

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 11, 2021

Chris Roy  
WSP  
4600 West 60th Avenue  
Arvada, CO 80003  
RE: Grynberg State  
Work Order #2105444

Enclosed are the results of analyses for samples received by Summit Scientific on 05/27/21 17:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M" and a long, sweeping underline.

Muri Premer For Paul Shrewsbury  
President



WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01 SE	2105444-01	Soil	05/27/21 10:25	05/27/21 17:25
SB02 SW	2105444-02	Soil	05/27/21 10:50	05/27/21 17:25
SB03 NW	2105444-03	Soil	05/27/21 11:20	05/27/21 17:25
SB04 NE	2105444-04	Soil	05/27/21 12:00	05/27/21 17:25

Summit Scientific

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2105444

Sample Receipt Checklist

S2 Work Order \_\_\_\_\_

Client: WSP Client Project ID: Erynberg State

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: \_\_\_\_\_

Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_ (Describe)

Temp (°C)	3.7
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Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

AT  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

5.29.21  
Date/Time



WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB01 SE**  
**2105444-01 (Soil)**

Summit Scientific

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	2.2	0.20	mg/kg	100	BEF0100	06/03/21	06/04/21	EPA 8260B	
Toluene	71	0.50	"	"	"	"	"	"	
Ethylbenzene	24	0.50	"	"	"	"	"	"	
Xylenes (total)	240	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	52	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	31	0.50	"	"	"	"	"	"	
Naphthalene	3.4	0.38	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	3100	50	"	"	"	"	"	"	

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		45.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		331 %	21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	1200	50	mg/kg	1	BEF0099	06/03/21	06/04/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		67.1 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB01 SE**  
**2105444-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEF0204	06/09/21	06/10/21	EPA 8270D SIM	
<b>Anthracene</b>	<b>0.0238</b>	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0274</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>1.49</b>	0.0500	"	10	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>2.25</b>	0.0500	"	"	"	"	"	"	

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		79.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		78.5 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.939</b>	0.0100	mg/L	1	BEF0110	06/04/21	06/07/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB01 SE**  
**2105444-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	88.8	0.256	mg/kg dry	1	BEF0092	06/03/21	06/07/21	EPA 6020B	
Barium	92.0	0.513	"	"	"	"	"	"	
Cadmium	ND	0.256	"	"	"	"	"	"	
Copper	40.2	0.513	"	"	"	"	"	"	
Lead	18.8	0.256	"	"	"	"	"	"	
Nickel	10.8	0.513	"	"	"	"	"	"	
Selenium	5.58	0.333	"	"	"	"	"	"	
Silver	0.117	0.0256	"	"	"	"	"	"	
Zinc	23.8	0.513	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0109	06/04/21	06/07/21	EPA 7196A	

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

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	216	0.0641	mg/L dry	1	BEF0010	06/01/21	06/04/21	EPA 6020B	
Magnesium	306	0.0641	"	"	"	"	"	"	
Sodium	530	0.0641	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.44	0.00100	units	1	BEF0121	06/04/21	06/04/21	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
 Project Manager: Chris Roy

**Reported:**  
 06/11/21 12:20

**SB01 SE**  
**2105444-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>78.0</b>	%	1	BEF0082	06/03/21	06/04/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>4.68</b>	0.0100	mmhos/cm	1	BEF0052	06/02/21	06/02/21	EPA 120.1	

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

Date Sampled: **05/27/21 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>4.21</b>		pH Units	1	BEF0051	06/02/21	06/02/21	EPA 9045D	

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Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB02 SW**  
**2105444-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	0.86	0.20		mg/kg	100	BEF0100	06/03/21	06/04/21	EPA 8260B	
Toluene	21	0.50		"	"	"	"	"	"	
Ethylbenzene	14	0.50		"	"	"	"	"	"	
Xylenes (total)	150	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	35	0.50		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	20	0.50		"	"	"	"	"	"	
Naphthalene	2.7	0.38		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1900	50		"	"	"	"	"	"	

