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19 March 2019

Steve Moskal  
BP America  
380 Airport Rd.  
Durango, CO 81303  
RE: Table 910 - less PAH, metals

Enclosed are the results of analyses for samples received by the laboratory on 03/13/19 13:15. The data to follow was performed, in whole or in part, by a subcontract laboratory with an additional report attached.

If you any any further assistance, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads 'Jenna Emerick'. The script is cursive and fluid.

Jenna Marie Emerick For Debbie Zufelt  
Reports Manager

All accredited analytes contained in this report are denoted by an asterisk (\*). For a complete list of accredited analytes please do not hesitate to contact us via any of the contact information contained in this report. All of our certifications can be viewed at <http://greenanalytical.com/certifications/>

Green Analytical Laboratories is NELAP accredited through the Texas Commission on Environmental Quality. Accreditation applies to drinking water and non-potable water matrices for trace metals and a variety of inorganic parameters. Green Analytical Laboratories is also accredited through the Colorado Department of Public Health and Environment and EPA region 8 for trace metals, Cyanide, Fluoride, Nitrate, and Nitrite in drinking water.

Our affiliate laboratory, Cardinal Laboratories, is also NELAP accredited through the Texas Commission on Environmental Quality for a variety of organic constituents in drinking water, non-potable water and solid matrices. Cardinal is also accredited for regulated VOCs, TTHM, and HAA-5 in drinking water through the Colorado Department of Public Health and Environment and EPA region 8.



BP America  
380 Airport Rd.  
Durango CO, 81303

Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SS 43	1903140-01	Solid	03/13/19 08:50	03/13/19 13:15	
SS 44	1903140-02	Solid	03/13/19 08:55	03/13/19 13:15	
SS 45	1903140-03	Solid	03/13/19 09:05	03/13/19 13:15	
SS 46	1903140-04	Solid	03/13/19 09:35	03/13/19 13:15	
SS 47	1903140-05	Solid	03/13/19 09:55	03/13/19 13:15	
SS 48	1903140-06	Solid	03/13/19 10:05	03/13/19 13:15	
SS 49	1903140-07	Solid	03/13/19 10:10	03/13/19 13:15	
SS 50	1903140-08	Solid	03/13/19 10:50	03/13/19 13:15	
SS 51	1903140-09	Solid	03/13/19 11:00	03/13/19 13:15	
SS 52	1903140-10	Solid	03/13/19 11:15	03/13/19 13:15	
SS 53	1903140-11	Solid	03/13/19 11:20	03/13/19 13:15	
SS 54	1903140-12	Solid	03/13/19 11:50	03/13/19 13:15	
SS 55	1903140-13	Solid	03/13/19 11:55	03/13/19 13:15	
SS 56	1903140-14	Solid	03/13/19 12:40	03/13/19 13:15	

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Project Name / Number: Thomas Jacquez E #1  
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03/19/19 11:12

## SS 43

## 1903140-01 (Solid)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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## Saturated Paste Extraction

Calcium	57.5	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	415			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	7.71	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	7.64			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	1.15			No Unit	1	03/19/19	Calculation		AES
Sodium	34.9	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

## Subcontracted -- Cardinal Laboratories

## Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID)

117 % 73.3-129

03/15/19

8021B

MS

## Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/15/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	03/15/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	03/15/19	8015B		MS

Surrogate: 1-Chlorooctane

94.9 % 41-142

03/15/19

8015B

MS

Surrogate: 1-Chlorooctadecane

96.5 % 37.6-147

03/15/19

8015B

MS

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Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

## SS 44

### 1903140-02 (Solid)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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#### Saturated Paste Extraction

Calcium	20.3	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	446			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	2.98	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	7.86			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	4.77			No Unit	1	03/19/19	Calculation		AES
Sodium	87.0	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

#### Subcontracted -- Cardinal Laboratories

#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID)

111 % 73.3-129

03/15/19

8021B

MS

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/15/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	03/15/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	03/15/19	8015B		MS

Surrogate: 1-Chlorooctane

98.2 % 41-142

03/15/19

8015B

MS

Surrogate: 1-Chlorooctadecane

101 % 37.6-147

03/15/19

8015B

MS

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Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

## SS 45

### 1903140-03 (Solid)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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#### Saturated Paste Extraction

