

BATES 20-22
FLOWLINE RELEASE
API #: 05-123-24849
Spill Tracking #: 445185
Remediation Project #: Not Assigned

THIRD QUARTER 2016
Analytical Tables, Figures,
and Laboratory Reports

July 25, 2016



Image: Google

PREPARED ON BEHALF OF

Noble Energy, Inc.
1600 Broadway
Denver, CO 80202



PREPARED BY

Tasman Geosciences, Inc.
6899 Pecos Street, Unit C
Denver, CO 80221



TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - BATES 20-22 FLOWLINE RELEASE

Soil Sample ID	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Naphthalene (mg/kg)
COGCC Standard		0.17	85	100	175	500		23
BH01@2-4'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH02@1-2.5'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH03@1-2'	03/22/16	0.11	1.6	0.68	4.5	170	420	0.22
BH04@1-3'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	0.015
BH05@0-2'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH06@1-2.5'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH07@2-3'	03/22/16	0.16	2.3	2.0	14	720	1,200	0.23
BH08@0-1.5'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH10@6-7'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH11@4-5'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH12@1-2'	07/15/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram

< = Analytical result is less than the indicated laboratory reporting limit

Soil standards referenced from COGCC Table 910-1

Highlighted results exceed the COGCC Table 910-1 standard

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - BATES 20-22 FLOWLINE RELEASE

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		5	560	700	1,400
BH01	03/22/16	<1.0	<1.0	<1.0	<1.0
BH01	07/13/16	<1.0	<1.0	<1.0	<1.0
BH02	03/22/16	<1.0	<1.0	<1.0	<1.0
BH02	07/13/16	<1.0	<1.0	<1.0	<1.0
BH03	03/22/16	92	210	66	470
BH03	07/13/16	<1.0	<1.0	<1.0	<1.0
BH04	03/22/16	<1.0	<1.0	<1.0	<1.0
BH04	07/13/16	<1.0	<1.0	<1.0	<1.0
BH05	03/22/16	<1.0	<1.0	<1.0	<1.0
BH05	07/13/16	<1.0	<1.0	<1.0	<1.0
BH06	03/22/16	<1.0	<1.0	<1.0	<1.0
BH06	07/13/16	<1.0	<1.0	<1.0	<1.0
BH07	03/22/16	62	170	24	150
BH07	07/13/16	Not Sampled - LNAPL Present			
BH08	03/22/16	<1.0	<1.0	<1.0	<1.0
BH08	07/13/16	<1.0	<1.0	<1.0	<1.0
BH12	07/15/16	<1.0	<1.0	<1.0	<1.0

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

< = Analytical result is less than the indicated laboratory reporting limit

Groundwater standards referenced from COGCC Table 910-1

Highlighted results exceed the COGCC Table 910-1 standard

TABLE 3
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - BATES 20-22

Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft. BTOC)	Depth to LNAPL (ft. BTOC)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	03/22/16	4716.21	12.75	8.33	ND	ND	4707.88
BH01	07/13/16	4716.21	12.75	3.69	ND	ND	4712.52
BH02	03/22/16	4715.15	10.95	7.18	ND	ND	4707.97
BH02	07/13/16	4715.15	10.95	2.67	ND	ND	4712.48
BH03	03/22/16	4714.36	12.13	8.03	ND	ND	4706.33
BH03	07/13/16	4714.36	12.13	4.32	ND	ND	4710.04
BH04	03/22/16	4714.35	9.85	7.50	ND	ND	4706.85
BH04	07/13/16	4714.35	9.85	4.56	ND	ND	4709.79
BH05	03/22/16	4714.40	10.17	7.13	ND	ND	4707.27
BH05	07/13/16	4714.40	10.17	4.11	ND	ND	4710.29
BH06	03/22/16	4714.67	9.83	7.24	ND	ND	4707.43
BH06	07/13/16	4714.67	9.83	3.70	ND	ND	4710.97
BH07	03/22/16	4716.10	12.60	8.85	ND	ND	4707.25
BH07	07/13/16	4716.10	12.60	5.45	5.35	0.10	4710.73
BH08	03/22/16	4714.24	9.63	7.80	ND	ND	4706.44
BH08	07/13/16	4714.24	9.63	3.83	ND	ND	4710.41
BH12	07/15/16	4715.58	9.88	4.92	ND	ND	4710.66

ft. = Feet

AMSL = Above mean sea level

BTOC = Below top of casing

LNAPL = Light non-aqueous phase liquid

ND = No LNAPL detected

* Groundwater elevation was corrected for product thickness (when present) using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water)+(LNAPL Thickness in Well x LNAPL Relative Density)

LNAPL relative density was estimated to be approximately 0.75

TABLE 4
SURFACE WATER ANALYTICAL DATA
NOBLE ENERGY, INC. - BATES 20-22 FLOWLINE RELEASE

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		5	560	700	1,400
SW01	03/22/16	<1.0	<1.0	<1.0	<1.0
SW02	03/22/16	<1.0	<1.0	<1.0	<1.0
SW03	03/22/16	<1.0	<1.0	<1.0	<1.0