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	69.8 %			23-173		"	"	"	"	
Surrogate: Toluene-d8	91.2 %			20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	229 %			21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	470	50		mg/kg	1	BEF0099	06/03/21	06/04/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	84.8 %			30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB02 SW**  
**2105444-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEF0204	06/09/21	06/10/21	EPA 8270D SIM	
<b>Anthracene</b>	<b>0.0101</b>	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.00843</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.802</b>	0.0500	"	10	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>1.36</b>	0.0500	"	"	"	"	"	"	

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		102 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.5 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>1.19</b>	0.0100	mg/L	1	BEF0110	06/04/21	06/07/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB02 SW**  
**2105444-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	51.5	0.248	mg/kg dry	1	BEF0092	06/03/21	06/07/21	EPA 6020B	
Barium	53.8	0.495	"	"	"	"	"	"	
Cadmium	ND	0.248	"	"	"	"	"	"	
Copper	26.5	0.495	"	"	"	"	"	"	
Lead	10.1	0.248	"	"	"	"	"	"	
Nickel	3.13	0.495	"	"	"	"	"	"	
Selenium	1.86	0.322	"	"	"	"	"	"	
Silver	0.0715	0.0248	"	"	"	"	"	"	
Zinc	13.7	0.495	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0109	06/04/21	06/07/21	EPA 7196A	

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

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	62.8	0.0619	mg/L dry	1	BEF0010	06/01/21	06/04/21	EPA 6020B	
Magnesium	250	0.0619	"	"	"	"	"	"	
Sodium	398	0.0619	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.03	0.00100	units	1	BEF0121	06/04/21	06/04/21	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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WSP  
4600 West 60th Avenue  
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Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB02 SW**  
**2105444-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	80.7	%	1	BEF0082	06/03/21	06/04/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.69	0.0100	mmhos/cm	1	BEF0052	06/02/21	06/02/21	EPA 120.1	

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

Date Sampled: **05/27/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	3.82		pH Units	1	BEF0051	06/02/21	06/02/21	EPA 9045D	

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB03 NW**  
**2105444-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	7.9	0.20		mg/kg	100	BEF0100	06/03/21	06/04/21	EPA 8260B	
Toluene	98	0.50		"	"	"	"	"	"	
Ethylbenzene	47	0.50		"	"	"	"	"	"	
Xylenes (total)	340	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	84	0.50		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	53	0.50		"	"	"	"	"	"	
Naphthalene	7.0	0.38		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	5700	50		"	"	"	"	"	"	

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		39.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		87.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		340 %		21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	800	50		mg/kg	1	BEF0099	06/03/21	06/04/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		42.8 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB03 NW**  
**2105444-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEF0204	06/09/21	06/10/21	EPA 8270D SIM	
<b>Anthracene</b>	<b>0.0271</b>	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0323</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.959</b>	0.0500	"	10	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>1.46</b>	0.0500	"	"	"	"	"	"	

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		33.7 %	40-150		"	"	"	"	S-02
Surrogate: Fluoranthene-d10		63.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>1.05</b>	0.0100	mg/L	1	BEF0110	06/04/21	06/07/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB03 NW**  
**2105444-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	81.1	0.253	mg/kg dry	1	BEF0092	06/03/21	06/07/21	EPA 6020B	
Barium	65.3	0.506	"	"	"	"	"	"	
Cadmium	ND	0.253	"	"	"	"	"	"	
Copper	45.5	0.506	"	"	"	"	"	"	
Lead	16.0	0.253	"	"	"	"	"	"	
Nickel	10.6	0.506	"	"	"	"	"	"	
Selenium	5.05	0.329	"	"	"	"	"	"	
Silver	0.138	0.0253	"	"	"	"	"	"	
Zinc	21.2	0.506	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0109	06/04/21	06/07/21	EPA 7196A	

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

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	6.30	0.0632	mg/L dry	1	BEF0010	06/01/21	06/04/21	EPA 6020B	
Magnesium	3.89	0.0632	"	"	"	"	"	"	
Sodium	16.0	0.0632	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.24	0.00100	units	1	BEF0121	06/04/21	06/04/21	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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WSP  
 4600 West 60th Avenue  
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Project: Grynberg State

