ORO)	ND	5.0	"							

LCS (3051106-BS1)

Prepared: 05/11/13 Analyzed: 05/13/13

C10-C28 (DRO)	47.6	5.0	mg/L	50.1		95.0	80-149			
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LCS Dup (3051106-BS1)

Prepared: 05/11/13 Analyzed: 05/13/13

C10-C28 (DRO)	47.3	5.0	mg/L	50.1		94.4	80-149	0.550	14	
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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

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 3051106 - EPA 3520B

Matrix Spike (3051106-MS1)		Source: R305108-01			Prepared: 05/11/13		Analyzed: 05/13/13			
C10-C28 (DRO)	46.5	5.0	mg/L	50.1	ND	92.8	80-120			
Matrix Spike Dup (3051106-MSD1)		Source: R305108-01			Prepared: 05/11/13		Analyzed: 05/13/13			
C10-C28 (DRO)	48.2	5.0	mg/L	50.1	ND	96.1	80-120	3.52	20	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

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 3050711 - EPA 5030 Soil MS

Blank (3050711-BLK1)

Prepared & Analyzed: 05/07/13

Benzene	ND	0.0050	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	0.0410	"	0.0397	103	23-173
Surrogate: Toluene-d8	0.0378	"	0.0400	94.4	20-170
Surrogate: 4-Bromofluorobenzene	0.0404	"	0.0400	101	21-167

LCS (3050711-BS1)

Prepared & Analyzed: 05/07/13

Benzene	0.0818	0.0050	mg/kg	0.100	81.8	58-130
Toluene	0.0945	0.0050	"	0.100	94.5	61-134
Ethylbenzene	0.118	0.0050	"	0.100	118	74-139
m,p-Xylene	0.223	0.010	"	0.200	111	73-137
o-Xylene	0.115	0.0050	"	0.100	115	73-141
<hr/>						
Surrogate: 1,2-Dichloroethane-d4	0.0409		"	0.0397	103	23-173
Surrogate: Toluene-d8	0.0386		"	0.0400	96.5	20-170
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400	97.0	21-167

LCS Dup (3050711-BSD1)

Prepared & Analyzed: 05/07/13

Benzene	0.0817	0.0050	mg/kg	0.100	81.7	58-130	0.147	13
Toluene	0.0950	0.0050	"	0.100	95.0	61-134	0.570	16
Ethylbenzene	0.118	0.0050	"	0.100	118	74-139	0.457	12
m,p-Xylene	0.220	0.010	"	0.200	110	73-137	1.06	14
o-Xylene	0.114	0.0050	"	0.100	114	73-141	0.105	12
<hr/>								
Surrogate: 1,2-Dichloroethane-d4	0.0425		"	0.0397	107	23-173		
Surrogate: Toluene-d8	0.0386		"	0.0400	96.5	20-170		
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400	96.0	21-167		

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

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 3050711 - EPA 5030 Soil MS

Matrix Spike (3050711-MS1)		Source: R305052-01			Prepared & Analyzed: 05/07/13					
Benzene	0.0826	0.0050	mg/kg	0.100	ND	82.6	30-131			
Toluene	0.0952	0.0050	"	0.100	ND	95.2	30-134			
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	22-153			
m,p-Xylene	0.222	0.010	"	0.200	ND	111	10-159			
o-Xylene	0.116	0.0050	"	0.100	ND	116	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0397		108	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.8	21-167			

Matrix Spike Dup (3050711-MSD1)		Source: R305052-01			Prepared & Analyzed: 05/07/13					
Benzene	0.0817	0.0050	mg/kg	0.100	ND	81.7	30-131	1.17	34	
Toluene	0.0943	0.0050	"	0.100	ND	94.3	30-134	1.04	30	
Ethylbenzene	0.118	0.0050	"	0.100	ND	118	22-153	0.840	24	
m,p-Xylene	0.221	0.010	"	0.200	ND	111	10-159	0.325	68	
o-Xylene	0.115	0.0050	"	0.100	ND	115	31-151	0.104	38	
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0397		106	23-173			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.0	21-167			

