PYRAMID PEAK MINING, LLC

August 9, 2018

Holland Shepherd via email: holland.shepherd@state.nm.us
Program Manager
Mining Act Reclamation Program, Mining & Minerals Division
Wendell Chino Building – 3rd Floor, Rm 360
1220 S. St. Francis Dr. – Santa Fe, NM 87505

Joseph Navarro via email: jnavarro@blm.gov
Environmental Protection Specialist
Bureau of Land Management
Las Cruces District Office
1800 Marquess St.
Las Cruces NM 88005

RE: Summit Mine; Permit No. GRO11ME; Waste Facility Slide; Revised Corrective Action Plan

Dear Messrs. Shepherd and Navarro:

Pyramid Peak Mining LLC (PPM), hereby, submit a revised Corrective Action Plan (CAP) to address the failure of a development material stockpile (DMS) and operations area at the Summit Peak Mine (Mine). The CAP was requested by the New Mexico Energy, Minerals and Natural Resources Department, Mining and Minerals Division (MMD) on August 31, 2017.

A preliminary CAP was provided to the Mining Act Reclamation Program, Mining & Minerals Division (MMD) and Bureau of Land Management, Las Cruces District Office (BLM) on January 26, 2018. The initial CAP included two options for mitigation of the slide that consisted of butress construction at the toe of the dump. Once scenario included excavation of material off of public lands prior to construction of the buttress, while the second option resulted in butress construction on public lands. During a site visit to assess the constructability of the preliminary options and associated safety concerns, a third mitigation approach was presented by the earthworks contractor which would reduce safety related risks and construction timeframes. The new design was assessed and PPM determined that it was the optimal approach for mitigation. The modified mitigation consists of redistributing the DMS material to the south to decrease the overall load of the facility, constructing an engineered butress along a portion of the toe, removing material from public land and regrading the facility to a stable slope.

Work conducted to develop the CAP includes site investigations and surveys of the Mine by PPM personnel and completion of a geotechnical evaluation, stability analysis and preliminary corrective action design by a third-party engineer. During development of the CAP, PPM consulted with MMD, New Mexico Environment Department (NMED) and BLM during site visits and meetings. Designs for the mitigation are presented in **Drawing Nos. 100 – 400** in **Appendix A.**

BACKGROUND

The Mine is an underground precious metals operation located entirely on patented claims owned by PPM within the Steeple Rock Mining District in Grant County New Mexico (**Figure 1**). Activities at the Mine and within the mining district in general date back to the late 1800s. The Mine is currently operated under Permit GR011ME (Permit) and is classified as a Minimal Impact Existing Mining Operation (i.e., less than ten acres of surface disturbance). The Permit was originally granted to Saint Cloud Mining Company in 1998 with an update in 2002. The Permit was transferred to the Lordsburg Mining Company (LMC) in 2008. PPM assumed control of the Mine in February 2016.

Active mining occurred during LMC's tenure until 2013. Since 2013, activity at the site has been limited to site maintenance and security.

DMS Construction

Development of the underground workings and construction of the DMS was completed by LMC from 2009 to 2013. The DMS was constructed by end dumping non-economic material in the area from the Summit Portal area and advancing south. The DMS was partially constructed to house ancillary facilities for mining including the administrative and maintenance areas which are generally located at the north portion of the facility.