Project Number: [none]  
 Project Manager: Chris Roy

**Reported:**  
 06/11/21 12:20

**SB03 NW**  
**2105444-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	79.1	%	1	BEF0082	06/03/21	06/04/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.117	0.0100	mmhos/cm	1	BEF0052	06/02/21	06/02/21	EPA 120.1	

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

Date Sampled: **05/27/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.70		pH Units	1	BEF0051	06/02/21	06/02/21	EPA 9045D	

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB04 NE**  
**2105444-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	12	0.20		mg/kg	100	BEF0100	06/03/21	06/04/21	EPA 8260B	
Toluene	55	0.50		"	"	"	"	"	"	
Ethylbenzene	42	0.50		"	"	"	"	"	"	
Xylenes (total)	300	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	76	0.50		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	46	0.50		"	"	"	"	"	"	
Naphthalene	5.6	0.38		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	5400	50		"	"	"	"	"	"	

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		42.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		87.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		320 %		21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	1300	50		mg/kg	1	BEF0099	06/03/21	06/04/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/27/21 12:00**

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

**PAH by EPA Method 8270D SIM**

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB04 NE**  
**2105444-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEF0204	06/09/21	06/10/21	EPA 8270D SIM	
<b>Anthracene</b>	<b>0.00730</b>	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>1.34</b>	0.500	"	100	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>2.31</b>	0.500	"	"	"	"	"	"	

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		90.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>1.19</b>	0.0100	mg/L	1	BEF0110	06/04/21	06/07/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB04 NE**  
**2105444-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	61.8	0.249	mg/kg dry	1	BEF0092	06/03/21	06/07/21	EPA 6020B	
Barium	68.9	0.498	"	"	"	"	"	"	
Cadmium	ND	0.249	"	"	"	"	"	"	
Copper	38.9	0.498	"	"	"	"	"	"	
Lead	24.6	0.249	"	"	"	"	"	"	
Nickel	6.47	0.498	"	"	"	"	"	"	
Selenium	3.49	0.323	"	"	"	"	"	"	
Silver	0.0731	0.0249	"	"	"	"	"	"	
Zinc	27.6	0.498	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0109	06/04/21	06/07/21	EPA 7196A	

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

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	3.16	0.0622	mg/L dry	1	BEF0010	06/01/21	06/04/21	EPA 6020B	
Magnesium	2.53	0.0622	"	"	"	"	"	"	
Sodium	7.50	0.0622	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.763	0.00100	units	1	BEF0121	06/04/21	06/04/21	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**SB04 NE**  
**2105444-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>80.4</b>	%	1	BEF0082	06/03/21	06/04/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.0714</b>	0.0100	mmhos/cm	1	BEF0052	06/02/21	06/02/21	EPA 120.1	

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

Date Sampled: **05/27/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>6.50</b>		pH Units	1	BEF0051	06/02/21	06/02/21	EPA 9045D	

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch BEF0100 - EPA 5030 Soil MS

##### Blank (BEF0100-BLK1)

Prepared & Analyzed: 06/03/21

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.4</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0431</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>21-167</i>				

##### LCS (BEF0100-BS1)

Prepared & Analyzed: 06/03/21

Benzene	0.0888	0.0020	mg/kg	0.100		88.8	70-130				
Toluene	0.0844	0.0050	"	0.100		84.4	70-130				
Ethylbenzene	0.0958	0.0050	"	0.100		95.8	70-130				
m,p-Xylene	0.185	0.010	"	0.200		92.4	70-130				
o-Xylene	0.0857	0.0050	"	0.100		85.7	70-130				
1,2,4-Trimethylbenzene	0.0901	0.0050	"	0.100		90.1	70-130				
1,3,5-Trimethylbenzene	0.0913	0.0050	"	0.100		91.3	70-130				
Naphthalene	0.0969	0.0038	"	0.100		96.9	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0268</i>		<i>"</i>	<i>0.0400</i>		<i>67.0</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.5</i>	<i>21-167</i>				

