# OFFICERS' CERTIFICATE OF CONTINENTAL MATERIALS CORPORATION 440 SOUTH LASALLE STREET, SUITE 3100 CHICAGO, ILLINOIS 60605 TELEPHONE: 312,553,3661 FAX: 312,541,8089

# MAY 7, 2021

The undersigned, an officer of Continental Materials Corporation, a Delaware corporation (the "Company"), hereby certifies on behalf of the Company that:

1. The undersigned is a duly elected, qualified, and acting officer of the Company.

2. Noah Mineo, Chief Financial Officer of the Company, is authorized and directed, for and on behalf of the Company, to execute and deliver any and all agreements, instruments, certificates, or other documents.

[Signature Page Follows]

IN WITNESS WHEREOF, I have executed this certificate as of the date set forth above.

) ~ SA By:

Name: Ryan Sullivan Title: Chief Executive Officer

## August 21, 2020

# Resolution of the Board of Directors of the Colorado Water Protective and Development Association

## Resolution No. 2020-7

As provided in the Article IV, Section 5 of the Bylaws, the Board of Directors has the "immediate control and supervision over the business affairs and management of the Association and shall have the power and authority to hire and employ such . . . employees . . . as may be necessary and advisable to carry out the purposes of this Association . . . . Article Second, section 1.(d) of the Articles of Incorporation provides the Association's purposes include to "[a]cquire, develop and operate a permanent water supply, including . . . to acquire, construct, maintain and operate a system for the diversion, supply storage, and distribution of water to its members, or for benefit of its members, for the beneficial purposes within the area served by the Association."

WHEREAS, The Board of Directors has agreed to pursue purchase certain properties ("TMOP Properties") from Castle Concrete Company and TMOP Legacy Company, f/k/a/ Transit Mix of Pueblo (collectively, "Seller"), and to pursue development of the TMOP Properties, if successfully purchased, for water diversion, storage, and distribution for the benefit of CWPDA members.

WHEREAS, on July 15, 2020, CWPDA, entered into a Purchase and Sale Agreement ("PSA") with Seller to purchase the TMOP Properties.

**Now, therefore**, be it resolved by the Board of Directors that the President and the General Manger are hereby authorized and directed to take all steps necessary and execute all documents to implement the terms of the PSA, including, but not limited to, to transfer DRMS Permit Nos. M1977573 and M1984008, for as long as the PSA is in effect.

Signed, this 21st day of August, 2020.

# THE BOARD OF DIRECTORS OF THE COLORADO WATER PROTECTIVE AND DEVELOPMENT ASSOCIATION

**President of the Board of Directors:** 

a then Protor

Secretary of the Board of Directors:

Name: Celesta Jane Rhoder

CWPDA Board of Directors Resolution No. 2020-7 - August 21, 2020 - Page 1 of 1

Lennberg - DNR, Patrick <patrick.lennberg@state.co.us>

# SO Due Date, Incompleteness Notice, Pueblo East and West (M1986-015 and M1977-573)

Kent Ricken <kent@cwpda.org>

Tue, Jun 29, 2021 at 5:10 PM

To: "Lennberg - DNR, Patrick" <patrick.lennberg@state.co.us> Cc: Jerald Schnabel <Jerald Schnabel@castleaggregate.com>, Dan Tucker <dan@cwpda.org>

Patrick,

Please find attached a Resolution by the CWPDA Board of Directors granting the General Manager (myself) to execute all documents related to this project. This should satisfy item 2 of the incompleteness letter.

Best Regards,

Kent Ricken

**General Manager** 

Colorado Water Protective and Development Association Arkansas Groundwater Users Association

www.cwpda.org www.arkwater.com

205 S. Main St Fowler, CO 81039

(719) 826-2597 Office - (719) 826-2599 Fax - (719) 406-6418 Cell

[Quoted text hidden]

CWPDA Board Resolution 2020-7 - Authorizing K Ricken re TMOP Purchase.PDF 7-279K

# <u>APPLICANTS' AGREEMENT TO REQUEST TRANSFER</u> OF MINERAL PERMIT AND SUCCESSION OF OPERATORS

 WHEREAS, on \_\_\_\_\_\_\_\_, <u>1986</u> Permit Number <u>M-1986-015</u> ("Permit")

 was granted to <u>Noah Mineo Continental Materials Corporation</u> ("Permittee"),

 pursuant to which Permit, Permittee has engaged in a mining operation located in

 Pueblo
 County, Colorado.

WHEREAS, The Permit includes and incorporates any and all subsequent Amendments, Technical Revisions and/or Conversions.

WHEREAS, Permittee wishes to assign the entire Permit, along with all associated rights and responsibilities to <u>Colorado Water Protective and Development Association</u> ("Prospective Successor"), and Prospective Successor wishes to become Successor Permittee under the Permit.

WHEREAS, Prospective Successor has inspected the mining and reclamation operations and is fully aware of the conditions thereof.

WHEREAS, Prospective Successor understands that the Reclamation Plan (the "Plan") is an integral part of the Permit and is required by law. Prospective Successor has had an opportunity to thoroughly review the Plan, understands that the Plan has not been completed and that, if Prospective Successor becomes Successor, he/she/it will assume full responsibility for the completion of the Plan.

NOW THEREFORE, Permittee and Prospective Successor hereby agree, for their own benefit and for the benefit of the State, as follows:

Prospective Successor agrees to accept all of the conditions of the Permit, including the condition that the operation remains in compliance with all applicable laws and regulations, and to perform all of the obligations of the Permittee under the Permit.

Prospective Successor agrees to complete the Plan, and to assume all liability for the same, as to all areas presently disturbed, as well as to all areas hereafter disturbed.

Prospective Successor agrees to submit to the Division of Reclamation, Mining and Safety ("Division"), Performance and Financial Warranties, as required by applicable law and regulations, which will be substituted for the Performance and Financial Warranties previously filed by the Permittee, if and when the Division approves a Transfer of Mineral Permit and Succession of Operators ("SO") and releases the latter Warranties.

Prospective Successor represents to the State that, to the best of its knowledge, information and belief, it is not in violation of any of the provisions of the Mined Land Reclamation Act (C.R.S. § 34-32-101 *et. seq.*) ("Hard Rock Act") and associated Rules (2 C.C.R. 407-1) ("Hard Rock Rules") or the Land Reclamation Act for the Extraction of

Construction Materials (C.R.S. § 34-32.5-101 *et. seq.*) ("Construction Materials Act") and associated Rules (2 C.C.R. 407-4) ("Construction Materials Rules"), with respect to any other operation conducted by the Prospective Successor in the State of Colorado.

Permittee and Prospective Successor hereby request that the Mined Land Reclamation Board ("Board") approves their SO Application, recognizes the Prospective Successor as Successor Operator under the Permit, accepts the Prospective Successor's Performance and Financial Warranties, and releases the current Permittee's Performance and Financial Warranties.

SIGNED, SEALED AND DATED this 12 day of 20, 20.

#### PERMITTEE

Noah MIneo Continental Materials Corporation

Name of Permittee 14 By Signature of Officer

(FO

Title of Officer

### PROSPECTIVE SUCCESSOR

Colorado Water Protective and Development Association

Name of Prospective Successor

By

Signature of Officer

Title of Officer

NOTARY FOR PERMITTEE
STATE OF Illinois COUNTY OF Millenry; ss.:
The foregoing instrument was acknowledged before me this <u>12</u> day of <u>May</u> , <u>202</u> ) by <u>LUCCUS AUCHSHELL</u> as <u>NO tacy Woblic</u> of <u>Things</u> Notary Public <u>Lucz</u> <u>Autoball</u> My Commission Expires <u>10-15-2024</u>

e		7
ł	OFFICIAL SEAL	þ
	LUCAS AUCHSTETTER	Þ
é	Notary Public, State of Illinois	Þ
9	My Commission Expires 10-15-2024	þ
- 2		æ

NO	TARY	FOR	PROSP	ECTIVE	SUCCESSOR

STATE OF	 )	
	)	ss.:
COUNTY OF	 )	

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_,

by \_\_\_\_\_\_ as \_\_\_\_\_\_ of \_\_\_\_\_\_.