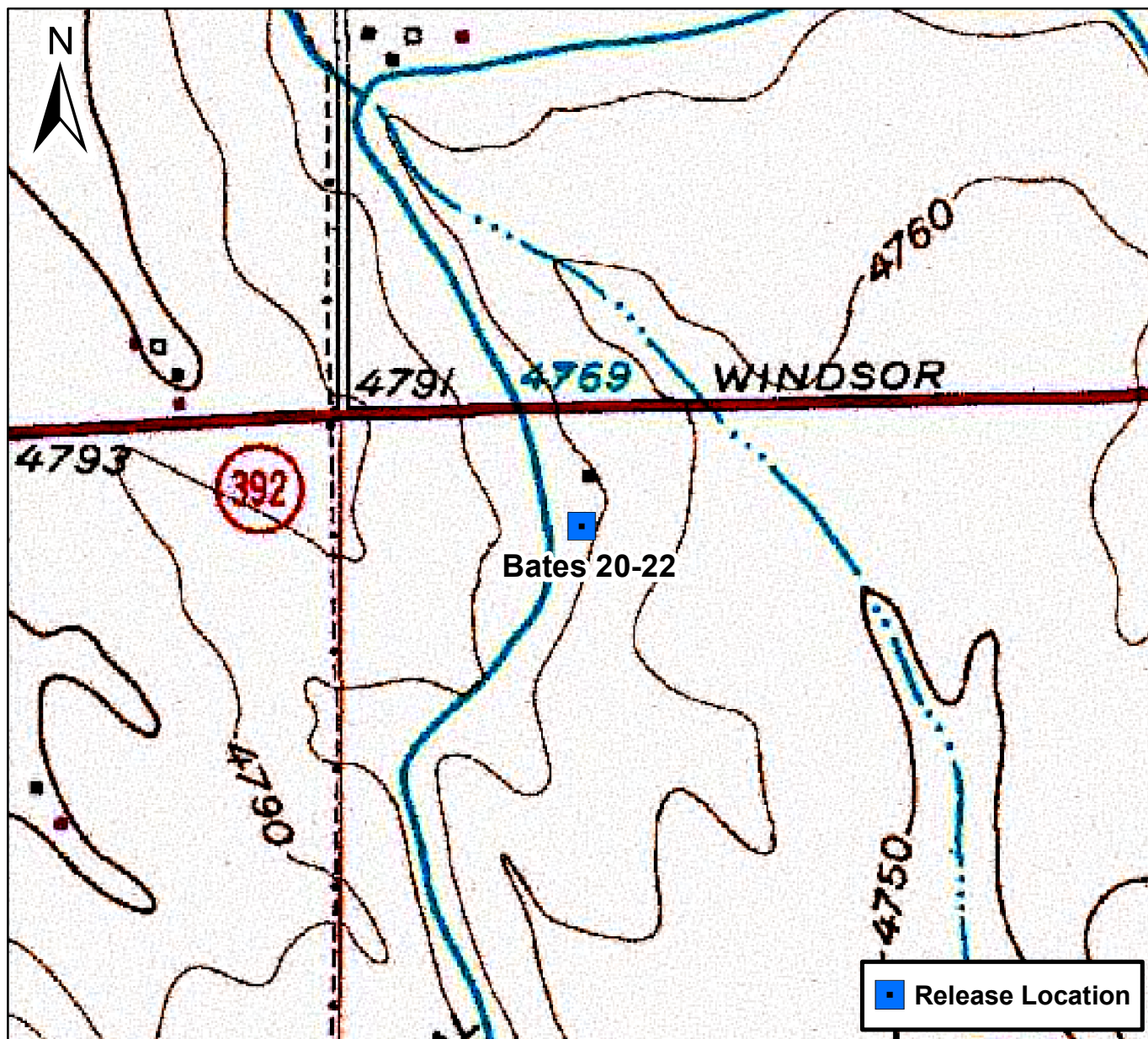
COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

< = Analytical result is less than the indicated laboratory reporting limit

Groundwater standards referenced from COGCC Table 910-1

Highlighted results exceed the COGCC Table 910-1 standard




0 750 1,500 Feet

Figure 1

Site Location Map
Bates 20-22
NWNW S20 T6N R66W
Weld County, Colorado





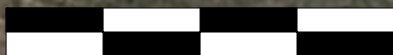
PROJECT NO:		Facility Bates 20-22 Weld County, CO	LEGEND: <div> <div>— Noble Flow Line</div> <div>▲ Surface Water Sample Location</div> </div>	<div> <div>⊕ Soil Boring Location (No Monitoring Well Installed)</div> <div>⊕ Groundwater Monitoring Well</div> <div>✗ Approximate Release Location</div> </div>	Site Overview Map Figure 2
DRAWN BY: JW					
DATE: 07/21/16					



Bates 20-22
Wellhead

Borehole soil samples were not
collected at BH09.

0 ft. 40 ft. 80 ft.



SW01
B - <1.0 µg/L
T - <1.0 µg/L
E - <1.0 µg/L
X - <1.0 µg/L

SW01

BH07@2-3'
B - 0.16 mg/kg
T - 2.3 mg/kg
E - 2.0 mg/kg
X - 14.0 mg/kg
TPH - 1,920 mg/kg
N - 0.23 mg/kg

BH12@1-2'
B - <0.0020 mg/kg
T - <0.0050 mg/kg
E - <0.0050 mg/kg
X - <0.010 mg/kg
TPH - <50 mg/kg
N - <0.010 mg/kg

BH01@2-4'
B - <0.0020 mg/kg
T - <0.0050 mg/kg
E - <0.0050 mg/kg
X - <0.010 mg/kg
TPH - <50 mg/kg
N - <0.010 mg/kg

BH08@0-1.5'
B - <0.0020 mg/kg
T - <0.0050 mg/kg
E - <0.0050 mg/kg
X - <0.010 mg/kg
TPH - <50 mg/kg
N - <0.010 mg/kg

BH10@6-7'
B - <0.0020 mg/kg
T - <0.0050 mg/kg
E - <0.0050 mg/kg
X - <0.010 mg/kg
TPH - <50 mg/kg
N - <0.010 mg/kg

SW02
B - <1.0 µg/L
T - <1.0 µg/L
E - <1.0 µg/L
X - <1.0 µg/L

SW02

BH10

BH11@4-5'
B - <0.0020 mg/kg
T - <0.0050 mg/kg
E - <0.0050 mg/kg
X - <0.010 mg/kg
TPH - <50 mg/kg
N - <0.010 mg/kg

BH11

BH02@1-2.5'
B - <0.0020 mg/kg
T - <0.0050 mg/kg
E - <0.0050 mg/kg
X - <0.010 mg/kg
TPH - <50 mg/kg
N - <0.010 mg/kg

BH02

BH06

BH06@1-2.5'
B - <0.0020 mg/kg
T - <0.0050 mg/kg
E - <0.0050 mg/kg
X - <0.010 mg/kg
TPH - <50 mg/kg
N - <0.010 mg/kg

BH05@0-2'
B - <0.0020 mg/kg
T - <0.0050 mg/kg
E - <0.0050 mg/kg
X - <0.010 mg/kg
TPH - <50 mg/kg
N - <0.010 mg/kg

