J. E. STOVER & ASSOCIATES, INC.

2352 NORTH 7TH STREET, UNIT B
GRAND JUNCTION, COLORADO 81501
PHONE: (970) 245-4101, FAX: (970) 242-7908

MINE ENGINEERING
MINE RECLAMATION
CIVIL ENGINEERING
CONST. MANAGEMENT

Via Electronic Transmittal

April 17, 2019

Janet Binns
Division of Reclamation, Mining & Safety
1313 Sherman St., Room 215
Denver, CO 80203

Re: Bowie Resources, LLC, Bowie No. 2 Mine
Coal Mine Waste Banks & Instrumentation Monitoring
Pond Quarterly Inspections
Permit C-1996-083

Dear Ms. Binns:

Enclosed please find the referenced reports for the 1st quarter of 2019.

Please call if you have any questions.

Sincerely,

Tamme Bishop

Tamme Bishop, P.E.
Project Engineer

cc: Basil Bear

QUARTERLY POND INSPECTION REPORT

Operator:	Bowie Resources LLC	Quarter:	First 2019
Mine:	Bowie No. 2 Mine - C-1996-083	Inspection Date:	28-Mar-19

Pond Identification	B	C	D - Gob Pile	F - New Gob	J UTL East	K UTL West
Type of Pond	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
Status During Inspection:						
Approximate Water Level	5943	5992	Puddle	5952	5852	Wet
Sediment (% remaining)	90%	90%	85%	80%	90%	80%
Outflow (cfs)	0	0	0	0	0	0
Features	Problem Yes/No	Problem Yes/No	Problem Yes/No	Problem Yes/No	Problem Yes/No	Problem Yes/No
Erosional						
Rills & Gulleys	No	No	No	No	No	No
Inadequate Vegetation	No	No	No	No	No	No
Outlet Channel Erosion	No	No	No	No	No	No
Burrows	No	No	No	No	No	No
Other	No	No	No	No	No	No
Structural						
Differential Settling	No	No	No	No	No	No
Cracks or Slides	No	No	No	No	No	No
Seepage	No	No	No	No	No	No
Other	No	No	No	No	No	No
Appurtenant Structures						
Defective Spillways	No	No	No	No	No	No
Dewatering Devices Clogged	No	No	No	No	No	No
Faulty Gates, Etc.	No	No	No	No	No	No
Other	No	No	No	No	No	No

Additional Comments

Design depth measured from pond bottom to invert of emergency spillway:
Pond B=10, C=10, D=10, J=10, K=3, F=10' TD
Pond Bottom Elevations B=5942, C=5990, D=5970, J=5846, F=5944, K=5819
Pond B about a foot of water and was below the primary spillway.
Pond C held about 2' of water and was below the primary spillway.
Pond D was held less than a foot of water and was below the primary spillway.
Pond J held between 4-5' of water.
Pond K was wet with no standing water visible.
Pond F held about 6' of water.

SWMP components evaluated as part of this inspection. No corrections necessary at this time.

Name of Inspector: Tamme Bishop

COLORADO LICENSED TAMMERIN KAE STOVER-BISHOP PROFESSIONAL ENGINEER

43402
Tamme Bishop
Colorado P. E. 43402 Date

BOWIE RESOURCES, LLC
BOWIE NO. 2 MINE

2019 IMPOUNDMENT YEARLY INSPECTION

In accordance with Rule 4.05.9(14), all impoundments shall be inspected at least yearly to determine if the impoundment has been maintained as designed, and in accordance with the approved plan and the applicable regulations. This yearly inspection is for the impoundments located at the Bowie No. 2 Mine.

On March 28, 2019, I performed the required yearly inspection. I, Tamme Bishop, have a wide variety experience in the design and construction of earth fill embankments. Nothing was observed during the inspection that would indicate the ponds have a potential for failure. There was no appearance of erosion, instability, structural weakness or other hazardous conditions. There are no required monitoring procedures or instrumentation other than monthly and yearly inspections. There are no aspects which might affect stability. None of the ponds were discharging during the inspection. However, the winter of 2018-2019 was very wet for the mine site, so all of the ponds contained water.

Pond B held water about a foot below the primary spillway, with water at approximate elevation of 5943. Pond B has approximately 90% of its sediment capacity remaining.

Pond C held about 2 feet of water at an approximate elevation of 5992. Pond C was cleaned out during 2017 and has about 90% of its sediment capacity remaining.

Pond D held a puddle of water. Estimate 15% sediment build up.

Pond F held about 6 feet of water, at approximate elevation 5952. There is a large sediment delta where ditch F4 enters the pond and it will need to be cleaned out during 2019.

Pond J held approximately 4-5 feet of water and an elevation between 5850-5852. Pond J has at least 90% sediment storage capacity.

Pond K was wet but no standing water, with an estimated sediment build up of 20%.

There are no mud pits open.

The impoundments have the following estimated capacities:

IMPOUNDMENT CAPACITIES - ACRE FEET			
	Water	Sediment *	Total
Pond B	4.10	0.55 (90% 0.62)	4.65
Pond C	3.47	0.41 (90% 0.46)	3.90
Pond D	0.48	0.08 (85% 0.10)	0.56
Pond F	3.82	0.14 (80% 0.18)	3.96
Pond J (expanded)	3.93	0.52 (90% 0.58)	4.45
Pond K	0.49	0.18 (80% 0.22)	0.67

Notes:

1. The capacity of Ponds B and C are shown on Maps 22-B and 22-C respectively.
2. The capacity of Pond D was certified by Jim Stover on 12-30-97.
3. The capacity of Pond K was certified by Jim Stover on May 29, 2002.
4. The capacity of Pond J was certified by Tammerin K. Stover-Bishop on July 20, 2017.
5. The capacity of Pond F was certified by Tammerin K. Stover-Bishop on September 17, 2012.

*The percentage amount shown in parenthesis above indicates the percent of sediment storage currently available. The number on the outside of the parenthesis indicates the volume of sediment storage currently available. The number in the total column indicates the total water and sediment storage volume currently available.

To the best of my knowledge and belief, the impoundments have been maintained as designed and in accordance with the approved plan and applicable regulations. As noted above, spring maintenance is required in the form of dewatering and sediment removal.

COLORADO LICENSED TAMMERIN KAE STOVER-BISHOP PROFESSIONAL ENGINEER

Tammerin Kae Stover-Bishop
Tammie Bishop
Colorado Professional Engineer
Registration No. 43402

4.17.19
Date

BOWIE RESOURCES, LLC

Bowie No. 2 Mine

Coal Mine Waste Bank Nos. 1, 2, & 3 Inspections –1st Quarter 2019

On March 28, 2019, a visual inspection of the Bowie No. 2 Mine coal mine waste banks was performed by the undersigned in accordance with Rule 4.10.2. This inspection includes Gob Pile Nos. 1, 2, and 3. Pile No. 1 is considered inactive. Pile no. 2 is located north of Bowie Road. Pile no. 3 is located south of Bowie Road.