##### Matrix Spike (BEF0100-MS1)

Source: 2105450-06

Prepared & Analyzed: 06/03/21

Benzene	0.0851	0.0020	mg/kg	0.100	ND	85.1	70-130				
Toluene	0.0821	0.0050	"	0.100	ND	82.1	70-130				
Ethylbenzene	0.0962	0.0050	"	0.100	ND	96.2	70-130				
m,p-Xylene	0.186	0.010	"	0.200	ND	92.8	70-130				
o-Xylene	0.0871	0.0050	"	0.100	ND	87.1	70-130				
1,2,4-Trimethylbenzene	0.0922	0.0050	"	0.100	ND	92.2	70-130				
1,3,5-Trimethylbenzene	0.0924	0.0050	"	0.100	ND	92.4	70-130				
Naphthalene	0.0789	0.0038	"	0.100	ND	78.9	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0226</i>		<i>"</i>	<i>0.0400</i>		<i>56.5</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0418</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0371</i>		<i>"</i>	<i>0.0400</i>		<i>92.8</i>	<i>21-167</i>				

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch BEF0100 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BEF0100-MSD1)</b>	<b>Source: 2105450-06</b>			<b>Prepared &amp; Analyzed: 06/03/21</b>						
Benzene	0.0852	0.0020	mg/kg	0.100	ND	85.2	70-130	0.106	30	
Toluene	0.0812	0.0050	"	0.100	ND	81.2	70-130	1.10	30	
Ethylbenzene	0.0943	0.0050	"	0.100	ND	94.3	70-130	2.02	30	
m,p-Xylene	0.181	0.010	"	0.200	ND	90.4	70-130	2.59	30	
o-Xylene	0.0852	0.0050	"	0.100	ND	85.2	70-130	2.16	30	
1,2,4-Trimethylbenzene	0.0903	0.0050	"	0.100	ND	90.3	70-130	2.04	30	
1,3,5-Trimethylbenzene	0.0898	0.0050	"	0.100	ND	89.8	70-130	2.83	30	
Naphthalene	0.0789	0.0038	"	0.100	ND	78.9	70-130	0.0760	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0232</i>		<i>"</i>	<i>0.0400</i>		<i>57.9</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0422</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0363</i>		<i>"</i>	<i>0.0400</i>		<i>90.8</i>	<i>21-167</i>			

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BEF0099 - EPA 3550A**

**Blank (BEF0099-BLK1)**

Prepared: 06/03/21 Analyzed: 06/04/21

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

**LCS (BEF0099-BS1)**

Prepared: 06/03/21 Analyzed: 06/04/21

C10-C28 (DRO)	513	50	mg/kg	500	103	70-130				
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**Matrix Spike (BEF0099-MS1)**

Source: 2105450-01

Prepared: 06/03/21 Analyzed: 06/04/21

C10-C28 (DRO)	447	50	mg/kg	500	13.8	86.6	70-130			
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**Matrix Spike Dup (BEF0099-MSD1)**

Source: 2105450-01

Prepared: 06/03/21 Analyzed: 06/04/21

C10-C28 (DRO)	467	50	mg/kg	500	13.8	90.7	70-130	4.45	20	
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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**PAH by EPA Method 8270D SIM - Quality Control**

**Summit Scientific**

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

**Batch BEF0204 - EPA 5030 Soil MS**

**Blank (BEF0204-BLK1)**

Prepared & Analyzed: 06/09/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0293		"	0.0333		87.9	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0278		"	0.0333		83.5	40-150			