BH05

BH03@1-2'
B - 0.11 mg/kg
T - 1.6 mg/kg
E - 0.68 mg/kg
X - 4.5 mg/kg
TPH - 590 mg/kg
N - 0.22 mg/kg

BH03

BH04

BH12

BH08

BH01

BH07

BH01

BH02

BH03

BH09

PROJECT NO:

DRAWN BY: ESS

DATE: 07/19/16



Facility

Bates 20-22
Weld County, CO

LEGEND:



Soil Boring and Sampling Location

µg/L Micrograms Per Liter



Noble Flow Line

mg/kg Milligrams Per Kilogram



Surface Water Sample Location







X Approximate Release Location

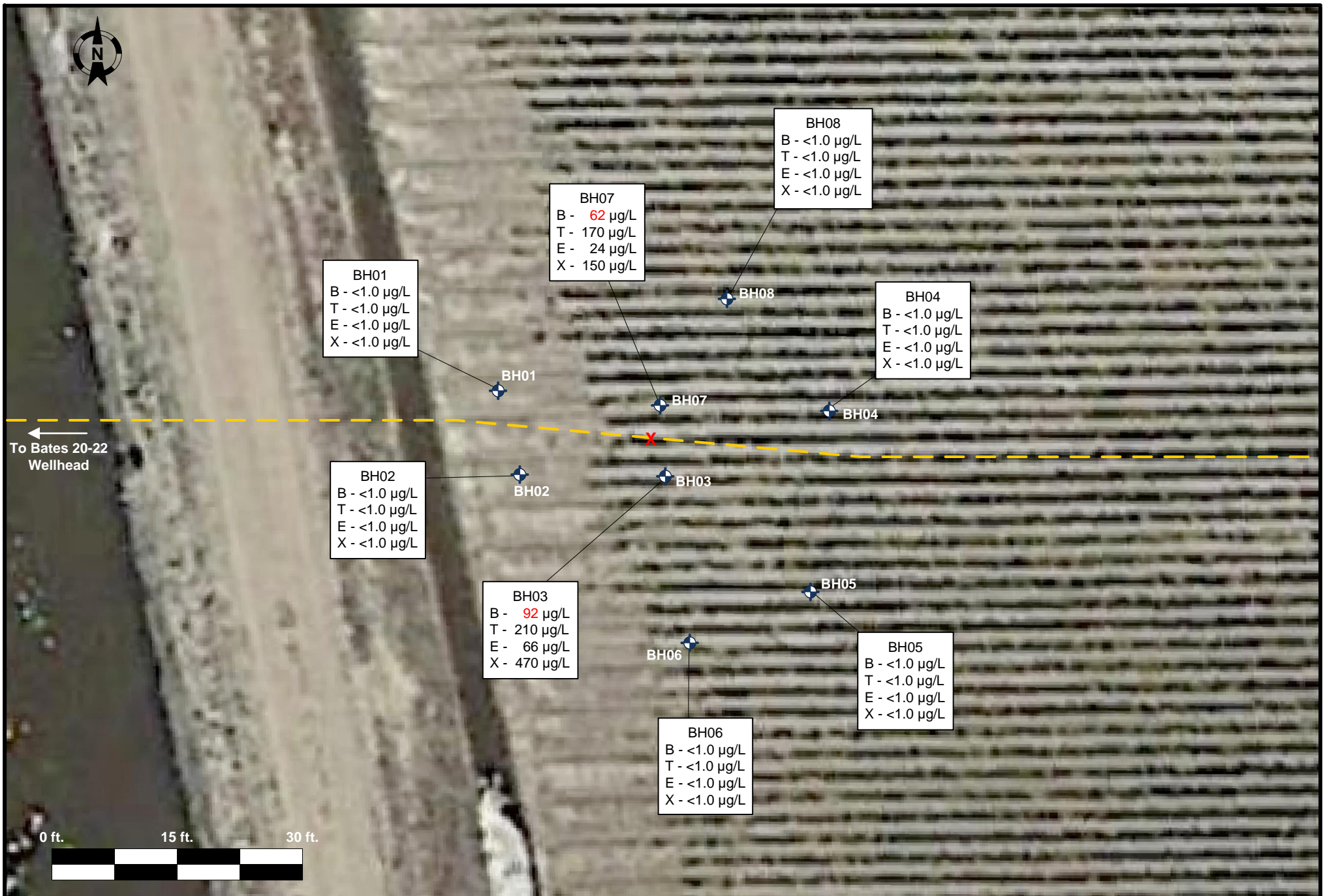
B - Benzene
T - Toluene
E - Ethylbenzene
X - Total Xylenes
TPH - Total Petroleum Hydrocarbons
N - Naphthalene

Borehole Soil and
Surface Water Analytical
Results Map
(03/22/16 – 07/15/16)

Figure 3



PROJECT NO:		Facility Bates 20-22 Weld County, CO	LEGEND: <div>  Noble Flow Line </div> <div>  Approximate Area of Release </div> <div>  Groundwater Monitoring Well </div>	<div>  Groundwater Elevation Contour (Dashed where inferred) </div> <div> 4712.52 Measured Groundwater Elevation </div> <div>  Flow Direction </div>	Groundwater Potentiometric Surface Contour Map (07/13/16 – 07/15/16) Figure 4
DRAWN BY: ESS					
DATE: 07/26/16					



PROJECT NO:
 DRAWN BY: ESS
 DATE: 07/19/16



Facility
 Bates 20-22
 Weld County, CO

LEGEND:

Groundwater Monitoring Well µg/L Micrograms Per Liter
 Noble Flow Line Approximate Release Location

B - Benzene T - Toluene E - Ethylbenzene X - Total Xylenes	Groundwater Analytical Results Map (03/22/16) Figure 5
---	---