Notary Public

My Commission Expires

### STATE APPROVAL [for completion by Division]

(a) The Board hereby approves the transfer of permit number \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_

(b) The Board hereby recognizes\_\_\_\_\_\_as Successor Operator under such Permit.

The Board hereby accepts the Performance and Financial Warranties submitted by Successor and hereby (c) , as former Permittee from all obligations under releases its Performance and Financial Warranties. The Board further releases all affected financial warrantors from obligations under Financial Warranties associated with the former Permittee.

STATE OF COLORADO DEPARTMENT OF NATURAL RESOURCES MINED LAND RECLAMATION BOARD DIVISION OF RECLAMATION, MINING AND SAFETY

By: \_\_\_\_\_ Division Director

Date Executed:



205 South Main Street Fowler, Colorado, 81039 Phone: 719-826-2597 www.cwpda.org

September 13, 2021

Mr. Patrick Lennberg Environmental Protection Specialist Colorado Division of Reclamation, Mining, and Safety 1313 Sherman Street, Rm. 215 Denver, CO 80203

RE: Existing Slope Stability Conditions at Transit Mix of Pueblo – Pueblo East

Dear Mr. Lennberg,

This letter is written on behalf of Colorado Water Protective and Development Association (CWPDA) and seeks approval of an existing slope stability analysis performed by Lyman Henn, an engineering firm which was hired to perform the analysis, in 2011. That report analyzed conditions that were proposed at that time by Transit Mix of Pueblo (TMOP) for its Phase 7 pit. Mining operations that would result in near-vertical highwalls or 1:1 slopes were analyzed for geotechnical stability, and appropriate setback distances from the limits of excavation created during mining were defined and proposed for use by the operator, to ensure safe distances were maintained from the pit limits.

The Division of Reclamation, Mining, and Safety (DRMS) has requested that CWPDA verify, as part of the Succession of Operator (SO) process currently underway by CWPDA as part of its assumption of ownership of the TMOP Pueblo East gravel pits, the stability of all existing slopes around the exposed excavations at the site, as well as whether adjacent structures are at risk due to cut slopes remaining on-site from mining operations.

CWPDA has reviewed the 2011 letter written by Lyman Henn and the recommendations contained therein. This letter will summarize CWPDA's findings from that report and will seek to demonstrate



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to DRMS the still-extant adequacy of those 2011 results to existing site conditions at TMOP – Pueblo East.

# **Background Information**

In 2011 Lyman Henn, a Denver-based geotechnical engineering firm, performed an analysis of the proposed Phase 7 pit area for TMOP, and summarized the results of this analysis in a report entitled "Slope Stability for Pueblo East, Phase 7 Mining, Pueblo Colorado". This report has been attached here as Exhibit A.

This analysis used drilled borings collected at two locations around the proposed mining area to define the engineering characteristics of the soils at those locations. Once the appropriate parameters had been determined for each layer present along the axis of each boring, such as internal angle of friction ( $\phi$ ), unit weight, and cohesion C, those parameters were used to analyze the global slope stability at two cross sections (D-D and E-E) cut perpendicular to the limit of excavation along the proposed pit perimeter.

The analysis of stability along these two cross sections resulted in recommendations for two slope configurations; one was a near-vertical highwall and the other, a 1:1 slope. These results are below in Table 1.

Slope Condition	Recommended Setback, in Feet
Near-Vertical Highwall	94
1:1 Slope	55

# Table 1. Summary of Proposed Slope Conditions from Lyman Henn Report

# **Existing Conditions**

Existing conditions at the TMOP – Pueblo East location are not substantially changed from the time of the Lyman Henn analysis and report. There are currently two unreclaimed pit on-site: Phase 1 and Phase 7. Phase 1 is a large pit with a surface area of exposed groundwater of approximately 45



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acres. This pit has slopes ranging from near-vertical highwalls to slopes of 3:1 around some small portions of the pit perimeter. An analysis using AutoCAD to examine the current distance between the edge of the existing excavation limits to the nearest structure, which would be a fence delineating the property line between TMOP-Pueblo East and a private property at the northwestern corner of the TMOP property, shows that there is a distance greater than 94 feet between the pit limit and the fence. Around the rest of the Phase 1 pit, there are no other encroachments that are close enough to merit examination.

Phase 7 is a smaller open excavation to the east of Phase 1. Phase 7's excavation is defined by nearvertical highwalls around its southern and eastern sides, and flatter slopes around its western edges resulting from the filling of portions of the pit with concrete washout waste generated by the existing Transit Mix batch plant north of the TMOP gravel pits.

Along the eastern side of Phase 7, the pit is bounded by a fence and beyond that, some agricultural out-buildings owned by adjacent property owners. An examination of existing setbacks between the edge of the Phase 7 excavation limits and the nearest adjacent structures, which in this case are fences delineating the property boundary, are usually approximately 110-120 feet outside of the pit limits. This is in accord with the Lyman Henn report, which recommends a setback of 109 feet where a drainage channel is present between the pit limits and the nearest structures, which is the case here.



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# Summary and Request for Approval

A slope stability analysis performed by Lyman Henn in 2011 analyzed proposed mining slopes at TMOP – Pueblo East for stability, Factor of Safety (FOS) and permissible setbacks resulting from mined slopes of near-vertical and 1:1. This analysis presented results showing that for near-vertical and 1:1 slopes, setbacks of 95 and 55 feet were advised.

CWPDA has been asked by DRMS to demonstrate that existing slopes at TMOP – Pueblo East are stable and pose no risk to adjacent man-made structures. CWPDA has examined the Lyman Henn report and believes that it provides a thorough analysis which continues to pertain to TMOP – Pueblo East and existing conditions there.

In addition to CWPDA's assessment of the applicability of the Lyman Henn analysis, and the current status of slopes at TMOP – Pueblo East in light of that report, CWPDA notes that as the result of its purchase of these properties, it will be undertaking reclamation efforts which will modify current conditions significantly for the better, with complete restoration of existing near-vertical highwalls to a minimum of a 3:1 slope in the case of the Phase 1 pit, which will then be used as a water storage reservoir. In the case of Phase 7, the pit will be reclaimed with backfill and all existing exposed slopes will be reduced to a new ground surface elevation. CWPDA will be improving the site, with no plans to mine the site further and therefore believes that if existing conditions are judged to meet the recommendations set forth in 2011 by Lyman Henn, that they will only continue to do so in future conditions.

CWPDA therefore respectfully requests from DRMS approval of this letter and the attached Lyman Henn analysis as sufficient to meet DRMS requirements for slope stability at TMOP – Pueblo East.



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Please do not hesitate to reach out to myself or to Kent Ricken, CWPDA General Manager, with any questions. We will be glad to assist you.

Best Regards,

Dull.The

Daniel Tucker, PE Water Resources Engineer Colorado Water Protective and Development Association



CC:

Kent Ricken - CWPDA General Manager Jerald Schnabel – President, Castle Aggregates



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EXHIBIT A

Lyman Henn Slope Stability Analysis

# **APPENDIX A**

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# **SLOPE STABILITY STUDY**

# SECTION T APPENDIX A SLOPE STABILITY STUDY



## A DIVISION OF BRIERLEY ASSOCIATES, LLC

Engineering Solutions from the Ground Down

May 18, 2011 File No. 111057-000

Transit Mix of Pueblo P.O. Box 1030 Colorado Springs, CO 80901

Attention: Mr. Bud Herskind

Subject: Slope Stability for Pueblo East, Phase 7 Mining Pueblo, Colorado

Mr. Herskind:

Lyman Henn, a division of Brierley Associates, LLC (Lyman Henn) is pleased to present Transit Mix of Pueblo (Transit Mix) with the results of a slope stability evaluation of the excavation slopes at the proposed Pueblo East, Phase 7 Mining Gravel Pit, an alluvial deposit located adjacent to the Arkansas River. Figure 1 shows the project location. The site is proposed as a construction materials aggregate mine and will be Phase 7 of the East mine pit. Lyman Henn performed this evaluation to determine a recommended setback between the proposed gravel mine excavation slopes/highwalls and adjacent structures. The slope stability analyses were performed using: 1) existing information from the site vicinity provided by Tuttle & Associates; 2) material strengths for the natural soil materials in the proposed cut slopes based on exploratory borings, laboratory testing, and DRMS typical soil strength parameters; 3) observed groundwater conditions; and 4) Lyman Henn's understanding of the proposed mining plan.

