



Huddleston-Berry
Engineering & Testing, LLC

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Grand Junction, Colorado 81501
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October 18, 2022
Project#01349-0001

Bowie Resources, LLC
43659 Bowie Road
Paonia, Colorado 81428

Attention: Mr. Basil Bear

Subject: Construction Materials Testing
3rd Quarter 2022
Bowie Mine No. 2
Paonia, Colorado

Dear Mr. Bear,

At your request, a representative of Huddleston-Berry Engineering and Testing, LLC (HBET) conducted field moisture and compaction testing, and laboratory moisture testing of coal mine waste materials placed at Bowie Mine No. 2 near Paonia, Colorado. Field testing was conducted on July 28th, 2022. Soil compaction test reports, test location data, and laboratory optimum moisture and density (Proctor) data are attached.

We are pleased to be of service to your project. Please contact us if you have any questions or comments regarding the contents of this report.

Respectfully Submitted:
Huddleston-Berry Engineering and Testing, LLC

A handwritten signature in blue ink, reading 'Michael A. Berry', with a stylized flourish at the end.

Michael A. Berry, P.E.
Vice President of Engineering



Huddlestone-Berry
Engineering & Testing, LLC

SOIL COMPACTION TEST REPORT

Task: Gob Pile Densities

Field vs. Lab Densities

Project No.: 01349 - 0001

Tested By: Dm **Date:** 7/28/22

Project Name: Bowie Mine

Work Order No: _____

Client Name: Bowie Resources

Authorized By: Client **Date:** 7/28/22

Placement Contractor: Bowie Resources

Reviewed By: MAB **Date:** 10/18/22

Contractor Representative: Basil

No.	Point No.	Elevation	Max. Dry Density (pcf)	Optimum Moisture (%)	Wet Density (pcf)	Speedy Moisture (%)	Field Dry Density (pcf)	Relative Field Comp.(%)	Tare Weight (g)	Wet Weight (g)	Dry Weight (g)	Lab Dry Density (pcf)	Lab Moisture (%)	Relative Lab Comp.(%)	
1	3202	5932.4	104.0	13.5	113.2				533.6	1557.7	1431.2	99.2	14.1%	95%	
2	3203	5930.8	104.0	13.5	114.8				151.6	899.6	812.5	101.4	13.2%	98%	
3	3204	5930.4	104.0	13.5	115.9				156.2	879.9	797.6	102.7	12.8%	99%	
4	3205	5930.4	104.0	13.5	116.1				536.0	1164.5	1080.1	100.5	15.5%	97%	
5	3206	5931.2	104.0	13.5	114.7				156.6	1107.4	998.0	101.5	13.0%	98%	
6	3207	5926.8	104.0	13.5	114.2				154.8	970.2	870.3	100.2	14.0%	96%	
7	3208	5926.7	104.0	13.5	113.5				156.1	1054.9	941.2	99.1	14.5%	95%	
8	3209	5924.2	104.0	13.5	115.5				154.9	553.8	502.4	100.6	14.8%	97%	
9	3210	5925.7	104.0	13.5	115.8				191.2	899.2	812.5	101.6	14.0%	98%	
10	3211	5923.8	104.0	13.5	116.4				191.1	1004.6	908.4	102.6	13.4%	99%	
11	3212	5921.5	104.0	13.5	117.9				536.3	1319.1	1226.4	103.9	13.4%	100%	
12	3213	5921	104.0	13.5	115.4				528.3	1116.8	1042.0	100.7	14.6%	97%	
13	3214	5917.6	104.0	13.5	116.2				387.5	1106.8	1024.3	102.9	13.0%	99%	
14	3215	5919.7	104.0	13.5	116.8				526.7	1589.8	1471.0	103.7	12.6%	100%	
15	3216	5923.5	104.0	13.5	115.1				536.8	1396.1	1290.1	100.9	14.1%	97%	