Batch 3051108 - EPA 5030 Water MS

Blank (3051108-BLK1)		Prepared & Analyzed: 05/12/13								
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Gasoline Range Hydrocarbons	ND	500	"							
Surrogate: 1,2-Dichloroethane-d4	10.9		"	13.2		82.1	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.5	45-149			
Surrogate: 4-Bromofluorobenzene	12.2		"	13.3		91.5	45-146			

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

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 3051108 - EPA 5030 Water MS

Blank (3051108-BLK2)

Prepared & Analyzed: 05/12/13

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Gasoline Range Hydrocarbons	ND	500	"							
Surrogate: 1,2-Dichloroethane-d4	10.7		"	13.2		80.7	37-154			
Surrogate: Toluene-d8	12.5		"	13.3		94.0	45-149			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		93.9	45-146			

LCS (3051108-BS1)

Prepared & Analyzed: 05/12/13

Benzene	23.0	1.0	ug/l	26.7		86.4	51-132			
Toluene	28.3	1.0	"	26.7		106	51-138			
Ethylbenzene	27.7	1.0	"	26.7		104	58-146			
m,p-Xylene	56.3	2.0	"	53.3		106	57-144			
o-Xylene	26.9	1.0	"	26.7		101	53-146			
Surrogate: 1,2-Dichloroethane-d4	11.0		"	13.2		83.4	37-154			
Surrogate: Toluene-d8	12.4		"	13.3		93.3	45-149			
Surrogate: 4-Bromofluorobenzene	11.9		"	13.3		89.3	45-146			

LCS (3051108-BS2)

Prepared & Analyzed: 05/12/13

Benzene	24.7	1.0	ug/l	26.7		92.6	51-132			
Toluene	30.1	1.0	"	26.7		113	51-138			
Ethylbenzene	29.4	1.0	"	26.7		110	58-146			
m,p-Xylene	60.1	2.0	"	53.3		113	57-144			
o-Xylene	28.3	1.0	"	26.7		106	53-146			
Surrogate: 1,2-Dichloroethane-d4	10.9		"	13.2		82.2	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.4	45-149			
Surrogate: 4-Bromofluorobenzene	12.2		"	13.3		91.3	45-146			

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

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 3051108 - EPA 5030 Water MS

LCS Dup (3051108-BSD1)

Prepared & Analyzed: 05/12/13

Benzene	25.6	1.0	ug/l	26.7	96.1	51-132	10.7	17	
Toluene	26.5	1.0	"	26.7	99.3	51-138	6.57	17	
Ethylbenzene	26.6	1.0	"	26.7	99.9	58-146	3.90	16	
m,p-Xylene	53.8	2.0	"	53.3	101	57-144	4.58	16	
o-Xylene	26.4	1.0	"	26.7	99.0	53-146	1.80	15	
Surrogate: 1,2-Dichloroethane-d4	16.1		"	13.2	122	37-154			
Surrogate: Toluene-d8	13.2		"	13.3	99.4	45-149			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3	101	45-146			

LCS Dup (3051108-BSD2)

Prepared & Analyzed: 05/12/13

Benzene	27.2	1.0	ug/l	26.7	102	51-132	9.63	17	
Toluene	28.2	1.0	"	26.7	106	51-138	6.52	17	
Ethylbenzene	28.0	1.0	"	26.7	105	58-146	4.87	16	
m,p-Xylene	56.9	2.0	"	53.3	107	57-144	5.54	16	
o-Xylene	28.0	1.0	"	26.7	105	53-146	1.24	15	
Surrogate: 1,2-Dichloroethane-d4	16.0		"	13.2	121	37-154			
Surrogate: Toluene-d8	13.5		"	13.3	101	45-149			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3	101	45-146			

Matrix Spike (3051108-MS1)

Source: R305053-01

Prepared & Analyzed: 05/12/13

Benzene	18.9	1.0	ug/l	26.7	1.23	66.3	34-141		
Toluene	23.0	1.0	"	26.7	ND	86.2	27-151		
Ethylbenzene	23.3	1.0	"	26.7	ND	87.2	29-160		
m,p-Xylene	47.7	2.0	"	53.3	ND	89.4	20-166		
o-Xylene	22.6	1.0	"	26.7	ND	84.6	33-159		
Surrogate: 1,2-Dichloroethane-d4	8.80		"	13.2	66.5	37-154			
Surrogate: Toluene-d8	12.4		"	13.3	92.8	45-149			
Surrogate: 4-Bromofluorobenzene	12.2		"	13.3	91.8	45-146			

