

**DCP MEWBOURN GAS PLANT PWV REMOVAL
FORM 19-S
INVESTIGATION SUMMARY REPORT**

ATTACHMENTS

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| 2 | Mewbourn Gas Plant Site Overview Map |
| 3 | Soil Sample Location Overview Map |

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| A | Laboratory Analytical Reports (soil): |
| - | Summit Scientific Job #: 2201113 |
| - | Summit Scientific Job #: 2201134 |
| - | Summit Scientific Job #: 2201150 |

Table 1 Mewbourn Gas Plant PWV Removal January 12, 2022 General Chemistry and Inorganic Soil Sample Results Weld County, Colorado																		
Sample ID	Date Sampled	Lab Report	PID Reading (PPM)	pH (pH units)	Specific Conductance (EC) (mmhos/cm)	Sodium Adsorption Ratio (SAR)	Boron (mg/l)	Arsenic ³ (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)	Comments
COGCC Protection of Groundwater Soil Screening Level Standards Risk & MCL Based ^(1 & 2) (mg/kg)	-	-	-	6-8.3	<4 mmhos/cm	<6	2 (mg/L)	0.29 (M)	82 (M)	0.38 (M)	0.00067 (R)	46 (M)	14 (M)	26 (R)	0.26 (M)	0.8 (R)	370 (R)	
SWallE@4'	1/13/2022	2201134	1210	7.06	0.256	0.702	0.0269	1.19	46.7	<0.54	<0.3	3.31	4.71	2.83	0.859	<0.054	14.5	
WTankB@6.5'	1/13/2022	2201134	3948	7.37	0.211	0.585	0.03	1.33	44.5	<0.539	<0.3	3.88	2.52	3.45	<0.701	<0.0539	11.2	
NWallW@4'	1/13/2022	2201134	4355	6.52	0.0701	1.09	0.0838	1.59	54.4	<0.569	<0.3	4.08	4.35	4.05	0.878	<0.0569	15.8	
SWallW@4'	1/13/2022	2201134	3410	6.89	0.127	1.02	0.0459	0.838	34.6	<0.546	<0.3	2.94	2.77	2.28	<0.71	<0.0546	10.6	
WWall@4'	1/14/2022	2201150	3648	6.67	0.203	0.909	0.0299	1.2	53.1	<0.545	<0.3	3.71	4.65	3.87	0.865	<0.0545	13.7	

1). Standards for Soil are referenced from the 2 CCR 404-1, Table 915-1, effective January 15, 2021.

2). The letter “(R)” following a protection of Groundwater soil screening level indicates the concentration is derived from a risk-based approach. The letter “(M)” following a protection of Groundwater soil screening level indicates the concentration is derived from the drinking water MCL.

3). The Arsenic concentration from soil sample TP05@12' is within known background levels for soil in Weld County, Colorado

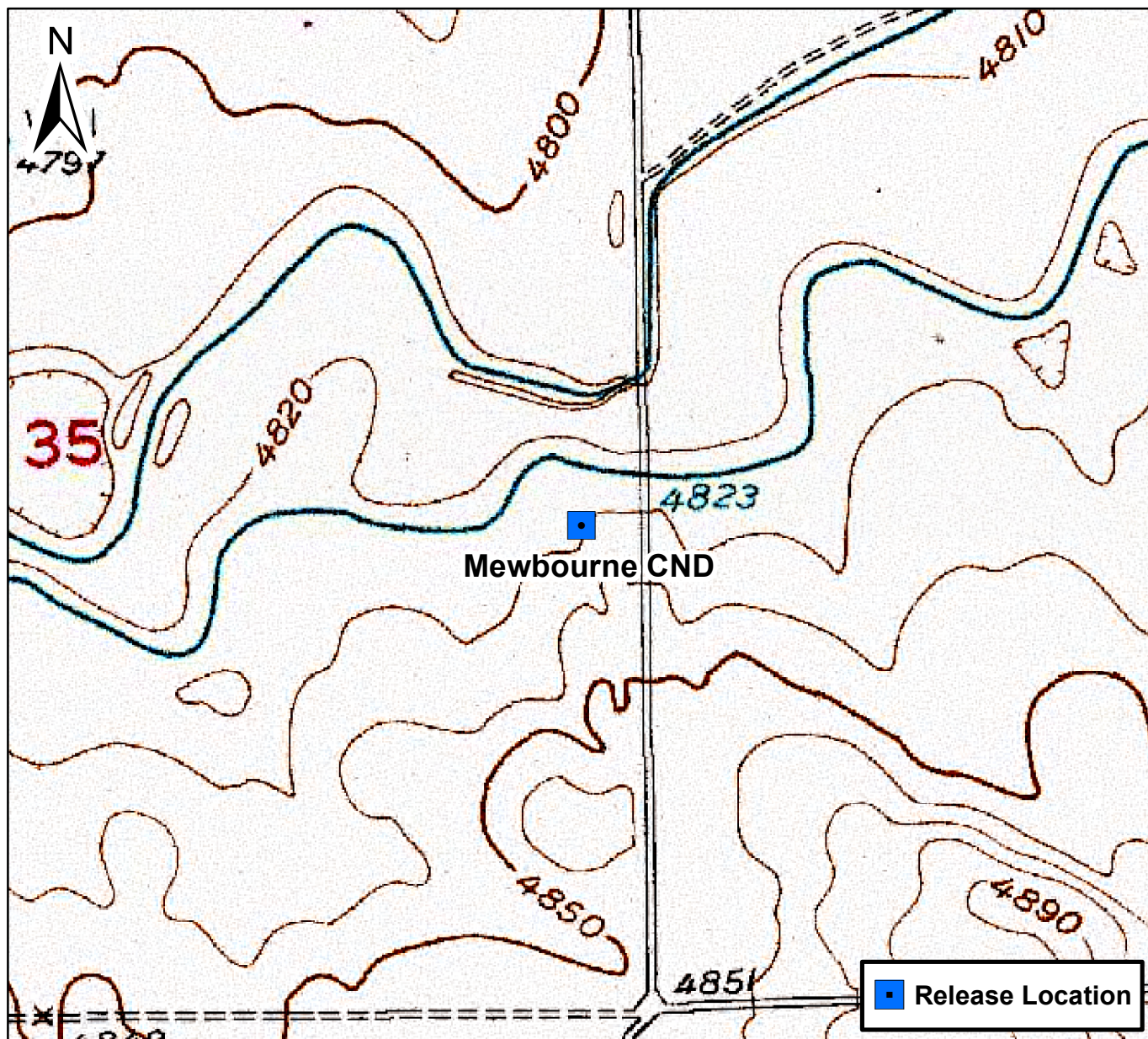
mg/kg= Milligrams per kilogram.

PPM - Parts per million

PID - Photoionization Detector

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

Table 915 note - If the method detection limit (“MDL”) or practical quantitation limit (“PQL”) for a pollutant is higher (less stringent) than a threshold concentration listed in Table 915-1, the Director may allow an Operator to substitute the MDL or PQL for the concentration listed in Table 915-1.




0 750 1,500 Feet

Figure 1

Site Location Map
Mewbourn CND
NESE S35 T4N R66W
Weld County, Colorado





DATE: April 2021	<div data-bbox="646 1822 957 1931"> TASMAN GEOSCIENCES</div> <div data-bbox="966 1850 1243 1923">Tasman Geosciences, Inc. 6855 W. 119th Ave Broomfield, CO 80020</div>	<div data-bbox="1466 1810 2197 1947">DCP Midstream – DJ Basin Mewbourn CND NESE, Section 35, Township 4 North, Range 66 West Weld County, Colorado</div>	Site Overview Map	Figure 2
DESIGNED BY: B. Humphrey				
DRAWN BY: J. Clonts				



DATE:	January 2022
DESIGNED BY:	B. Humphrey
DRAWN BY:	J. Clonts



Tasman, Inc.
6855 W. 119th Ave
Broomfield, CO 80020

DCP Midstream – DJ Basin
Mewbourn CND
NESE, Section 35, Township 4 North, Range 66 West
Weld County, Colorado

Site Overview Map -
Soil Sample
Locations

Figure
3

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 19, 2022

Chandler Cole

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Mewbourn PWV Removal

Work Order #2201113

Enclosed are the results of analyses for samples received by Summit Scientific on 01/12/22 17:00. 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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
ETankB@8'	2201113-01	Soil	01/12/22 12:40	01/12/22 17:00
NWallE@4'	2201113-02	Soil	01/12/22 12:55	01/12/22 17:00
EWall@4'	2201113-03	Soil	01/12/22 13:50	01/12/22 17:00

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.