I, Tamme Bishop, P.E., have a wide variety of experience in the design and construction of earth fill embankments. Nothing was observed during the inspection that would indicate the piles have a potential for failure. The slips discussed in the 4Q 2016 and 1Q 2017 report had been regraded to the design contours and show no evidence that would be cause for concern of slipping again. A fair cover of volunteer vegetation has been established.

A small area of seepage discussed in past reports, at the toe of gob pile #2 and west of the haul road has begun to seep again, however there is no movement or slips associated with the seep. There are no windrows remaining on top of gob pile #2. All organic material and topsoil has been removed ahead of the waste bank founding. The diversion ditches were cleaned out during June, 2017 and were in good repair. The upper diversion and lower ditches at gob pile #3 were inspected, and were in good condition, however the upper diversion ditch should be cleaned out during 2019. The lower diversion ditch (J3) was cleaned out in May 2017, the Operator plans to clean it out again this spring or summer. A new seep has been discovered at gob pile #3, north of the east drying area. At this time, the seep will not impact the long-term stability of the gob pile. However, before final placement and compaction of gob in the footprint of the east drying area, an underdrain will be installed. Approval of the underdrain design was incorporated into the permit under Technical Revision No. 105.

At gob pile #2, the first bench east of the haul road is covered with soil. The second bench east of the haul road is mostly covered with a subsoil pile. Most of the third and forth benches east of the road are covered with soil. Soil has been placed on most of the second and third benches west of the haul road.

There was no coal mine waste was generated from the preparation plant during the quarter. Coal mine waste is to be placed in the piles in approximately horizontal lifts no more than 24-inches thick. The coal mine waste is dried and then spread and compacted by self propelled sheepsfoot compactors. There were no compaction tests were taken at gob pile #3 during the quarter. There were no compaction tests taken at gob pile #2 during the quarter.

The top of gob pile #2 can serve as a drying area for end dumped gob, however, no gob is currently stockpiled on top of the pile. Gob is to be stacked to a maximum height of 20 feet, with a slope angle up to 1.5h:1v. A 25-foot buffer zone on the face of the gob pile will be maintained at all times. Gob will be spread and compacted to the currently approved slope configuration as soon as gob and weather conditions allow.

The westernmost and easternmost sections of gob pile #3 serve as drying areas for end dumped material. The purpose of the gob drying area is to provide an area for temporary storage of gob for drying purposes. End-dumped gob in the gob drying areas is worked with dozers and track hoes to assist in the drying process. There was no work at gob pile #3 during the inspection although placement and compaction efforts will begin again during the second quarter.

During active mining conditions, it is necessary to stockpile gob material at gob pile #3 during the winter months, then place and compact the stockpiled gob when weather allows. Stockpiling of gob can commence November 15 and end April 15. Winter stockpiled material will be re-handled and compacted by September 30. Beginning on October 1, the Operator should be compacting all material concurrently, until conditions again require stockpiling. The stockpiling dates listed above should be considered flexible and may change slightly from year to year based on weather conditions. The gob material will be stockpiled in rows generally running from northwest to southeast. The rows of gob will be placed in a controlled manner and overlap will be minimized so there is space between rows to allow for drainage to the southeast. Windrows were located on top of the pile and contained gob that had been hauled out of the west drying area.

The available volume of coverfill material is sufficient to meet the requirements of Rule 4.10.4(5). No coverfill was used for blending or other uses during the quarter.

A failure of the gob pile no. 1 would probably not be a hazard to human life. The pile is located above a large flat bench. The bench is approximately 80 to 150-feet wide directly below the pile. Additionally, the gob pile sediment pond is located below the pile. If the coal mine waste bank failed, the material would very likely be contained on the bench below the pile and or within the gob pile sediment pond.

A failure of gob pile no. 2 would probably not be a hazard to human life. A residential dwelling is located over 300-feet below pile no. 2. The piles are located above Bowie Road. A failure of the piles might damage Bowie Road and the Fire Mountain Canal but would not likely impact the residential dwelling.

A failure of gob pile no. 3 would not be a hazard to human life. A failure of the pile might damage the rail track below the pile. A small slip/slide occurred in February on the southern edge of the pile, no offsite damage occurred. The road at the toe of the pile was covered with gob making it inaccessible to vehicles.

I certify that to the best of my knowledge and belief, that the fill and other aspects of the coal mine waste banks have been constructed as permitted in the design approved by the DRMS.

COLORADO LICENSED
TAMRIN KAE STOVER-BISHOP
43402
PROFESSIONAL ENGINEER

Tamme Bishop 43402 4.17.19

Tamme Bishop — Date
Colorado Professional Engineer
Registration No. 43402

Huddleston-Berry
Engineering & Testing, LLC

2789 Riverside Parkway
Grand Junction, Colorado 81501
Phone: 970-255-8005
Info@huddlestonberry.com

April 16, 2019
Project#01349-0001

Bowie Resources, LLC
43659 Bowie Road
Paonia, Colorado 81428

Attention: Mr. Basil Bear

Subject: Summary of Instrumentation Monitoring
1st Quarter 2019
Bowie Coal Waste Disposal Area No. 2
Paonia, Colorado

Reference: *Summary of Instrumentation Monitoring, 4th Quarter 2018, Bowie Coal Waste Disposal Area No. 2, Paonia, Colorado* by Huddleston-Berry Engineering & Testing, LLC for Bowie Resources, LLC, January 7, 2019.

Stability Evaluation, Technical Revision #85, Gob Pile #2 Drying Area, Bowie No. 2 Mine by Huddleston-Berry Engineering & Testing, LLC for Bowie Resources, LLC, June 3, 2014.

Dear Mr. Bear,

At the request of the Colorado Division of Reclamation, Mining and Safety (DRMS), Huddleston-Berry Engineering & Testing, LLC (HBET) prepared this letter regarding quarterly monitoring of vibrating wire piezometers and inclinometers at Coal Waste Disposal Area No. 2 (CWDA No. 2) at the Bowie mine near Paonia, Colorado. The intent of the monitoring was to detect significant changes in the pore water pressures or significant displacements within the coal waste which may impact the stability of the waste pile.

Inclinometers

In 2005, three inclinometers, designated BG05-04, BG05-05, and BG05-07, were installed at CWDA No. 2 through the coal refuse and into the native foundation soils. The inclinometers have been monitored quarterly since August 2005. The 1st Quarter 2019 monitoring was completed by DOWL on March 28th, 2019. The monitoring report prepared by DOWL includes a site plan showing the locations of the inclinometers and cumulative displacement curves relative to the baseline readings in 2005. Axis "A" reflects deformation with depth in the direction of anticipated movement perpendicular to the face of the gob. Axis "B" reflects deformation with depth parallel to the face of the gob.

Discussion of Inclinometer Monitoring

The latest inclinometer readings indicate no major movements since the last quarterly reading. In general, the 1st Quarter 2019 monitoring data does not provide any indication of instability in CWDA No. 2.

Vibrating Wire Piezometers

Between 2005 and 2012, a total of ten vibrating wire piezometers were installed in CWDA No. 2. However, several of the piezometers have been damaged or have otherwise ceased to function. Currently, five of the piezometers are functional.