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 28, 2016

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Bates 20-22

Enclosed are the results of analyses for samples received by Summit Scientific on 03/22/16 17:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
03/28/16 12:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@2-4'	1603156-01	Soil	03/22/16 10:15	03/22/16 17:50
BH02@1-2.5'	1603156-02	Soil	03/22/16 10:40	03/22/16 17:50
BH03@1-2'	1603156-03	Soil	03/22/16 11:15	03/22/16 17:50
BH04@1-3'	1603156-04	Soil	03/22/16 11:45	03/22/16 17:50
BH05@0-2'	1603156-05	Soil	03/22/16 12:05	03/22/16 17:50
BH06@1-2.5'	1603156-06	Soil	03/22/16 12:30	03/22/16 17:50
BH07@2-3'	1603156-07	Soil	03/22/16 13:00	03/22/16 17:50
BH08@0-1.5'	1603156-08	Soil	03/22/16 13:20	03/22/16 17:50
BH10@6-7'	1603156-09	Soil	03/22/16 15:00	03/22/16 17:50
BH11@4-5'	1603156-10	Soil	03/22/16 15:30	03/22/16 17:50
BH01	1603156-11	Water	03/22/16 14:15	03/22/16 17:50
BH02	1603156-12	Water	03/22/16 14:20	03/22/16 17:50
BH03	1603156-13	Water	03/22/16 15:25	03/22/16 17:50
BH04	1603156-14	Water	03/22/16 15:30	03/22/16 17:50
BH05	1603156-15	Water	03/22/16 15:34	03/22/16 17:50
BH06	1603156-16	Water	03/22/16 15:39	03/22/16 17:50
BH07	1603156-17	Water	03/22/16 15:43	03/22/16 17:50
BH08	1603156-18	Water	03/22/16 15:49	03/22/16 17:50
SW01	1603156-19	Water	03/22/16 15:10	03/22/16 17:50
SW02	1603156-20	Water	03/22/16 15:15	03/22/16 17:50
SW03	1603156-21	Water	03/22/16 15:20	03/22/16 17:50

Case Narrative

Client: Tasman Geosciences

Project: Bates 20-22

Report Number 1603156

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
03/28/16 12:21

Per client request via email dated 3/23/16 from Jacob Whritenour, the sample IDs in this report have been changed in the following manner:

SS(ID@depth) to BH(ID@depth) for all soils samples.

Summit Scientific

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

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
03/28/16 12:21

Summit Scientific 1603156.1

741 Corporate Circle Suite 1 • Golden, Colorado 80401
303-277-9310 • 303-374-5933 Fax

Page 1 of 3

Client: Noble/Tasman

Address:

City/State/Zip:

Phone:

Fax:

Sampler Name: Jacob Whritenour & Rob Irvin

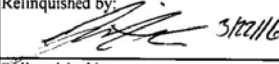
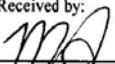
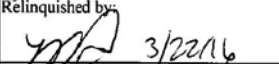
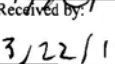
Project Manager: Brandon Bruns, Invoice: Jacob Evans

E-Mail:

Project Name: Bates 20-22

Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:				Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR		
SS01 @ 2-4'	3/22/2016	10:15a	1		X			X					X	X			
SS02 @ 1-2.5'	3/22/2016	10:40a	1		X			X					X	X			
SS03 @ 1-2'	3/22/2016	11:15a	1		X			X					X	X			
SS04 @ 1-3'	3/22/2016	11:45a	1		X			X					X	X			
SS05 @ 0-2'	3/22/2016	12:05	1		X			X					X	X			
SS06 @ 1-2.5'	3/22/2016	12:30	1		X			X					X	X			
SS07 @ 2-3'	3/22/2016	13:00	1		X			X					X	X			
SS08 @ 0-1.5'	3/22/2016	13:20	1		X			X					X	X			
SS09 @ 6-7'	3/22/2016	15:00	1		X			X					X	X			
SS10 @ 4-5'	3/22/2016	16:30	1		X			X					X	X			

Relinquished by: 	Date/Time: 3/22/16 1700	Received by: 	Date/Time: 3/22/16 1700	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 Hours <input type="checkbox"/>	Notes: on ice
Relinquished by: 	Date/Time: 3/22/16 1750	Received by: 	Date/Time: 3/22/16 1750	Sample Integrity: Temperature Upon Receipt: 4.8°C	
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
03/28/16 12:21

Summit Scientific 1603156.2

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303-277-9310 • 303-374-5933 Fax

Page 2 of 3

Client: Noble/Tasman

Address:

City/State/Zip:

Phone:

Fax:

Sampler Name: Jacob Whritenour & Rob Irvin

Project Manager: Brandon Bruns, Invoice: Jacob Evans

E-Mail:

Project Name: Bates 20-22

Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:						Special Instructions
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR		
BH01	3/22/2016	1415	3	X				X				X					
BH02	3/22/2016	1420						X				X					
BH03	3/22/2016	1525						X				X					
BH04	3/22/2016	1530						X				X					
BH05	3/22/2016	1534						X				X					
BH06	3/22/2016	1539						X				X					
BH07	3/22/2016	1543						X				X					
BH08	3/22/2016	1549						X				X					
SW01	3/22/2016	1510						X				X					
SW02	3/22/2016	1515	↓	↓				X				X					

Relinquished by: <i>[Signature]</i> 3/22/16	Date/Time: 1700	Received by: <i>[Signature]</i> 3/22/16	Date/Time: 1700	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/>	Notes: on ice
Relinquished by: <i>[Signature]</i> 3/22/16	Date/Time: 1750	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 4.0°C	
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
03/28/16 12:21



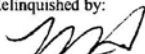
Summit Scientific 1603156.3

741 Corporate Circle Suite 1 ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 3 of 3

Client:	Noble/Tasman
Address:	
City/State/Zip:	
Phone:	Fax:
Sampler Name:	Jacob Whritenour & Rob Irvin

Project Manager: Brandon Bruns, Invoice: Jacob Evans
E-Mail:
Project Name: Bates 20-22
Project Number:

				Preservative		Matrix		Analyze For:									
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR		Special Instructions
SW03	3/22/2016	1520	3	X				X				X					
Relinquished by:  3/22/16	Date/Time: 1700	Received by:  3/22/16	Date/Time: 1700	Turn Around Time (Check)				Notes:									
				Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/>													
				24 Hours <input type="checkbox"/> Standard <input type="checkbox"/>													
				48 Hours <input type="checkbox"/>													
Relinquished by:  3/22/16	Date/Time: 1750	Received by:	Date/Time:	Sample Integrity:													
				Temperature Upon Receipt: 4.0°C													
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				on ice									