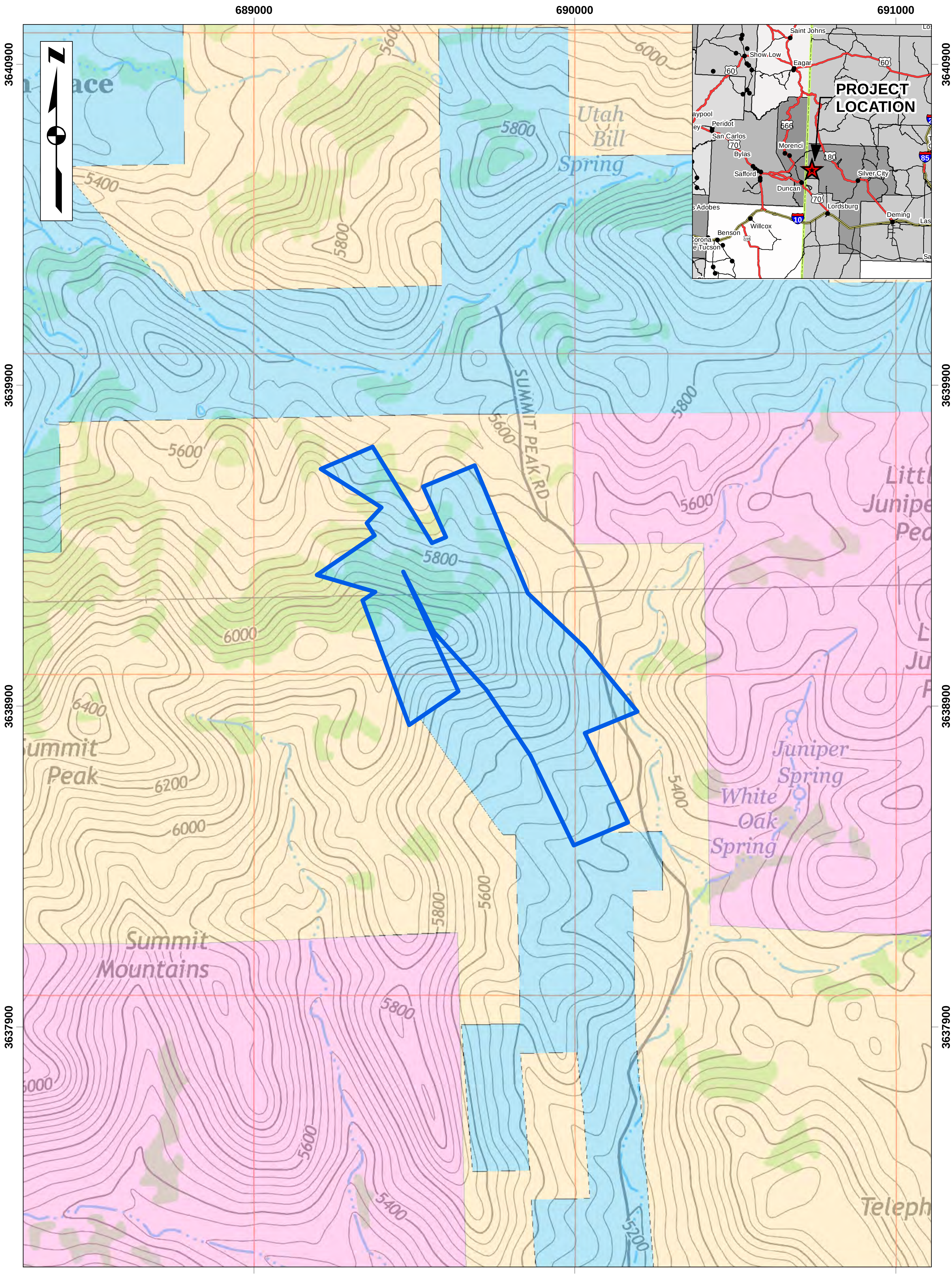
Topography in the project area is steep and variable with slopes ranging from 2.5 horizontal to 1 vertical (2.5H:1V) in the south to 4H:1V in the north. The area consists of a shallow sandy alluvial material ranging from 0.5-foot to 1.5 feet deep overlaying bedrock. Rock outcrops are present throughout the downgradient area.

At the end of construction, the DMS contained approximately 175,000 cubic yards (yd^3) of development material. The final pre-slide footprint measured approximately 3.75 acres with a total height of 135 feet. All slopes were constructed at the angle of repose.