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

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 3051108 - EPA 5030 Water MS

Matrix Spike (3051108-MS2)		Source: R305053-01			Prepared & Analyzed: 05/12/13					
Benzene	18.5	1.0	ug/l	26.7	1.23	64.7	34-141			
Toluene	22.5	1.0	"	26.7	ND	84.3	27-151			
Ethylbenzene	22.4	1.0	"	26.7	ND	84.0	29-160			
m,p-Xylene	46.1	2.0	"	53.3	ND	86.5	20-166			
o-Xylene	21.9	1.0	"	26.7	ND	82.0	33-159			
Surrogate: 1,2-Dichloroethane-d4	8.91		"	13.2		67.3	37-154			
Surrogate: Toluene-d8	12.3		"	13.3		92.6	45-149			
Surrogate: 4-Bromofluorobenzene	12.2		"	13.3		91.9	45-146			

Matrix Spike Dup (3051108-MSD1)		Source: R305053-01			Prepared & Analyzed: 05/12/13					
Benzene	18.9	1.0	ug/l	26.7	1.23	66.2	34-141	0.106	32	
Toluene	23.0	1.0	"	26.7	ND	86.2	27-151	0.0435	25	
Ethylbenzene	22.9	1.0	"	26.7	ND	86.0	29-160	1.43	50	
m,p-Xylene	47.1	2.0	"	53.3	ND	88.2	20-166	1.29	36	
o-Xylene	22.2	1.0	"	26.7	ND	83.4	33-159	1.47	26	
Surrogate: 1,2-Dichloroethane-d4	8.97		"	13.2		67.8	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.1	45-149			
Surrogate: 4-Bromofluorobenzene	12.2		"	13.3		91.1	45-146			

Matrix Spike Dup (3051108-MSD2)		Source: R305053-01			Prepared & Analyzed: 05/12/13					
Benzene	19.0	1.0	ug/l	26.7	1.23	66.7	34-141	2.93	32	
Toluene	23.0	1.0	"	26.7	ND	86.4	27-151	2.42	25	
Ethylbenzene	23.3	1.0	"	26.7	ND	87.3	29-160	3.85	50	
m,p-Xylene	47.5	2.0	"	53.3	ND	89.0	20-166	2.89	36	
o-Xylene	22.5	1.0	"	26.7	ND	84.3	33-159	2.80	26	
Surrogate: 1,2-Dichloroethane-d4	8.93		"	13.2		67.5	37-154			
Surrogate: Toluene-d8	12.4		"	13.3		93.3	45-149			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.2	45-146			

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch 3051011 - EPA 5030 Soil MS

Blank (3051011-BLK1)

Prepared & Analyzed: 05/10/13

Acenaphthene	ND	5.00	ug/kg
Acenaphthylene	ND	5.00	"
Anthracene	ND	5.00	"
Benzo (a) anthracene	ND	5.00	"
Benzo (b) fluoranthene	ND	5.00	"
Benzo (k) fluoranthene	ND	5.00	"
Benzo (g,h,i) perylene	ND	5.00	"
Benzo (a) pyrene	ND	5.00	"
Chrysene	ND	5.00	"
Dibenz (a,h) anthracene	ND	10.0	"
Fluoranthene	ND	5.00	"
Fluorene	ND	5.00	"
Indeno (1,2,3-cd) pyrene	ND	10.0	"
Naphthalene	ND	5.00	"
Phenanthrene	ND	5.00	"
Pyrene	ND	5.00	"

Surrogate: 2-Methylnaphthalene-d10	36.5	"	33.1	111	50-150
Surrogate: Fluoranthene-d10	39.7	"	32.7	121	50-150

LCS (3051011-BS1)