Remarks: Steve not present on this day so Locations shot by Basil

Gauge Number: 26667

Density Counts: 1859

Moisture Counts: 412

Record No. 58 **58 S**



Huddlestone-Berry
Engineering & Testing, LLC

SOIL COMPACTION TEST REPORT

Task: Gob Pile Densities

Field vs. Lab Densities

Project No.: 01349 - 0001

Tested By: Dm **Date:** 7/28/22

Project Name: Bowie Mine

Work Order No.: _____

Client Name: Bowie Resources

Authorized By: Client **Date:** 7/28/22

Placement Contractor: Bowie Resources

Reviewed By: MAB **Date:** 10/18/22

Contractor Representative: Basil

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16	3217	5925.7	104.0	13.5	114.1				534.8	1162.6	1081.4	99.3	14.9%	96%	
17	3218	5922.2	104.0	13.5	115.5				390.3	963.5	891.2	100.9	14.4%	97%	
18	3219	5922.2	104.0	13.5	116.9				393.6	858.6	800.5	102.3	14.3%	98%	
19	3220	5925.4	104.0	13.5	114.4				386.5	1114.6	1033.0	101.6	12.6%	98%	
20	3221	5925.3	104.0	13.5	114.2				398.9	1217.5	1107.4	98.8	15.5%	95%	
21	3222	5928.95	104.0	13.5	115.8				293.4	1026.6	946.7	103.2	12.2%	99%	
22	3223	5925.3	104.0	13.5	115.2				295.0	951.7	864.0	99.8	15.4%	96%	
23	3224	5929.3	104.0	13.5	118.9				320.9	971.6	886.9	103.4	15.0%	99%	
24	3225	5933.5	104.0	13.5	116.4				387.2	1000.0	917.7	100.8	15.5%	97%	
25	3226	5936.5	104.0	13.5	119.2				158.3	613.2	558.1	104.8	13.8%	+100	
26	3227	5935.4	104.0	13.5	115.7				156.6	948.4	851.1	101.5	14.0%	98%	
27	3228	5932.4	104.0	13.5	116.2				532.7	1159.5	1075.5	100.6	15.5%	97%	
28	3229	5934.2	104.0	13.5	116.0				157.9	462.1	426.5	102.4	13.3%	98%	
29	3230	5931.1	104.0	13.5	116.6				153.0	728.2	650.1	100.8	15.7%	97%	
30	3231	5934.8	104.0	13.5	115.8				156.6	1147.3	1023.4	101.3	14.3%	97%	

Remarks: Steve not present on this day so Locations shot by Basil

Gauge Number: 26667

Density Counts: 1859

Moisture Counts: 412

Record No. 59 **59 S**



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Engineering & Testing, LLC

SOIL COMPACTION TEST REPORT

Task: Gob Pile Densities

Field vs. Lab Densities

Project No.: 01349 - 0001

Tested By: Dm **Date:** 7/28/22

Project Name: Bowie Mine

Work Order No.: _____

Client Name: Bowie Resources

Authorized By: Client **Date:** 7/28/22

Placement Contractor: Bowie Resources

Reviewed By: MAB **Date:** 10/18/22

Contractor Representative: Basil

No.	Point No.	Elevation	Max. Dry Density (pcf)	Optimum Moisture (%)	Wet Density (pcf)	Speedy Moisture (%)	Field Dry Density (pcf)	Relative Field Comp.(%)	Tare Weight (g)	Wet Weight (g)	Dry Weight (g)	Lab Dry Density (pcf)	Lab Moisture (%)	Relative Lab Comp.(%)	
31	3232	5937.2	104.0	13.5	114.4				161.4	954.2	859.6	100.7	13.5%	97%	
32	3233	5938.2	104.0	13.5	115.2				154.4	1054.0	951.1	102.0	12.9%	98%	
33	3234	5929.7	104.0	13.5	116.9				154.7	805.7	727.4	102.8	13.7%	99%	
34	3235	5928.2	104.0	13.5	118.4				156.2	568.2	521.4	105.0	12.8%	+100	
35	3236	5926.1	104.0	13.5	115.2				154.3	726.5	659.4	101.7	13.3%	98%	
36	3237	5922.8	104.0	13.5	116.0				158.5	655.3	598.4	102.7	12.9%	99%	
37	3238	5922.8	104.0	13.5	114.3				155.3	563.2	513.7	100.4	13.8%	97%	
38	3239	5927	104.0	13.5	115.8				153.5	451.6	412.4	100.6	15.1%	97%	
39	3240	5930.2	104.0	13.5	115.2				158.2	607.1	555.2	101.9	13.1%	98%	
40	3241	5928.65	104.0	13.5	114.7				153.3	585.2	531.6	100.5	14.2%	97%	