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH01@2-4'
1603156-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/22/16 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1603235	03/22/16	03/22/16	8015M	

Date Sampled: **03/22/16 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		113 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1603234	03/22/16	03/22/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **03/22/16 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH02@1-2.5'
1603156-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/22/16 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1603235	03/22/16	03/22/16	8015M	

Date Sampled: **03/22/16 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		114 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1603234	03/22/16	03/22/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **03/22/16 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH03@1-2'
1603156-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/22/16 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	420	50	mg/kg	1	1603235	03/22/16	03/22/16	8015M	

Date Sampled: **03/22/16 11:15**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.22	0.010	mg/kg	1	1603234	03/22/16	03/22/16	EPA 8260B	
Benzene	0.11	0.0020	"	"	"	"	"	"	
Toluene	1.6	0.0050	"	"	"	"	"	"	E
Ethylbenzene	0.68	0.0050	"	"	"	"	"	"	
Xylenes (total)	4.5	0.010	"	"	"	"	"	"	E
Gasoline Range Hydrocarbons	170	50	"	"	"	"	"	"	E

Date Sampled: **03/22/16 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		107 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		143 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		139 %	21-167		"	"	"	"	

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6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH04@1-3'
1603156-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 03/22/16 11:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1603235	03/22/16	03/23/16	8015M	

Date Sampled: 03/22/16 11:45

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 03/22/16 11:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.015	0.010	mg/kg	1	1603234	03/22/16	03/22/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 03/22/16 11:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH05@0-2'
1603156-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/22/16 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1603235	03/22/16	03/23/16	8015M	

Date Sampled: **03/22/16 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		113 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1603234	03/22/16	03/23/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **03/22/16 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

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6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH06@1-2.5'
1603156-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/22/16 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1603235	03/22/16	03/23/16	8015M	

Date Sampled: **03/22/16 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		113 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1603234	03/22/16	03/23/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **03/22/16 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH07@2-3'
1603156-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/22/16 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1200	50	mg/kg	1	1603235	03/22/16	03/23/16	8015M	

Date Sampled: **03/22/16 13:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.23	0.010	mg/kg	1	1603234	03/22/16	03/23/16	EPA 8260B	
Benzene	0.16	0.0020	"	"	"	"	"	"	
Toluene	2.3	0.050	"	10	"	"	"	"	
Ethylbenzene	2.0	0.050	"	"	"	"	"	"	
Xylenes (total)	14	0.10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	720	500	"	"	"	"	"	"	

Date Sampled: **03/22/16 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		151 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %	21-167		"	"	"	"	

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6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH08@0-1.5'
1603156-08 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 03/22/16 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1603235	03/22/16	03/23/16	8015M	

Date Sampled: 03/22/16 13:20

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 03/22/16 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1603234	03/22/16	03/23/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 03/22/16 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH10@6-7'
1603156-09 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/22/16 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1603235	03/22/16	03/23/16	8015M	

Date Sampled: **03/22/16 15:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1603234	03/22/16	03/23/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **03/22/16 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	21-167		"	"	"	"	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH11@4-5'
1603156-10 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 03/22/16 15:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1603235	03/22/16	03/23/16	8015M	

Date Sampled: 03/22/16 15:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 03/22/16 15:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1603234	03/22/16	03/23/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 03/22/16 15:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

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6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH01
1603156-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1603236	03/22/16	03/22/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/22/16 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		93.4 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		106 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH02
1603156-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1603236	03/22/16	03/22/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/22/16 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.6 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		102 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH03
1603156-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 15:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	92	1.0	ug/l	1	1603236	03/22/16	03/22/16	EPA 8260B	
Toluene	210	100	"	100	"	"	03/22/16	"	
Ethylbenzene	66	1.0	"	1	"	"	03/22/16	"	
Xylenes (total)	470	1.0	"	"	"	"	"	"	

Date Sampled: **03/22/16 15:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		105 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		105 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		108 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH04
1603156-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 15:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1603236	03/22/16	03/22/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/22/16 15:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		100 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		104 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH05
1603156-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 15:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1603236	03/22/16	03/22/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/22/16 15:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.3 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		104 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	45-146		"	"	"	"	

Summit Scientific

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Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH06
1603156-16 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 15:39**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1603236	03/22/16	03/22/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/22/16 15:39**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		104 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH07
1603156-17 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 15:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	62	1.0	ug/l	1	1603236	03/22/16	03/22/16	EPA 8260B	
Toluene	170	1.0	"	"	"	"	"	"	
Ethylbenzene	24	1.0	"	"	"	"	"	"	
Xylenes (total)	150	1.0	"	"	"	"	"	"	

Date Sampled: **03/22/16 15:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		96.0 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		103 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		109 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

BH08
1603156-18 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 15:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1603236	03/22/16	03/22/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/22/16 15:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		102 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		105 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

SW01
1603156-19 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1603236	03/22/16	03/22/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/22/16 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		100 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		103 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

SW02
1603156-20 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1603236	03/22/16	03/22/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/22/16 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.5 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		103 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

SW03
1603156-21 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/22/16 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1603236	03/22/16	03/22/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/22/16 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.3 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		104 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	45-146		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
03/28/16 12:21

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1603235 - EPA 3550A

Blank (1603235-BLK1)

Prepared: 03/22/16 Analyzed: 03/23/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 14.2 " 12.5 114 30-150

LCS (1603235-BS1)

Prepared: 03/22/16 Analyzed: 03/23/16

C10-C28 (DRO) 512 50 mg/kg 499 103 73-134

Surrogate: o-Terphenyl 13.7 " 12.5 110 30-150

Matrix Spike (1603235-MS1)

Source: 1603154-01

Prepared: 03/22/16 Analyzed: 03/23/16

C10-C28 (DRO) 476 50 mg/kg 481 34.0 91.8 50-148

Surrogate: o-Terphenyl 13.2 " 12.0 110 30-150

Matrix Spike Dup (1603235-MSD1)