Monitoring of the functioning piezometers was completed by DOWL on March 28th, 2019. The attached monitoring report prepared by DOWL includes the piezometer monitoring data and the data is summarized in the following table.

VWP ID	Initial Pore Pressure (psi)	12/06/18 Pore Pressure (psi)	03/28/19 Pore Pressure (psi)	Difference Since Installation (psi)	Difference Since Last Reading (psi)
VWP-05	6.8	1.6	1.7	-5.1	0.1
VWP-06	11.3	12.5	12.6	+1.3	0.1
VWP-08	8.2	9.0	9.3	+1.1	0.3
VWP-09	2.8	2.8	2.8	0.0	0.0
VWP-10	-1.9	-1.8	-1.8	+0.1	0.0

Discussion of Vibrating Wire Piezometers

VWP-05

VWP-05 was installed on August 3, 2005 near the toe of CWDA No. 2 adjacent to the access road/bench. The pore pressures recorded at VWP-05 have shown some seasonal fluctuations; however, the range of pore pressure changes is fairly small. In general, HBET does not believe that the pore pressures in VWP-05 are cause for concern regarding stability of the gob pile.

VWP-06

VWP-06 was installed on June 5, 2009 near the existing top of CWDA No. 2. The pore pressures recorded at VWP-06 have fluctuated since installation. In general, the fluctuations have been seasonal and reflect the level of coal mine waste placement activity on top of CWDA No. 2. In general, HBET does not believe that the measured pore pressures are an indication of any instability in CWDA No. 2.

VWP-08

VWP-08 was installed on June 5, 2009 at a slightly lower elevation than VWP-06. The pore pressures recorded at VWP-08 have fluctuated since installation. However, the fluctuations have generally been within a narrow range of values. The measured pore pressures are generally consistent with the level of coal mine waste placement activity at CWDA No. 2.

As indicated in the referenced *Stability Evaluation* report, the stability of CWDA No. 2 is sensitive to increases in pore pressures in VWP-08. An increase in the pore pressure of 7 psi in VWP-08 would result in a reduction of the Factor of Safety to below 1.5.

The current pore pressure reflects a piezometric surface elevation of approximately 6097 feet which is much less than the critical elevation of 6113 feet. As a result, HBET does not believe that the measured pore pressures in VWP-08 are any indication of instability in CWDA No. 2.

VWP-09

VWP-09 was installed on May 18, 2012 near the toe of CWDA No. 2. The pore pressures recorded at VWP-09 have been fairly steady since installation. This suggests that dewatering of the gob in this area is likely nearly complete. It is anticipated that the pore pressures at VWP-09 will remain fairly steady over time.

VWP-10

VWP-10 was installed on May 18, 2014 near the toe of CWDA No. 2. The pore pressures recorded at VWP-10 have been fairly steady since installation. This suggests that dewatering of the gob in this area is likely nearly complete. It is anticipated that the pore pressures at VWP-10 will remain fairly steady over time.

General

In general, based upon the results of the recent VWP and inclinometer monitoring data, HBET does not believe that there is any reduction in the stability of CWDA No. 2. Due to the limited activity at the mine, HBET recommends that the monitoring frequency be reduced to semi-annually.

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

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

ATTACHMENTS

970-249-6828 ■ 800-865-9847 (fax) ■ 222 South Park ■ Montrose, Colorado 81401 ■ www.dowl.com
Alaska ■ Arizona ■ Colorado ■ Montana ■ Oregon ■ Washington ■ Wyoming

March 29, 2019

Mike Berry
Huddleston-Berry Engineering and Testing, LLC
640 White Avenue
Grand Junction, CO 81501

SUBJECT: Summary Report, 1st Quarter 2019, Inclinometer and Active Vibrating Wire Piezometer Data January – March 2019, Bowie Mine #2 Coal Waste Disposal Area (CWDA) #2

Dear Mr. Berry:

DOWL conducted quarterly monitoring of inclinometers and vibrating wire piezometers (VWP) at Coal Waste Disposal Area #2 (CWDA #2), Bowie Resources, LLC. This report is intended to cover the period of January through March 2019. VWP and inclinometer data was recorded on 3/28/19. Per CDRMS and your instructions, vibrating wire piezometer and inclinometer readings for all active instruments are taken quarterly.

Vibrating Wire Piezometers

The physical locations of the piezometers are shown on the attached Instrumentation Site Plan (Map 1). As seen on this map, five of the original VWP's were damaged and some were replaced. Currently, there are five active VWP's and three of them are adjacent to the three inclinometers. The graph of historical data from 5/16/05 through 5/21/14 is presented for reference as Figure 1. A graph of measured pore pressures of active piezometers is presented on the attached Figure 2 and is presented numerically in Table 1 below.

Table 1. Summary of VWP Pore Pressure Readings

VWP ID #	Installation Pore Pressure (psi)	12/6/18 (Q4) Pore Pressure (psi)	3/28/19 (Q1) Pore Pressure (psi)	Difference Since Installation (psi)	Difference Since Last Quarter (psi)
VWP-05	6.8	1.6	1.7	-5.1	0.1
VWP-06	11.3	12.5	12.6	1.3	0.1
VWP-08	8.2	9.0	9.3	1.1	0.3
VWP-09	2.8	2.8	2.8	0.0	0.0
VWP-10	-1.9	-1.8	-1.8	0.1	0.0

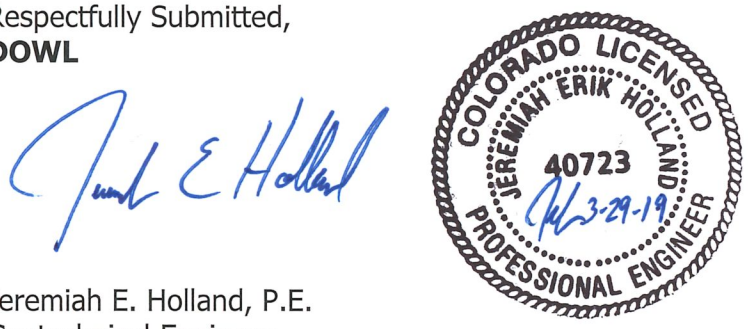
Inclinometers

Three inclinometers, designated BG05-4, BG05-5, and BG05-7, were installed at CWDA #2 in August 2005. The inclinometers were installed through the coal refuse and approximately 20 feet into the native foundation soils. The physical locations of the inclinometers are shown on the attached Instrumentation Site Plan (Map 1). Baseline readings were taken on 8/10/05 and subsequent readings have generally been taken quarterly since that time. Displacement curves for each of the three inclinometers for the current and the prior three readings are presented as attachments to this letter in Figure 3. Axis "A" reflects deformation with depth in the direction of anticipated movement (downslope), while Axis "B" is orthogonal to Axis A.

As described in previous reports, we believe historic displacements indicated on the plots for the approximate upper ten feet of the inclinometers are likely due to placement of cover soil on the face of the waste bank during normal operations for maintenance and revegetation. Recent readings are generally consistent with previous readings.