MATERIAL SLIDE

The DMS has undergone two separate failures. The first and most significant failure occurred during early 2017. An approximately 250-foot wide section of the DMS toe moved downgradient a maximum of 150 feet. The slide is shown in **Photograph 1.** All photographs are contained in **Attachment B**. The slope failed at the highest point of the DMS and toe movement resulted in a highwall forming in the facility crest (**Photograph 2**). Tension cracks formed on the DMS surface after the slide (**Photograph 3**). In the aftermath of the slide, PPM initiated a monitoring program on the tension cracks to identify the risk of further movements. In addition, equipment which was located near the slide area was relocated to the north.

A second smaller slide occurred in the fall of 2017 during the rainy season. The second slide was limited in extent and consisted of minor downgradient movement of the toe and additional failures of the highwall. Additional tension cracks became visible on the facility surface.



LEGEND:	COORDINATE SYSTEM:
Summit Patented Claims Boundary	NAD 1983 UTM ZONE 12N
Public Land (BLM)	PROJECTION: TRANSVERSE MERCATOR
Private Land	DATUM: NORTH AMERICAN 1983
State of New Mexico Land	

SCALE:

0 500 1,000
Feet

1 INCH : 1,000 FEET

ELKO MINING GROUP LLC

PYRAMID PEAK MINING, LLC

DRAWN BY: L. REINSEL

DATE: 20180809

SUMMIT MINE

FIGURE 1
PROJECT LOCATION & LAND OWNERSHIP

*Sumt_LandOwner_NAD83mDsize.mpk

As the DMS moved, alluvial materials were pushed in front of the advancing face creating a thick visible layer under the toe (**Photograph 4**). The soil was found to be saturated with infiltrated water, which in some locations was actively seeping (**Photograph 5**). Based on inspections of the stockpile toe and soil analysis PPM concluded that the slides were likely the result of meteoric water infiltration through the facility which wetted up the native alluvial material reducing cohesion and strength. The alluvial material remains saturated, but seeping has stopped with decreased precipitation.