Prepared & Analyzed: 05/10/13

Acenaphthene	26.4	5.00	ug/kg	33.3	79.2	48-131
Acenaphthylene	27.5	5.00	"	33.3	82.4	49-130
Anthracene	26.9	5.00	"	33.3	80.8	48-135
Benzo (a) anthracene	30.4	5.00	"	33.3	91.2	37-142
Benzo (b) fluoranthene	30.6	5.00	"	33.3	91.9	35-139
Benzo (k) fluoranthene	26.1	5.00	"	33.3	78.4	30-139
Benzo (g,h,i) perylene	30.5	5.00	"	33.3	91.6	30-132
Benzo (a) pyrene	31.7	5.00	"	33.3	95.0	41-132
Chrysene	26.0	5.00	"	33.3	78.0	30-136
Dibenz (a,h) anthracene	31.8	10.0	"	33.3	95.4	24-127
Fluoranthene	26.7	5.00	"	33.3	80.1	50-139
Fluorene	28.7	5.00	"	33.3	86.2	50-130
Indeno (1,2,3-cd) pyrene	32.6	10.0	"	33.3	97.9	26-139
Naphthalene	25.3	5.00	"	33.3	75.8	40-135
Phenanthrene	27.7	5.00	"	33.3	83.1	53-130
Pyrene	27.4	5.00	"	33.3	82.2	39-141

Surrogate: 2-Methylnaphthalene-d10	34.8	"	33.1	105	50-150
Surrogate: Fluoranthene-d10	39.1	"	32.7	119	50-150

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5
Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch 3051011 - EPA 5030 Soil MS

LCS Dup (3051011-BSD1)

Prepared & Analyzed: 05/10/13

Acenaphthene	27.6	5.00	ug/kg	33.3		82.7	48-131	4.35	23	
Acenaphthylene	28.9	5.00	"	33.3		86.6	49-130	4.99	23	
Anthracene	28.6	5.00	"	33.3		85.7	48-135	5.95	28	
Benzo (a) anthracene	33.7	5.00	"	33.3		101	37-142	10.3	32	
Benzo (b) fluoranthene	34.1	5.00	"	33.3		102	35-139	10.8	30	
Benzo (k) fluoranthene	30.7	5.00	"	33.3		92.2	30-139	16.2	27	
Benzo (g,h,i) perylene	32.6	5.00	"	33.3		97.7	30-132	6.44	28	
Benzo (a) pyrene	33.0	5.00	"	33.3		99.1	41-132	4.31	25	
Chrysene	27.5	5.00	"	33.3		82.5	30-136	5.66	27	
Dibenz (a,h) anthracene	34.1	10.0	"	33.3		102	24-127	7.12	29	
Fluoranthene	27.8	5.00	"	33.3		83.5	50-139	4.10	26	
Fluorene	29.4	5.00	"	33.3		88.1	50-130	2.10	24	
Indeno (1,2,3-cd) pyrene	35.7	10.0	"	33.3		107	26-139	9.07	30	
Naphthalene	25.9	5.00	"	33.3		77.8	40-135	2.68	21	
Phenanthrene	29.5	5.00	"	33.3		88.4	53-130	6.10	25	
Pyrene	28.9	5.00	"	33.3		86.8	39-141	5.46	26	
Surrogate: 2-Methylnaphthalene-d10	36.6		"	33.1		111	50-150			
Surrogate: Fluoranthene-d10	39.9		"	32.7		122	50-150			

Matrix Spike (3051011-MS1)

Source: R305066-01

Prepared: 05/10/13 Analyzed: 05/12/13

Acenaphthene	37.4	5.00	ug/kg	33.3	19.2	54.5	27-140			
Acenaphthylene	40.7	5.00	"	33.3	12.0	86.1	24-136			
Anthracene	32.1	5.00	"	33.3	0.824	93.8	23-144			
Benzo (a) anthracene	37.9	5.00	"	33.3	5.28	97.8	12-168			
Benzo (b) fluoranthene	53.2	5.00	"	33.3	ND	160	10-170			
Benzo (k) fluoranthene	38.2	5.00	"	33.3	ND	115	11-150			
Benzo (g,h,i) perylene	21.7	5.00	"	33.3	ND	65.0	10-161			
Benzo (a) pyrene	50.2	5.00	"	33.3	0.912	148	11-162			
Chrysene	63.9	5.00	"	33.3	40.7	69.6	10-167			
Dibenz (a,h) anthracene	23.1	10.0	"	33.3	ND	69.4	10-128			
Fluoranthene	25.1	5.00	"	33.3	3.78	63.8	18-157			
Fluorene	167	5.00	"	33.3	139	83.5	37-133			
Indeno (1,2,3-cd) pyrene	28.0	10.0	"	33.3	ND	84.1	10-161			
Naphthalene	140	5.00	"	33.3	98.8	123	10-157			
Phenanthrene	215	5.00	"	33.3	190	74.9	10-156			E
Pyrene	79.7	5.00	"	33.3	33.7	138	10-166			
Surrogate: 2-Methylnaphthalene-d10	30.3		"	33.1		91.6	50-150			
Surrogate: Fluoranthene-d10	34.3		"	32.7		105	50-150			