**LCS (BEF0204-BS1)**

Prepared & Analyzed: 06/09/21

Acenaphthene	0.0318	0.00500	mg/kg	0.0333		95.4	31-137			
Anthracene	0.0329	0.00500	"	0.0333		98.7	30-120			
Benzo (a) anthracene	0.0374	0.00500	"	0.0333		112	30-120			
Benzo (a) pyrene	0.0321	0.00500	"	0.0333		96.3	30-120			
Benzo (b) fluoranthene	0.0310	0.00500	"	0.0333		92.9	30-120			
Benzo (k) fluoranthene	0.0286	0.00500	"	0.0333		85.8	30-120			
Chrysene	0.0345	0.00500	"	0.0333		104	30-120			
Dibenz (a,h) anthracene	0.0353	0.00500	"	0.0333		106	30-120			
Fluoranthene	0.0250	0.00500	"	0.0333		75.0	30-120			
Fluorene	0.0340	0.00500	"	0.0333		102	30-120			
Indeno (1,2,3-cd) pyrene	0.0342	0.00500	"	0.0333		103	30-120			
Pyrene	0.0289	0.00500	"	0.0333		86.8	35-142			
1-Methylnaphthalene	0.0303	0.00500	"	0.0333		90.8	35-142			
2-Methylnaphthalene	0.0426	0.00500	"	0.0333		128	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0244		"	0.0333		73.3	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0278		"	0.0333		83.5	40-150			

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

Reported:  
06/11/21 12:20

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BEF0204 - EPA 5030 Soil MS

Matrix Spike (BEF0204-MS1)	Source: 2105434-01			Prepared & Analyzed: 06/09/21						
Acenaphthene	0.0339	0.00500	mg/kg	0.0333	ND	102	31-137			
Anthracene	0.0338	0.00500	"	0.0333	ND	101	30-120			
Benzo (a) anthracene	0.0391	0.00500	"	0.0333	ND	117	30-120			
Benzo (a) pyrene	0.0333	0.00500	"	0.0333	ND	100	30-120			
Benzo (b) fluoranthene	0.0319	0.00500	"	0.0333	ND	95.7	30-120			
Benzo (k) fluoranthene	0.0288	0.00500	"	0.0333	ND	86.5	30-120			
Chrysene	0.0363	0.00500	"	0.0333	ND	109	30-120			
Dibenz (a,h) anthracene	0.0359	0.00500	"	0.0333	ND	108	30-120			
Fluoranthene	0.0334	0.00500	"	0.0333	ND	100	30-120			
Fluorene	0.0361	0.00500	"	0.0333	ND	108	30-120			
Indeno (1,2,3-cd) pyrene	0.0351	0.00500	"	0.0333	ND	105	30-120			
Pyrene	0.0299	0.00500	"	0.0333	ND	89.7	35-142			
1-Methylnaphthalene	0.0315	0.00500	"	0.0333	ND	94.4	15-130			
2-Methylnaphthalene	0.0432	0.00500	"	0.0333	ND	129	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0213		"	0.0333		63.9	40-150			
Surrogate: Fluoranthene-d10	0.0235		"	0.0333		70.6	40-150			

Matrix Spike Dup (BEF0204-MSD1)	Source: 2105434-01			Prepared & Analyzed: 06/09/21						
Acenaphthene	0.0339	0.00500	mg/kg	0.0333	ND	102	31-137	0.0383	30	
Anthracene	0.0345	0.00500	"	0.0333	ND	103	30-120	2.00	30	
Benzo (a) anthracene	0.0393	0.00500	"	0.0333	ND	118	30-120	0.420	30	
Benzo (a) pyrene	0.0334	0.00500	"	0.0333	ND	100	30-120	0.145	30	
Benzo (b) fluoranthene	0.0321	0.00500	"	0.0333	ND	96.3	30-120	0.601	30	
Benzo (k) fluoranthene	0.0296	0.00500	"	0.0333	ND	88.7	30-120	2.51	30	
Chrysene	0.0367	0.00500	"	0.0333	ND	110	30-120	1.07	30	
Dibenz (a,h) anthracene	0.0361	0.00500	"	0.0333	ND	108	30-120	0.637	30	
Fluoranthene	0.0297	0.00500	"	0.0333	ND	89.2	30-120	11.5	30	
Fluorene	0.0359	0.00500	"	0.0333	ND	108	30-120	0.636	30	
Indeno (1,2,3-cd) pyrene	0.0350	0.00500	"	0.0333	ND	105	30-120	0.530	30	
Pyrene	0.0307	0.00500	"	0.0333	ND	92.0	35-142	2.55	30	
1-Methylnaphthalene	0.0307	0.00500	"	0.0333	ND	92.2	15-130	2.35	50	
2-Methylnaphthalene	0.0424	0.00500	"	0.0333	ND	127	15-130	1.68	50	
Surrogate: 2-Methylnaphthalene-d10	0.0262		"	0.0333		78.7	40-150			
Surrogate: Fluoranthene-d10	0.0205		"	0.0333		61.6	40-150			