If you have any questions regarding this letter or the instrumentation monitoring at CWDA #2, please contact me at (907) 562-2000 or jholland@dowl.com.

Respectfully Submitted,
DOWL

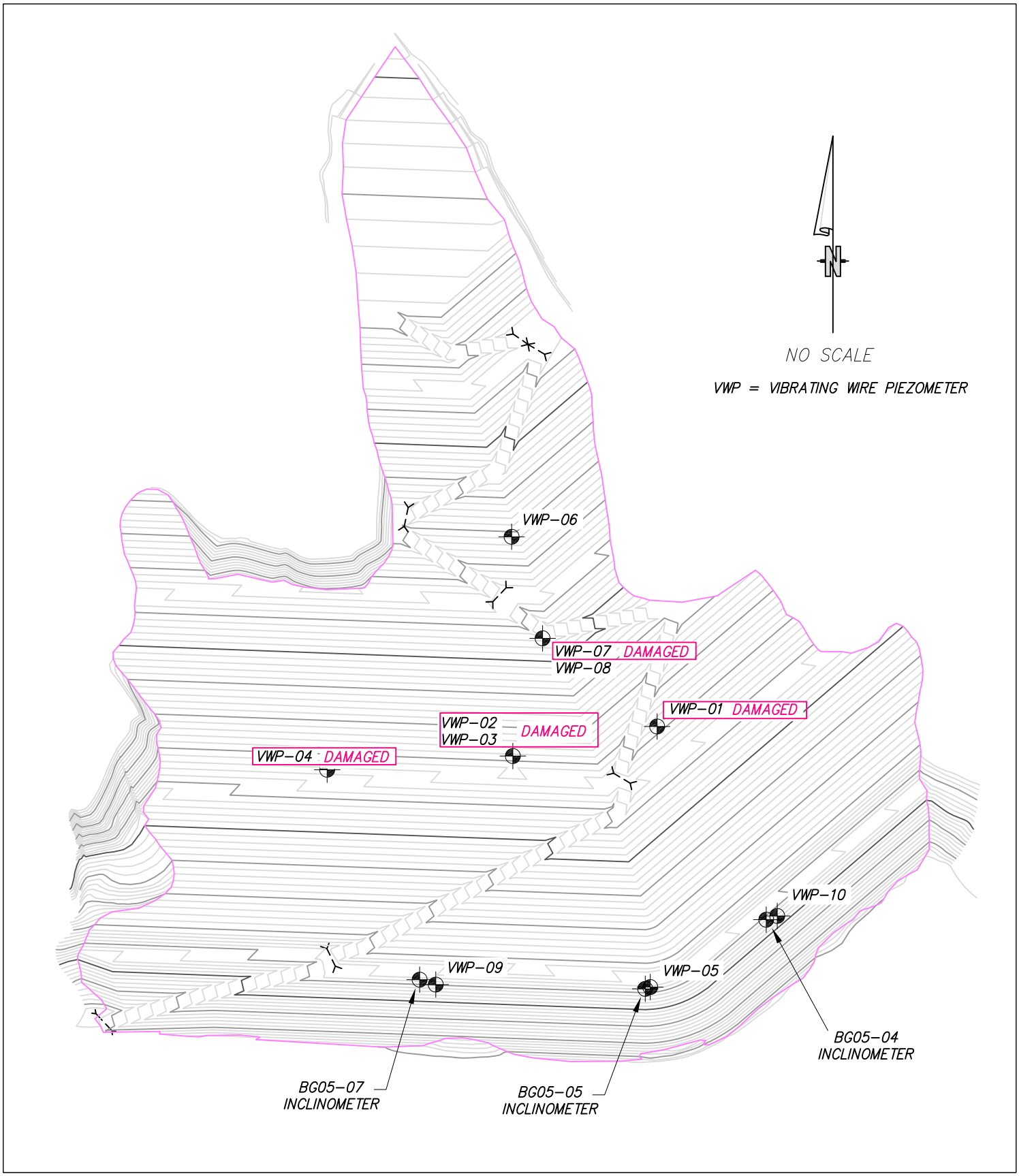


Jeremiah E. Holland, P.E.
Geotechnical Engineer

LJB/JEH

Enclosures: Map 1 – Instrumentation Location Plan
Figure 1 – Active and Damaged Piezometer Data Graph (2005-2014)
Figure 2 – Active Vibrating Wire Piezometer Data Graph (to present)
Figure 3 – Inclinometer Displacement Curves

INSTRUMENTATION SITE PLAN



Map 1 OF 1	DATE 2017 JOB NO. 7131.74699.01	Huddleston-Berry BOWIE #2 GOB PILE DELTA COUNTY, COLORADO	DOWL WWW.DOWL.COM 222 South Park Avenue Montrose, Colorado 81401 970-249-6828

Figure 1 - Bowie Mine #2 - CWDA #2
Active and Damaged Vibrating Wire Piezometer Data