Extent of Slide and Land Status and Survey

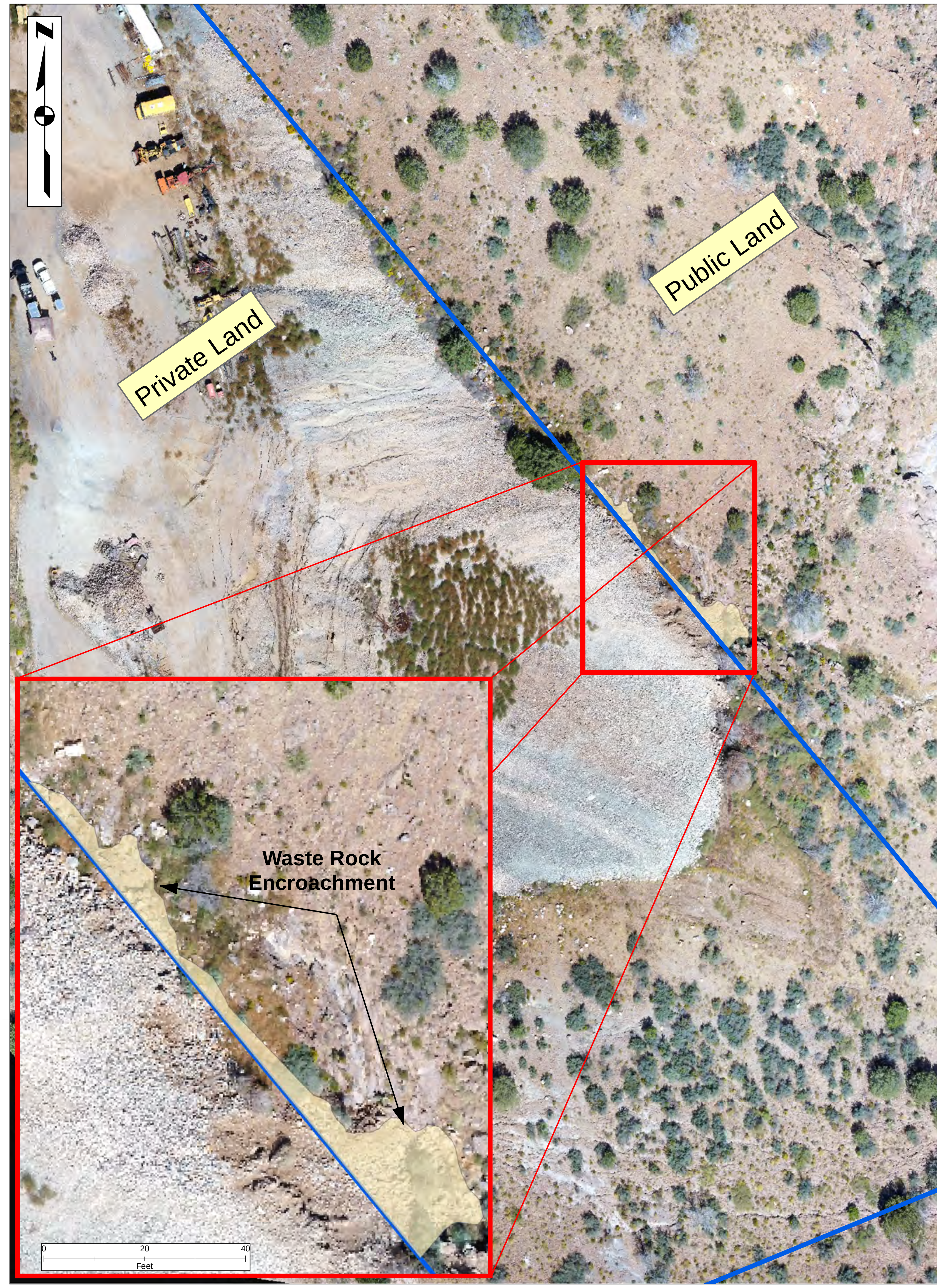
As constructed, the DMS was located entirely on patented claims owned by PPM. After the first slide, PPM performed a visual assessment of the modified footprint and compared it to the BLM Public Land Survey System Survey data (PLSS). The assessment indicated that material had not encroached into the BLM administered public lands downgradient and east of the Mine (**Figure 1**).

After the second slide PPM determined that a formal survey should be performed for use in developing the CAP. As part of the pre-survey research and field work, PPM discovered the available PLSS data was inaccurate and that there had been a mineral patent resurvey conducted by the BLM in 2014 (#1010). A survey was conducted in November 2017 in which the 2014 BLM survey was retraced. The surveyed extent of the slide was compared to retraced land boundaries. Results indicated that approximately 0.25 acre of the slide had encroached onto public land (**Figure 2**) on unpatented claims controlled by PPM. The BLM was notified of the discovery and a site visit to review the encroachment was conducted in January 2018. Areas of encroachment were staked for the site visit and are shown in **Photographs 6** through **9**. The footprint of the DMS increased from 3.75 acres to approximately 4.25 acres as a result of the slide.

Material Characterization

The Mine gold-silver deposit is a structurally-controlled, vein-type deposit. Gold and silver mineralization occur in an epithermal, low-sulfidation system containing less than one percent very-fine-grained, disseminated pyrite and trace amounts of galena, sphalerite and chalcopyrite. Above the mineralized zone the system is notably calcareous, and the mineralization is low grade and erratically distributed.

After reviewing the limited data available, a SGS Metcon Head Characterization report (M-829-01) completed by LMC, we can assume the low levels of total sulfur (0.10 parts per million [ppm]) and elevated Ca (greater than two percent, presumed to be associated with $CaCO_3$ and logged calcite) paired with the description of the mineralization of having less than one percent pyrite content that the material is not likely to be acid generating. Test results are included as **Attachment C**.