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

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

Batch 3051301 - EPA 3050B

Blank (3051301-BLK1)

Prepared & Analyzed: 05/13/13

Arsenic	ND	0.100	mg/kg wet
Barium	ND	0.100	"
Cadmium	ND	0.100	"
Chromium	ND	0.100	"
Copper	ND	0.500	"
Lead	ND	0.100	"
Nickel	ND	0.100	"
Selenium	ND	0.100	"
Silver	ND	0.100	"
Zinc	ND	10.0	"

LCS (3051301-BS1)

Prepared & Analyzed: 05/13/13

Arsenic	2.70	0.100	mg/kg wet	2.50	108	80-120
Barium	262	0.100	"	226	116	80-120
Cadmium	1.07	0.100	"	1.00	107	80-120
Chromium	10.5	0.100	"	10.0	105	80-120
Copper	21.7	0.500	"	20.0	108	80-120
Lead	83.1	0.100	"	75.5	110	80-120
Nickel	16.5	0.100	"	15.0	110	80-120
Selenium	1.35	0.100	"	1.25	108	80-120
Silver	0.190	0.100	"	0.207	92.0	80-120
Zinc	82.7	10.0	"	75.5	110	80-120

Matrix Spike (3051301-MS1)

Source: R305126-01

Prepared & Analyzed: 05/13/13

Arsenic	6.52	0.136	mg/kg dry	3.40	3.59	86.3	75-125	
Barium	422	0.136	"	308	98.0	105	75-125	
Cadmium	1.78	0.136	"	1.36	0.405	101	75-125	
Chromium	20.5	0.136	"	13.6	7.82	93.3	75-125	
Copper	74.0	0.679	"	27.2	62.0	44.0	75-125	QM-07
Lead	114	0.136	"	103	29.9	81.5	75-125	
Nickel	25.4	0.136	"	20.4	8.20	84.3	75-125	
Selenium	2.24	0.136	"	1.70	0.547	99.5	75-125	
Silver	0.280	0.136	"	0.268	0.0475	86.7	75-125	
Zinc	205	13.6	"	103	152	52.1	75-125	QM-07

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

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

Batch 3051301 - EPA 3050B

Matrix Spike Dup (3051301-MSD1)			Source: R305126-01		Prepared & Analyzed: 05/13/13					
Arsenic	5.77	0.136	mg/kg dry	3.40	3.59	64.2	75-125	12.2	25	QM-07
Barium	433	0.136	"	308	98.0	109	75-125	2.61	25	
Cadmium	1.70	0.136	"	1.36	0.405	95.2	75-125	4.70	25	
Chromium	19.5	0.136	"	13.6	7.82	85.7	75-125	5.13	25	
Copper	110	0.679	"	27.2	62.0	176	75-125	39.0	25	QM-07
Lead	119	0.136	"	103	29.9	87.1	75-125	4.94	25	
Nickel	25.0	0.136	"	20.4	8.20	82.6	75-125	1.36	25	
Selenium	2.17	0.136	"	1.70	0.547	95.7	75-125	2.98	25	
Silver	0.324	0.136	"	0.299	0.0475	92.4	75-125	14.5	25	
Zinc	180	13.6	"	103	152	27.9	75-125	12.9	25	QM-07