Inception (5/16/05) through 5/21/14

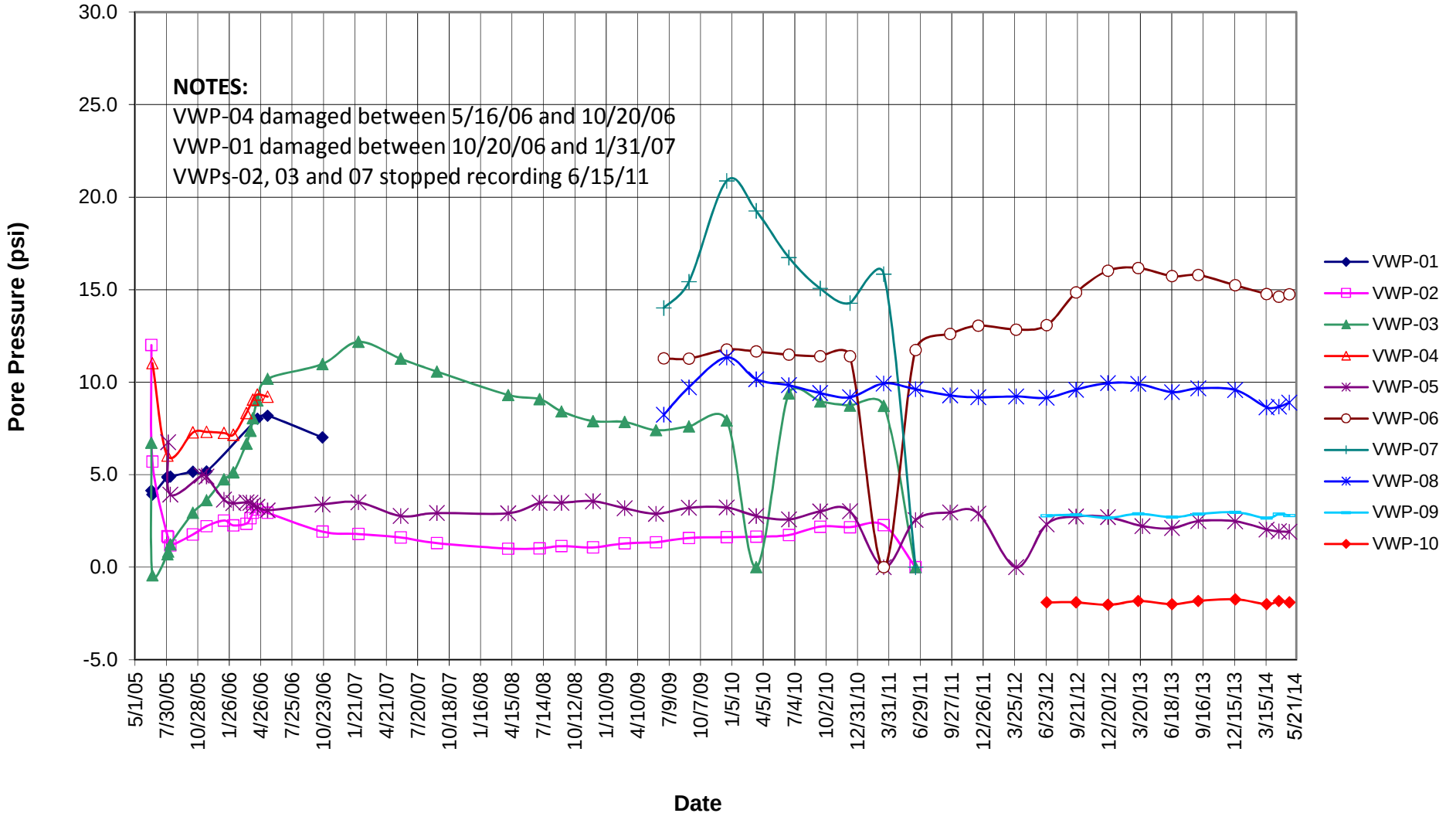


Figure 2 - Bowie Mine #2 - CWDA #2
Active Vibrating Wire Piezometer Data