2201113

Page 1 of 1

Project Manager: Jeb Watts / Chandler Cole
E-Mail: j.watts@tasman-900.com / cecoleed@pmidstream.com / vscrm995@tasman-900.com
Project Name: Memburn PWV Removal
Project Number: _____

				Preservative				Matrix		Analyze For:										Special Instructions		
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	Full Range 9/5-1	Soils									
ETank BE8'	1/12/22	1240	3			X			X			X										
N Wall E4'	1/12/22	1255	3			X			X			X										
E Wall E4'	1/12/22	1350	3			X			X			X										
Relinquished by: <i>Be. Loh</i>				Date/Time: 1/12/22 1700		Received by: <i>Jason Lockbox</i>				Date/Time: 1/12/22 1700		Turn Around Time (Check) Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>										Notes:
Relinquished by:				Date/Time:		Received by: <i>[Signature]</i>				Date/Time: 1/12/22 1700		Sample Integrity: Temperature Upon Receipt: <u>4.1</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>										
Relinquished by:				Date/Time:		Received in Lab by:				Date/Time:												

S₂

2201113

Sample Receipt Checklist

S2 Work Order#

Client: DCP-TasmanClient Project ID: Mawbourn Pwv RemovalShipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #: _____

Matrix (check all that apply):

☐ Air☒ Soil/Solid☐ Water☐ Other: _____

(Describe)


Temp (°C)

4.1

Thermometer ID: G86A9201901378

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

Additional Comments (if any):

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

 Custodian Printed Name or Initials

11222
 Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

ETankB@8'
2201113-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	0.0080	0.0020		mg/kg	1	BFA0190	01/13/22	01/14/22	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.016	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.0069	0.0050		"	"	"	"	"	"	
Naphthalene	0.0042	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BFA0191	01/13/22	01/14/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/12/22 12:40**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

ETankB@8'
2201113-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0187	01/13/22	01/14/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.00891	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0156	0.00500	"	"	"	"	"	"	

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		56.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0592	0.0100	mg/L	1	BFA0189	01/13/22	01/15/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

ETankB@8'
2201113-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.793	0.213	mg/kg dry	1	BFA0199	01/13/22	01/15/22	EPA 6020B
Barium	47.4	0.426	"	"	"	"	"	"
Cadmium	ND	0.213	"	"	"	"	"	"
Copper	4.00	0.426	"	"	"	"	"	"
Lead	4.23	0.213	"	"	"	"	"	"
Nickel	3.84	0.426	"	"	"	"	"	"
Selenium	0.385	0.277	"	"	"	"	"	"
Silver	0.0220	0.0213	"	"	"	"	"	"
Zinc	18.2	0.426	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFA0258	01/17/22	01/19/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	8.46	0.0532	mg/L dry	1	BFA0210	01/13/22	01/15/22	EPA 6020B	
Magnesium	3.04	0.0532	"	"	"	"	"	"	
Sodium	4.05	0.0532	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.304	0.00100	units	1	BFA0279	01/17/22	01/17/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

ETankB@8'
2201113-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	94.0	%	1	BFA0211	01/13/22	01/14/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.115	0.0100	mmhos/cm	1	BFA0236	01/14/22	01/14/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/12/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.06		pH Units	1	BFA0235	01/14/22	01/14/22	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

NWallE@4'
2201113-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.016	0.0020	mg/kg	1	BFA0190	01/13/22	01/14/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.97	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.58	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.49	0.0050	"	"	"	"	"	"	
Naphthalene	0.056	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	23	0.50	"	"	"	"	"	"	

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		110 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		96.2 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		147 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	82	50	mg/kg	1	BFA0191	01/13/22	01/14/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		92.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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6855 W. 119th Ave.
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Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

NWallE@4'
2201113-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0187	01/13/22	01/14/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0541	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.105	0.00500	"	"	"	"	"	"	

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		53.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0734	0.0100	mg/L	1	BFA0189	01/13/22	01/15/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/12/22 12:55**

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

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

NWallE@4'
2201113-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.500	0.215	mg/kg dry	1	BFA0199	01/13/22	01/15/22	EPA 6020B
Barium	33.2	0.430	"	"	"	"	"	"
Cadmium	ND	0.215	"	"	"	"	"	"
Copper	3.93	0.430	"	"	"	"	"	"
Lead	4.57	0.215	"	"	"	"	"	"
Nickel	2.46	0.430	"	"	"	"	"	"
Selenium	0.298	0.280	"	"	"	"	"	"
Silver	ND	0.0215	"	"	"	"	"	"
Zinc	14.7	0.430	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFA0258	01/17/22	01/19/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5.16	0.0538	mg/L dry	1	BFA0210	01/13/22	01/15/22	EPA 6020B	
Magnesium	1.76	0.0538	"	"	"	"	"	"	
Sodium	2.03	0.0538	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.197	0.00100	units	1	BFA0279	01/17/22	01/17/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

NWallE@4'
2201113-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.9		%	1	BFA0211	01/13/22	01/14/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0716	0.0100	mmhos/cm	1	BFA0236	01/14/22	01/14/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/12/22 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.33		pH Units	1	BFA0235	01/14/22	01/14/22	EPA 9045D	

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Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

EWall@4'
2201113-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFA0190	01/13/22	01/14/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.031	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0191	01/13/22	01/14/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		73.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

EWall@4'
2201113-03 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0187	01/13/22	01/14/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		62.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0573	0.0100	mg/L	1	BFA0189	01/13/22	01/15/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

EWall@4'
2201113-03 (Soil)

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Total Metals by EPA 6020B

Arsenic	0.785	0.218	mg/kg dry	1	BFA0199	01/13/22	01/15/22	EPA 6020B
Barium	41.9	0.436	"	"	"	"	"	"
Cadmium	ND	0.218	"	"	"	"	"	"
Copper	4.44	0.436	"	"	"	"	"	"
Lead	4.13	0.218	"	"	"	"	"	"
Nickel	3.29	0.436	"	"	"	"	"	"
Selenium	0.331	0.283	"	"	"	"	"	"
Silver	ND	0.0218	"	"	"	"	"	"
Zinc	17.0	0.436	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFA0258	01/17/22	01/19/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	16.1	0.0544	mg/L dry	1	BFA0210	01/13/22	01/15/22	EPA 6020B	
Magnesium	4.39	0.0544	"	"	"	"	"	"	
Sodium	14.4	0.0544	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.821	0.00100	units	1	BFA0279	01/17/22	01/17/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

EWall@4'
2201113-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.8		%	1	BFA0211	01/13/22	01/14/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.287	0.0100	mmhos/cm	1	BFA0236	01/14/22	01/14/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/12/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.36		pH Units	1	BFA0235	01/14/22	01/14/22	EPA 9045D	

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Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

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 BFA0190 - EPA 5030 Soil MS

Blank (BFA0190-BLK1)

Prepared: 01/13/22 Analyzed: 01/14/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0425		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	21-167			

LCS (BFA0190-BS1)

Prepared: 01/13/22 Analyzed: 01/14/22

Benzene	0.0717	0.0020	mg/kg	0.0750		95.6	70-130			
Toluene	0.0768	0.0050	"	0.0750		102	70-130			
Ethylbenzene	0.0773	0.0050	"	0.0750		103	70-130			
m,p-Xylene	0.158	0.010	"	0.150		105	70-130			
o-Xylene	0.0767	0.0050	"	0.0750		102	70-130			
1,2,4-Trimethylbenzene	0.0839	0.0050	"	0.0750		112	70-130			
1,3,5-Trimethylbenzene	0.0858	0.0050	"	0.0750		114	70-130			
Naphthalene	0.0871	0.0038	"	0.0750		116	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

Matrix Spike (BFA0190-MS1)

Source: 2201102-01

Prepared: 01/13/22 Analyzed: 01/14/22

Benzene	0.0703	0.0020	mg/kg	0.0750	ND	93.7	70-130			
Toluene	0.0768	0.0050	"	0.0750	ND	102	70-130			
Ethylbenzene	0.0800	0.0050	"	0.0750	ND	107	70-130			
m,p-Xylene	0.163	0.010	"	0.150	ND	108	70-130			
o-Xylene	0.0782	0.0050	"	0.0750	ND	104	70-130			
1,2,4-Trimethylbenzene	0.0866	0.0050	"	0.0750	ND	116	70-130			
1,3,5-Trimethylbenzene	0.0880	0.0050	"	0.0750	ND	117	70-130			
Naphthalene	0.0923	0.0038	"	0.0750	ND	123	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0400		98.2	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0474		"	0.0400		118	21-167			

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Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

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 BFA0190 - EPA 5030 Soil MS

Matrix Spike Dup (BFA0190-MSD1)		Source: 2201102-01			Prepared: 01/13/22 Analyzed: 01/14/22					
Benzene	0.0704	0.0020	mg/kg	0.0750	ND	93.9	70-130	0.213	30	
Toluene	0.0777	0.0050	"	0.0750	ND	104	70-130	1.20	30	
Ethylbenzene	0.0805	0.0050	"	0.0750	ND	107	70-130	0.598	30	
m,p-Xylene	0.164	0.010	"	0.150	ND	109	70-130	0.625	30	
o-Xylene	0.0803	0.0050	"	0.0750	ND	107	70-130	2.69	30	
1,2,4-Trimethylbenzene	0.0909	0.0050	"	0.0750	ND	121	70-130	4.83	30	
1,3,5-Trimethylbenzene	0.0913	0.0050	"	0.0750	ND	122	70-130	3.71	30	
Naphthalene	0.0967	0.0038	"	0.0750	ND	129	70-130	4.60	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0401		"	0.0400		100	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0526		"	0.0400		131	21-167			

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Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFA0191 - EPA 3550A

Blank (BFA0191-BLK1)

Prepared: 01/13/22 Analyzed: 01/14/22

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

LCS (BFA0191-BS1)

Prepared: 01/13/22 Analyzed: 01/14/22

C10-C28 (DRO)	418	50	mg/kg	500	83.5	70-130
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Matrix Spike (BFA0191-MS1)

Source: 2201102-01

Prepared: 01/13/22 Analyzed: 01/14/22

C10-C28 (DRO)	413	50	mg/kg	500	10.1	80.6	70-130
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Matrix Spike Dup (BFA0191-MSD1)

Source: 2201102-01

Prepared: 01/13/22 Analyzed: 01/14/22

C10-C28 (DRO)	401	50	mg/kg	500	10.1	78.3	70-130	2.88	20
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFA0187 - EPA 5030 Soil MS

Blank (BFA0187-BLK1)

Prepared: 01/13/22 Analyzed: 01/14/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0245		"	0.0333		73.5	40-150			
Surrogate: Fluoranthene-d10	0.0251		"	0.0333		75.3	40-150			

LCS (BFA0187-BS1)