Calcium	20.8	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	430			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	3.51	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	7.87			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	5.39			No Unit	1	03/19/19	Calculation		AES
Sodium	101	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

#### Subcontracted -- Cardinal Laboratories

#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID)

113 % 73.3-129

03/15/19

8021B

MS

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/15/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	03/15/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	03/15/19	8015B		MS

Surrogate: 1-Chlorooctane

95.3 % 41-142

03/15/19

8015B

MS

Surrogate: 1-Chlorooctadecane

98.8 % 37.6-147

03/15/19

8015B

MS

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380 Airport Rd.  
Durango CO, 81303Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve MoskalReported:  
03/19/19 11:12

## SS 46

## 1903140-04 (Solid)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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## Saturated Paste Extraction

Calcium	40.3	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	650			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	5.42	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	7.74			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	5.18			No Unit	1	03/19/19	Calculation		AES
Sodium	132	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

## Subcontracted -- Cardinal Laboratories

## Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID)

116 % 73.3-129

03/15/19

8021B

MS

## Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/15/19	8015B		MS
DRO >C10-C28*	369	10.0	1.56	mg/kg	1	03/15/19	8015B		MS
EXT DRO >C28-C36	45.5	10.0	1.56	mg/kg	1	03/15/19	8015B		MS

Surrogate: 1-Chlorooctane

100 % 41-142

03/15/19

8015B

MS

Surrogate: 1-Chlorooctadecane

133 % 37.6-147

03/15/19

8015B

MS

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Jenna Marie Emerick For Debbie Zufelt, Reports Manager

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BP America  
380 Airport Rd.  
Durango CO, 81303

Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

## SS 47

### 1903140-05 (Solid)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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#### Saturated Paste Extraction

Calcium	29.2	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	467			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	4.13	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	7.76			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	3.78			No Unit	1	03/19/19	Calculation		AES
Sodium	82.3	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

#### Subcontracted -- Cardinal Laboratories

#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS
Surrogate: 4-Bromofluorobenzene (PID)				116 %	73.3-129	03/15/19	8021B		MS

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/15/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	03/15/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	03/15/19	8015B		MS
Surrogate: 1-Chlorooctane				97.0 %	41-142	03/15/19	8015B		MS
Surrogate: 1-Chlorooctadecane				99.6 %	37.6-147	03/15/19	8015B		MS

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BP America  
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Durango CO, 81303

Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

**SS 48****1903140-06 (Solid)**

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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**Saturated Paste Extraction**

Calcium	41.8	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	487			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	5.86	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	7.72			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	2.49			No Unit	1	03/19/19	Calculation		AES
Sodium	64.8	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

**Subcontracted -- Cardinal Laboratories****Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID)

114 % 73.3-129

03/15/19

8021B

MS

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/15/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	03/15/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	03/15/19	8015B		MS

Surrogate: 1-Chlorooctane

93.8 % 41-142

03/15/19

8015B

MS

Surrogate: 1-Chlorooctadecane

94.1 % 37.6-147

03/15/19

8015B

MS

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Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
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## SS 49

### 1903140-07 (Solid)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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#### Saturated Paste Extraction

Calcium	174	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	1090			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	24.9	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	7.39			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	0.85			No Unit	1	03/19/19	Calculation		AES
Sodium	45.2	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

#### Subcontracted -- Cardinal Laboratories

#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID)

114 % 73.3-129

03/15/19

8021B

MS

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/15/19	8015B		MS
DRO >C10-C28*	179	10.0	1.56	mg/kg	1	03/15/19	8015B		MS
EXT DRO >C28-C36	52.9	10.0	1.56	mg/kg	1	03/15/19	8015B		MS

Surrogate: 1-Chlorooctane

90.3 % 41-142

03/15/19

8015B

MS

Surrogate: 1-Chlorooctadecane

107 % 37.6-147

03/15/19

8015B

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Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

## SS 50

### 1903140-08 (Solid)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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#### Saturated Paste Extraction

Calcium	51.8	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	522			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	7.46	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	7.72			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	2.03			No Unit	1	03/19/19	Calculation		AES
Sodium	59.1	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

#### Subcontracted -- Cardinal Laboratories

#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID)

107 % 73.3-129

03/15/19

8021B

MS

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/15/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	03/15/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	03/15/19	8015B		MS