## SITE DESCRIPTION

The proposed mining plan consists of one irregular shaped mining area. The site is located within parts of the NW ¼ of Section 35 and the NE ¼ Section 35, all in Township 20 South, Range 64 west, 6th meridian, Pueblo County, Colorado. The northern boundary of the Phase 7 mining area is adjacent to industrial businesses; the eastern edge abuts residential housing and trailers, and the western boundary flanks adjacent quarry areas. The Arkansas River lies to the south of the permit boundary area. \*

<sup>\*</sup> See list of References at the end of this letter.

Transit Mix May 18, 2011 Page 2 of 2

## SUBSURFACE CONDITIONS AND LABORATORY TESTING

Lyman Henn conducted a subsurface evaluation on April 28, 2011, which included the drilling, sampling, and logging of two exploratory borings. Borings LH-1 and LH-2 were extended to depths of 46 and 41 feet below the ground surface (bgs), respectively.

Earth materials encountered during the subsurface exploration consisted of fine alluvium, coarse alluvium residuum and bedrock (Pierre Shale). The locations of the borings are presented on Figure 2. Generalized descriptions of the materials encountered are presented below. Detailed descriptions are presented on the boring logs in Appendix A. A Test Boring Key is also supplied in Appendix A for an explanation of soil and rock descriptions.

To aid in classifying the soils and to determine general soil and bedrock characteristics, selected laboratory tests were performed on representative samples; test method references are shown in the following table.

Table 1: Laboratory Test Methods	
Parameter	Method Reference
Sieve Analysis	ASTM C136/AASHTO T27
-#200 wash	ASTM D1140, C117, T11
Atterberg Limits	ASTM D4318, T89/T90
Unconfined Compressive Strength	ASTM D2166

Table 1: Laboratory Test Methods

The test boring reports were amended as necessary to reflect laboratory test data. The results of the laboratory testing are summarized in Table 1 and laboratory test reports are provided in Appendix B. Laboratory testing was performed by Lyman Henn.

## Fine Alluvium (CL, CL-ML)

Fine alluvium consisting of sandy lean clay and silty clay was encountered in borings LH-1 and LH-2. The stratum was encountered from the ground surface to as deep as 10 feet bgs. This material was dry to moist and, based on Modified California test values, stiff, with blow counts ranging from 11 to 14 blows per foot (bpf).

Silty clay soil was tested for unconfined compressive strength in boring LH-1. The unconfined compressive strength result was 2,290 pounds per square foot (psf). The laboratory results are provided in Table I and Appendix B.

### Coarse Alluvium (SP, SW)

Coarse alluvium consisting of poorly-graded sand, well-graded sand, and well-graded sand with gravel was encountered in both borings below the fine alluvium. The coarse alluvium was encountered at 10 feet and extended to depths of approximately 35.4 feet and 38.1 feet bgs. This stratum ranged from approximately 25.5 feet to 28 feet in thickness. The material was slightly moist to wet and very loose to very dense, with standard penetration test values ranging from 4 to 68 bpf.

### **Bedrock and Residuum**

Residuum (bedrock that is completely weathered to soil but still retaining the structure of the rock), encountered in boring LH-2, was composed of dark gray to black, highly plastic, blocky, clayey shale. The top of this stratum



Transit Mix May 18, 2011 Page 3 of 3

was approximately 35.4 feet bgs and extended to approximately 40 feet bgs. The material was very soft, highly weathered, and slightly moist with blow counts of 50 for 3 inches of penetration.

Clayey Shale and Shale bedrock of the Pierre Shale Formation was encountered beneath the alluvium in boring LH-1 and residuum in boring LH-2. The Pierre Shale was encountered at depths of 35.4 feet and 38.1 feet bgs and extended beyond the bottom of the exploration. The bedrock was slightly moist, with field hardness classification (resistance to abrasion) of very soft. Modified California penetration values ranged from 50 blows per 1 inch to 50 blows per 3 inches of penetration.

The shale was tested for unconfined compressive strength in boring LH-1. The unconfined compressive strength result was 9,313 psf. The laboratory results are provided in Table I and Appendix B.

#### Groundwater

Groundwater was encountered while drilling the borings as tabulated below. Fluctuations in the groundwater level may occur due to variations in rainfall, temperature, site development and other factors not evident at the time measurements were taken.

Boring Number	Water Level During Drilling (feet below surface)
LH-1	8.3
LH-2	11.6

The natural static groundwater is assumed to be approximately 1 feet below existing grade, and during mining Lyman Henn assumes that the phreatic surface will be drawn down by dewatering to the top of the weathered bedrock.

## ANALYSES

Lyman Henn performed an analysis for two separate cross-sections which were provided by Tuttle & Associates (Reference 1). The cross-section identifications used by Lyman Henn (Figure 2) are consistent with the drawings provided by Tuttle & Associates. Section D-D' is located at the eastern pit boundary with the proposed pit wall offset 85 feet from the property line, a 55-foot drainage ditch is included within the offset distance. Section E-E' is along the northern pit boundary with a proposed 50-foot offset from the property line. Lyman Henn analyzed the two proposed cross-section configurations with a near vertical highwall. Lyman Henn performed the analyses using a computer program (Slope/W, GEO-SLOPE International) based on limit equilibrium theory to compute Factor of Safety (FOS). A target FOS of 1.01 was used in the analyses to evaluate the temporary mining condition.

Results of the laboratory data were evaluated to determine strength values for the subsurface materials. The target FOS and chosen strength properties were determined with guidance from the Colorado Division of Reclamation Mining and Safety (DRMS). Two borings conducted in 1999 by Haley and Aldrich (Reference 2), located adjacent to the western boundary of Phase 7, were also reviewed for variability of subsurface materials and anticipated depths. The selected values used in the analysis are summarized in the table below.



Transit Mix May 18, 2011 Page 4 of 4

Depth (feet below existing grade)	Material	Effective Friction Angle \$\$\phi'\$ (degrees)	Effective cohesion c' (psf)	Moist Unit Weight 7m (pcf)	Saturated Unit Weight <sub>Kat</sub> (pcf)
10	Overburden	28	50	114	
10-38	Sand and Gravel	31	0		130
38-40	Weathered Shale	14	0		142
40+	Clayey Shale	28	100		142

#### Analysis 1

This stability analysis involves modeling the proposed excavation with a near-vertical highwall and evaluating the variety of failure surfaces which result in a FOS less than 1.01. Both sections were evaluated with a near-vertical highwall of 38 feet. Where the failure surface which extended the furthest behind the highwall with a FOS less than 1.01 daylights is the minimum required setback.

According to the analysis, the proposed pit wall offset is 85 feet from the property line for Section D-D', and the failure surfaces which daylight 24 feet beyond the property line have FOS greater than 1.01; failures originating in front of that point may have FOS less than 1 (Figure 3). The proposed pit wall offset is 50 feet from the property line at Section E-E' and failure surfaces which daylight 44 feet beyond the property line have FOS greater than 1.01; failures originating in front of that point may have FOS less than 1 (Figure 3).

### Analysis 2

The second analysis evaluates the reduced setback which could be realized from mining to a specific slope as an alternative to a vertical highwall. Specifically, the required maximum setback that could be allowed while maintaining a 1:1 (horizontal: vertical) slope was evaluated. The distance through a daylight point offset from the slope crest where a FOS greater than 1.01 was determined. The offset using the 1H:1V slope configuration is 55 feet. Figure 5 demonstrates the factor of safety for the critical failure surface through the point 55 feet offset from the crest of a 1H:1V slope; failures originating in front of that point may have FOS less than 1. Therefore, to maintain a minimum 55-foot setback between the top of the excavated slope and the adjacent structures, the mine side slopes should be flatter than 1H:1V. Material beneath and behind the 1H:1V slope should not be removed, even temporarily. The stability of the slope appears to be sensitive to the phreatic surface, and therefore comprehensive development and monitoring of the dewatering system should be conducted during mining.