Source: 1603154-01

Prepared: 03/22/16 Analyzed: 03/23/16

C10-C28 (DRO) 486 50 mg/kg 481 34.0 94.1 50-148 2.25 13

Surrogate: o-Terphenyl 13.4 " 12.0 111 30-150

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
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
03/28/16 12:21

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

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

Batch 1603234 - EPA 5030 Soil MS

Blank (1603234-BLK1)

Prepared: 03/22/16 Analyzed: 03/23/16

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0372		"	0.0400		93.0	23-173			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	21-167			

LCS (1603234-BS1)

Prepared: 03/22/16 Analyzed: 03/23/16

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0978	0.0020	"	0.100		97.8	58-130			
Toluene	0.106	0.0050	"	0.100		106	61-134			
Ethylbenzene	0.114	0.0050	"	0.0992		114	74-139			
m,p-Xylene	0.210	0.010	"	0.200		105	73-137			
o-Xylene	0.106	0.0050	"	0.0980		108	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.6	23-173			
Surrogate: Toluene-d8	0.0428		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400		104	21-167			

Matrix Spike (1603234-MS1)

Source: 1603154-01

Prepared: 03/22/16 Analyzed: 03/23/16

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0932	0.0020	"	0.0978	ND	95.3	30-131			
Toluene	0.106	0.0050	"	0.0978	ND	108	30-134			
Ethylbenzene	0.118	0.0050	"	0.0971	ND	122	22-153			
m,p-Xylene	0.219	0.010	"	0.195	ND	112	10-159			
o-Xylene	0.102	0.0050	"	0.0959	ND	106	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0391		102	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0391		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0391		104	21-167			

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
03/28/16 12:21

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

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

Batch 1603234 - EPA 5030 Soil MS

Matrix Spike Dup (1603234-MSD1)				Source: 1603154-01		Prepared: 03/22/16		Analyzed: 03/23/16	
Naphthalene	ND	0.010	mg/kg		ND		10-158		42
Benzene	0.0948	0.0020	"	0.0988	ND	96.0	30-131	1.70	34
Toluene	0.108	0.0050	"	0.0988	ND	109	30-134	1.84	30
Ethylbenzene	0.124	0.0050	"	0.0980	ND	126	22-153	4.86	24
m,p-Xylene	0.231	0.010	"	0.197	ND	117	10-159	5.43	68
o-Xylene	0.114	0.0050	"	0.0968	ND	118	31-151	11.3	38
Surrogate: 1,2-Dichloroethane-d4	0.0382		"	0.0395		96.5	23-173		
Surrogate: Toluene-d8	0.0388		"	0.0395		98.2	20-170		
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0395		99.6	21-167		

Batch 1603236 - EPA 5030 Water MS

Blank (1603236-BLK1)				Prepared: 03/22/16		Analyzed: 03/23/16	
Benzene	ND	1.0	ug/l				
Toluene	ND	1.0	"				
Ethylbenzene	ND	1.0	"				
Xylenes (total)	ND	1.0	"				
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.3		99.4	37-154
Surrogate: Toluene-d8	13.8		"	13.3		103	45-149
Surrogate: 4-Bromofluorobenzene	14.4		"	13.3		108	45-146
LCS (1603236-BS1)				Prepared: 03/22/16		Analyzed: 03/23/16	
Benzene	31.8	1.0	ug/l	33.3		95.4	51-132
Toluene	31.0	1.0	"	33.3		92.9	51-138
Ethylbenzene	35.6	1.0	"	33.1		108	58-146
m,p-Xylene	72.2	2.0	"	66.5		109	57-144
o-Xylene	34.0	1.0	"	32.7		104	53-146
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.3		100	37-154
Surrogate: Toluene-d8	13.7		"	13.3		103	45-149
Surrogate: 4-Bromofluorobenzene	14.4		"	13.3		108	45-146

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
03/28/16 12:21

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

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

Batch 1603236 - EPA 5030 Water MS

Matrix Spike (1603236-MS1)		Source: 1603156-12			Prepared: 03/22/16		Analyzed: 03/23/16			
Benzene	32.2	1.0	ug/l	33.3	ND	96.6	34-141			
Toluene	31.2	1.0	"	33.3	ND	93.8	27-151			
Ethylbenzene	34.6	1.0	"	33.1	ND	105	29-160			
m,p-Xylene	70.7	2.0	"	66.5	ND	106	20-166			
o-Xylene	33.0	1.0	"	32.7	ND	101	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.3		103	37-154			
Surrogate: Toluene-d8	13.8		"	13.3		104	45-149			
Surrogate: 4-Bromofluorobenzene	14.0		"	13.3		105	45-146			
Matrix Spike Dup (1603236-MSD1)		Source: 1603156-12			Prepared: 03/22/16		Analyzed: 03/23/16			
Benzene	32.3	1.0	ug/l	33.3	ND	96.9	34-141	0.372	32	
Toluene	31.8	1.0	"	33.3	ND	95.3	27-151	1.62	25	
Ethylbenzene	34.5	1.0	"	33.1	ND	104	29-160	0.318	50	
m,p-Xylene	71.1	2.0	"	66.5	ND	107	20-166	0.536	36	
o-Xylene	32.6	1.0	"	32.7	ND	99.8	33-159	1.04	26	
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.3		102	37-154			
Surrogate: Toluene-d8	13.9		"	13.3		104	45-149			
Surrogate: 4-Bromofluorobenzene	14.0		"	13.3		105	45-146			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
03/28/16 12:21

Notes and Definitions

E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

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.