Surrogate: 1-Chlorooctane

96.2 % 41-142

03/15/19

8015B

MS

Surrogate: 1-Chlorooctadecane

92.0 % 37.6-147

03/15/19

8015B

MS

Green Analytical Laboratories

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BP America  
380 Airport Rd.  
Durango CO, 81303Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve MoskalReported:  
03/19/19 11:12

## SS 51

## 1903140-09 (Solid)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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## Saturated Paste Extraction

Calcium	126	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	810			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	18.0	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	7.67			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	0.70			No Unit	1	03/19/19	Calculation		AES
Sodium	31.5	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

## Subcontracted -- Cardinal Laboratories

## Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID)

106 % 73.3-129

03/15/19

8021B

MS

## Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/16/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	03/16/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	03/16/19	8015B		MS

Surrogate: 1-Chlorooctane

91.9 % 41-142

03/16/19

8015B

MS

Surrogate: 1-Chlorooctadecane

89.5 % 37.6-147

03/16/19

8015B

MS

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BP America  
380 Airport Rd.  
Durango CO, 81303

Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

## SS 52

### 1903140-10 (Solid)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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#### Saturated Paste Extraction

Calcium	74.4	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	610			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	11.7	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	7.70			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	1.12			No Unit	1	03/19/19	Calculation		AES
Sodium	39.4	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

#### Subcontracted -- Cardinal Laboratories

#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS
Surrogate: 4-Bromofluorobenzene (PID)				109 %	73.3-129	03/15/19	8021B		MS

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/16/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	03/16/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	03/16/19	8015B		MS
Surrogate: 1-Chlorooctane				90.9 %	41-142	03/16/19	8015B		MS
Surrogate: 1-Chlorooctadecane				95.4 %	37.6-147	03/16/19	8015B		MS

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BP America  
380 Airport Rd.  
Durango CO, 81303Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve MoskalReported:  
03/19/19 11:12

## SS 53

## 1903140-11 (Solid)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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## Saturated Paste Extraction

Calcium	138	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	815			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	15.7	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	7.76			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	0.75			No Unit	1	03/19/19	Calculation		AES
Sodium	34.9	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

## Subcontracted -- Cardinal Laboratories

## Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID)

108 % 73.3-129

03/15/19

8021B

MS

## Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/16/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	03/16/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	03/16/19	8015B		MS

Surrogate: 1-Chlorooctane

76.9 % 41-142

03/16/19

8015B

MS

Surrogate: 1-Chlorooctadecane

89.4 % 37.6-147

03/16/19

8015B

MS

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Jenna Marie Emerick For Debbie Zufelt, Reports Manager

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BP America  
380 Airport Rd.  
Durango CO, 81303

Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

**SS 54****1903140-12 (Solid)**

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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**Saturated Paste Extraction**

Calcium	64.4	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	530			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	10.8	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	8.00			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	1.02			No Unit	1	03/19/19	Calculation		AES
Sodium	33.7	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

**Subcontracted -- Cardinal Laboratories****Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID)

116 % 73.3-129

03/15/19

8021B

MS

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/16/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	03/16/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	03/16/19	8015B		MS

Surrogate: 1-Chlorooctane

94.6 % 41-142

03/16/19

8015B

MS

Surrogate: 1-Chlorooctadecane

96.9 % 37.6-147

03/16/19

8015B

MS

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Jenna Marie Emerick For Debbie Zufelt, Reports Manager

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BP America  
380 Airport Rd.  
Durango CO, 81303

Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

## SS 55

### 1903140-13 (Solid)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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#### Saturated Paste Extraction

Calcium	75.6	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	914			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	9.01	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	8.01			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	4.08			No Unit	1	03/19/19	Calculation		AES
Sodium	141	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

#### Subcontracted -- Cardinal Laboratories

#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Toluene*	<0.050	0.050	0.002	mg/kg	50	03/15/19	8021B		MS
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	03/15/19	8021B		MS
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	03/15/19	8021B		MS
Total BTEX	<0.300	0.300	0.018	mg/kg	50	03/15/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID)

111 % 73.3-129

03/15/19

8021B

MS

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	03/16/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	03/16/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	03/16/19	8015B		MS

Surrogate: 1-Chlorooctane

92.8 % 41-142

03/16/19

8015B

MS

Surrogate: 1-Chlorooctadecane

92.4 % 37.6-147

03/16/19

8015B

MS

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Jenna Marie Emerick For Debbie Zufelt, Reports Manager