### RECOMMENDATIONS

This stability analysis is intended to demonstrate that the temporary highwall will not adversely affect the stability of any significant, valuable and permanent man-made structure according to rule 6.4.19 of the Colorado Division of Reclamation Mining and Safety (DRMS) *Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Material* (Reference 3). Therefore, for a highwall mined to a near-vertical slope we recommend the minimum required setback from the highwall to a structure is 94 feet. However, if a drainage ditch is located between the highwall and the property line we recommend the minimum required setback from the highwall mined at a 1H:1V slope we recommend the minimum required setback from the highwall mined at a 1H:1V slope we recommend the minimum required setback from the highwall to a structure is 55 feet.



Transit Mix May 18, 2011 Page 5 of 5

## LIMITATIONS

The stratification lines designating the interface between soil types on the test boring reports represent approximate boundaries. The transition between materials may be gradual.

The test boring reports and related information depict subsurface conditions only at the specific locations and at the particular time designated on the reports. Soil conditions at other locations may differ from conditions occurring at these boring locations. Also, the passage of time may result in a change in the subsurface conditions at these boring locations.

This report has been prepared for Transit Mix for specific application to the Pueblo East, Phase 7 projects as understood at this time, in accordance with generally-accepted geotechnical engineering practices common to the local area. No other warranty, express or implied, is made. In the event that changes in the nature, design, or location of the planned construction are made, the conclusions and recommendations contained in this report should not be considered valid, unless the changes are reviewed by Lyman Henn and the conclusions of this report are modified or verified in writing.

Nothing contained in this report shall be construed to create, impose, or give rise to any duty owed by Lyman Henn to any individual or entity other than Transit Mix. This report is for the sole use and benefit of Transit Mix and may not be used or relied upon by any other individual or entity without the express written approval of Lyman Henn.

The analyses and recommendations are based, in part, upon the data obtained from the referenced subsurface explorations. The nature and extent of variations between explorations may not become evident until construction. If variations appear, it may be necessary to re-evaluate the recommendations of this report.

The scope of Lyman Henn's services does not include a full environmental assessment and does not provide an analysis for the presence or absence of hazardous or toxic materials in the soil, groundwater, or surface water within or beyond the site studied. Any statements in this report or on the test boring reports regarding odors of soil or other unusual conditions observed are strictly for the information of our client. Unless complete environmental information regarding the site is already available, an environmental assessment is recommended prior to construction.

## CLOSING

We appreciate the opportunity to provide [environmental consulting/engineering] services on this project. Please do not hesitate to call if you have any questions or comments.

### Sincerely,

LYMAN HENN, a division of Brierley Associates, LLC



the South

Nathan C. Soule, P.E., P.G. Senior Engineer

Transit Mix May 18, 2011 Page 6 of 6

Enclosures:

Figure 1 – Project Location Figure 2 – Boring Location Plan Figure 3 – Section D-D Analysis Figure 4 – Section E-E Analysis Appendix A – Lyman Henn Test Boring Reports Appendix B – Laboratory Test Results Appendix C – Haley & Aldrich Test Boring Reports

c: Tuttle & Associates; Gary Tuttle

G:PROJECTS\111057-000 Transit Mix Pueblo East Slope Stability\O - Original Reports, Drawings and Specifications\O1 Letter Reports and Reports (GDR, GBR, GIR, etc.)Pueblo East Phase 7\_text.doc



Transit Mix May 18, 2011 Page 7 of 7

## REFERENCES

- 1. Tuttle & Associates, 2011, Draft Mining Plan and Cross Sections for the Phase 7 Area, transmitted via email on April 8.
- 2. Haley and Aldrich, 1999, East Pueblo Gravel Mine, Pueblo, Colorado, Test boring reports and Figure, dated September.
- 3. DRMS, 2006, Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials, dated August.



FIGURES







Figure 3: Section D-D Analysis



Depth Name: Overburden Unit Weight: 114 pcf Cohesion: 50 psf Phi: 28 ° Name: Sand Unit Weight: 130 pcf Cohesion: 0 psf Phi: 31 ° Name: Weathered shale Unit Weight: 142 pcf Cohesion: 0 psf Phi: 14 ° Name: Clayey shale File Name: EE44r\_1-1a.gsz Method: Spencer -120 -110 -100 -90 Unit Weight: 142 pcf Cohesion: 100 psf Phi: 28 ° -80 -70 Overnme -60 50 Sand **Property Line** 40 <u>'</u>3 55 ft -20 -10-5 0 5 101520253035404550556065707580859095 **Clayey shale** Pistance 1.010 105 115 125

Figure 5: Section E-E Analysis with a 1H:1V slope

APPENDIX A LYMAN HENN TEST BORING REPORTS

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Туре			HSA	\   C#	, SS		Rig Make & Mode	CME-55					evati atum				
Inside Diar			4.25	2"	1 & 3/8		Drill Method: Holl	-				_	catio			·	
Hammer V		))					Bit Type: Cutting I		sing:	4.25	<b>,</b> "		Nort	n-cen osed	ntral p minir	ortion ng area	of a
Hammer F	an (m.)	Wate	orlo	vel Data			Hoist/Hammer: A	Identification				1					
Date	Time	Elar	sed	Bottom	Bottom	Depth to	1	• • • • • • • • • • • • • • • • • • • •		+				Vote	5		
4-28-11	1:45	Tir	ne	of Casing 38'	of Hole 46'	Water 8.3'	CS Continuous	C California B	arrei								
- 20 11		none	•			0.0	Sampler	R Core									
						8	S Split Spoon	B Bulk									
	l						G Geoprobe	T Thin Wall T	uce	<u> </u>		1.04	oral		Resu	14-	
ĵ ⊑	D	e e	Ā	v	isual-ivi	anuariue	enuncation and i	Description		~	Γ				l		T
Depth (ft.) Elevation	Depth (ft.) Rec. (in.)	Blows/6 in.	Stratigraphy	Soil:	Density/co	nsistency, c	olor, GROUP NAME,	max. particle size,	Jran	Moisture (%)	8	<u>.</u>	ত			œ.	
Dept Elev	or RQD/Rec.	No Second	trati		ure, odor, r Rock: Har	iness, weat	ional descriptions, geo hering, color, LITHOLO	DGY, texture,	Diag	stur	Gravel (%)	р р	se S	(%	3	× ×	
	(%/in.)		Ś			joint spaci	ng, drilling rate (ft./min	.)	Well Diagram	Moi	Ga	Sand (%)	Fines (%)	LL (%)	PI (%)	UCS (ksf)	:
0		<u> </u>							┼Ѯ			⊢	-	<u> </u>	┼──		╋
1																	ł
1																	
5-	C-1 5-6	6 8		Stiff, ta	n, clayey S/	AND (SC), m	iostly fine clay, some sit	t, dry, no odor.		8.6			45.8	37	10	2.290	
1	4"	Ů		-FINE A	LLUVIUM-					0.0			-5.0	3,	10	2.250	Ί
r													ŀ				
-									흋								
-																	
10-	C-2 10-11	5	222	Loose,	tan, well gr	aded SAND	(SW), mostly fine to me	dium sand, little	-								
-1	8"	Ĭ		coarse	sand, trace	of fine grave	el, poorly sorted, slightly	moist, no odor.									
-				-COAR	SE ALLUV	UM-				İ							
1														l			
													ľ				
15-	S-3 15-16.5	1 2		Very loc	ose, tan, po	orly graded \$	SAND (SP) , mostly fine	sand, trace of	1								
	24"	2		mediun	sand, trac	e of fines, w	ell sorted, no odor, wet.	-									
1				COAR	SE ALLUVI	UM-								l			
~																	
20	S-4 20-21.5	3 3 3			as above.		<u>.</u>		]								
	18"	3					ded SAND (SW), mostl; , no odor, wet.	y fine to medium sand.	1							İ .	
					SE ALLUVI		,		1								
25-		_															
~]]	S-5 25-26.5	7 5 9		Medium little coa	i dense, tan irse sand, t	well graded	I SAND (SW) , mostly li o coarse gravel, mps⇒1	ne to medium sand, .5", no odor, wet									
- H - I	10*	9		poorly s	orted.		3.e.e.( (ibae)										
] [																	
]																	
30-1		5	deta		alue - 4 - 1		vithin the limitations		1								
davi-			MOTOR		durant ob	on/otion u											