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

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

July 19, 2016

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Noble - Bates 20 - 22

Enclosed are the results of analyses for samples received by Summit Scientific on 07/13/16 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
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/16 14:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1607086-01	Water	07/13/16 12:40	07/13/16 17:00
BH02	1607086-02	Water	07/13/16 12:50	07/13/16 17:00
BH03	1607086-03	Water	07/13/16 13:00	07/13/16 17:00
BH04	1607086-04	Water	07/13/16 13:30	07/13/16 17:00
BH05	1607086-05	Water	07/13/16 13:15	07/13/16 17:00
BH06	1607086-06	Water	07/13/16 12:50	07/13/16 17:00
BH08	1607086-07	Water	07/13/16 13:30	07/13/16 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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/16 14:57

Summit Scientific

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

1607086
Page 1 of 1

Client: Noble/Tasman
Address: —
City/State/Zip: —
Phone: 503-487-1228 Fax:
Sampler Name: Graham Basee & Jake Whiskey

Project Manager: Brandon Bruns, Invoice: Jacob Evans
E-Mail: B.Brun@tasman-geo.com
Project Name: Noble: Bates 20-22
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:				Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	B260 BTEX	B260 GBTEXN	B015 DRO	pH, EC, SAR		
BH01	7-13-16	1240	3			X		X					X				
BH02	7-13-16	1250	3			X		X					X				
BH03	7-13-16	1300	3			X		X					X				
BH04	7-13-16	1330	3			X		X					X				
BH05	7-13-16	1315	3			X		X					X				
BH06	7-13-16	1250	3			X		X					X				
BH07	7-13-16	—	—														
BH08	7-13-16	1330	3			X		X					X				

Relinquished by:	Date/Time: 7-13-16 1700	Received by:	Date/Time: 7/13/16 1700	Turn Around Time (Check): Same Day <input type="checkbox"/> 72 Hours <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> Standard 48 Hours <input type="checkbox"/>	Notes: on ice
Relinquished by:	Date/Time: 7/13/16 1745	Received by:	Date/Time: 7/13/16 1745	Sample Integrity: Temperature Upon Receipt: 4.7°C	
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

www.s2scientific.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/16 14:57

Sample Receipt Checklist

S2 Work Order: 1607086

Client: Noble/Tasman

Client Project ID: Noble: Bates 20-22

Shipped Via: P/V

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Cooler ID					
Temp (°C)	4.7				

Thermometer ID: 61857155-K

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

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

Nakita
Custodian Printed Name

MA
Signature of Initials of Custodian

7/13/16 1745
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/16 14:57

BH01
1607086-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/13/16 12:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1607143	07/16/16	07/16/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: 07/13/16 12:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/19/16 14:57

BH02
1607086-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/16 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1607143	07/16/16	07/16/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/13/16 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.3 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/19/16 14:57

BH03
1607086-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/16 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1607143	07/16/16	07/16/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/13/16 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/19/16 14:57

BH04
1607086-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/16 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1607143	07/16/16	07/16/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/13/16 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/19/16 14:57

BH05
1607086-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/16 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1607143	07/16/16	07/16/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/13/16 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/19/16 14:57

BH06
1607086-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/16 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1607143	07/16/16	07/16/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/13/16 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/19/16 14:57

BH08
1607086-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/16 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1607143	07/16/16	07/16/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/13/16 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.6 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.7 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/16 14:57

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 1607143 - EPA 5030 Water MS

Blank (1607143-BLK1)

Prepared & Analyzed: 07/16/16

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.3		"	13.3		107	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		96.4	45-149			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	45-146			

LCS (1607143-BS1)

Prepared & Analyzed: 07/16/16

Benzene	41.3	1.0	ug/l	33.3		124	51-132			
Toluene	39.3	1.0	"	33.3		118	51-138			
Ethylbenzene	45.9	1.0	"	33.1		139	58-146			
m,p-Xylene	81.6	2.0	"	66.5		123	57-144			
o-Xylene	39.0	1.0	"	32.7		120	53-146			
Surrogate: 1,2-Dichloroethane-d4	14.4		"	13.3		108	37-154			
Surrogate: Toluene-d8	13.7		"	13.3		103	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.9	45-146			

Matrix Spike (1607143-MS1)

Source: 1607072-01

Prepared & Analyzed: 07/16/16

Benzene	43.6	1.0	ug/l	33.3	ND	131	34-141			
Toluene	41.5	1.0	"	33.3	ND	125	27-151			
Ethylbenzene	50.3	1.0	"	33.1	ND	152	29-160			
m,p-Xylene	87.6	2.0	"	66.5	ND	132	20-166			
o-Xylene	42.4	1.0	"	32.7	ND	130	33-159			
Surrogate: 1,2-Dichloroethane-d4	15.5		"	13.3		116	37-154			
Surrogate: Toluene-d8	13.5		"	13.3		101	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.5	45-146			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/16 14:57

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 1607143 - EPA 5030 Water MS

Matrix Spike Dup (1607143-MSD1)	Source: 1607072-01			Prepared & Analyzed: 07/16/16						
Benzene	44.5	1.0	ug/l	33.3	ND	134	34-141	2.16	32	
Toluene	42.1	1.0	"	33.3	ND	126	27-151	1.48	25	
Ethylbenzene	51.7	1.0	"	33.1	ND	156	29-160	2.84	50	
m,p-Xylene	90.7	2.0	"	66.5	ND	136	20-166	3.47	36	
o-Xylene	44.0	1.0	"	32.7	ND	135	33-159	3.63	26	
Surrogate: 1,2-Dichloroethane-d4	15.6		"	13.3		117	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		99.1	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.9	45-146			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Bates 20 - 22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/16 14:57

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

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

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

July 22, 2016

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Bates 20-22

Enclosed are the results of analyses for samples received by Summit Scientific on 07/15/16 14:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/22/16 14:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH12@1-2'	1607104-01	Soil	07/15/16 09:40	07/15/16 14:00
BH12	1607104-02	Water	07/15/16 11:10	07/15/16 14:00

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/22/16 14:14

Sonnit Scientific

1607104

741 Corporate Circle Suite 1 Golden, Colorado 80401
303-277-9310 303-374-5933 Fax

Client: Noble/Tasman

Page 1 of 1

Address: Noble/Tasman

Project Manager: Brandon Bruns, Invoice: Jacob Evans

City/State/Zip: _____

E-Mail:

Phone: _____ Fax: _____

Project Name: Bates ~~2020~~ 2022

Sampler Name: Eric Siegel

Project Number:

[illegible]

www.szscitech.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/22/16 14:14

Sample Receipt Checklist

S2 Work Order: 1607104

Client: Tasman

Client Project ID: Bates 20-22

Shipped Via: H.D. on ice
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Cooler ID					
Temp (°C)	<u>3.1</u>				