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BP America  
380 Airport Rd.  
Durango CO, 81303

Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

**Reported:**  
03/19/19 11:12

**SS 56****1903140-14 (Solid)**

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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**Saturated Paste Extraction**

Calcium	66.3	0.100	0.013	mg/L	1	03/19/19	EPA200.7		AES
Conductivity	495			umhos/cm	1	03/18/19	ASA#9 10-3.3		JDA
Magnesium	10.8	0.100	0.019	mg/L	1	03/19/19	EPA200.7		AES
pH	7.93			pH Units	1	03/18/19	ASA#9 12-2.6		JDA
SAR	0.85			No Unit	1	03/19/19	Calculation		AES
Sodium	28.3	1.00	0.367	mg/L	1	03/19/19	EPA200.7		AES

**Total Metals by ICPMS**

Arsenic	2.08	1.00	0.214	mg/kg dry	1000	03/18/19	6020A		AES
Manganese	376	2.00	0.0895	mg/kg dry	1000	03/18/19	6020A		AES

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BP America  
380 Airport Rd.  
Durango CO, 81303

Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

### Saturated Paste Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B903143 - Paste Extract

##### Blank (B903143-BLK1)

Prepared: 03/18/19 Analyzed: 03/19/19

Calcium	ND	0.100	mg/L
Magnesium	ND	0.100	mg/L
Sodium	ND	1.00	mg/L

##### Duplicate (B903143-DUP1)

Source: 1903140-10 Prepared: 03/18/19 Analyzed: 03/19/19

Calcium	73.4	0.100	mg/L	74.4	1.25	20
Magnesium	11.7	0.100	mg/L	11.7	0.0161	20
SAR	1.11		No Unit	1.12	0.897	20
Sodium	38.7	1.00	mg/L	39.4	1.71	20

#### Batch B903145 - Paste Extract

##### Duplicate (B903145-DUP1)

Source: 1903140-10 Prepared & Analyzed: 03/18/19

pH	7.69		pH Units	7.70	0.130	20
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#### Batch B903146 - Paste Extract

##### Duplicate (B903146-DUP1)

Source: 1903140-10 Prepared & Analyzed: 03/18/19

Conductivity	590		umhos/cm	610	3.33	20
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BP America  
380 Airport Rd.  
Durango CO, 81303

Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

### Total Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B903140 - EPA 3050M

##### Blank (B903140-BLK1)

Prepared: 03/15/19 Analyzed: 03/18/19

Arsenic	ND	0.100	mg/kg dry							
Manganese	ND	0.200	mg/kg dry							

##### LCS (B903140-BS1)

Prepared: 03/15/19 Analyzed: 03/18/19

Arsenic	4.89	0.100	mg/kg dry	5.00		97.9	80-120			
Manganese	4.95	0.200	mg/kg dry	5.00		98.9	80-120			

##### LCS Dup (B903140-BSD1)

Prepared: 03/15/19 Analyzed: 03/18/19

Arsenic	5.44	0.100	mg/kg dry	5.00		109	80-120	10.6	20	
Manganese	4.84	0.200	mg/kg dry	5.00		96.9	80-120	2.07	20	

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BP America  
380 Airport Rd.  
Durango CO, 81303Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve MoskalReported:  
03/19/19 11:12

## Volatile Organic Compounds by EPA Method 8021 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Batch 9031505 - Volatiles

## Blank (9031505-BLK1)

Prepared &amp; Analyzed: 03/15/19

Surrogate: 4-Bromofluorobenzene (PID)	0.116		mg/kg	0.100		116	73.3-129			
Benzene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Total Xylenes	ND	0.150	mg/kg							

## LCS (9031505-BS1)

Prepared &amp; Analyzed: 03/15/19

Surrogate: 4-Bromofluorobenzene (PID)	0.129		mg/kg	0.100		129	73.3-129			
Benzene	2.00	0.050	mg/kg	2.00		100	72.2-131			
Ethylbenzene	2.27	0.050	mg/kg	2.00		113	68.9-126			
Toluene	2.13	0.050	mg/kg	2.00		107	71.7-126			
Total Xylenes	6.68	0.150	mg/kg	6.00		111	71.4-125			