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6					TES	T BOI	RING REP	PORT					orir Ieet N			LH	-1
LYM	IAN 🔪 –	Proj	ect.	т	ransit Miv	of Pueblo	, East Slope Stabi	lity Study					e No			1057-0	00
HEN		Clie				of Pueblo	•	ing Group				Sta	art:		4-2	28-11	
Na divisa			tracto		recision E		•						nish:			28-11	
Brierley Asso		<u> </u>	Cas		Sampler	Barrel	Drilling For	uipment and Proce	duro			•	iller: I Rep			arlie & Bailey	
<b></b>						Danei			uure	3			evatio			Dalley	
Туре			HSA	1	A, SS		Rig Make & Mode						itum:	_			
Inside Dia			4.25	. 12	, 1 & 3/8		Drill Method: Holl	-	·				catio		tral n	ortion o	<b>.</b> f
Hammer V Hammer F		,,					Bit Type: Cutting Hoist/Hammer: A		sing:	4.25						ig area	
	an (iii.)	Wate	er Lev	vel Data				Identification		1			h	lotes	3		
Date	Time	Elap	sed	Bottom	Bottom	Depth to											
4-28-11	1:45	Tir		of Casing 38'	of Hole 46'	Water 8.3	CS Continuous	C California E	arrei								
4-20-11	1.45	none	•	30	40	0.3	Sampler	R Core									
				ļ			S Split Spoon	B Bulk									
	ļ			<u> </u>			G Geoprobe	T Thin Wall T	ube								
				١	/isual-M	anual Ide	entification and I	Description				Lat	orat	ory F	lesu	lts	
(j; )	ID Depth (ft.)	Blows/6 in.	Stratigraphy	<u>.</u>					Ē	8							
Depth (ft.) Elevation	Rec. (in.) or	NS/E	ligr	ට Soi ග strut	: Derisity/co ture, odor, i	onsistency, o moisture.opi	olor, GROUP NAME, ional descriptions, geo	max. particle size,	l g	Moisture (%)	Gravel (%)	Sand (%)	Fines (%)			(st)	
Ele Der	RQD/Rec. (%/in.)	l Se	lta	3	Rock: Har	dness, weat	hering, color, LITHOL(	DGY, texture,	ă	istu		P	es	rr (%)	PI (%)	UCS (ksf)	
	(76/81.)	-	00			joint spaci	ng, drilling rate (ft./min	.)	Well Diagram	ž	ö	Sa	Ē	E	ā	3	
1	S-6	5 12	() <sup>(</sup> )				ded SAND with Gravel (		-								
	30-31.5 22"	12				e fine sand, s i', no odor, w	ome fine to coarse grav	el,angular to well									
			<u>(</u>	<u>ii</u>	•												
				-COA	RSE ALLUV	IUM-											
1				4 7													
35-	S-7	20	9	🔆 As ab	ove, except	very dense.					1						
4	35-36.5 24	20 32 36		44 21							28.9	67	4.1				
Ę	S-8	50/5		iii Too 1	3° as above	, except den	<b>60</b>										
	37-38.5				J , as above	, except den											
-1-1	18					ift, dark-gray	/black, clayey SHALE (E	BR), mostly fines,	'		1						
				piana	, fresh.												
40-	C-9 40-41	50/2	* 📃	-PIEF	RE SHALE-					9.2			81.1	50	32	9.315	
Г	4"			As at	ove.					ŀ							
1																	
1											1						
1												1					
45	C-10	50/2	. 📃	As ab	ove.												
, p	45-46 3*			=				46 ft									
	Ŭ														1		
1												1					
50-																	ŀ
1																	
-	1								1								
-		1															
		ĺ							l	l							
55 -		l							-		J				ŀ		
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	L	L		. I						<u> </u>		l					

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					TES	T BOI	RING REP	PORT						-		LH	-2
LYM	ian 🔪 –	Proje	ect:	T	ransit Mix	of Pueblo	, East Slope Stabi	lity Study			<del>.</del>	_	eet f e No		of 2	057-0	000
HEN	N	Clier				of Pueblo		inty otday					art:	•		8-11	
Brierley Assoc	on of	Cont			recision E		,					1	ish:			8-11	_
Brieney ASSOC	wates LLU		Cas	<u>r</u>	Sampler	Barrel	Drilling For	uipment and Proce	dure	<u>.</u>			iller: I Rep	).:		arlie & Bailey	-
Туре	· · ·		HSA		A, SS		Rig Make & Mode			<u> </u>		Ele	evati	on:			
Inside Diar	mator (in		4.25		', 1 & 3/8"		Drill Method: Holk					_	itum:				
Hammer W			4.2.5	12	, 1 04 5/0	-	Bit Type: Cutting I	•	sing:	4.25			catio East		of pro	perty	
Hammer F							Hoist/Hammer: A		a.								
				el Data		<u>,</u>	Sample	Identification					N	lotes	5		
Date	Time	Elap Tin		Bottom of Casing	Bottom of Hole	Depth to Water	CS Continuous	C California B	arrel								
4-28-11	11:05	none		35'	41'	11.6'	Sampler	R Core									
							S Split Spoon	B Bulk									
							G Geoprobe	T Thin Wall T	uhe								
			Т	<u> </u>	/isual-M	anual Ide	entification and I		T	╎		Lat	orat	orv F	lesu	ts	
a tì	ID Depth (ft.)	<u>.</u>	Ę,	`	ioud. In			Beschption		3	<u> </u>						
Depth (ft.) Elevation	Rec. (in.)	Blows/6 in.	Stratigraphy	Soil	: Density/co	nsistency, c	olor, GROUP NAME,	max. particle size,	Well Diagram	Moisture (%)	(%)	(%	1			st)	
Depi Elev	or ROD/Rec.	Now	Irati		Rock: Har	dness, weat	tional descriptions, geo hering, color, LITHOL	OGY, texture,	<u>D</u>	stur	Gravel (%)	Sand (%)	Fines (%)	8	(%	UCS (kst)	
-	(%/in.)		Ś			joint spaci	ng, drilling rate (ft./min	L.)	Vell	Moi	Ga	Sar	Ξ	rr (%)	PI (%)	ö	
0			V//	4					┼╴								
-	Į			2													
-				8						1							
-		ŀ															
				8													
5-	5-6 6 odor.					sandy lean CLAY (CL), mostly fines, trace of fine sand, moist, no											
		6					·····							1			
4				-FINE	ALLUVIUM	-											
-		1		8													
10-1	S-2	9		Top 2	, as above.												
	10-11.5 12"	9 9 5		<u>⊜</u> \		ddish/tan. w	ell graded SAND with gr							1			
	12	Ĩ		📰 to me	dium sand, li	ittle coarse s	and, little fine to coarse	gravel, mps=1.5*, no	¥								
-				odor,						1							
				-COA	RSE ALLUV	VIUM-											
15-		<u>م</u>		Made	m dence ire	ditan well	aded SAND (SW), mos	the fine to made		1							
	S-3 15-16.5	9 9 6		sand,			of fine to coarse gravel										
LJ.	15"	l °		wet.													
									1								
20																	
	S-4 20-21.5	433		As ab	ove, except	loose.											
Ч	18"	3															
1																	
1																	
1	ļ																
	S-5	5 2 12					d SAND (SW) , mostly f e to coarse gravel, no oc										
25		12		aome	waise sailu			uui, wul.									
25	25-26.5 18"		1	# <b>1</b>					1		ŀ	.		f i			
25									1					·			
25																	
25																	
30	18"	10					s, trace of cobbles on at within the limitations		f								