Thermometer ID: 61857155-K

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

Murp
Custodian Printed Name

BR 7.15.16
Signature or Initials of Custodian

18:33
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/22/16 14:14

BH12@1-2'
1607104-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/15/16 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1607160	07/18/16	07/18/16	8015M	

Date Sampled: 07/15/16 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		108 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/15/16 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1607159	"	07/18/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 07/15/16 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/22/16 14:14

BH12
1607104-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/15/16 11:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1607161	07/18/16	07/18/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: 07/15/16 11:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.7 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		100 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %	45-146		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/22/16 14:14

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1607160 - EPA 3550A

Blank (1607160-BLK1)

Prepared & Analyzed: 07/18/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 12.6 " 12.5 101 30-150

LCS (1607160-BS1)

Prepared & Analyzed: 07/18/16

C10-C28 (DRO) 453 50 mg/kg 499 90.9 73-134

Surrogate: o-Terphenyl 12.6 " 12.5 101 30-150

Matrix Spike (1607160-MS1)

Source: 1607099-03

Prepared & Analyzed: 07/18/16

C10-C28 (DRO) 436 50 mg/kg 472 10.8 90.2 50-148

Surrogate: o-Terphenyl 11.4 " 11.8 96.6 30-150

Matrix Spike Dup (1607160-MSD1)

Source: 1607099-03

Prepared & Analyzed: 07/18/16

C10-C28 (DRO) 450 50 mg/kg 488 10.8 90.1 50-148 3.21 20

Surrogate: o-Terphenyl 12.0 " 12.2 98.1 30-150

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/22/16 14:14

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 1607159 - EPA 5030 Soil MS

Blank (1607159-BLK1)

Prepared & Analyzed: 07/18/16

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0352		"	0.0400		88.0	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0400		93.8	21-167			

LCS (1607159-BS1)

Prepared & Analyzed: 07/18/16

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0943	0.0020	"	0.100		94.3	58-130			
Toluene	0.110	0.0050	"	0.100		110	61-134			
Ethylbenzene	0.116	0.0050	"	0.0992		116	74-139			
m,p-Xylene	0.235	0.010	"	0.200		118	73-137			
o-Xylene	0.110	0.0050	"	0.0980		112	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0374		"	0.0400		93.4	23-173			
Surrogate: Toluene-d8	0.0388		"	0.0400		96.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.3	21-167			

Matrix Spike (1607159-MS1)

Source: 1607099-03

Prepared & Analyzed: 07/18/16

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0940	0.0020	"	0.0977	ND	96.2	30-131			
Toluene	0.109	0.0050	"	0.0977	ND	112	30-134			
Ethylbenzene	0.114	0.0050	"	0.0969	ND	117	22-153			
m,p-Xylene	0.228	0.010	"	0.195	ND	117	10-159			
o-Xylene	0.109	0.0050	"	0.0957	ND	114	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0378		"	0.0391		96.7	23-173			
Surrogate: Toluene-d8	0.0388		"	0.0391		99.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0369		"	0.0391		94.4	21-167			

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Tasman Geosciences
6899 Pecos Street
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Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Bruns

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07/22/16 14:14

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

Batch 1607159 - EPA 5030 Soil MS

Matrix Spike Dup (1607159-MSD1)

Source: 1607099-03

Prepared & Analyzed: 07/18/16

Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0930	0.0020	"	0.0954	ND	97.5	30-131	1.02	34	
Toluene	0.107	0.0050	"	0.0954	ND	112	30-134	1.91	30	
Ethylbenzene	0.114	0.0050	"	0.0947	ND	120	22-153	0.150	24	
m,p-Xylene	0.230	0.010	"	0.190	ND	121	10-159	0.953	68	
o-Xylene	0.110	0.0050	"	0.0935	ND	117	31-151	0.411	38	
Surrogate: 1,2-Dichloroethane-d4	0.0360		"	0.0382		94.4	23-173			
Surrogate: Toluene-d8	0.0375		"	0.0382		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0362		"	0.0382		94.8	21-167			

Batch 1607161 - EPA 5030 Water MS

Blank (1607161-BLK1)

Prepared & Analyzed: 07/18/16

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.1		"	13.3		106	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		96.9	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	45-146			

LCS (1607161-BS1)

Prepared & Analyzed: 07/18/16

Benzene	36.6	1.0	ug/l	33.3		110	51-132			
Toluene	34.4	1.0	"	33.3		103	51-138			
Ethylbenzene	34.2	1.0	"	33.1		104	58-146			
m,p-Xylene	62.7	2.0	"	66.5		94.2	57-144			
o-Xylene	29.9	1.0	"	32.7		91.4	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.3		104	37-154			
Surrogate: Toluene-d8	15.6		"	13.3		117	45-149			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		104	45-146			

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/22/16 14:14

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 1607161 - EPA 5030 Water MS

Matrix Spike (1607161-MS1)		Source: 1607101-01			Prepared & Analyzed: 07/18/16					
Benzene	40.8	1.0	ug/l	33.3	ND	122	34-141			
Toluene	39.2	1.0	"	33.3	ND	117	27-151			
Ethylbenzene	42.4	1.0	"	33.1	ND	128	29-160			
m,p-Xylene	76.4	2.0	"	66.5	ND	115	20-166			
o-Xylene	36.4	1.0	"	32.7	ND	112	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.3		110	37-154			
Surrogate: Toluene-d8	14.4		"	13.3		108	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.0	45-146			

Matrix Spike Dup (1607161-MSD1)		Source: 1607101-01			Prepared & Analyzed: 07/18/16					
Benzene	44.7	1.0	ug/l	33.3	ND	134	34-141	9.11	32	
Toluene	42.4	1.0	"	33.3	ND	127	27-151	7.90	25	
Ethylbenzene	49.2	1.0	"	33.1	ND	149	29-160	14.7	50	
m,p-Xylene	86.6	2.0	"	66.5	ND	130	20-166	12.5	36	
o-Xylene	41.6	1.0	"	32.7	ND	127	33-159	13.3	26	
Surrogate: 1,2-Dichloroethane-d4	15.6		"	13.3		117	37-154			
Surrogate: Toluene-d8	13.7		"	13.3		103	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.7	45-146			

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

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07/22/16 14:14

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

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