Summit Scientific

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

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

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

**Batch BEF0110 - EPA 3050B**

**Blank (BEF0110-BLK1)**

Prepared: 06/04/21 Analyzed: 06/07/21

Boron ND 0.0100 mg/L

**LCS (BEF0110-BS1)**

Prepared: 06/04/21 Analyzed: 06/07/21

Boron 5.45 0.0100 mg/L 5.00 109 80-120

**Duplicate (BEF0110-DUP1)**

**Source: 2105438-02**

Prepared: 06/04/21 Analyzed: 06/07/21

Boron 1.23 0.0100 mg/L 1.13 8.51 20

**Matrix Spike (BEF0110-MS1)**

**Source: 2105438-02**

Prepared: 06/04/21 Analyzed: 06/07/21

Boron 6.44 0.0100 mg/L 5.00 1.13 106 75-125

**Matrix Spike Dup (BEF0110-MSD1)**

**Source: 2105438-02**

Prepared: 06/04/21 Analyzed: 06/07/21

Boron 5.22 0.0100 mg/L 5.00 1.13 81.8 75-125 21.0 25

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BEF0092 - EPA 3050B**

**Blank (BEF0092-BLK1)**

Prepared: 06/03/21 Analyzed: 06/07/21

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

**LCS (BEF0092-BS1)**

Prepared: 06/03/21 Analyzed: 06/07/21

Arsenic	38.9	0.200	mg/kg wet	40.0	97.3	80-120
Barium	38.1	0.400	"	40.0	95.3	80-120
Cadmium	2.03	0.200	"	2.00	101	80-120
Copper	36.6	0.400	"	40.0	91.5	80-120
Lead	20.0	0.200	"	20.0	99.8	80-120
Nickel	36.8	0.400	"	40.0	92.1	80-120
Selenium	3.12	0.260	"	4.00	77.9	80-120
Silver	2.00	0.0200	"	2.00	99.8	80-120
Zinc	38.8	0.400	"	40.0	97.0	80-120

**Duplicate (BEF0092-DUP1)**

Source: 2105370-12

Prepared: 06/03/21 Analyzed: 06/07/21

Arsenic	5.78	0.258	mg/kg dry	6.03	4.23	20
Barium	237	0.516	"	245	3.45	20
Cadmium	0.379	0.258	"	0.378	0.254	20
Copper	18.3	0.516	"	18.9	3.28	20
Lead	17.9	0.258	"	17.9	0.110	20
Nickel	18.7	0.516	"	19.3	3.38	20
Selenium	0.557	0.335	"	0.527	5.63	20
Silver	0.0896	0.0258	"	0.0924	3.15	20
Zinc	60.8	0.516	"	62.2	2.40	20

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BEF0092 - EPA 3050B**

**Matrix Spike (BEF0092-MS1)**

Source: 2105370-12

Prepared: 06/03/21 Analyzed: 06/07/21

Arsenic	53.2	0.258	mg/kg dry	51.6	6.03	91.5	75-125		
Barium	308	0.516	"	51.6	245	121	75-125		
Cadmium	2.98	0.258	"	2.58	0.378	101	75-125		
Copper	67.0	0.516	"	51.6	18.9	93.3	75-125		
Lead	42.8	0.258	"	25.8	17.9	96.4	75-125		
Nickel	69.0	0.516	"	51.6	19.3	96.2	75-125		
Selenium	4.90	0.335	"	5.16	0.527	84.8	75-125		
Silver	2.54	0.0258	"	2.58	0.0924	95.0	75-125		
Zinc	117	0.516	"	51.6	62.2	106	75-125		