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

Total Mercury by EPA Method 7471/7470/245.1 - Quality Control
Summit Scientific

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

Batch 3050806 - EPA 7471A

Blank (3050806-BLK1)				Prepared & Analyzed: 05/08/13						
Mercury	ND	0.0500	mg/kg wet							
LCS (3050806-BS1)				Prepared & Analyzed: 05/08/13						
Mercury	0.382	0.0500	mg/kg wet	0.400		95.5	80-120			
LCS Dup (3050806-BSD1)				Prepared & Analyzed: 05/08/13						
Mercury	0.393	0.0500	mg/kg wet	0.400		98.4	80-120	3.00	20	
Matrix Spike (3050806-MS1)				Source: R305028-01		Prepared & Analyzed: 05/08/13				
Mercury	0.422	0.0539	mg/kg dry	0.431	0.0403	88.6	80-120			
Matrix Spike Dup (3050806-MSD1)				Source: R305028-01		Prepared & Analyzed: 05/08/13				
Mercury	0.403	0.0527	mg/kg dry	0.422	0.0403	86.1	80-120	4.66	20	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

Hexavalent Chromium by EPA 7199 - Quality Control
Summit Scientific

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

Batch 3051307 - General Preparation

Blank (3051307-BLK1)			Prepared & Analyzed: 05/13/13							
Chromium, Hexavalent	ND	1.00	mg/kg wet							
LCS (3051307-BS1)			Prepared & Analyzed: 05/13/13							
Chromium, Hexavalent	174	1.25	mg/kg wet	184		94.8	85-115			
LCS Dup (3051307-BSD1)			Prepared & Analyzed: 05/13/13							
Chromium, Hexavalent	206	1.25	mg/kg wet	184		112	85-115	16.5	20	
Duplicate (3051307-DUP1)			Source: R305064-17		Prepared & Analyzed: 05/13/13					
Chromium, Hexavalent	99.8	1.00	mg/kg wet		96.1			3.82	20	
Matrix Spike (3051307-MS1)			Source: R305066-01		Prepared & Analyzed: 05/13/13					
Chromium, Hexavalent	ND	1.92	mg/kg dry		ND		85-115			QM-05

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

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 3050803 - General Preparation

Blank (3050803-BLK1)

Prepared & Analyzed: 05/08/13

Calcium	ND	2.50	mg/kg
Magnesium	ND	1.00	"
Sodium	ND	5.00	"

LCS (3050803-BS1)

Prepared & Analyzed: 05/08/13

Calcium	377	2.50	mg/kg	400	94.1	77-118
Magnesium	177	1.00	"	200	88.6	77-117
Sodium	621	5.00	"	700	88.7	80-119

LCS Dup (3050803-BSD1)

Prepared & Analyzed: 05/08/13

Calcium	394	2.50	mg/kg	400	98.5	77-118	4.50	14
Magnesium	174	1.00	"	200	87.2	77-117	1.62	12
Sodium	654	5.00	"	700	93.4	80-119	5.13	14

Matrix Spike (3050803-MS1)

Source: R305072-01

Prepared & Analyzed: 05/08/13

Calcium	1140	2.50	mg/kg	400	693	111	13-170
Magnesium	309	1.00	"	200	154	77.4	34-152
Sodium	936	5.00	"	700	302	90.6	43-155

Matrix Spike Dup (3050803-MSD1)

Source: R305072-01

Prepared & Analyzed: 05/08/13

Calcium	1080	2.50	mg/kg	400	693	95.5	13-170	5.54	37
Magnesium	347	1.00	"	200	154	96.5	34-152	11.6	33
Sodium	940	5.00	"	700	302	91.2	43-155	0.447	25

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

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 3050809 - General Preparation

LCS (3050809-BS1)				Prepared & Analyzed: 05/08/13						
pH	7.970	0.1000	pH Units	8.00		99.6	0-200			

Duplicate (3050809-DUP1)				Source: R305064-03		Prepared & Analyzed: 05/08/13				
pH	10.41	0.1000	pH Units		10.42			0.0960	20	

Batch 3050812 - General Preparation

Duplicate (3050812-DUP1)				Source: R305066-01		Prepared: 05/08/13 Analyzed: 05/09/13				
Specific Conductance (EC)	2.23	0.00100	mmhos/cm		2.16			3.51	20	

Batch 3050907 - General Preparation

Duplicate (3050907-DUP1)				Source: R305029-02		Prepared & Analyzed: 05/09/13				
% Solids	92.7		%		92.5			0.216	20	

Summit Scientific

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6899 Pecos Street
Denver CO, 80221

Project: FEM Allard 30-8-5

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
05/14/13 10:55

Notes and Definitions

- 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.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- 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