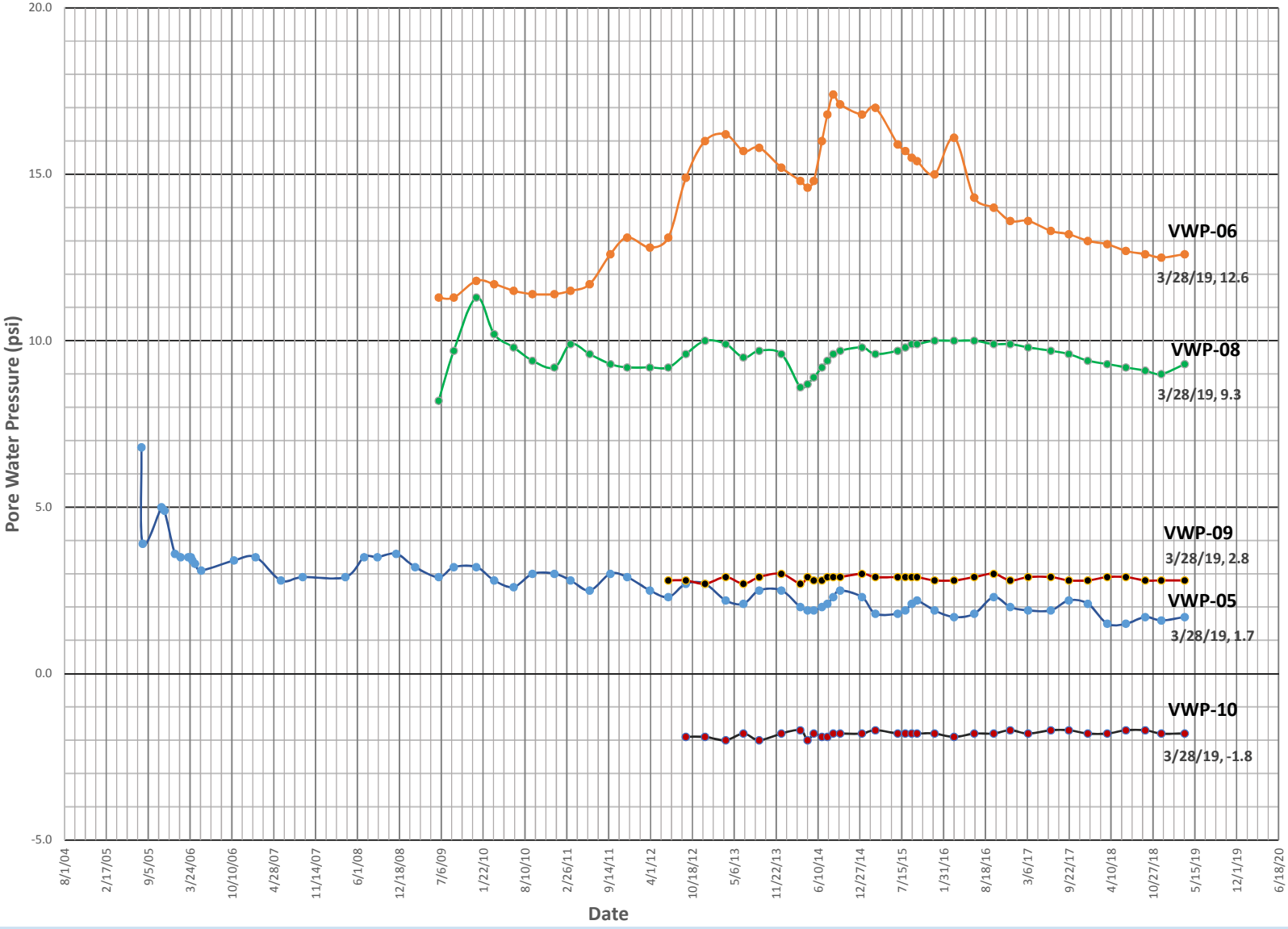
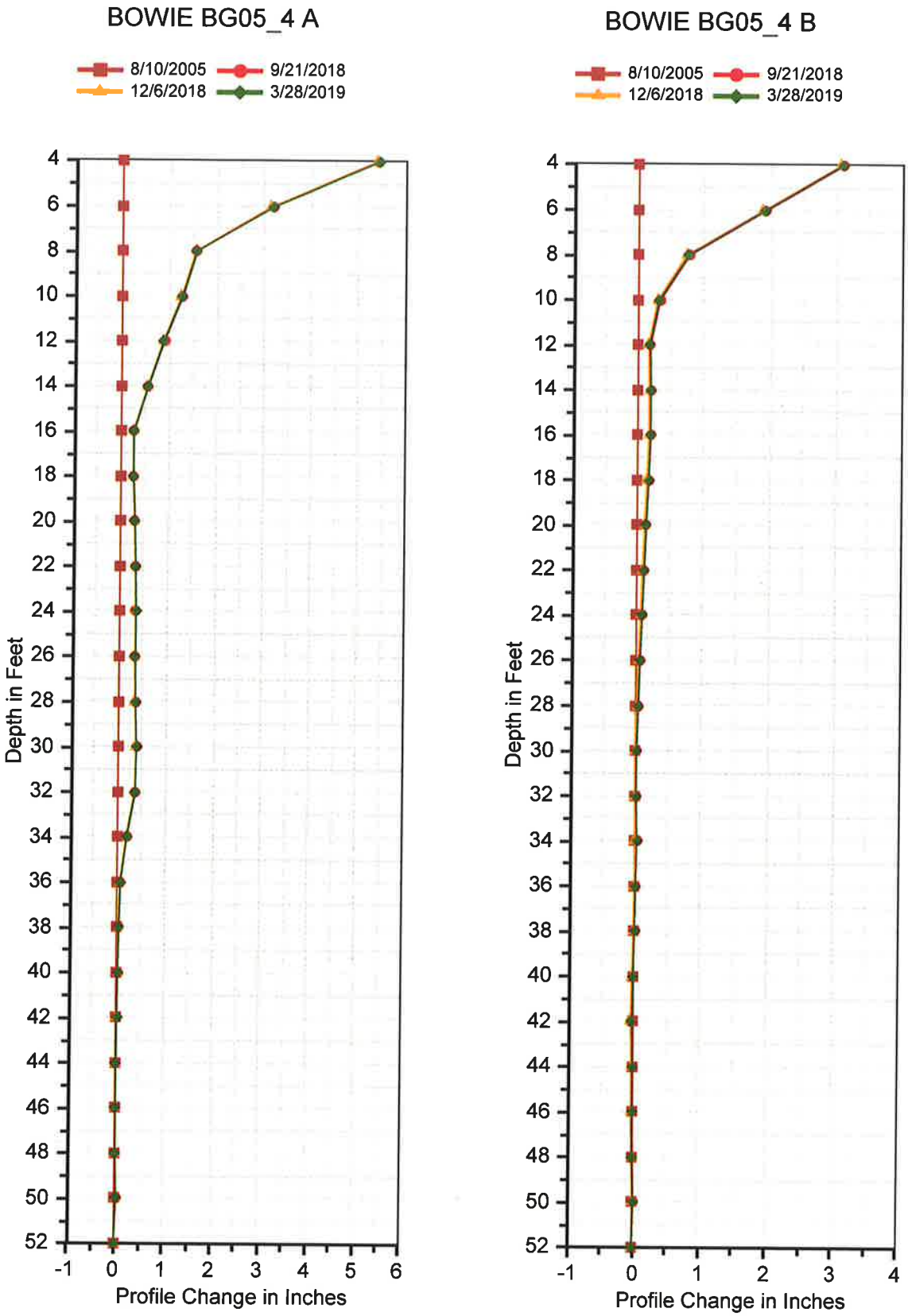
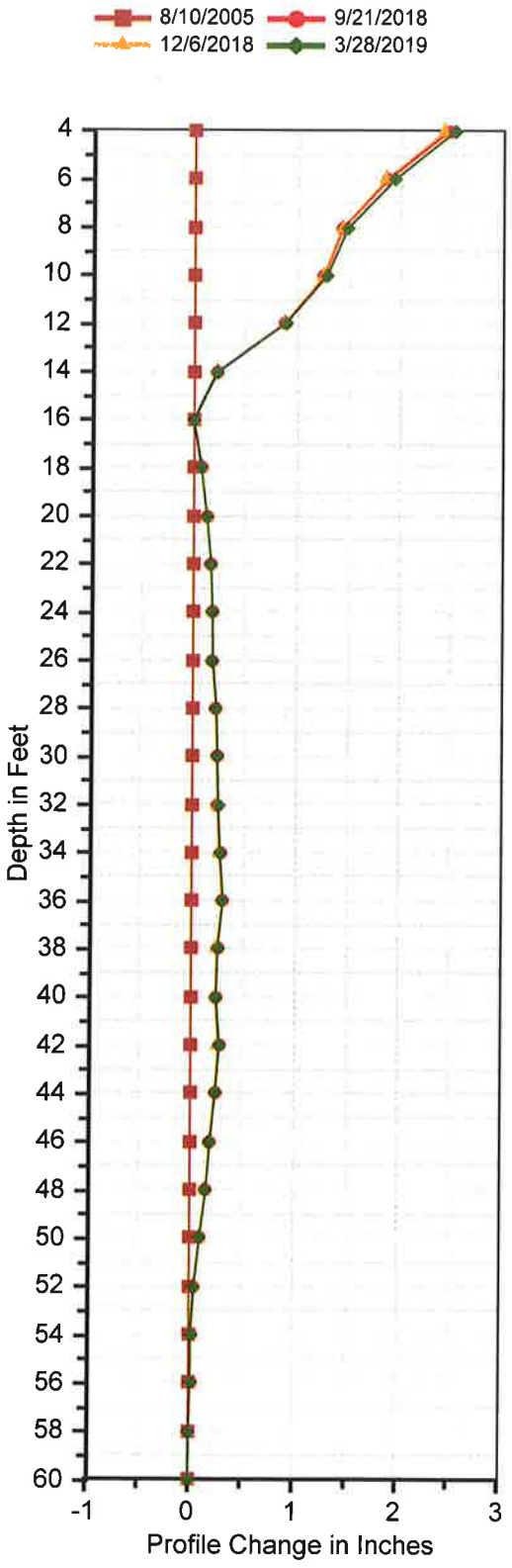