Prepared: 01/13/22 Analyzed: 01/14/22

Acenaphthene	0.0303	0.00500	mg/kg	0.0333	91.0	31-137	
Anthracene	0.0300	0.00500	"	0.0333	90.1	30-120	
Benzo (a) anthracene	0.0281	0.00500	"	0.0333	84.4	30-120	
Benzo (a) pyrene	0.0296	0.00500	"	0.0333	88.8	30-120	
Benzo (b) fluoranthene	0.0317	0.00500	"	0.0333	95.1	30-120	
Benzo (k) fluoranthene	0.0335	0.00500	"	0.0333	101	30-120	
Chrysene	0.0296	0.00500	"	0.0333	88.9	30-120	
Dibenz (a,h) anthracene	0.0228	0.00500	"	0.0333	68.5	30-120	
Fluoranthene	0.0328	0.00500	"	0.0333	98.5	30-120	
Fluorene	0.0314	0.00500	"	0.0333	94.3	30-120	
Indeno (1,2,3-cd) pyrene	0.0220	0.00500	"	0.0333	65.9	30-120	
Pyrene	0.0294	0.00500	"	0.0333	88.3	35-142	
1-Methylnaphthalene	0.0273	0.00500	"	0.0333	82.0	35-142	
2-Methylnaphthalene	0.0289	0.00500	"	0.0333	86.8	35-142	
Surrogate: 2-Methylnaphthalene-d10	0.0265		"	0.0333	79.4	40-150	
Surrogate: Fluoranthene-d10	0.0285		"	0.0333	85.4	40-150	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFA0187 - EPA 5030 Soil MS

Matrix Spike (BFA0187-MS1)

Source: 2201024-01

Prepared: 01/13/22 Analyzed: 01/14/22

Acenaphthene	0.0238	0.00500	mg/kg	0.0333	ND	71.5	31-137			
Anthracene	0.0250	0.00500	"	0.0333	ND	75.0	30-120			
Benzo (a) anthracene	0.0226	0.00500	"	0.0333	ND	67.7	30-120			
Benzo (a) pyrene	0.0211	0.00500	"	0.0333	ND	63.3	30-120			
Benzo (b) fluoranthene	0.0236	0.00500	"	0.0333	ND	70.8	30-120			
Benzo (k) fluoranthene	0.0258	0.00500	"	0.0333	ND	77.4	30-120			
Chrysene	0.0233	0.00500	"	0.0333	ND	70.0	30-120			
Dibenz (a,h) anthracene	0.0167	0.00500	"	0.0333	ND	50.1	30-120			
Fluoranthene	0.0272	0.00500	"	0.0333	ND	81.6	30-120			
Fluorene	0.0250	0.00500	"	0.0333	ND	74.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0196	0.00500	"	0.0333	ND	58.9	30-120			
Pyrene	0.0235	0.00500	"	0.0333	ND	70.6	35-142			
1-Methylnaphthalene	0.0251	0.00500	"	0.0333	ND	75.4	15-130			
2-Methylnaphthalene	0.0251	0.00500	"	0.0333	ND	75.4	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0216		"	0.0333		64.9	40-150			
Surrogate: Fluoranthene-d10	0.0234		"	0.0333		70.1	40-150			

Matrix Spike Dup (BFA0187-MSD1)

Source: 2201024-01

Prepared: 01/13/22 Analyzed: 01/14/22

Acenaphthene	0.0234	0.00500	mg/kg	0.0333	ND	70.1	31-137	1.95	30	
Anthracene	0.0259	0.00500	"	0.0333	ND	77.6	30-120	3.40	30	
Benzo (a) anthracene	0.0228	0.00500	"	0.0333	ND	68.3	30-120	0.815	30	
Benzo (a) pyrene	0.0235	0.00500	"	0.0333	ND	70.5	30-120	10.8	30	
Benzo (b) fluoranthene	0.0250	0.00500	"	0.0333	ND	74.9	30-120	5.63	30	
Benzo (k) fluoranthene	0.0255	0.00500	"	0.0333	ND	76.4	30-120	1.25	30	
Chrysene	0.0244	0.00500	"	0.0333	ND	73.2	30-120	4.56	30	
Dibenz (a,h) anthracene	0.0171	0.00500	"	0.0333	ND	51.2	30-120	2.26	30	
Fluoranthene	0.0274	0.00500	"	0.0333	ND	82.3	30-120	0.832	30	
Fluorene	0.0247	0.00500	"	0.0333	ND	74.2	30-120	0.863	30	
Indeno (1,2,3-cd) pyrene	0.0201	0.00500	"	0.0333	ND	60.2	30-120	2.10	30	
Pyrene	0.0240	0.00500	"	0.0333	ND	72.1	35-142	2.08	30	
1-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.1	15-130	11.6	50	
2-Methylnaphthalene	0.0234	0.00500	"	0.0333	ND	70.3	15-130	7.01	50	
Surrogate: 2-Methylnaphthalene-d10	0.0197		"	0.0333		59.2	40-150			
Surrogate: Fluoranthene-d10	0.0235		"	0.0333		70.6	40-150			

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

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

Batch BFA0189 - EPA 3050B

Blank (BFA0189-BLK1)

Prepared: 01/13/22 Analyzed: 01/15/22

Boron ND 0.0100 mg/L

LCS (BFA0189-BS1)

Prepared: 01/13/22 Analyzed: 01/15/22

Boron 5.13 0.0100 mg/L 5.00 103 80-120

Duplicate (BFA0189-DUP1)

Source: 2201102-01

Prepared: 01/13/22 Analyzed: 01/15/22

Boron 0.541 0.0100 mg/L 0.528 2.45 20

Matrix Spike (BFA0189-MS1)

Source: 2201102-01

Prepared: 01/13/22 Analyzed: 01/15/22

Boron 5.36 0.0100 mg/L 5.00 0.528 96.7 75-125

Matrix Spike Dup (BFA0189-MSD1)

Source: 2201102-01

Prepared: 01/13/22 Analyzed: 01/15/22

Boron 5.42 0.0100 mg/L 5.00 0.528 97.8 75-125 1.08 25

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFA0199 - EPA 3050B

Blank (BFA0199-BLK1)

Prepared: 01/13/22 Analyzed: 01/15/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BFA0199-BS1)

Prepared: 01/13/22 Analyzed: 01/15/22

Arsenic	40.6	0.200	mg/kg wet	40.0	102	80-120
Barium	38.2	0.400	"	40.0	95.6	80-120
Cadmium	1.95	0.200	"	2.00	97.6	80-120
Copper	37.3	0.400	"	40.0	93.3	80-120
Lead	18.6	0.200	"	20.0	92.9	80-120
Nickel	37.0	0.400	"	40.0	92.4	80-120
Selenium	3.60	0.260	"	4.00	90.0	80-120
Silver	1.87	0.0200	"	2.00	93.5	80-120
Zinc	41.5	0.400	"	40.0	104	80-120

Duplicate (BFA0199-DUP1)

Source: 2201024-01

Prepared: 01/13/22 Analyzed: 01/15/22

Arsenic	10.8	0.253	mg/kg dry	11.9	10.5	20	QR-03
Barium	34.2	0.506	"	25.7	28.4	20	
Cadmium	0.168	0.253	"	0.151	11.1	20	
Copper	18.0	0.506	"	18.4	2.20	20	
Lead	20.9	0.253	"	21.6	3.44	20	
Nickel	12.5	0.506	"	12.8	2.65	20	
Selenium	2.33	0.329	"	2.57	9.60	20	
Silver	0.105	0.0253	"	0.112	6.50	20	
Zinc	131	0.506	"	126	3.61	20	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BFA0199 - EPA 3050B

Matrix Spike (BFA0199-MS1)		Source: 2201024-01			Prepared: 01/13/22 Analyzed: 01/15/22					
Arsenic	53.8	0.253	mg/kg dry	50.6	11.9	82.8	75-125			
Barium	71.9	0.506	"	50.6	25.7	91.5	75-125			
Cadmium	2.54	0.253	"	2.53	0.151	94.5	75-125			
Copper	62.2	0.506	"	50.6	18.4	86.6	75-125			
Lead	34.2	0.253	"	25.3	21.6	49.7	75-125			QR-03
Nickel	55.5	0.506	"	50.6	12.8	84.3	75-125			
Selenium	5.89	0.329	"	5.06	2.57	65.6	75-125			QR-03
Silver	2.34	0.0253	"	2.53	0.112	88.3	75-125			
Zinc	136	0.506	"	50.6	126	19.6	75-125			QR-03

Matrix Spike Dup (BFA0199-MSD1)		Source: 2201024-01			Prepared: 01/13/22 Analyzed: 01/15/22					
Arsenic	54.0	0.253	mg/kg dry	50.6	11.9	83.2	75-125	0.388	25	
Barium	68.0	0.506	"	50.6	25.7	83.7	75-125	5.66	25	
Cadmium	2.60	0.253	"	2.53	0.151	96.9	75-125	2.34	25	
Copper	62.9	0.506	"	50.6	18.4	87.9	75-125	1.08	25	
Lead	35.0	0.253	"	25.3	21.6	53.0	75-125	2.41	25	QR-03
Nickel	55.6	0.506	"	50.6	12.8	84.5	75-125	0.152	25	
Selenium	6.18	0.329	"	5.06	2.57	71.4	75-125	4.84	25	QR-03
Silver	2.42	0.0253	"	2.53	0.112	91.2	75-125	3.08	25	
Zinc	137	0.506	"	50.6	126	21.7	75-125	0.763	25	QR-03

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFA0258 - 3060A Mod

Blank (BFA0258-BLK1)

Prepared & Analyzed: 01/17/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFA0258-BS1)