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					TES	T BOI	RING REF	ORT							No. 2 of 2	LH	-2
LYM	11	Proj	ect:	Tr	ansit Mix	of Pueblo	, East Slope Stabi	lity Study					e No			1057-0	000
HEN	IN	Clie				of Pueblo	•						art:			8-11	
Rierley Asso			tracto		recision [								iish: iller:			8-11 arlie &	T-
		T	Casi	·····	ampler	Barrel	Drilling Eq	uipment and Proce	dure	s			Rep	o.:		anie a Bailey	-
Туре			HSA	-	A, SS		Rig Make & Mode	•				Ele	evatio	on:			
Inside Dia	motor (in		4.25*		, 1 & 3/8"		Drill Method: Holk					_	tum:				
Hammer V			4.20	12		•	Bit Type: Cutting I	-	sing:	4 25	-		catio East		of pro	perty	
Hammer F		· /					Hoist/Hammer: A								•		
		Wate	er Lev	el Data			Sample	Identification					٨	lotes	5		
Date	Time	Elap Tir		Bottom of Casing	Bottom of Hole	Depth to Water	CS Continuous	C California E	arrel								
4-28-11	11:05	none		35'	41'	11.6'	Sampler	R Core									
							S Split Spoon	B Bulk		ŀ							
							G Geoprobe	T Thin Wall T	ube								
	<u> </u>				ieual-M	anual Ide	entification and		1			Lah	vorat	orv P	lesu	te	
ΩĘ	Ю	e.	<u>≥</u>		19041-141		situncation and i	Description			<b> </b>						
Depth (ft.) Elevation	Depth (It.) Rec. (in.)	Blows/6 in.	Stratigraphy	Soil:	Density/co	onsistency, c	olor, GROUP NAME,	max. particle size,	Well Diagram	Moisture (%)	8	()	3			(Ju	
lept Elev	or ROD/Rec.	Ň	ratio	2 struct	ure, odor, i Rock: Har	moisture,opt dness. weat	ional descriptions, geo hering, color, LITHOL	Dogic interpretation	lä	it,	je )	ه P	s (%	(%	()	; (ks	
ωw	(%/in.)	6	Ś			joint spaci	ng, drilling rate (ft./min	.)	(eil	ş	Gravel (%)	Sand (%)	Fines (%)	rr (%)	PI (%)	UCS (ksf)	
	S-6	14		: hole, m	ax. cobble	size=4".			15	<u> </u>		Ļ.	F	Ē			Ļ
1-1	30-31.5 18"	16			SE ALLUV												
1				004													
1	l																
-																	
35-	S-7	38 50/3		Top 5",	, as above,	except dense	9.	25 40 /									
	35-36.5 9"	50/3		Bottom	13", very s	oft, dark-gra	y/black, clayey RESIDU	UM (BR), mostly fines	1								
-				nigniy i	plastic, Dioc	ky, slightly m	ioist, no odor, highly we	athered.									
-				-PIERF	RE SHALE-												
-																	
40 -	C-8	50/1		Very so	oft, dark-gra	iy, clayey SH	ALE (BR), mostly fines,	trace of very fine									
	40-41 3"						moist, no odor, fresh.	41 ft	]								
4																	
-																	
-																	
45-																	
				1													
	1			1													
				1													
	1																
50 -																	
~_]																	
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1		1															
		1								ľ							
		1															
55 -	1		1														
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		I															
-																	
60-																	
4																	
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APPENDIX C HALEY & ALDRICH TEST BORING REPORTS

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	HA AL	LE) DRI	Y & : CH						TEST BORING	REPORT		BO	RI	NG	ĦA	-1
	Der Col				NTF		TOR;	Sp	ectrum Exploration, Inc. ME 75, truck-mount	CLIENT: Transit Mix		Page	e 1	of	2	
•				AU	GER	<u>؛:      </u>	-		3/4 in. ID hollow stem	HAMMER: Automatic	1	File:			358-0	
				JND						APHIC LEGEND			ition: ation:		e Plan	1
		ate		Time		Dep	th (ft)		Clayey Overburden		-			: 6/1	4/99	
			+		-			]	Mineable Sand/Gra	vel	1			h: 6/1		
			t		1			1_				Drill Logg		з. /: В.	WHIT ZIET	
						1		12					_	TORY	-	
	<b>Մեթ</b> ւև (ñ)	Sample	Percett Recovery	Blows / 6 ln.	N Lay	Tates I	Strata Type	Strata Change Depth	4	ICATION AND REMARKS	***	(II) mdari	Moisture Content	A Sand	007- æ	3
	1	GI			T	0.	- <i>KJ / J</i>		LEAN CLAY WITH SAN Brown, slightly molst, mos	tly lean clay, little sht, little fine sand,		1			+	+
	2					1				- FINE ALLUVIUM -	-	1				
	3		7	$\uparrow$	2.		]	LEAN CLAY (CL)	mante for all that the second	-	2		1			
		<b>S2</b>	-FINE	, mostly lean clay, little silt, trace fine sand. - FINE ALLUVIUM -		3			ļ							
				8	–	- 4.1						¢				
	5		 			5.0			Same as above except very stilf with few fine, well-rounded gravel.			5				
	6	53	30	8 10	17				Game as above except very	- FINE ALLUVIUM -	1	5				
	7			77		7.0					7					
	8										-	-				
	9						8	-								
											9		1			
	10			6		10.6			LEAN CLAY WITH SAND (CL)							
	<u> 11</u>	S4	50			Stiff, brown, slightly moist, mostly lean clay, little fine sand, - FINB ALLUVIUM -										
	12			7		12.0		13.5-						76	38	21
	13															
	14		ĺ	ĺ												
	15															
	16		2		15.0			PAT CLAY (CH)	<b>4</b> • • • •	15						
	s	S5         100         2         S           17         4         17.0			Medium stiff, brown, wet, mostly fat clay, trace silt. Becoming brown and gray motiled at 15.5 ft.					ĺ						
	17		4		17.0				- FINE ALLUVIUM -	17						
	18										18	ľ				
	19						18	.5-			19					
	20										20					
		AMPLE IDENTIFICATION							SAMPLER SIZE	GROUND WATER ABBREVIATIONS			L	L]	[	—. <u> </u>
	S - Standard split spoon C - California barrel								S - 1-3/8 in. (ID)	WD - While drilling	7					
	Т	- Sh	elby			•			C - 2 in. (ID)	NE - Not encountered	BC	RI	NG	H/	<b>\-1</b> ]	10
	B - Bulk G - Grab DP - Direct push							T - 3 in. (ID) UC - Upon completion AC - After completion								

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	IALE LDR	Y & ICH	De Co	nver, lorad	, to			Т	EST BORING REPORT		OR			A-1	[10
	T	T		T	<u> </u>		Т	م			ge				
		Ę			1.65			Dept			BOR		KY R	rs01	
Denth (ft)	Samule	Percent Recovery	Blows / 6 in		St I N Samala Tatanat (61)	Create Trans		Strita Change Depth		Depth (ft)	Moisture Content	and	000		
Å	8	2	Ĭ	Ê				8	CLASSIFICATION AND REMARKS	Å	Moj	% Sand	× -200	님	A
2	- 56	75	13	2	3	000	ă		POORLY GRADED SAND WITH GRAVEL (SP) Medium dense, brown, wet, mostly coaras sand, some medium sand, little fine sand, little fine subangular gravel.	21					
2:	+	+	9	-	22	.0 		i	- COARSE ALLUVIUM -	22					
24	1					000				23					
25	-1						3			24					
26	1					j.	3			25					
27	1						; ; ;			26					
28	1					100 00				_27					
20	1						Z I			28					
30	1				1		? }			29					
31	<b>†</b>		10		30.0				Same as above.	30	ĺ				
32	- S7	50	13 15 10	28	32.0					31					
33	<u> </u>	$\square$			32.0	-60				32					ĺ
34	1									33					
35										34					
36	ĺ					0				35					ľ
37						0.0				36					
38										37					
39				l		Ō				38					
										39					
40			13		40.0	e.		S	ame as above except dense. Cobble encountered at 41.5 ft.	40					
41	58	50	20 (	50+			i		- COARSE ALLUVIUM -	41					
42			50/4		42.0	j.			-	42					
43								Nr-	Not August softward at 46.0 A . The second states a	43					
44						õ		CO	ote: Auger refusal at 46.0 R. Driller stated that it was probably due to a bble.	44					
45						0				45					
46						9. I 1	6.0 <sup>-</sup>	Bo	Kom of exploration at 46.0 ft.	46	ļ				
47										47					
		<u> </u>		L		_1_	_L			48   BOR				110	
										BOR	age	2	of	2	1