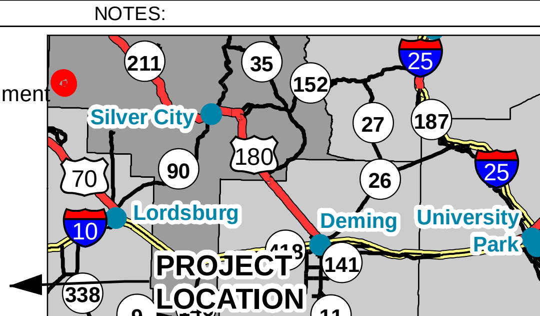


NOTES:

Legend

Waste Rock Encroachment

Property Boundary



NAD 1983 UTM ZONE 12N
PROJECTION: TRANSVERSE MERCATOR
DATUM: NORTH AMERICAN 1983

SCALE:

0 0.005 0.01
Miles

1 INCH : 59 FEET

ELKO MINING GROUP LLC

PYRAMID PEAK MINING, LLC

DRAWN BY: L. REINSEL

DATE: 20180119

SUMMIT MINE

FIGURE 2
ENCROACHMENT AREA

Stability Analysis

PPM engaged Axelrod, Inc. (Axelrod) in October 2017 to prepare an initial Stability Analysis and Corrective Action Measures Design report (2017 Report) for the DMS. The report included a geotechnical investigation, a stability analysis and preliminary design for two conceptual corrective actions.

The geotechnical investigation consisted of collecting alluvial soils from two test pits, soil profiling and laboratory testing. Testing was carried out to determine the shear strength of the alluvial materials underlying the DMS and consisted of Sieve Analyses, Atterberg Limits, and a Triaxial Sheet Strength. Test protocols are detailed in the 2017 Report.

Findings in the 2017 Report include the following:

- The alluvial material has a high clay content;
- Alluvial material is highly saturated;
- The estimated friction angle of the saturated alluvium is calculated to be 22.9 degrees;
- The failure was potentially caused by the wetting of the alluvium over several years which reduced its shear strength;
- Wetting likely occurred due to infiltration of meteoric water through the DMS;
- The estimated friction angle for the bedrock in the area is 45 degrees;
- An acceptable long-term factor of safety (FOS) for a facility like the DMS is 1.3;
- The pre-failure FOS for the DMS was less than 1.0;
- Current FOS for the dump ranges from 1.1 in the south to 1.65 in the north;
- The slide area is currently stable for the short term with a FOS of 1.2; however, long term stability would require a FOS of 1.3 or greater; and
- The intact northern section of the dump is stable with FOS of 1.65

The slide area and the southern slope of the DMS are currently stable for the near term; however, additional wetting of the alluvium could result in further loss cohesion and a reduction in strength. In addition, the face of the toe is made up of unconsolidated materials stacked at the angle of repose that could further erode or collapse due to other forces. The movement of the unconsolidated material is of concern for any work performed on the surface of the slide area or at the toe. Results of the study indicated that some stabilization of the DMS is required to increase the FOS to an acceptable long term value of 1.3.

A second stability analysis was performed by SRK Consulting US (SRK) in July 2018 (2018 Report). The updated analysis utilized data gathered from the 2017 program and a revised design for mitigation. The 2018 program consisted of the following:

- Analyze existing failure geometry and back-analyze material properties based on previous stability analyses, existing laboratory testing data, and updated stability modeling using a two-dimensional (2D) method of slides;
- Review existing data sets for clarification of material in the foundation of the DMS;
- Evaluate strength parameters for material previously modeled as bedrock at 45 degrees;
- Provide a proposed modification of the DMS to meet a minimum Factor of Safety (FOS) requirement as an Autocad (dxf) surface; and

- Construct a 2D limit equilibrium analysis, run model, and calculate a FOS on the revised DMS geometry.

All work performed for the 2018 analysis completed under the direction of Edward C Wellman, PE #18365, a New Mexico Registered Professional Engineer (PE). The 2018 Report is included in **Attachment D**.