Prepared & Analyzed: 01/17/22

Chromium, Hexavalent 28.2 0.30 mg/kg wet 25.0 113 80-120

Duplicate (BFA0258-DUP1)

Source: 2201059-01

Prepared & Analyzed: 01/17/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFA0258-MS1)

Source: 2201059-01

Prepared & Analyzed: 01/17/22

Chromium, Hexavalent 31.8 0.30 mg/kg dry 27.5 ND 116 75-125

Matrix Spike Dup (BFA0258-MSD1)

Source: 2201059-01

Prepared & Analyzed: 01/17/22

Chromium, Hexavalent 30.3 0.30 mg/kg dry 27.5 ND 110 75-125 4.60 20

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFA0210 - General Preparation

Blank (BFA0210-BLK1)

Prepared: 01/13/22 Analyzed: 01/15/22

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BFA0210-BS1)

Prepared: 01/13/22 Analyzed: 01/15/22

Calcium	5.14	0.0500	mg/L wet	5.00	103	70-130
Magnesium	5.31	0.0500	"	5.00	106	70-130
Sodium	4.93	0.0500	"	5.00	98.5	70-130

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

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

Summit Scientific

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

Batch BFA0211 - General Preparation

Duplicate (BFA0211-DUP1)

Source: 2201100-01

Prepared: 01/13/22 Analyzed: 01/14/22

% Solids	83.6	%	83.5	0.0586	20
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Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BFA0236 - General Preparation

Blank (BFA0236-BLK1)

Prepared & Analyzed: 01/14/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFA0236-BS1)

Prepared & Analyzed: 01/14/22

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BFA0236-DUP1)

Source: 2201102-01

Prepared & Analyzed: 01/14/22

Specific Conductance (EC) 1.16 0.0100 mmhos/cm 1.20 2.88 20

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFA0235 - General Preparation

LCS (BFA0235-BS1)

Prepared & Analyzed: 01/14/22

pH	8.97	pH Units	9.18	97.7	95-105
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Duplicate (BFA0235-DUP1)

Source: 2201102-01

Prepared & Analyzed: 01/14/22

pH	7.90	pH Units	7.63	3.48	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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Chandler Cole

Reported:
01/19/22 09:07

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 18, 2022

Jeb Watts

Tasman Geosciences

6855 W. 119th Ave.

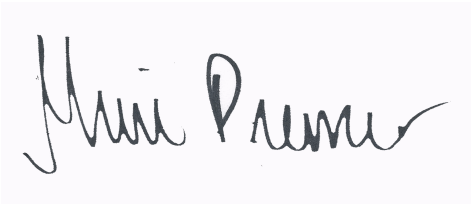
Broomfield, CO 80020

RE: Mewbourn PWV Removal

Work Order #2201134

Enclosed are the results of analyses for samples received by Summit Scientific on 01/13/22 17:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premer", is displayed on a light purple rectangular background.

Muri Premer

Project Manager



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWallE@4'	2201134-01	Soil	01/13/22 12:10	01/13/22 17:50
WTankB@6.5'	2201134-02	Soil	01/13/22 14:30	01/13/22 17:50
NWallW@4'	2201134-03	Soil	01/13/22 14:50	01/13/22 17:50
SWallW@4'	2201134-04	Soil	01/13/22 15:15	01/13/22 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.

2201134

Page 1 of 1

Project Number:

www.s2scientific.com

S₂

2201134

Sample Receipt Checklist

S2 Work Order#

Client: DCP TasmanClient Project ID: Mewbourn Pw RemovalShipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

Matrix (check all that apply):

☐ Air☒ Soil/Solid☐ Water☐ Other:

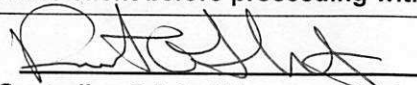
(Describe)

Temp (°C)	4.9
-----------	-----

Thermometer ID: G86A9201901378

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

Additional Comments (if any):

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

 Custodian Printed Name or Initials

11322
 Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

SWallE@4'
2201134-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFA0231	01/14/22	01/15/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.037	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.10	0.0050	"	"	"	"	"	"	
Naphthalene	0.025	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6.6	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		86.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		125 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	160	50	mg/kg	1	BFA0232	01/14/22	01/15/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		89.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

SWallE@4'
2201134-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0284	01/18/22	01/19/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0169	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.108	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0971	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		50.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0269	0.0100	mg/L	1	BFA0262	01/17/22	02/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/22 12:10**

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

SWallE@4'
2201134-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.19	0.540	mg/kg dry	1	BFA0239	01/14/22	02/18/22	EPA 6020B
Barium	46.7	1.08	"	"	"	"	"	"
Cadmium	ND	0.540	"	"	"	"	"	"
Copper	3.31	1.08	"	"	"	"	"	"
Lead	4.71	0.540	"	"	"	"	"	"
Nickel	2.83	1.08	"	"	"	"	"	"
Selenium	0.859	0.703	"	"	"	"	"	"
Silver	ND	0.0540	"	"	"	"	"	"
Zinc	14.5	1.08	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFA0330	01/20/22	01/20/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	18.2	0.0540	mg/L dry	1	BFA0245	01/16/22	01/28/22	EPA 6020B	
Magnesium	4.73	0.0540	"	"	"	"	"	"	
Sodium	13.0	0.0540	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.702	0.00100	units	1	BFA0464	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

SWallE@4'
2201134-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.5		%	1	BFA0269	01/17/22	01/17/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.256	0.0100	mmhos/cm	1	BFA0250	01/17/22	01/17/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.06		pH Units	1	BFA0251	01/17/22	01/17/22	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

WTankB@6.5'
2201134-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.84	0.20	mg/kg	100	BFA0231	01/14/22	01/15/22	EPA 8260B	
Toluene	0.16	0.0050	"	1	"	"	"	"	
Ethylbenzene	0.58	0.0050	"	"	"	"	"	"	
Xylenes (total)	14	1.0	"	100	"	"	"	"	
1,2,4-Trimethylbenzene	3.6	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	2.3	0.50	"	"	"	"	"	"	
Naphthalene	0.10	0.0038	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	300	50	"	100	"	"	"	"	

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		96.2 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		75.7 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		105 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	140	50	mg/kg	1	BFA0232	01/14/22	01/15/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		92.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

WTankB@6.5'
2201134-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0284	01/18/22	01/19/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.00532	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.00593	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0111	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.00827	0.00500	"	"	"	"	"	"	
Fluorene	0.00660	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0107	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0573	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.109	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		43.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0300	0.0100	mg/L	1	BFA0262	01/17/22	02/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/22 14:30**

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

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

WTankB@6.5'
2201134-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.33	0.539	mg/kg dry	1	BFA0239	01/14/22	02/18/22	EPA 6020B
Barium	44.5	1.08	"	"	"	"	"	"
Cadmium	ND	0.539	"	"	"	"	"	"
Copper	3.88	1.08	"	"	"	"	"	"
Lead	2.52	0.539	"	"	"	"	"	"
Nickel	3.45	1.08	"	"	"	"	"	"
Selenium	ND	0.701	"	"	"	"	"	"
Silver	ND	0.0539	"	"	"	"	"	"
Zinc	11.2	1.08	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFA0330	01/20/22	01/20/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	19.6	0.0539	mg/L dry	1	BFA0245	01/16/22	01/28/22	EPA 6020B	
Magnesium	10.5	0.0539	"	"	"	"	"	"	
Sodium	12.9	0.0539	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.585	0.00100	units	1	BFA0464	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

WTankB@6.5'
2201134-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	92.7			%	1	BFA0269	01/17/22	01/17/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.211	0.0100		mmhos/cm	1	BFA0250	01/17/22	01/17/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/13/22 14:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.37			pH Units	1	BFA0251	01/17/22	01/17/22	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

NWallW@4'
2201134-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/22 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.87	0.20	mg/kg	100	BFA0231	01/14/22	01/15/22	EPA 8260B	
Toluene	3.1	0.50	"	"	"	"	"	"	
Ethylbenzene	0.53	0.0050	"	1	"	"	"	"	
Xylenes (total)	6.7	1.0	"	100	"	"	"	"	
1,2,4-Trimethylbenzene	0.56	0.0050	"	1	"	"	"	"	
1,3,5-Trimethylbenzene	0.31	0.0050	"	"	"	"	"	"	
Naphthalene	0.038	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	190	50	"	100	"	"	"	"	

Date Sampled: **01/13/22 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<i>Surrogate: 1,2-Dichloroethane-d4</i>		60.8 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		52.4 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		115 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/22 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	51	50	mg/kg	1	BFA0232	01/14/22	01/15/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/13/22 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<i>Surrogate: o-Terphenyl</i>		91.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

NWallW@4'
2201134-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/22 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0284	01/18/22	01/19/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.00640	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0194	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/22 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/22 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0838	0.0100	mg/L	1	BFA0262	01/17/22	02/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/22 14:50**

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

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

NWallW@4'
2201134-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.59	0.569	mg/kg dry	1	BFA0239	01/14/22	02/18/22	EPA 6020B
Barium	54.4	1.14	"	"	"	"	"	"
Cadmium	ND	0.569	"	"	"	"	"	"
Copper	4.08	1.14	"	"	"	"	"	"
Lead	4.35	0.569	"	"	"	"	"	"
Nickel	4.05	1.14	"	"	"	"	"	"
Selenium	0.878	0.740	"	"	"	"	"	"
Silver	ND	0.0569	"	"	"	"	"	"
Zinc	15.8	1.14	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 01/13/22 14:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFA0330	01/20/22	01/20/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 01/13/22 14:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4.58	0.0569	mg/L dry	1	BFA0245	01/16/22	01/28/22	EPA 6020B	
Magnesium	4.55	0.0569	"	"	"	"	"	"	
Sodium	13.7	0.0569	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 01/13/22 14:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.09	0.00100	units	1	BFA0464	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