PROJECT:       Bart Public Graved Mine       CLENT:       Transit Mix       Page       1 of       2         Colorado       DELL R.G.       Spettrum Exploration, I.e       GRAPHIC LEGEND       Hereiron       Classical       File:       20358-000         CROUNDWATER       GRAPHIC LEGEND       Identified Mine       Classical       Date Final       Classical       Classical       Classical       Classical       Classical       Classical       Classical       Classical       Classical       Cla	H A	ALE LDRI	Y & ICH						TEST BORING	REPORT	В	OR	IN	'G I	IA-	111	
Denser, Colorado         CONTRACTOR:         Spectrum Exploration, Inc.           Colorado         DRILL RIG:         CMB 75, frugk-mount           AUGBR:         3-34 in D hollow stem         HAMMER:         Automatic         FUe:         20358-000           CROUNDWATER         Depth (t)         Charge Overburden         GRAPHIC LEGEND         Elevention:         See Plan           Date         Time         Depth (t)         Charge Overburden         Date Stort:         6/14/99         Date Stort:         6/14/99           Date         Time         Egg and fill         g and fi	F			Í.							P	age	1	of	2		
JAUL ROF:       Club 75, funk-month       HAMMER:       Automatic       File:       20358-000         CROUNDWATER       GRAPHIC LEGEND       Elevation:       See Plan       Elevation:       See Plan         Date       Time       Depth (ft)       Clayey Overburden       Date Start:       6/14/99       Date Start:       6/14/99         Date       Time       Depth (ft)       Clayey Overburden       Date Start:       6/14/99         Date       Time       Start:       6/14/99       Date Finish:       6/14/99         Date       Time       Start:       6/14/99       Date Finish:       6/14/99         Date       Time       Start:       Start:       Start:       Start:       Start:         Start: <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>OR:</td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td>-</td> <td></td>							OR:					-			-		
GROUNDWATER         Location: See Plan           Date         Time         Depth (f)         GRAPHIC LEGIND         Location: See Plan           WD         4         Clayey Overburden         Date Star: 671499         Date Star: 671499           WD         4         Clayey Overburden         Date Star: 671499         Date Star: 671499           Date         Time         Claystone         Location: See Plan         Elevation:           Star:         Star:         Star: 671499         Date Star: 671499         Date Star: 671499           Date         Time         Star: 671499         Date Star: 671499         Date Star: 671499           Star:         Star:         Star: 671499         Date Star: 671499         Date Star: 671499           Star:         Star:         Star:         Star: 67149         Date Star: 671499           Star:         Star:         Star:         Star:         Star: 671499           Star:         Star:         Star:         Star:         Star:         Star:           Star:         Star:         Star:         Star:         Star:         Star:           Star:         Star:         Star:         Star:         Star:         Star:           Star:         <																	
DateTimeDepth (0)Clayed OverburdenElevation: $wp$ 4Clayed OverburdenDate Stat: 6/14/99 $wp$ 4Clayed OverburdenDate Stat: 6/14/99 $wp$ Clayed OverburdenDate Stat: 6/14/99 $wp$ Clayed OverburdenDate Stat: 6/14/99 $wp$ $wp$ Clayed Overburden $wp$ $wp$ Clayed Overburden $wp$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $															D	
Line         Line         Line         Line         Line         Line         Line         Date Start:         6/14/99           W         4         Claystone         Claystone         Date Start:         6/14/99         Date Start:         6/14/99           Start:         Start:         Start:         Start:         6/14/99         Date Start:         6/14/99           Start:         Start:         Start:         Start:         6/14/99         Date Start:         6/14/99           Start:         Start:         Start:         Start:         Start:         6/14/99           Start:         Start:         Start:         Start:         Start:         6/14/99           Start:         Start:         Start:         Start:         Start:         Start:         Start:           Start:         Start:         Start:         Start:         Start:         Start:         Start:           1         ClassiFicArtion And REMARKS         Start:	<b>—</b>				<u> </u>			_		RAPHIC LEGEND				See	Plan		
And Provided in the stand and provided in the stand and and provided in the stand and and provided in the stand and provided		Jate						-	•••	D				6/14	/99		
Image: Second second								1	Mineable Sand/Gr	avel							
E         E						· · · ·		_									
1       0.0       0.0       1.0	-	<u> </u>	╉	7	7		Τ-	+-		· · · · · · · · · · · · · · · · · · ·			_		-		
1       C1       0.0       1.0       1.0       SANDY CLAY (CL)       1.0			2			€			x .				ATC	DRYI	RESU	LTS	
1       0.0       0.0       1.0			No S	व	1	Ē						Dten			1		
1       C1       0.0       1.0         1       C1       1.0       1.0       1.0         2       1.0       1.0            3       7       1.2             4       5               5	Ê	9	L N L	19				1			£	U U U	Ι				
1       C1       0.0       1.0         1       C1       1.0       1.0       1.0         2       1.0       1.0            3       7       1.2             4       5               5	Ĩ	ĥ	1	low!				1250	CLASSI	ICATION AND REMARKS	臣	istur	Sand	ន្ត្	1		
1       11       1.0<	F		144		<u>~</u>			1 50	4		<u> </u>	ž	R.	88	님	K.	
2       - FINE ALLUVIUM -       2         3       52       3       7       12       2         4       5       -       -       -       -       3         5       -       -       -       -       -       3         6       53       50       2       7       -       5       -       -       4       -       5       -       4       -       5       -       -       4       -       5       -       -       4       -       5       -       -       4       -       5       -       -       6       5       -       5       -       5       -       5       -       5       -       -       4       -       5       -       6       5       5       7       0       14       -       5       -       6       5       -       7       7       7       7       30       14       -       5       -       5       -       7       7       7       30       14       -       5       -       7       7       7       30       14       -       5       -       7       7	1	GI					- V.I.I.	1	Brown, moist, mostly cla	y, some fine sand, little coarse sand, trace fine gravel.	1.						
3       52       33       7       12       2.5         4       52       33       7       12       2.5         4       5       4.0       5       4.0         5       4       4.0       5       4.0         5       4.0       5       4.0       5         6       53       5       7       5       5.5         5       7       5       7.0       5.5       SUTY CLAY (CLML)       6         7       5       7.0       5.0       5.5       SUTY CLAY (CLML)       6         6       53       5       7.0       5.0       5.5       SUTY CLAY (CLML)       6         9       5       7.0       5.0       5.5       SUTY CLAY (CLML)       7       7         10       5       7.0       5.0       5.0       5.5       SUTY CLAY (CLML)       7         10       6       6       6       6       6       6       6       6         11       54       100       5       6.0       6       6       6       6       6       6       6       6       6       6       6       6 <td< td=""><td>2</td><td></td><td></td><td></td><td></td><td></td><td>¥//</td><td></td><td></td><td>- FINE ALLUYUM -</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	2						¥//			- FINE ALLUYUM -							
4       3       7       12       3       3         4       5       40       5       3       7       12       3         5       1       5       40       5       5       7       10       4       5         6       53       50       2       7       50       55       5       7       55       5       7       55       5       7       55       5       6       5       5       7       6       5       5       7       6       6       5       5       7       5       7       5       7       6       5       5       7       5       7       6       6       5       5       7       7       5       7       6       6       6       5       5       7       7       5       7       6	Ļ-	-						1	[		2	Į					
4       23       7       12       12       12       14       14       15       12       14       15       14       16       14       14       14       14       14       14       14       14       14       14       15       16       1	3		1	7	1		V//		LEAN CLAY WITH SAN	id (CL)	3						
5     1     5.0     5.5       6     53     50     2     5       7     5     7     5.6       7     5     7.0     5.6       7     5     7.0     5.6       7     5     7.0     5.6       8     6     6.0       9     6.0       9     6.0       10     6.0       11     54       10     7       11     54       12     10.0       13     12.0       14     50.0       15     6.0       16     6.0       17     12.0	4	S2	33		12			1.	Stiff, brown, very moist,	Mostly clay, little fine sand, trace fine gravel.				77	20		
6       S3       50       2       7       5.5       Sance as above except medium stiff.       6         7       5       7       5.5       SILTY CLAY (CLML)       6         7       5       7.0       5.5       SILTY CLAY (CLML)       6         8       7       5       7.0       60       Medium stiff, alternating brown and gray, very molst, mostly slity lean clay, trace fine sand.       7         9       6       60       60       POORLY GRADED SAND (SP)       7       7         10       6       60       60       10       60       10       10       7         11       54       100       3       6       60       10       10       10       10       10         11       54       100       3       6       60       10       10       10       10       10         12       3       12.0       60       60       60       10       10       11       12       13       13       13       13       13       13       13       13       14       14       15       16       16       16       16       16       16       16       16       16		<u> </u>	<u> </u>	Ť			1	1			4			[ ''	50	14	
6       S3       50       2       7       6         7       5       7.0       6.0       Medium stiff, alternating brown and gray, very molst, mostly sitty lean clay, trace fine sand.       7         8       7.0       6.0       Medium stiff, alternating brown and gray, very molst, mostly sitty lean clay, trace fine sand.       7         9       6.0       FINE ALLUVRIM -       7         9       6.0       FINE ALLUVRIM -       9         10       6.0       FOORLY GRADED SAND (SP)       10         10       6.0       FOORLY GRADED SAND (SP)       10         11       54       100       3       6         12       3       12.0       60       11         13       7       6.0       10       11         14       60       60       11       12         13       14       60       11       12         14       60       60       11       12         15       16       14       14       15         16       60       60       16       16	5		<b> _</b>								5						
13       25       7       10       10       -       7 <td>6</td> <td></td> <td></td> <td></td> <td></td> <td>5.0</td> <td>IJ</td> <td>5.5</td> <td>Sante as above except med</td> <td>ion stiff</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	6					5.0	IJ	5.5	Sante as above except med	ion stiff							
7       5       7.0       PL         8       9       9       9       9       9       9       9       9       9       9       10       10       9       10       10       9       10       10       10       9       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       11       12       10       11       12       12       11       12       12       13       13       13       13       13       14       15       16       16       16       16       16       16       16       16       16       16       16 <th< td=""><td></td><td><b>\$</b>3</td><td>50</td><td>5</td><td>7</td><td></td><td></td><td>6.0</td><td>Medium stiff, alternating b</td><td>rown and gray, very molsi, mostly silty lean clay.</td><td>6</td><td></td><td></td><td></td><td></td><td></td></th<>		<b>\$</b> 3	50	5	7			6.0	Medium stiff, alternating b	rown and gray, very molsi, mostly silty lean clay.	6						
8     9     10     9     10     9       10     10     10     10     9       11     S4     100     3     6       3     12.0     9     10     10       11     S4     100     3     6       12     3     12.0     9       13     14     15     10       14     15     16     16	1			5		7,0	ξΩ.		trace fine sand.		7						
9     -COARSE ALLUVIUM -     9       10     -COARSE ALLUVIUM -     9       10     -     9       11     S4     100     3       12     3     6     -       13     -     -     10       14     -     -     12       15     -     -     13       16     -     -     16	8						ŝ		POORLY GRADED SAN	D (SP)			1		·		
9       10       9       9         10       10       9       10         11       S4       100       3       6       10         11       S4       100       3       6       10       10         12       3       12.0       9       10       11       11         13       12.0       9       10.0       11       12       12         13       14       15       60       12       13       12       13         14       15       60       14       15       16       16       16         17       10       10       16       16       16       16									Loose, orowa, wet, mostly	- COARSE ALLIVIIM -							
11       S4       100       3       6       10.0       9(1)       10.0       9(1)       10.0       10.0       9(1)       10.0       9(1)       10.0       11       10.0       11       11       11       11       11       11       11       11       11       12       13       12.0       9(1)       10.0       9(1)       10.0       9(1)       10.0       11       12       11       12       12       11       12       12       13       12       12       13       13       13       14       15       14       15       14       15       16       15       16	9						•				9					I	
11       S4       100       3       6       900RLY GRADED SAND (SP)       11         12       3       6       6       6       11       11         12       3       12.0       6       6       11       12         13       12.0       6       6       13       12       13         14       6       6       6       13       13       13         14       6       6       6       13       13       14         15       6       6       6       6       15       15         16       6       6       6       6       16       16         17       6       6       6       6       16       16	10						6							' (			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				2		10.0	, , ,		POORLY GRADED SANE	) (SP)							
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	-11	<b>S</b> 4	100		6				Loose, brown, wet mostly (	Source sand, some medium sand, little fine sand.	11						
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	12					1 (	9.0			- CONTROL ALLOW -	12				ĺ		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	13																
$ \begin{array}{c}                                     $											13						
15 50 e(C) e(C) a) b) b) c) c) c) c) c) c) c) c) c) c	14									i	14		-				
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CREGAD WATER ABBREVIATIONS	SAMPLE IDENTIFICATION						N		SAMPLER SIZE	GROUND WATER ABBREVIATIONS			L		<u>t</u> .	-1	
S - Standard split spoon S - 1-3/8 in. (ID) WD - While drilling	S	- Sta	indare 1160-	d spli	t spo	on			\$ - 1-3/8 in. (ID)								
T - Shelby tube C - 2 in. (ID) NB - Not encountered BORING HA-111	Т	' - Sb	elby		u 1 <b>C1</b>				C - 2 in. (ID)	_	BORING HA-111						
B - Bulk T - 3 in. (ID) UC - Upon completion									T - 3 in. (ID)	1							
DP - Direct push AC - After completion Page 1 of 2				push	L					1 1	<b>m</b>				^		