CONCEPTUAL CORRECTIVE ACTION

A revised conceptual corrective action has been developed for the DMS based on the stability analysis and existing site conditions. Corrective actions are designed to stabilize the DMS in place, remove material from public land and reduce infiltration of meteoric water into the facility. The revised design meets the compliance requirements for the State of New Mexico and is generally in conformance to industry standards reported in Guidelines for Mine Waste Dump and Stockpile Design (Hawley and Cunning, 2017). Designs are depicted in a stamped drawing set (**Drawings 100 – 400**) which is included as **Attachment A**.

Key elements of regrading of slope remediation design are as follows:

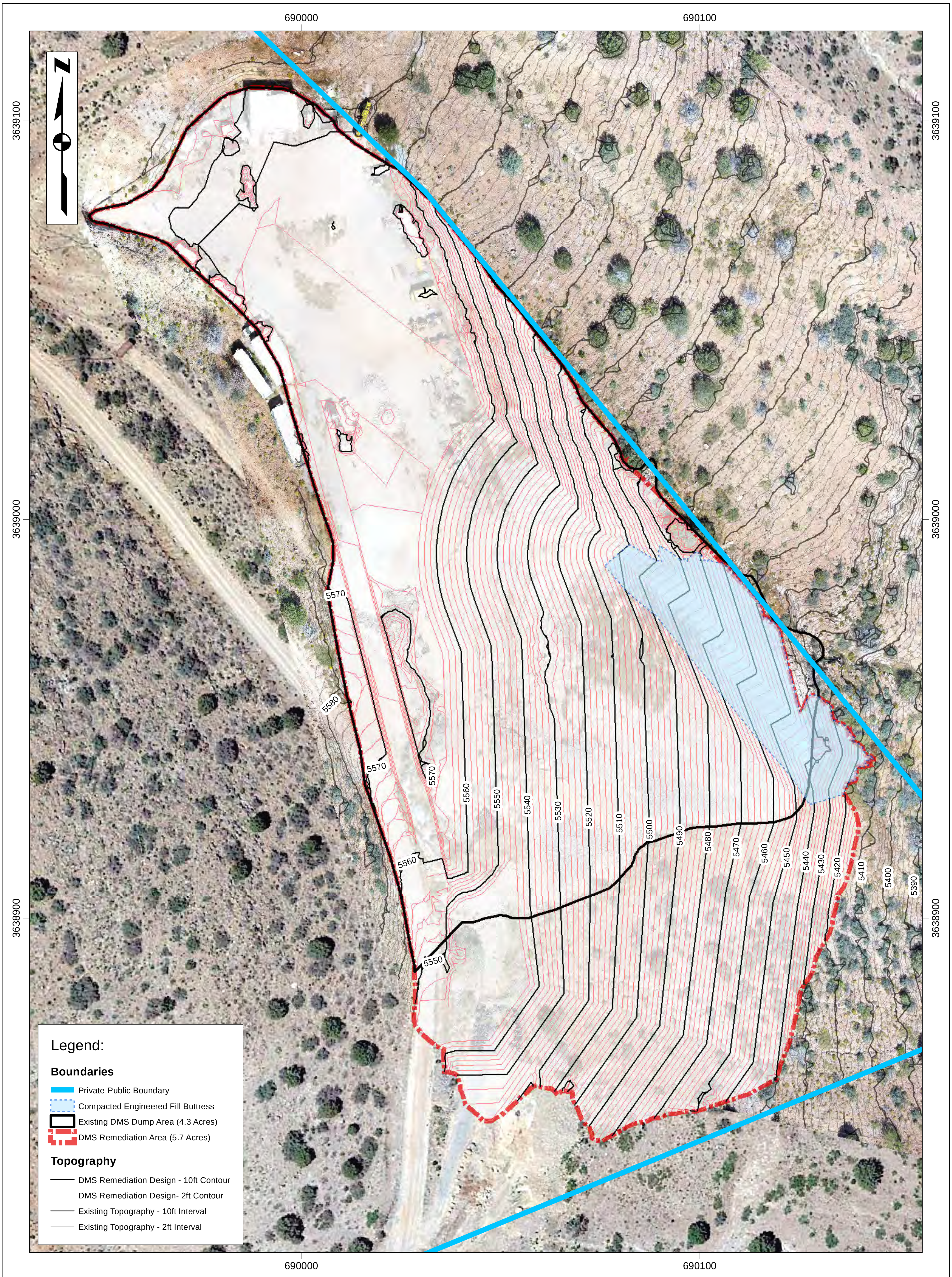
- Clearing, grubbing and stockpiling of top soil in any new foundation areas;
- Redistribution of DMS material to the south of the existing facility to allow for the upgradient weight to be unloaded safely;
- Benches to be developed to redistribute the material to the south;
- Excavation of 30-foot wide keyway into rock foundation at the base of the facility;
- Placement of 20-foot high buttress at a 30-degree slope inclination (1.75H:1V) the buttress will be compacted in 1-3 ft lifts and will track walked to improve compaction;
- Regrading of existing DMS dump to 2.5H:1V slope;
- Regrading the top surface of the DMS to promote runoff to the south of the facility;
- Excavation of a diversion ditch on the surface of the DMS to divert runoff to the south of the facility into existing drainage; and
- Reclamation of a portion of the DMS. Reclamation will utilize the top soil removed from the new foundation areas to promote growth.