NWallW@4'
2201134-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/22 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.8		%	1	BFA0269	01/17/22	01/17/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/13/22 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0701	0.0100	mmhos/cm	1	BFA0250	01/17/22	01/17/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/13/22 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.52		pH Units	1	BFA0251	01/17/22	01/17/22	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

SWallW@4'
2201134-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	0.037	0.0020	mg/kg	1	BFA0231	01/14/22	01/15/22	EPA 8260B	
Toluene	0.016	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.021	0.0050	"	"	"	"	"	"	
Xylenes (total)	14	1.0	"	100	"	"	"	"	
1,2,4-Trimethylbenzene	13	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	9.2	0.50	"	"	"	"	"	"	
Naphthalene	0.10	0.0038	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	660	50	"	100	"	"	"	"	

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<i>Surrogate: 1,2-Dichloroethane-d4</i>		88.0 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		85.9 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		115 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	710	50	mg/kg	1	BFA0232	01/14/22	01/15/22	EPA 8015M	
C28-C36 (ORO)	86	50	"	"	"	"	"	"	

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<i>Surrogate: o-Terphenyl</i>		93.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

SWallW@4'
2201134-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0284	01/18/22	01/19/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.00570	0.00500	"	"	"	"	"	"	
Fluorene	0.0143	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.00705	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0954	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.179	0.00500	"	"	"	"	"	"	

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		50.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0459	0.0100	mg/L	1	BFA0262	01/17/22	02/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

SWallW@4'
2201134-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.838	0.546	mg/kg dry	1	BFA0239	01/14/22	02/18/22	EPA 6020B
Barium	34.6	1.09	"	"	"	"	"	"
Cadmium	ND	0.546	"	"	"	"	"	"
Copper	2.94	1.09	"	"	"	"	"	"
Lead	2.77	0.546	"	"	"	"	"	"
Nickel	2.28	1.09	"	"	"	"	"	"
Selenium	ND	0.710	"	"	"	"	"	"
Silver	ND	0.0546	"	"	"	"	"	"
Zinc	10.6	1.09	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFA0330	01/20/22	01/20/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5.28	0.0546	mg/L dry	1	BFA0245	01/16/22	01/28/22	EPA 6020B	
Magnesium	4.37	0.0546	"	"	"	"	"	"	
Sodium	13.1	0.0546	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.02	0.00100	units	1	BFA0464	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

SWallW@4'
2201134-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	91.6			%	1	BFA0269	01/17/22	01/17/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.127	0.0100		mmhos/cm	1	BFA0250	01/17/22	01/17/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/13/22 15:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	6.89			pH Units	1	BFA0251	01/17/22	01/17/22	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

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 BFA0231 - EPA 5030 Soil MS

Blank (BFA0231-BLK1)

Prepared & Analyzed: 01/14/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0377		"	0.0400		94.4	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.2	21-167			

LCS (BFA0231-BS1)

Prepared & Analyzed: 01/14/22

Benzene	0.0660	0.0020	mg/kg	0.0750		88.0	70-130			
Toluene	0.0631	0.0050	"	0.0750		84.1	70-130			
Ethylbenzene	0.0650	0.0050	"	0.0750		86.6	70-130			
m,p-Xylene	0.129	0.010	"	0.150		86.1	70-130			
o-Xylene	0.0678	0.0050	"	0.0750		90.4	70-130			
1,2,4-Trimethylbenzene	0.0658	0.0050	"	0.0750		87.8	70-130			
1,3,5-Trimethylbenzene	0.0659	0.0050	"	0.0750		87.9	70-130			
Naphthalene	0.0825	0.0038	"	0.0750		110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0343		"	0.0400		85.8	23-173			
Surrogate: Toluene-d8	0.0375		"	0.0400		93.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.5	21-167			

Matrix Spike (BFA0231-MS1)

Source: 2201118-03

Prepared & Analyzed: 01/14/22

Benzene	0.0740	0.0020	mg/kg	0.0750	ND	98.7	70-130			
Toluene	0.0674	0.0050	"	0.0750	ND	89.9	70-130			
Ethylbenzene	0.0706	0.0050	"	0.0750	ND	94.2	70-130			
m,p-Xylene	0.139	0.010	"	0.150	ND	92.5	70-130			
o-Xylene	0.0735	0.0050	"	0.0750	ND	98.0	70-130			
1,2,4-Trimethylbenzene	0.0702	0.0050	"	0.0750	ND	93.6	70-130			
1,3,5-Trimethylbenzene	0.0695	0.0050	"	0.0750	ND	92.7	70-130			
Naphthalene	0.0930	0.0038	"	0.0750	ND	124	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0356		"	0.0400		89.0	23-173			
Surrogate: Toluene-d8	0.0384		"	0.0400		96.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		100	21-167			

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

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 BFA0231 - EPA 5030 Soil MS

Matrix Spike Dup (BFA0231-MSD1)	Source: 2201118-03			Prepared & Analyzed: 01/14/22						
Benzene	0.0725	0.0020	mg/kg	0.0750	ND	96.7	70-130	2.05	30	
Toluene	0.0673	0.0050	"	0.0750	ND	89.8	70-130	0.134	30	
Ethylbenzene	0.0683	0.0050	"	0.0750	ND	91.0	70-130	3.41	30	
m,p-Xylene	0.135	0.010	"	0.150	ND	89.9	70-130	2.78	30	
o-Xylene	0.0708	0.0050	"	0.0750	ND	94.4	70-130	3.78	30	
1,2,4-Trimethylbenzene	0.0691	0.0050	"	0.0750	ND	92.1	70-130	1.68	30	
1,3,5-Trimethylbenzene	0.0677	0.0050	"	0.0750	ND	90.3	70-130	2.58	30	
Naphthalene	0.0961	0.0038	"	0.0750	ND	128	70-130	3.24	30	
Surrogate: 1,2-Dichloroethane-d4	0.0353		"	0.0400		88.3	23-173			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400		95.0	21-167			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFA0232 - EPA 3550A

Blank (BFA0232-BLK1)

Prepared & Analyzed: 01/14/22

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

LCS (BFA0232-BS1)

Prepared & Analyzed: 01/14/22

C10-C28 (DRO)	417	50	mg/kg	500		83.4	70-130			
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Matrix Spike (BFA0232-MS1)

Source: 2201118-03

Prepared & Analyzed: 01/14/22

C10-C28 (DRO)	416	50	mg/kg	500	14.2	80.3	70-130			
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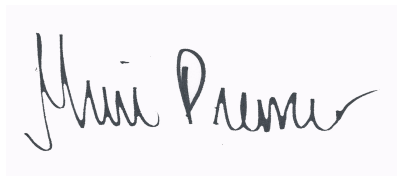
Matrix Spike Dup (BFA0232-MSD1)

Source: 2201118-03

Prepared & Analyzed: 01/14/22

C10-C28 (DRO)	449	50	mg/kg	500	14.2	87.0	70-130	7.75	20	
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFA0284 - EPA 5030 Soil MS

Blank (BFA0284-BLK1)

Prepared & Analyzed: 01/18/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0283		"	0.0333		85.0	40-150			
Surrogate: Fluoranthene-d10	0.0255		"	0.0333		76.5	40-150			

LCS (BFA0284-BS1)

Prepared & Analyzed: 01/18/22

Acenaphthene	0.0265	0.00500	mg/kg	0.0333		79.6	31-137			
Anthracene	0.0271	0.00500	"	0.0333		81.2	30-120			
Benzo (a) anthracene	0.0265	0.00500	"	0.0333		79.5	30-120			
Benzo (a) pyrene	0.0267	0.00500	"	0.0333		80.2	30-120			
Benzo (b) fluoranthene	0.0259	0.00500	"	0.0333		77.7	30-120			
Benzo (k) fluoranthene	0.0299	0.00500	"	0.0333		89.8	30-120			
Chrysene	0.0287	0.00500	"	0.0333		86.0	30-120			
Dibenz (a,h) anthracene	0.0301	0.00500	"	0.0333		90.3	30-120			
Fluoranthene	0.0298	0.00500	"	0.0333		89.3	30-120			
Fluorene	0.0291	0.00500	"	0.0333		87.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0355	0.00500	"	0.0333		106	30-120			
Pyrene	0.0288	0.00500	"	0.0333		86.3	35-142			
1-Methylnaphthalene	0.0212	0.00500	"	0.0333		63.7	35-142			
2-Methylnaphthalene	0.0239	0.00500	"	0.0333		71.8	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0221		"	0.0333		66.2	40-150			
Surrogate: Fluoranthene-d10	0.0263		"	0.0333		79.0	40-150			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

PAH 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 BFA0284 - EPA 5030 Soil MS

Matrix Spike (BFA0284-MS1)

Source: 2201118-03

Prepared: 01/18/22 Analyzed: 01/19/22

Acenaphthene	0.0231	0.00500	mg/kg	0.0333	ND	69.2	31-137		
Anthracene	0.0262	0.00500	"	0.0333	ND	78.7	30-120		
Benzo (a) anthracene	0.0243	0.00500	"	0.0333	ND	72.8	30-120		
Benzo (a) pyrene	0.0252	0.00500	"	0.0333	ND	75.5	30-120		
Benzo (b) fluoranthene	0.0246	0.00500	"	0.0333	ND	73.8	30-120		
Benzo (k) fluoranthene	0.0269	0.00500	"	0.0333	ND	80.7	30-120		
Chrysene	0.0254	0.00500	"	0.0333	ND	76.2	30-120		
Dibenz (a,h) anthracene	0.0262	0.00500	"	0.0333	ND	78.7	30-120		
Fluoranthene	0.0274	0.00500	"	0.0333	ND	82.1	30-120		
Fluorene	0.0244	0.00500	"	0.0333	ND	73.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0320	0.00500	"	0.0333	ND	96.0	30-120		
Pyrene	0.0270	0.00500	"	0.0333	ND	80.9	35-142		
1-Methylnaphthalene	0.0186	0.00500	"	0.0333	ND	55.9	15-130		
2-Methylnaphthalene	0.0209	0.00500	"	0.0333	ND	62.7	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0202		"	0.0333		60.5	40-150		
Surrogate: Fluoranthene-d10	0.0240		"	0.0333		72.0	40-150		