Remarks: Steve not present on this day so Locations shot by Basil

Gauge Number: 26667

Density Counts: 1859

Moisture Counts: 412

Record No. 60 **60 S**

Point	Northing	Easting	Elevation	Description
3202	17710.818809	35563.867754	5932.384645	DA
3203	17849.440337	35582.242249	5930.793733	DA
3204	17935.624248	35623.241938	5930.382283	DA
3205	18039.396550	35711.654976	5930.386456	DA
3206	18099.978132	35807.312627	5931.182425	DA
3207	18189.568572	36274.199278	5926.842096	DA
3208	18144.115682	36296.279851	5926.683670	DA
3209	18173.161323	36388.145420	5924.224529	DA
3210	18259.366465	36370.886319	5925.667936	DA
3211	18305.050980	36502.706351	5923.848580	DA
3212	18213.127395	36511.074565	5921.548251	DA
3213	18144.888155	36505.222411	5920.932752	DA
3214	18049.173478	36491.397537	5917.604276	DA
3215	18017.026921	36408.594662	5919.671099	DA
3216	18101.604566	36371.505087	5923.490461	DA
3217	18066.357263	36292.104174	5925.680152	DA
3218	17979.907358	36318.272233	5922.170883	DA
3219	17963.821395	36249.032037	5922.121926	DA
3220	17954.365256	36261.129531	5925.378731	DA
3221	18085.845381	36235.125933	5925.323995	DA
3222	18069.316990	36232.478150	5928.953310	DA
3223	18181.658231	36220.209412	5925.327463	DA
3224	18163.980013	36219.549721	5929.321866	DA
3225	18132.805286	36004.359175	5933.548566	DA
3226	18141.277340	35992.102214	5936.494525	DA
3227	18023.119151	36062.919130	5935.438033	DA
3228	18006.644115	36058.505502	5932.432389	DA
3229	17906.014043	36090.993975	5934.146491	DA
3230	17885.282649	36089.261215	5931.036654	DA
3231	17837.926448	35952.766648	5934.775894	DA
3232	17941.625065	35897.365339	5937.159296	DA
3233	18057.283047	35820.990523	5938.216778	DA
3234	17577.737343	35605.184679	5929.735793	MP
3235	17517.636244	35503.952195	5928.172705	MP
3236	17470.970583	35606.053893	5926.074781	MP
3237	17385.713625	35561.095025	5922.775932	MP
3238	17484.445826	35720.265384	5922.805137	MP
3239	17593.341620	35791.944797	5927.044316	MP
3240	17665.895699	35761.761645	5930.201826	MP
3241	17584.893149	35684.024101	5928.653770	MP



Huddlestone-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

MOISTURE-DENSITY RELATIONSHIP

CLIENT Bowie Resources, LLC

PROJECT NAME Bowie Mine #2

PROJECT NUMBER 00489-0003

PROJECT LOCATION Paonia, CO

Sample Date: _____

14-0195

Sample No.: _____

Source of Material: _____

Gob #3 Borrow Blend

Description of Material: _____

Test Method: _____

ASTM D698C

TEST RESULTS

Maximum Dry Density

104.0 PCF

Optimum Water Content

13.5 %

GRADATION RESULTS (% PASSING)

#200

#4

3/4"

ATTERBERG LIMITS

LL

PL

PI

Curves of 100% Saturation
for Specific Gravity Equal to:

2.80

2.70

2.60