## LCS Dup (9031505-BSD1)

Prepared &amp; Analyzed: 03/15/19

Surrogate: 4-Bromofluorobenzene (PID)	0.125		mg/kg	0.100		125	73.3-129			
Benzene	2.11	0.050	mg/kg	2.00		105	72.2-131	5.23	6.91	
Ethylbenzene	2.29	0.050	mg/kg	2.00		115	68.9-126	1.03	7.88	
Toluene	2.14	0.050	mg/kg	2.00		107	71.7-126	0.349	7.12	
Total Xylenes	6.55	0.150	mg/kg	6.00		109	71.4-125	1.96	7.46	

Green Analytical Laboratories

Jenna Marie Emerick For Debbie Zufelt, Reports Manager

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www.GreenAnalytical.com

BP America  
380 Airport Rd.  
Durango CO, 81303

Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

### Petroleum Hydrocarbons by GC FID - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 9031423 - General Prep - Organics

##### Blank (9031423-BLK1)

Prepared: 03/14/19 Analyzed: 03/15/19

Surrogate: 1-Chlorooctadecane	49.3		mg/kg	50.0		98.6	37.6-147			
Surrogate: 1-Chlorooctane	48.6		mg/kg	50.0		97.2	41-142			
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
GRO C6-C10	ND	10.0	mg/kg							

##### LCS (9031423-BS1)

Prepared: 03/14/19 Analyzed: 03/15/19

Surrogate: 1-Chlorooctadecane	54.7		mg/kg	50.0		109	37.6-147			
Surrogate: 1-Chlorooctane	51.9		mg/kg	50.0		104	41-142			
DRO >C10-C28	197	10.0	mg/kg	200		98.3	72.9-138			
GRO C6-C10	193	10.0	mg/kg	200		96.5	76.5-133			
Total TPH C6-C28	471	10.0	mg/kg	400		118	78-132			

##### LCS Dup (9031423-BSD1)

Prepared: 03/14/19 Analyzed: 03/15/19

Surrogate: 1-Chlorooctadecane	55.3		mg/kg	50.0		111	37.6-147			
Surrogate: 1-Chlorooctane	55.2		mg/kg	50.0		110	41-142			
DRO >C10-C28	226	10.0	mg/kg	200		113	72.9-138	14.2	20.6	
GRO C6-C10	208	10.0	mg/kg	200		104	76.5-133	7.41	20.6	
Total TPH C6-C28	434	10.0	mg/kg	400		109	78-132	8.22	18	

#### Batch 9031503 - General Prep - Organics

##### Blank (9031503-BLK1)

Prepared & Analyzed: 03/15/19

Surrogate: 1-Chlorooctadecane	44.8		mg/kg	50.0		89.5	37.6-147			
Surrogate: 1-Chlorooctane	46.7		mg/kg	50.0		93.4	41-142			
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
GRO C6-C10	ND	10.0	mg/kg							

##### LCS (9031503-BS1)

Prepared & Analyzed: 03/15/19

Surrogate: 1-Chlorooctadecane	48.6		mg/kg	50.0		97.2	37.6-147			
Surrogate: 1-Chlorooctane	51.8		mg/kg	50.0		104	41-142			
DRO >C10-C28	183	10.0	mg/kg	200		91.4	72.9-138			
GRO C6-C10	204	10.0	mg/kg	200		102	76.5-133			
Total TPH C6-C28	387	10.0	mg/kg	400		96.6	78-132			

##### LCS Dup (9031503-BSD1)

Prepared & Analyzed: 03/15/19

Surrogate: 1-Chlorooctadecane	48.4		mg/kg	50.0		96.9	37.6-147			
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380 Airport Rd.  
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Project: Table 910 - less PAH, metals  
Project Name / Number: Thomas Jacquez E #1  
Project Manager: Steve Moskal

Reported:  
03/19/19 11:12

**Petroleum Hydrocarbons by GC FID - Quality Control  
(Continued)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 9031503 - General Prep - Organics (Continued)**

**LCS Dup (9031503-BSD1) (Continued)**

Prepared & Analyzed: 03/15/19

Surrogate: 1-Chlorooctane	52.0		mg/kg	50.0		104	41-142			
DRO >C10-C28	228	10.0	mg/kg	200		114	72.9-138	21.9	20.6	QR-02
GRO C6-C10	225	10.0	mg/kg	200		113	76.5-133	9.97	20.6	
Total TPH C6-C28	453	10.0	mg/kg	400		113	78-132	15.8	18	