Matrix Spike Dup (BFA0284-MSD1)

Source: 2201118-03

Prepared: 01/18/22 Analyzed: 01/19/22

Acenaphthene	0.0205	0.00500	mg/kg	0.0333	ND	61.5	31-137	11.9	30
Anthracene	0.0227	0.00500	"	0.0333	ND	68.0	30-120	14.5	30
Benzo (a) anthracene	0.0211	0.00500	"	0.0333	ND	63.2	30-120	14.1	30
Benzo (a) pyrene	0.0212	0.00500	"	0.0333	ND	63.6	30-120	17.1	30
Benzo (b) fluoranthene	0.0217	0.00500	"	0.0333	ND	65.1	30-120	12.6	30
Benzo (k) fluoranthene	0.0239	0.00500	"	0.0333	ND	71.8	30-120	11.6	30
Chrysene	0.0227	0.00500	"	0.0333	ND	68.2	30-120	11.1	30
Dibenz (a,h) anthracene	0.0253	0.00500	"	0.0333	ND	75.8	30-120	3.77	30
Fluoranthene	0.0231	0.00500	"	0.0333	ND	69.3	30-120	16.9	30
Fluorene	0.0210	0.00500	"	0.0333	ND	63.1	30-120	14.9	30
Indeno (1,2,3-cd) pyrene	0.0292	0.00500	"	0.0333	ND	87.6	30-120	9.06	30
Pyrene	0.0238	0.00500	"	0.0333	ND	71.5	35-142	12.3	30
1-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.3	15-130	0.694	50
2-Methylnaphthalene	0.0174	0.00500	"	0.0333	ND	52.1	15-130	18.4	50
Surrogate: 2-Methylnaphthalene-d10	0.0183		"	0.0333		54.9	40-150		
Surrogate: Fluoranthene-d10	0.0209		"	0.0333		62.7	40-150		

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

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

Batch BFA0262 - EPA 3050B

Blank (BFA0262-BLK1)

Prepared: 01/17/22 Analyzed: 02/08/22

Boron ND 0.0100 mg/L

LCS (BFA0262-BS1)

Prepared: 01/17/22 Analyzed: 02/08/22

Boron 4.30 0.0100 mg/L 5.00 86.0 80-120

Duplicate (BFA0262-DUP1)

Source: 2201118-03

Prepared: 01/17/22 Analyzed: 02/08/22

Boron 0.0105 0.0100 mg/L 0.0102 2.90 20

Matrix Spike (BFA0262-MS1)

Source: 2201118-03

Prepared: 01/17/22 Analyzed: 02/08/22

Boron 3.01 0.0100 mg/L 5.00 0.0102 60.0 75-125 QM-05

Matrix Spike Dup (BFA0262-MSD1)

Source: 2201118-03

Prepared: 01/17/22 Analyzed: 02/08/22

Boron 3.02 0.0100 mg/L 5.00 0.0102 60.2 75-125 0.332 25 QM-05

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFA0239 - EPA 3050B

Blank (BFA0239-BLK1)

Prepared: 01/14/22 Analyzed: 02/18/22

Arsenic	ND	0.500	mg/kg wet
Barium	ND	1.00	"
Cadmium	ND	0.500	"
Copper	ND	1.00	"
Lead	ND	0.500	"
Nickel	ND	1.00	"
Selenium	ND	0.650	"
Silver	ND	0.0500	"
Zinc	ND	1.00	"

LCS (BFA0239-BS1)

Prepared: 01/14/22 Analyzed: 02/18/22

Arsenic	34.8	0.500	mg/kg wet	37.5	92.8	80-120
Barium	38.2	1.00	"	37.5	102	80-120
Cadmium	1.81	0.500	"	1.88	96.5	80-120
Copper	32.0	1.00	"	37.5	85.3	80-120
Lead	17.4	0.500	"	18.8	92.8	80-120
Nickel	31.3	1.00	"	37.5	83.5	80-120
Selenium	4.07	0.650	"	3.75	109	80-120
Silver	1.80	0.0500	"	1.88	96.0	80-120
Zinc	36.7	1.00	"	37.5	97.9	80-120

Duplicate (BFA0239-DUP1)

Source: 2112217-01

Prepared: 01/14/22 Analyzed: 02/18/22

Arsenic	3.13	0.569	mg/kg dry	3.31	5.65	20
Barium	92.4	1.14	"	102	9.50	20
Cadmium	ND	0.569	"	ND		20
Copper	4.29	1.14	"	4.46	3.90	20
Lead	5.36	0.569	"	5.71	6.37	20
Nickel	5.51	1.14	"	5.49	0.414	20
Selenium	1.10	0.740	"	1.10	0.310	20
Silver	ND	0.0569	"	ND		20
Zinc	20.0	1.14	"	20.7	3.35	20

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFA0239 - EPA 3050B

Matrix Spike (BFA0239-MS1)

Source: 2112217-01

Prepared: 01/14/22 Analyzed: 02/18/22

Arsenic	46.1	0.569	mg/kg dry	42.7	3.31	100	75-125
Barium	139	1.14	"	42.7	102	87.2	75-125
Cadmium	2.38	0.569	"	2.13	ND	111	75-125
Copper	42.5	1.14	"	42.7	4.46	89.0	75-125
Lead	26.1	0.569	"	21.3	5.71	95.4	75-125
Nickel	44.2	1.14	"	42.7	5.49	90.6	75-125
Selenium	5.49	0.740	"	4.27	1.10	103	75-125
Silver	2.11	0.0569	"	2.13	ND	98.7	75-125
Zinc	68.0	1.14	"	42.7	20.7	111	75-125

Matrix Spike Dup (BFA0239-MSD1)

Source: 2112217-01

Prepared: 01/14/22 Analyzed: 02/18/22

Arsenic	42.2	0.569	mg/kg dry	42.7	3.31	91.2	75-125	8.76	25
Barium	154	1.14	"	42.7	102	122	75-125	10.1	25
Cadmium	2.22	0.569	"	2.13	ND	104	75-125	6.93	25
Copper	39.7	1.14	"	42.7	4.46	82.6	75-125	6.65	25
Lead	25.2	0.569	"	21.3	5.71	91.1	75-125	3.56	25
Nickel	41.0	1.14	"	42.7	5.49	83.1	75-125	7.49	25
Selenium	5.16	0.740	"	4.27	1.10	95.0	75-125	6.20	25
Silver	1.96	0.0569	"	2.13	ND	91.7	75-125	7.28	25
Zinc	64.8	1.14	"	42.7	20.7	103	75-125	4.80	25

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFA0330 - 3060A Mod

Blank (BFA0330-BLK1)

Prepared & Analyzed: 01/20/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFA0330-BS1)

Prepared & Analyzed: 01/20/22

Chromium, Hexavalent 23.2 0.30 mg/kg wet 25.0 92.6 80-120

Duplicate (BFA0330-DUP1)

Source: 2201125-01

Prepared & Analyzed: 01/20/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFA0330-MS1)

Source: 2201125-01

Prepared & Analyzed: 01/20/22

Chromium, Hexavalent 30.8 0.30 mg/kg dry 29.2 ND 105 75-125

Matrix Spike Dup (BFA0330-MSD1)

Source: 2201125-01

Prepared & Analyzed: 01/20/22

Chromium, Hexavalent 31.2 0.30 mg/kg dry 29.2 ND 107 75-125 1.32 20

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BFA0245 - General Preparation

Blank (BFA0245-BLK1)

Prepared: 01/16/22 Analyzed: 01/28/22

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BFA0245-BS1)

Prepared: 01/16/22 Analyzed: 01/28/22

Calcium	5.67	0.0500	mg/L wet	5.00	113	70-130
Magnesium	4.89	0.0500	"	5.00	97.8	70-130
Sodium	4.50	0.0500	"	5.00	90.0	70-130

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

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

Summit Scientific

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

Batch BFA0269 - General Preparation

Duplicate (BFA0269-DUP1)

Source: 2201132-01

Prepared & Analyzed: 01/17/22

% Solids	80.4	%	80.5	0.0912	20
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFA0250 - General Preparation

Blank (BFA0250-BLK1)

Prepared & Analyzed: 01/17/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFA0250-BS1)

Prepared & Analyzed: 01/17/22

Specific Conductance (EC) 0.158 0.0100 mmhos/cm 0.150 105 95-105

Duplicate (BFA0250-DUP1)

Source: 2201118-03

Prepared & Analyzed: 01/17/22

Specific Conductance (EC) 0.185 0.0100 mmhos/cm 0.185 0.108 20

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFA0251 - General Preparation

LCS (BFA0251-BS1)

Prepared & Analyzed: 01/17/22

pH	9.02	pH Units	9.18	98.3	95-105
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Duplicate (BFA0251-DUP1)

Source: 2201118-03

Prepared & Analyzed: 01/17/22

pH	6.88	pH Units	7.18	4.27	20
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 11:48

Notes and Definitions

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.
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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 18, 2022

Jeb Watts

Tasman Geosciences

6855 W. 119th Ave.

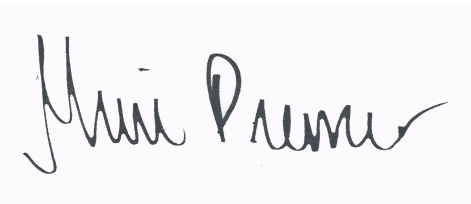
Broomfield, CO 80020

RE: Mewbourn PWV Removal

Work Order #2201150

Enclosed are the results of analyses for samples received by Summit Scientific on 01/14/22 16:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premer", is displayed on a light purple rectangular background.