<u>Material Redistribution</u>

The DMS material will be redistributed by pushing/dozing a portion to the south of the existing facility. Redistributing material will decrease the amount of load on the base of the facility and allow for safe excavation of the toe and construction of a buttress. The material will be pushed with a bulldozer in benches as shown on **Figure 3** and in **Drawing 200** (**Attachment A**).

Prior to dozing the material, alluvial material will be excavated and stockpiled, exposing the bedrock. Utilizing the bedrock as a base for the dump will increase stability. Stockpiled material will be utilized for reclamation of a portion of the DMS.

Moving material to the south will increase the size of the DMS by approximately 1.5 acres



NOTES:	COORDINATE SYSTEM:		
Flyover Image Source File: Elko_mining-Summit_gold_mine-20171012-EPSG_102714-Orthophotography.tif (Daniel Park 10-12-2017) Base Topography Source File: Redbird Contours-2'_clipped.dwg (Daniel Park 04-09-2018) WR Slope Topography Source File: Sumt Final contours.dxf (Kent Hartley 07-10-2018) Compacted Engineered Fill Buttress Source File: 511800-030-300_GRD01_Rev01_20180712.dwg (Karena Carpenter 08-03-2018)	NAD 1983 UTM ZONE 12N PROJECTION: TRANSVERSE MERCATOR DATUM: NORTH AMERICAN 1983	ELKO MINING GROUP LLC	PYRAMID PEAK MINING, LLC
		DRAWN BY:	PYRAMID PEAK MINING, LLC
	SCALE: 0 37.5 75 Feet 1 INCH : 75 FEET	L. REINSEL DATE: 20180807	FIGURE 3: SUMMIT MINE DMS CONTOUR DESIGN

*Sumt_WR2ftcont_NAD83z12.mxd

Toe Buttress

Since the current dump slope is considered unstable for the long term, a buttress will be constructed along a portion of the base of the slide as shown in **Figure 3** and **Drawing 200, Attachment A**.

A keyway will be excavated into the bedrock to form a flat foundation. Rock slopes in the keyway may be excavated at inclinations of 63 degrees (0.5H:1V). The maximum rock excavation width will be 30 feet. The foundation rock will be ripped with a dozer or equivalent. The keyway will be constructed on private land controlled by PPM. Once the buttress is constructed, an excavator will be utilized to remove material from public land.

Once the keyway has been excavated to bedrock, rock fill will be placed to build up the buttress. Rock fill will be placed in 1-foot to 3-foot compacted lifts to a total height of approximately 20 feet. The rock fill will consist of hard durable rock. It is envisioned that a 3rd party material testing company will be onsite during the construction to test the material compaction. Run of mine (RoM) waste rock will be utilized for the rock fill and the need for a separate borrow source is not anticipated.