**Notes and Definitions**

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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 *Results reported on as received basis unless designated as dry.
RPD	Relative Percent Difference
LCS	Laboratory Control Sample (Blank Spike)
RL	Report Limit
MDL	Method Detection Limit

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75 Suttle St Durango, CO 81303

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 2

Company Name: BP America Production Co.		P.O. #:		Bill to (if different):		ANALYSIS REQUEST	
Project Manager: Steve Moskal		Company:					
Address: 1199 Main Ave Suite 101		Attn:					
City: Durango		State: CO		Zip: 81301			
Phone #: (505) 330 9179		Email: steven.moskal@bpx.com		Address:			
Additional Report To:		City:		State:		Zip:	
Project Name: Thomas Jacques E #1		Phone #:					
Project Number:		Fax or Email:					
Sampler Name (Print): Amanda Webb		Matrix (check one)		# of containers			
FOR LAB USE ONLY		GROUNDWATER		SOIL			
		SURFACEWATER		OTHER :			
		WASTEWATER		No preservation (general)			
		PRODUCEDWATER		HNO <sub>3</sub>			
				HCl			
				H <sub>2</sub> SO <sub>4</sub>			
				Other:			
				Other:			
Lab I.D.		Date		Time		See attached list of analytes	
1003-140-01		3/13/19		0830		X	
- 02		3/13/19		0855		X	
- 03		3/13/19		0905		X	
- 04		3/13/19		0935		X	
- 05		3/13/19		0955		X	
- 06		3/13/19		1005		X	
- 07		3/13/19		1010		X	
- 08		3/13/19		1050		X	
- 09		3/13/19		1100		X	
- 10		3/13/19		1115		X	
Sample Name or Location		Date		Time			
SS43		3/13/19		0830		X	
SS44		3/13/19		0855		X	
SS45		3/13/19		0905		X	
SS46		3/13/19		0935		X	
SS47		3/13/19		0955		X	
SS48		3/13/19		1005		X	
SS49		3/13/19		1010		X	
SS50		3/13/19		1050		X	
SS51		3/13/19		1100		X	
SS52		3/13/19		1115		X	
Relinquished By:		Date:		Time:		Report to State? (Circle)	
Steve Moskal		3/13/19		135		Yes No	
Relinquished By:		Date:		Time:			
Relinquished By:		Date:		Time:			
Delivered By: (Circle One)		Temperature at receipt:		CHECKED BY:			
UPS - FedEx - Kangaroo - Other:		4.1/3.9C		m			

RUSH ASAP

\* Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.

Company Name: BP America Production Co.

Project Manager: Steve Moskal

Address: 1199 Main Ave Suite 101

City: Durango

State: CO Zip: 81301

Phone #: (505) 330 9179

Email: steven.moskal@bpx.com

Additional Report To:

Project Name: Thomas Jacques E #1

Project Number:

Sample Name (Print): Amanda Webb

FOR LAB USE ONLY

Bill to (if different):

P.O. #:

Company:

Attn:

Address:

City:

State:

Zip:

Phone #:

Fax or Email:

Collected

Matrix (check one)

# of containers

Sample Name or Location

GROUNDWATER  
SURFACEWATER  
WASTEWATER  
PRODUCEDWATER  
SOIL  
OTHER :  
No preservation (general)  
HNO<sub>3</sub>  
HCl  
H<sub>2</sub>SO<sub>4</sub>  
Other:  
Other:

See attached list of analytes

PH, EC, SAP, & Arsenic

ANALYSIS REQUEST

PLEASE NOTE: GAL's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by GAL within 30 days after completion. In no event shall GAL be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by GAL, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:

Date: 3/13/19

Received By:

Date:

ADDITIONAL REMARKS:

Report to State? (Circle)

Yes

No

Relinquished By:

Date:

Received By:

Date:

RUSH ASAP

Relinquished By:

Date:

Received By:

Date:

Delivered By: (Circle One)

Date:

Received By:

Date:

Delivered By: (Circle One)

Date:

Received By:

Date:

Sample: UPS - FedEx - Kangaroo - Other:

Date:

Received By:

Date:

Temperature at receipt:

CHECKED BY:

\* Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.



The samples will be analyzed for BTEX, TPH, SAR, pH, and EC.