Muri Premer

Project Manager



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WWall@4'	2201150-01	Soil	01/14/22 09:45	01/14/22 16:50

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.

2201150

Page 1 of 1

Sampler Name: Brian Gabel

Project Number:

www.s2scientific.com

S₂


Sample Receipt Checklist

S2 Work Order# 2201150Client: DCP-Tasman Client Project ID: NewbournpwwRemovalShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____
☐ ☒ ☐ ☐ ☐
Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	<u>5.4</u>
-----------	------------

Thermometer ID: G86A9201901378

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

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

 Custodian Printed Name or Initials

1.14.22
 Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

WWall@4'
2201150-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.023	0.0020	mg/kg	1	BFA0256	01/17/22	01/17/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.095	0.0050	"	"	"	"	"	"	
Xylenes (total)	11	1.0	"	100	"	"	"	"	
1,2,4-Trimethylbenzene	3.6	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	2.3	0.50	"	"	"	"	"	"	
Naphthalene	0.086	0.0038	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	190	50	"	100	"	"	"	"	

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		186 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	340	50	mg/kg	1	BFA0257	01/17/22	01/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/14/22 09:45**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

WWall@4'
2201150-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BFA0284	01/18/22	01/19/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0503	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0940	0.00500	"	"	"	"	"	"	

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		55.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.0299	0.0100	mg/L	1	BFA0262	01/17/22	02/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

WWall@4'
2201150-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.20	0.545	mg/kg dry	1	BFA0239	01/14/22	02/18/22	EPA 6020B
Barium	53.1	1.09	"	"	"	"	"	"
Cadmium	ND	0.545	"	"	"	"	"	"
Copper	3.71	1.09	"	"	"	"	"	"
Lead	4.65	0.545	"	"	"	"	"	"
Nickel	3.87	1.09	"	"	"	"	"	"
Selenium	0.865	0.709	"	"	"	"	"	"
Silver	ND	0.0545	"	"	"	"	"	"
Zinc	13.7	1.09	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFA0330	01/20/22	01/20/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	8.55	0.0545	mg/L dry	1	BFA0266	01/17/22	01/28/22	EPA 6020B	
Magnesium	4.36	0.0545	"	"	"	"	"	"	
Sodium	13.1	0.0545	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.909	0.00100	units	1	BFA0462	01/28/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

WWall@4'
2201150-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.7		%	1	BFA0285	01/18/22	01/24/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.203	0.0100	mmhos/cm	1	BFA0287	01/18/22	01/18/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/14/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.67		pH Units	1	BFA0286	01/18/22	01/18/22	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFA0256 - EPA 5030 Soil MS

Blank (BFA0256-BLK1)

Prepared & Analyzed: 01/17/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0424		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		98.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	21-167			

LCS (BFA0256-BS1)

Prepared: 01/17/22 Analyzed: 01/18/22

Benzene	0.0953	0.0020	mg/kg	0.100		95.3	70-130			
Toluene	0.0978	0.0050	"	0.100		97.8	70-130			
Ethylbenzene	0.106	0.0050	"	0.100		106	70-130			
m,p-Xylene	0.202	0.010	"	0.200		101	70-130			
o-Xylene	0.101	0.0050	"	0.100		101	70-130			
1,2,4-Trimethylbenzene	0.0751	0.0050	"	0.100		75.1	70-130			
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100		104	70-130			
Naphthalene	0.0982	0.0038	"	0.100		98.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0465		"	0.0400		116	23-173			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103	21-167			

Matrix Spike (BFA0256-MS1)

Source: 2201136-01

Prepared: 01/17/22 Analyzed: 01/18/22

Benzene	0.0879	0.0020	mg/kg	0.100	ND	87.9	70-130			
Toluene	0.0870	0.0050	"	0.100	ND	87.0	70-130			
Ethylbenzene	0.0754	0.0050	"	0.100	ND	75.4	70-130			
m,p-Xylene	0.169	0.010	"	0.200	ND	84.4	70-130			
o-Xylene	0.0839	0.0050	"	0.100	ND	83.9	70-130			
1,2,4-Trimethylbenzene	0.0852	0.0050	"	0.100	ND	85.2	70-130			
1,3,5-Trimethylbenzene	0.0786	0.0050	"	0.100	ND	78.6	70-130			
Naphthalene	0.0769	0.0038	"	0.100	0.0156	61.3	50-130			
Surrogate: 1,2-Dichloroethane-d4	0.0487		"	0.0400		122	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	21-167			

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

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

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

Batch BFA0256 - EPA 5030 Soil MS

Matrix Spike Dup (BFA0256-MSD1)

Source: 2201136-01

Prepared: 01/17/22 Analyzed: 01/18/22

Benzene	0.0858	0.0020	mg/kg	0.100	ND	85.8	70-130	2.35	30	
Toluene	0.0862	0.0050	"	0.100	ND	86.2	70-130	0.935	30	
Ethylbenzene	0.0804	0.0050	"	0.100	ND	80.4	70-130	6.39	30	
m,p-Xylene	0.167	0.010	"	0.200	ND	83.4	70-130	1.13	30	
o-Xylene	0.0827	0.0050	"	0.100	ND	82.7	70-130	1.51	30	
1,2,4-Trimethylbenzene	0.0848	0.0050	"	0.100	ND	84.8	70-130	0.388	30	
1,3,5-Trimethylbenzene	0.0778	0.0050	"	0.100	ND	77.8	70-130	0.997	30	
Naphthalene	0.0737	0.0038	"	0.100	0.0156	58.0	50-130	4.30	30	
Surrogate: 1,2-Dichloroethane-d4	0.0487		"	0.0400		122	23-173			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFA0257 - EPA 3550A

Blank (BFA0257-BLK1)

Prepared & Analyzed: 01/17/22

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

LCS (BFA0257-BS1)

Prepared & Analyzed: 01/17/22

C10-C28 (DRO)	509	50	mg/kg	500	102	70-130				
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Matrix Spike (BFA0257-MS1)

Source: 2201136-01

Prepared & Analyzed: 01/17/22

C10-C28 (DRO)	502	50	mg/kg	500	56.2	89.3	70-130			
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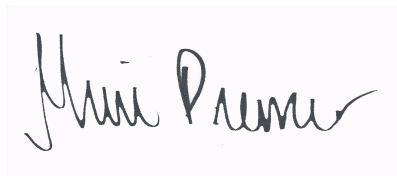
Matrix Spike Dup (BFA0257-MSD1)

Source: 2201136-01

Prepared & Analyzed: 01/17/22

C10-C28 (DRO)	593	50	mg/kg	500	56.2	107	70-130	16.5	20	
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFA0284 - EPA 5030 Soil MS

Blank (BFA0284-BLK1)

Prepared & Analyzed: 01/18/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0283		"	0.0333		85.0	40-150			
Surrogate: Fluoranthene-d10	0.0255		"	0.0333		76.5	40-150			

LCS (BFA0284-BS1)

Prepared & Analyzed: 01/18/22

Acenaphthene	0.0265	0.00500	mg/kg	0.0333		79.6	31-137			
Anthracene	0.0271	0.00500	"	0.0333		81.2	30-120			
Benzo (a) anthracene	0.0265	0.00500	"	0.0333		79.5	30-120			
Benzo (a) pyrene	0.0267	0.00500	"	0.0333		80.2	30-120			
Benzo (b) fluoranthene	0.0259	0.00500	"	0.0333		77.7	30-120			
Benzo (k) fluoranthene	0.0299	0.00500	"	0.0333		89.8	30-120			
Chrysene	0.0287	0.00500	"	0.0333		86.0	30-120			
Dibenz (a,h) anthracene	0.0301	0.00500	"	0.0333		90.3	30-120			
Fluoranthene	0.0298	0.00500	"	0.0333		89.3	30-120			
Fluorene	0.0291	0.00500	"	0.0333		87.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0355	0.00500	"	0.0333		106	30-120			
Pyrene	0.0288	0.00500	"	0.0333		86.3	35-142			
1-Methylnaphthalene	0.0212	0.00500	"	0.0333		63.7	35-142			
2-Methylnaphthalene	0.0239	0.00500	"	0.0333		71.8	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0221		"	0.0333		66.2	40-150			
Surrogate: Fluoranthene-d10	0.0263		"	0.0333		79.0	40-150			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFA0284 - EPA 5030 Soil MS

Matrix Spike (BFA0284-MS1)

Source: 2201118-03

Prepared: 01/18/22 Analyzed: 01/19/22

Acenaphthene	0.0231	0.00500	mg/kg	0.0333	ND	69.2	31-137		
Anthracene	0.0262	0.00500	"	0.0333	ND	78.7	30-120		
Benzo (a) anthracene	0.0243	0.00500	"	0.0333	ND	72.8	30-120		
Benzo (a) pyrene	0.0252	0.00500	"	0.0333	ND	75.5	30-120		
Benzo (b) fluoranthene	0.0246	0.00500	"	0.0333	ND	73.8	30-120		
Benzo (k) fluoranthene	0.0269	0.00500	"	0.0333	ND	80.7	30-120		
Chrysene	0.0254	0.00500	"	0.0333	ND	76.2	30-120		
Dibenz (a,h) anthracene	0.0262	0.00500	"	0.0333	ND	78.7	30-120		
Fluoranthene	0.0274	0.00500	"	0.0333	ND	82.1	30-120		
Fluorene	0.0244	0.00500	"	0.0333	ND	73.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0320	0.00500	"	0.0333	ND	96.0	30-120		
Pyrene	0.0270	0.00500	"	0.0333	ND	80.9	35-142		
1-Methylnaphthalene	0.0186	0.00500	"	0.0333	ND	55.9	15-130		
2-Methylnaphthalene	0.0209	0.00500	"	0.0333	ND	62.7	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0202		"	0.0333		60.5	40-150		
Surrogate: Fluoranthene-d10	0.0240		"	0.0333		72.0	40-150		