**Matrix Spike Dup (BEF0092-MSD1)**

Source: 2105370-12

Prepared: 06/03/21 Analyzed: 06/07/21

Arsenic	50.0	0.258	mg/kg dry	51.6	6.03	85.2	75-125	6.30	25
Barium	288	0.516	"	51.6	245	82.4	75-125	6.70	25
Cadmium	2.77	0.258	"	2.58	0.378	92.7	75-125	7.29	25
Copper	62.4	0.516	"	51.6	18.9	84.3	75-125	7.15	25
Lead	39.7	0.258	"	25.8	17.9	84.3	75-125	7.57	25
Nickel	63.8	0.516	"	51.6	19.3	86.2	75-125	7.76	25
Selenium	4.42	0.335	"	5.16	0.527	75.4	75-125	10.4	25
Silver	2.37	0.0258	"	2.58	0.0924	88.4	75-125	6.90	25
Zinc	109	0.516	"	51.6	62.2	91.3	75-125	6.90	25

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BEF0109 - 3060A Mod**

**Blank (BEF0109-BLK1)**

Prepared: 06/04/21 Analyzed: 06/07/21

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BEF0109-BS1)**

Prepared: 06/04/21 Analyzed: 06/07/21

Chromium, Hexavalent 22.8 0.30 mg/kg wet 25.0 91.0 80-120

**Duplicate (BEF0109-DUP1)**

**Source: 2105370-12**

Prepared: 06/04/21 Analyzed: 06/07/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BEF0109-MS1)**

**Source: 2105370-12**

Prepared: 06/04/21 Analyzed: 06/07/21

Chromium, Hexavalent 28.7 0.30 mg/kg dry 32.3 ND 89.0 75-125

**Matrix Spike Dup (BEF0109-MSD1)**

**Source: 2105370-12**

Prepared: 06/04/21 Analyzed: 06/07/21

Chromium, Hexavalent 28.7 0.30 mg/kg dry 32.3 ND 89.0 75-125 0.00 20

Summit Scientific

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Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

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

**Summit Scientific**

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

**Batch BEF0010 - General Preparation**

**Blank (BEF0010-BLK1)**

Prepared: 06/01/21 Analyzed: 06/04/21

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

**LCS (BEF0010-BS1)**

Prepared: 06/01/21 Analyzed: 06/04/21

Calcium	5.00	0.0500	mg/L wet	5.00	100	70-130				
Magnesium	5.69	0.0500	"	5.00	114	70-130				
Sodium	5.08	0.0500	"	5.00	102	70-130				

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 4600 West 60th Avenue  
 Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
 Project Manager: Chris Roy

**Reported:**  
 06/11/21 12:20

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

**Summit Scientific**

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

**Batch BEF0082 - General Preparation**

<b>Duplicate (BEF0082-DUP1)</b>		<b>Source: 2105284-09</b>		Prepared: 06/03/21 Analyzed: 06/04/21	
% Solids	95.3	%		95.1	0.183 20

Summit Scientific

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4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

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

**Summit Scientific**

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

**Batch BEF0052 - General Preparation**

**Blank (BEF0052-BLK1)**

Prepared & Analyzed: 06/02/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BEF0052-BS1)**

Prepared & Analyzed: 06/02/21

Specific Conductance (EC) 0.149 0.0100 mmhos/cm 0.150 99.2 90-110

**Duplicate (BEF0052-DUP1)**

Source: 2105410-02

Prepared & Analyzed: 06/02/21

Specific Conductance (EC) 0.137 0.0100 mmhos/cm 0.136 0.366 20

Summit Scientific

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WSP  
 4600 West 60th Avenue  
 Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
 Project Manager: Chris Roy

**Reported:**  
 06/11/21 12:20

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

**Summit Scientific**

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

**Batch BEF0051 - General Preparation**

**LCS (BEF0051-BS1)**

Prepared & Analyzed: 06/02/21

pH 9.19 pH Units 9.21 99.8 95-105

**Duplicate (BEF0051-DUP1)**

Source: 2105410-02

Prepared & Analyzed: 06/02/21

pH 7.79 pH Units 7.78 0.128 20

Summit Scientific

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WSP  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Grynberg State

Project Number: [none]  
Project Manager: Chris Roy

**Reported:**  
06/11/21 12:20

### Notes and Definitions

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