H/ AL	LEA DRI	(& CH	Dei Coi	nver, lorad	lo			T	EST BORING REPORT	B	OR	IN(	Η	[ <b>A</b> -]	1
	T	T			-	Ţ		<u> </u>		Pa			of		
ŀ		2				8		1 T		LA	BOR	ATO) T	RYR	ESU	
Depth (ft)	Sample	Percem Recovery	Blows / 6 in.	spr N		(U) TEAJINIT ordunet	Strata Type	Strata Change Depth		Depth (ft)	Moisture Content	% Sand	<b>%</b> -200	LL.	10
21	\$5	55	19	20	20	).0 p	2		POORLY GRADED SAND (SP) Medium dense, brown, wet, mostly coarse saad, some medium sand, trace fine sand. Approximately six inches of sand inflow.	21					
22 23		┼─	7		22	2.0 P	ñ.		- COARSE ALLUVIUM -	22					
 24						02 0	0			23					
25										24 25					
26						e Periodical Celoritational Celorita	Ċ,			26					
27	1					<u>بار</u> م	ē,			27					
28 29						0.000	Ö			28					
30						20.0	Č			29 30					
31	<b>S</b> 6	100	50/9	50+	30.		<b>S</b>		PIERRE SHALE Hard, gray, slightly moist. - BEDROCK -	31					
32						ğ	Ş		- Dilikotik -	32					
33 34						Ş	Ş			33					
35						ğ	2			34 35					
36	\$7	100	50/3	<del>30+</del>	35.0		35	.3\{ {	Same as above. Bottom of exploration at 35.3 ft.	36					
37										37					
38										38					
39 10									·	39					
11									-	40					
12										42			ĺ		
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