Figure 3. Displacement Curves for Inclinometers

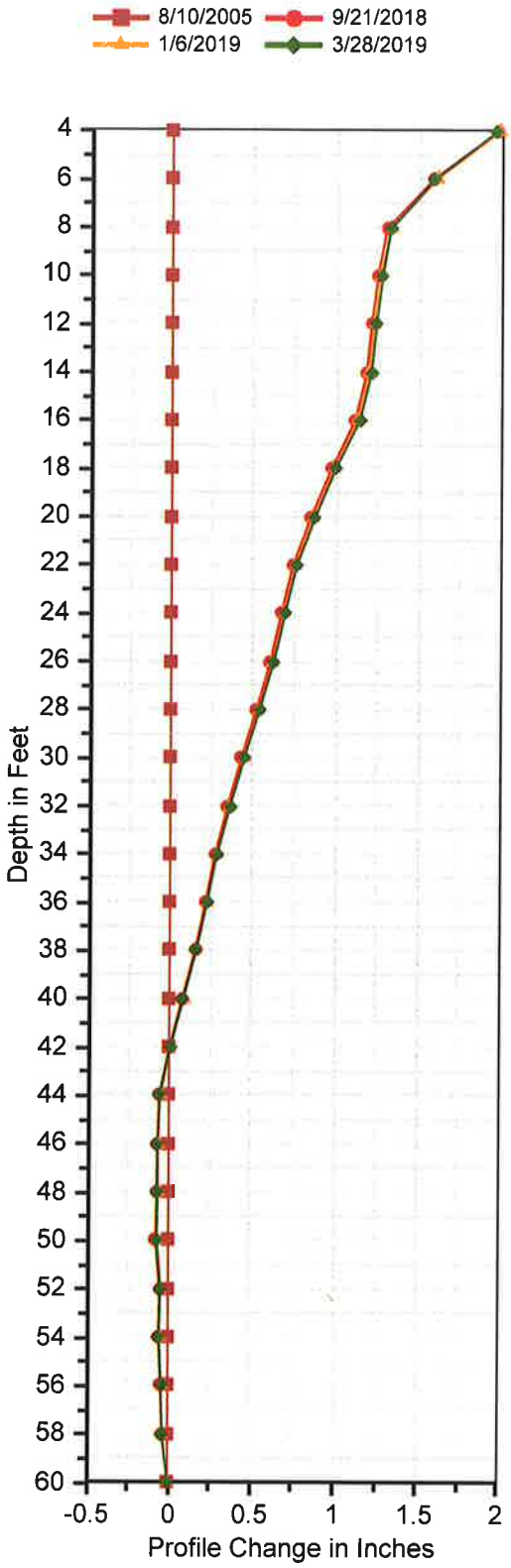
1st Quarter 2019



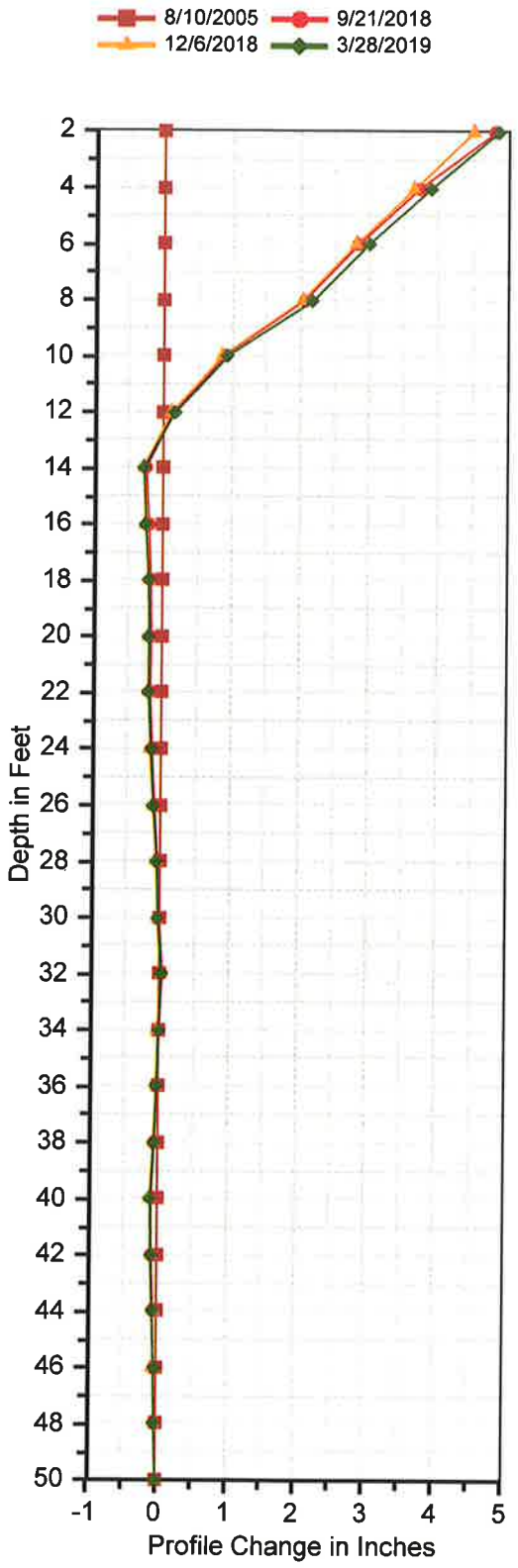
BOWIE BG05_5 A



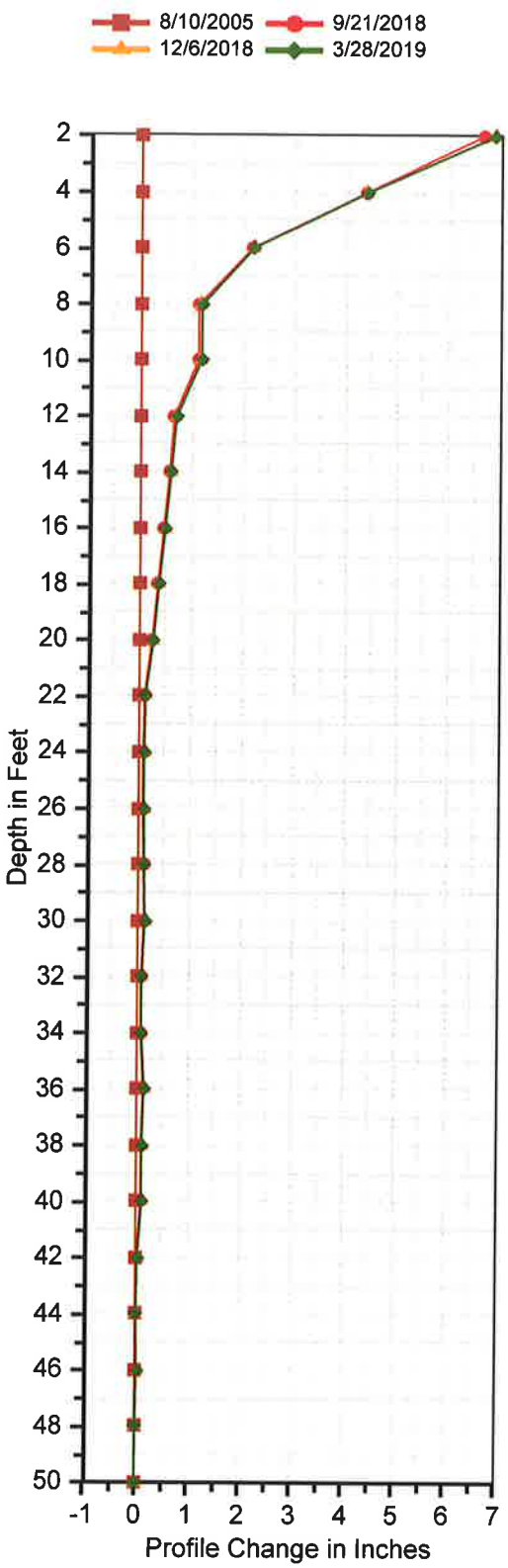
BOWIE BG05_5 B



BOWIE BG05_7 A



BOWIE BG05_7 B



Huddleston-Berry
Engineering & Testing, LLC

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Phone: 970-255-8005
Info@huddlestonberry.com

April 16, 2019
Project#01349-0001

Bowie Resources, LLC
43659 Bowie Road
Paonia, Colorado 81428

Attention: Mr. Basil Bear

Subject: Summary of Instrumentation Monitoring
1st Quarter 2019
Bowie Coal Waste Disposal Area No. 3
Paonia, Colorado

Reference: *Summary of Instrumentation Monitoring, 4th Quarter 2018, Bowie Coal Waste Disposal Area No. 3, Paonia, Colorado* by Huddleston-Berry Engineering & Testing, LLC for Bowie Resources, LLC, January 7, 2019.