Matrix Spike Dup (BFA0284-MSD1)

Source: 2201118-03

Prepared: 01/18/22 Analyzed: 01/19/22

Acenaphthene	0.0205	0.00500	mg/kg	0.0333	ND	61.5	31-137	11.9	30
Anthracene	0.0227	0.00500	"	0.0333	ND	68.0	30-120	14.5	30
Benzo (a) anthracene	0.0211	0.00500	"	0.0333	ND	63.2	30-120	14.1	30
Benzo (a) pyrene	0.0212	0.00500	"	0.0333	ND	63.6	30-120	17.1	30
Benzo (b) fluoranthene	0.0217	0.00500	"	0.0333	ND	65.1	30-120	12.6	30
Benzo (k) fluoranthene	0.0239	0.00500	"	0.0333	ND	71.8	30-120	11.6	30
Chrysene	0.0227	0.00500	"	0.0333	ND	68.2	30-120	11.1	30
Dibenz (a,h) anthracene	0.0253	0.00500	"	0.0333	ND	75.8	30-120	3.77	30
Fluoranthene	0.0231	0.00500	"	0.0333	ND	69.3	30-120	16.9	30
Fluorene	0.0210	0.00500	"	0.0333	ND	63.1	30-120	14.9	30
Indeno (1,2,3-cd) pyrene	0.0292	0.00500	"	0.0333	ND	87.6	30-120	9.06	30
Pyrene	0.0238	0.00500	"	0.0333	ND	71.5	35-142	12.3	30
1-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.3	15-130	0.694	50
2-Methylnaphthalene	0.0174	0.00500	"	0.0333	ND	52.1	15-130	18.4	50
Surrogate: 2-Methylnaphthalene-d10	0.0183		"	0.0333		54.9	40-150		
Surrogate: Fluoranthene-d10	0.0209		"	0.0333		62.7	40-150		

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

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

Batch BFA0262 - EPA 3050B

Blank (BFA0262-BLK1)

Prepared: 01/17/22 Analyzed: 02/08/22

Boron ND 0.0100 mg/L

LCS (BFA0262-BS1)

Prepared: 01/17/22 Analyzed: 02/08/22

Boron 4.30 0.0100 mg/L 5.00 86.0 80-120

Duplicate (BFA0262-DUP1)

Source: 2201118-03

Prepared: 01/17/22 Analyzed: 02/08/22

Boron 0.0105 0.0100 mg/L 0.0102 2.90 20

Matrix Spike (BFA0262-MS1)

Source: 2201118-03

Prepared: 01/17/22 Analyzed: 02/08/22

Boron 3.01 0.0100 mg/L 5.00 0.0102 60.0 75-125 QM-05

Matrix Spike Dup (BFA0262-MSD1)

Source: 2201118-03

Prepared: 01/17/22 Analyzed: 02/08/22

Boron 3.02 0.0100 mg/L 5.00 0.0102 60.2 75-125 0.332 25 QM-05

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFA0239 - EPA 3050B

Blank (BFA0239-BLK1)

Prepared: 01/14/22 Analyzed: 02/18/22

Arsenic	ND	0.500	mg/kg wet
Barium	ND	1.00	"
Cadmium	ND	0.500	"
Copper	ND	1.00	"
Lead	ND	0.500	"
Nickel	ND	1.00	"
Selenium	ND	0.650	"
Silver	ND	0.0500	"
Zinc	ND	1.00	"

LCS (BFA0239-BS1)

Prepared: 01/14/22 Analyzed: 02/18/22

Arsenic	34.8	0.500	mg/kg wet	37.5	92.8	80-120
Barium	38.2	1.00	"	37.5	102	80-120
Cadmium	1.81	0.500	"	1.88	96.5	80-120
Copper	32.0	1.00	"	37.5	85.3	80-120
Lead	17.4	0.500	"	18.8	92.8	80-120
Nickel	31.3	1.00	"	37.5	83.5	80-120
Selenium	4.07	0.650	"	3.75	109	80-120
Silver	1.80	0.0500	"	1.88	96.0	80-120
Zinc	36.7	1.00	"	37.5	97.9	80-120

Duplicate (BFA0239-DUP1)

Source: 2112217-01

Prepared: 01/14/22 Analyzed: 02/18/22

Arsenic	3.13	0.569	mg/kg dry	3.31	5.65	20
Barium	92.4	1.14	"	102	9.50	20
Cadmium	ND	0.569	"	ND		20
Copper	4.29	1.14	"	4.46	3.90	20
Lead	5.36	0.569	"	5.71	6.37	20
Nickel	5.51	1.14	"	5.49	0.414	20
Selenium	1.10	0.740	"	1.10	0.310	20
Silver	ND	0.0569	"	ND		20
Zinc	20.0	1.14	"	20.7	3.35	20

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFA0239 - EPA 3050B

Matrix Spike (BFA0239-MS1)		Source: 2112217-01			Prepared: 01/14/22 Analyzed: 02/18/22					
Arsenic	46.1	0.569	mg/kg dry	42.7	3.31	100	75-125			
Barium	139	1.14	"	42.7	102	87.2	75-125			
Cadmium	2.38	0.569	"	2.13	ND	111	75-125			
Copper	42.5	1.14	"	42.7	4.46	89.0	75-125			
Lead	26.1	0.569	"	21.3	5.71	95.4	75-125			
Nickel	44.2	1.14	"	42.7	5.49	90.6	75-125			
Selenium	5.49	0.740	"	4.27	1.10	103	75-125			
Silver	2.11	0.0569	"	2.13	ND	98.7	75-125			
Zinc	68.0	1.14	"	42.7	20.7	111	75-125			

Matrix Spike Dup (BFA0239-MSD1)		Source: 2112217-01			Prepared: 01/14/22 Analyzed: 02/18/22					
Arsenic	42.2	0.569	mg/kg dry	42.7	3.31	91.2	75-125	8.76	25	
Barium	154	1.14	"	42.7	102	122	75-125	10.1	25	
Cadmium	2.22	0.569	"	2.13	ND	104	75-125	6.93	25	
Copper	39.7	1.14	"	42.7	4.46	82.6	75-125	6.65	25	
Lead	25.2	0.569	"	21.3	5.71	91.1	75-125	3.56	25	
Nickel	41.0	1.14	"	42.7	5.49	83.1	75-125	7.49	25	
Selenium	5.16	0.740	"	4.27	1.10	95.0	75-125	6.20	25	
Silver	1.96	0.0569	"	2.13	ND	91.7	75-125	7.28	25	
Zinc	64.8	1.14	"	42.7	20.7	103	75-125	4.80	25	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFA0330 - 3060A Mod

Blank (BFA0330-BLK1)

Prepared & Analyzed: 01/20/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFA0330-BS1)

Prepared & Analyzed: 01/20/22

Chromium, Hexavalent 23.2 0.30 mg/kg wet 25.0 92.6 80-120

Duplicate (BFA0330-DUP1)

Source: 2201125-01

Prepared & Analyzed: 01/20/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFA0330-MS1)

Source: 2201125-01

Prepared & Analyzed: 01/20/22

Chromium, Hexavalent 30.8 0.30 mg/kg dry 29.2 ND 105 75-125

Matrix Spike Dup (BFA0330-MSD1)

Source: 2201125-01

Prepared & Analyzed: 01/20/22

Chromium, Hexavalent 31.2 0.30 mg/kg dry 29.2 ND 107 75-125 1.32 20

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFA0266 - General Preparation

Blank (BFA0266-BLK1)

Prepared: 01/17/22 Analyzed: 01/28/22

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BFA0266-BS1)

Prepared: 01/17/22 Analyzed: 01/28/22

Calcium	6.05	0.0500	mg/L wet	5.00	121	70-130
Magnesium	5.08	0.0500	"	5.00	102	70-130
Sodium	4.67	0.0500	"	5.00	93.4	70-130

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

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

Summit Scientific

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

Batch BFA0285 - General Preparation

Duplicate (BFA0285-DUP1)

Source: 2201070-04

Prepared: 01/18/22 Analyzed: 01/24/22

% Solids	81.2	%	79.5	2.06	20
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Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BFA0287 - General Preparation

Blank (BFA0287-BLK1)

Prepared & Analyzed: 01/18/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFA0287-BS1)

Prepared & Analyzed: 01/18/22

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 95-105

Duplicate (BFA0287-DUP1)

Source: 2201148-02

Prepared & Analyzed: 01/18/22

Specific Conductance (EC) 1.06 0.0100 mmhos/cm 1.06 0.0942 20

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFA0286 - General Preparation

LCS (BFA0286-BS1)

Prepared & Analyzed: 01/18/22

pH	9.02	pH Units	9.18	98.3	95-105
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Duplicate (BFA0286-DUP1)

Source: 2201148-02

Prepared & Analyzed: 01/18/22

pH	7.57	pH Units	7.33	3.22	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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Mewbourn PWV Removal

Project Number: [none]
Project Manager: Jeb Watts

Reported:
02/18/22 12:02

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QM-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.
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