Stability Evaluation, Gob Pile #3, Bowie No. 2 Mine by Huddleston-Berry Engineering & Testing, LLC for Bowie Resources, LLC, July 15, 2014.

Dear Mr. Bear,

At the request of the Colorado Division of Reclamation, Mining and Safety (DRMS), Huddleston-Berry Engineering & Testing, LLC (HBET) prepared this letter regarding quarterly monitoring of vibrating wire piezometers at Coal Waste Disposal Area No. 3 (CWDA No. 3) at the Bowie mine near Paonia, Colorado. The intent of the monitoring was to detect significant changes in the pore water pressures within the coal waste which may impact the stability of the waste pile.

Vibrating Wire Piezometers

Five vibrating wire piezometers were installed in CWDA No. 3 in October 2014. The piezometers were installed at three locations within the footprint of the gob pile. Monitoring of the functioning piezometers was completed by DOWL on March 28th, 2019. The attached monitoring report prepared by DOWL includes the piezometer monitoring data and the data is summarized in the following table.

VWP ID	Initial Pore Pressure 10/31/14 (psi)	12/06/18 Pore Pressure (psi)	03/28/19 Pore Pressure (psi)	Difference Since Installation (psi)	Difference Since Last Reading (psi)
VWP-A Deep	10.4	3.7	3.8	-6.6	0.1
VWP-A Shallow	4.7	3.4	3.5	-1.2	0.1
VWP-B Deep	0.2	0.2	1.2	1.0	1.0
VWP-B Shallow	13.9	10.4	10.6	-3.3	0.2
VWP-D	7.1	5.5	5.4	-1.7	-0.1

Discussion of Vibrating Wire Piezometers

VWP-A Deep

VWP-A Deep was installed on October 6, 2014 near the northern edge of CWDA No. 3. VWP-A Deep was installed in the foundation soil approximately eight feet below the bottom of the gob. The pore pressures recorded at VWP-A Deep generally decreased since installation until September 2015. After that, the pore pressures have fluctuated within a narrow range. In general, HBET does not believe that the pore pressure changes in VWP-A Deep are cause for concern regarding stability of the gob pile.

VWP-A Shallow

VWP-A Shallow was installed on October 6, 2014 near the northern edge of CWDA No. 3. VWP-A Shallow was installed approximately ten feet above the base of the gob. After installation, the pore pressures dropped until November 2014. Between November 2014 and September 2015, increases in the pore pressures were recorded at VWP-A Shallow. However, between September 2015 and December 2016, the pore pressures decreased. Since then, the data have fluctuated within a narrow range. In general, HBET does not believe that the pore pressure changes in VWP-A Shallow are an indication of instability in CWDA No. 3.

VWP-B Deep

VWP-B Deep was installed on October 6, 2014 in the west-central portion of CWDA No. 3. VWP-B Deep was installed in the foundation soil approximately ten feet below the bottom of the gob. Since installation, the pore pressures recorded at VWP-B Deep have fluctuated within a narrow range. The current data shows an increase of 1.0 psi since the previous reading and the cause of this increase is unknown as no significant changes were detected in the other instruments. In general, HBET does not believe that the pore pressure changes in VWP-B Deep are an indication of instability in CWDA No. 3. In addition, the 2nd Quarter 2019 readings will provide an indication of whether or not the recorded increase is an anomaly or not.

VWP-B Shallow

VWP-B Shallow was installed on October 6, 2014 in the west-central portion of CWDA No. 3. VWP-B Shallow was installed approximately ten feet above the base of the gob. Since installation, the pore pressures recorded at VWP-B Shallow have fluctuated with periods of slight increase and slight decrease. In general, HBET does not believe that the pore pressure changes in VWP-B Shallow are an indication of instability in CWDA No. 3.

VWP-D

VWP-D was installed on October 7, 2014 in the east-central portion of CWDA No. 3. VWP-D was installed approximately ten feet above the base of the gob. Since installation, the pore pressures recorded at VWP-D have fluctuated. The pore pressures increase slightly during the 3rd Quarter of 2017. However, this likely reflects the activity at CWDA No. 3 during the monitoring period and the pore pressures have decreased since September 2017. In general, HBET does not believe that the pore pressure changes in VWP-D are an indication of instability in CWDA No. 3.

General

Based upon the results of the most recent VWP monitoring data, HBET does not believe that there is any reduction in the stability of CWDA No. 3. However, the 2nd Quarter 2019 readings will be used to further evaluate changes in pore pressure at VWP-B Deep.

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

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

ATTACHMENTS

970-249-6828 ■ 800-865-9847 (fax) ■ 222 South Park ■ Montrose, Colorado 81401 ■ www.dowl.com
Alaska ■ Arizona ■ Colorado ■ Montana ■ Oregon ■ Washington ■ Wyoming

March 29, 2019

Mike Berry
Huddleston-Berry Engineering and Testing, LLC
640 White Avenue
Grand Junction, CO 81501

SUBJECT: Summary Report, 1st Quarter 2019, Vibrating Wire Piezometers
January – March 2019, Bowie Mine #2
Coal Waste Disposal Area (CWDA) #3

Dear Mr. Berry,

DOWL conducted quarterly monitoring of installed vibrating wire piezometers at Coal Waste Disposal Area #3 (CWDA #3), Bowie Resources, LLC. This report is intended to cover the period of January through March 2019 (1st Quarter). VWP data was recorded on 3/28/19. Per CDRMS and your instructions, vibrating wire piezometer readings for all active piezometers are taken quarterly.

A graph of measured pore pressures is presented on the attached Figure 1 and numerically in Table 1 below. Table 1 summarizes the initial, prior and current readings and the difference in individual pore pressures since installation and previous quarterly readings.

Table 1. Summary of Pore Pressure Readings

VWP ID #	10/31/14 Installation Pore Pressure (psi)	12/6/18 Pore Pressure (psi)	3/28/19 Pore Pressure (psi)	Difference Since Installation (psi)	Difference Since Last Quarter (psi)
VWP-A Deep	10.4	3.7	3.8	-6.6	0.1
VWP-A Shallow	4.7	3.4	3.5	-1.2	0.1
VWP-B Deep	0.2	0.2	1.2	1.0	1.0
VWP-B Shallow	13.9	10.4	10.6	-3.3	0.2
VWP-D	7.1	5.5	5.4	-1.7	-0.1

As seen on Figure 1, the readings are either consistent with previous historic readings. One VWP shows a slight decrease pore pressure over the most recent readings, three show a slight increase, and one shows a more substantial (1.0 psi) increase. The VWP with the most increase (VWP-B Deep) has had a similar rate and amount of increase as it experienced in the early summer of 2016 and could be related to greater influence of groundwater movement in a wetter year. If you have any questions regarding this letter or the instrumentation monitoring at CWDA #3, please contact me at (907) 562-2000 or *jholland@dowl.com*.

Respectfully Submitted,
DOWL

Jeremiah E. Holland, P.E.
Geotechnical Engineer

LJB/JEH

Enclosure: Figure 1 – Vibrating Wire Piezometer Data Graph

Figure 1 - Bowie Mine #2 - CWDA #3
Vibrating Wire Piezometer Data