Regrading and Reclamation

Once the DMS material has been redistributed to the south, material from public lands removed, and the buttress constructed, the facility will the be graded to an overall 2.5V:1H slope. Material will be regraded to approximately the surrounding topography to the extent practicable and to create a natural looking slope feature.

A portion of the regraded dump will then be covered with stockpiled topsoil/alluvium and seeded. The final seed mix will be developed with and approved by MMD. The overall reclamation goal will be to reduce the overall amount of surface disturbance at the site to less than 10 acres. Additional site reclamation may be performed during this project. The total plan for reclamation would be developed with the MMD.

Slope Surface Drainage

The current top surface of the DMS allows for ponding of meteoric water and subsequent infiltration. As part of this CAP, the surface would be regraded to promote runoff to the south of the DMS. A minimum of 2 percent grade would be created. A diversion ditch would be created in the southern portion of the DMS to convey meteoric waters to the existing access road. The grading plan and ditch are shown in **Drawing Nos. 300 and 400** (**Attachment A**).

Construction Stability

There is a risk of addition slope movement and failures during construction of the keyway and DMS grading. This is a result of the daylighting of the existing weak soil foundation, below the existing DMS.

When the keyway is excavated the factor of safety (FOS) will approach limit equilibrium (i.e., FOS of 1.0). A critical surface may develop at the toe of the slope. Failure cracks and movement of the slope is possible during construction and excavation of the keyway. Slope monitoring and observation will be required for construction safety during the remediation. Monitoring should focus on observing the slopes for tension crack development, and may include the use of prisms, pin-sets, and wireline extensometers.

Project Access

The Mine is accessed from Duncan Arizona via the Carlisle and Summit Mine Roads. The roads are maintained by Grant County and cross public and private lands. PPM has entered into an agreement with Grant County to perform maintenance on the roads if necessary. PPM anticipates that minor maintenance may be required to perform CAP related work. No widening or other alterations of the of the road will be required.

A temporary construction easement will be required to access public land for excavation of material and construction. The work site will be accessed from the south of the DMS as shown on **Figure 3**.

CONCLUSION

Based on PPM's investigations the DMS facility should be stable in the near term, but additional seepage of meteoric waters and wetting of the alluvium could further weaken the structure. Corrective actions are required for long-term stabilization of the DMS, to remove material that has encroached onto public land, and to protect downgradient drainages. Conceptual corrective actions presented in this plan are based on the following:

- The material slide was likely the result of meteoric water infiltrating though the stockpile surface and a subsequent wetting of the high clay alluvium surface;
- The stockpile is currently stable for the near term with FOS ranging from 1.1 to 1.65;
- Subsequent wetting of the alluvial material could cause further movement of the stockpile;
- Stabilization of the stockpile and stormwater diversion is required to increase the FOS to adequate levels (1.3 or greater);
- Redistributing material in the DMS will alleviate pressure on the toe of the dump and allow for safer conditions for excavation and stabilization;
- Buttressing the toe of the dump will increase the FOS to acceptable levels;
- A portion of the DMS will be reclaimed to ensure that the total surface disturbance of the operation is below 10 acres;
- Regrading of the surface of the dump and construction of a diversion ditch will be required to ensure that stormwater does not collect on the facility and infiltrate;
- Temporary access to public land will be required to carry out any corrective actions; and
- Maintenance of access roads on public land may be required and would be completed in accordance with existing agreements with Grant County.

PPM hereby submits this CAP as a preliminary report and fully intends to work with the MMD and BLM to develop a final course of action. If you have any questions or require further information, please do not hesitate to contact me at joseph.martini@elkominingroup.com or 775.401.6552.

Sincerely,

Joseph Martini

Director of Environmental Affairs

Attachments:
A. Design Drawings
B. Photographs
C. Material Characterization
D. Stability Analysis Technical Memo

EC:
Sara Holcomb, Stormwater Quality Bureau, Santa Fe NM sarah.holcomb@state.nm.us
George Lewellen, Ground Water Quality Bureau, Silver City NM – George.llewellyn@state.nm.us

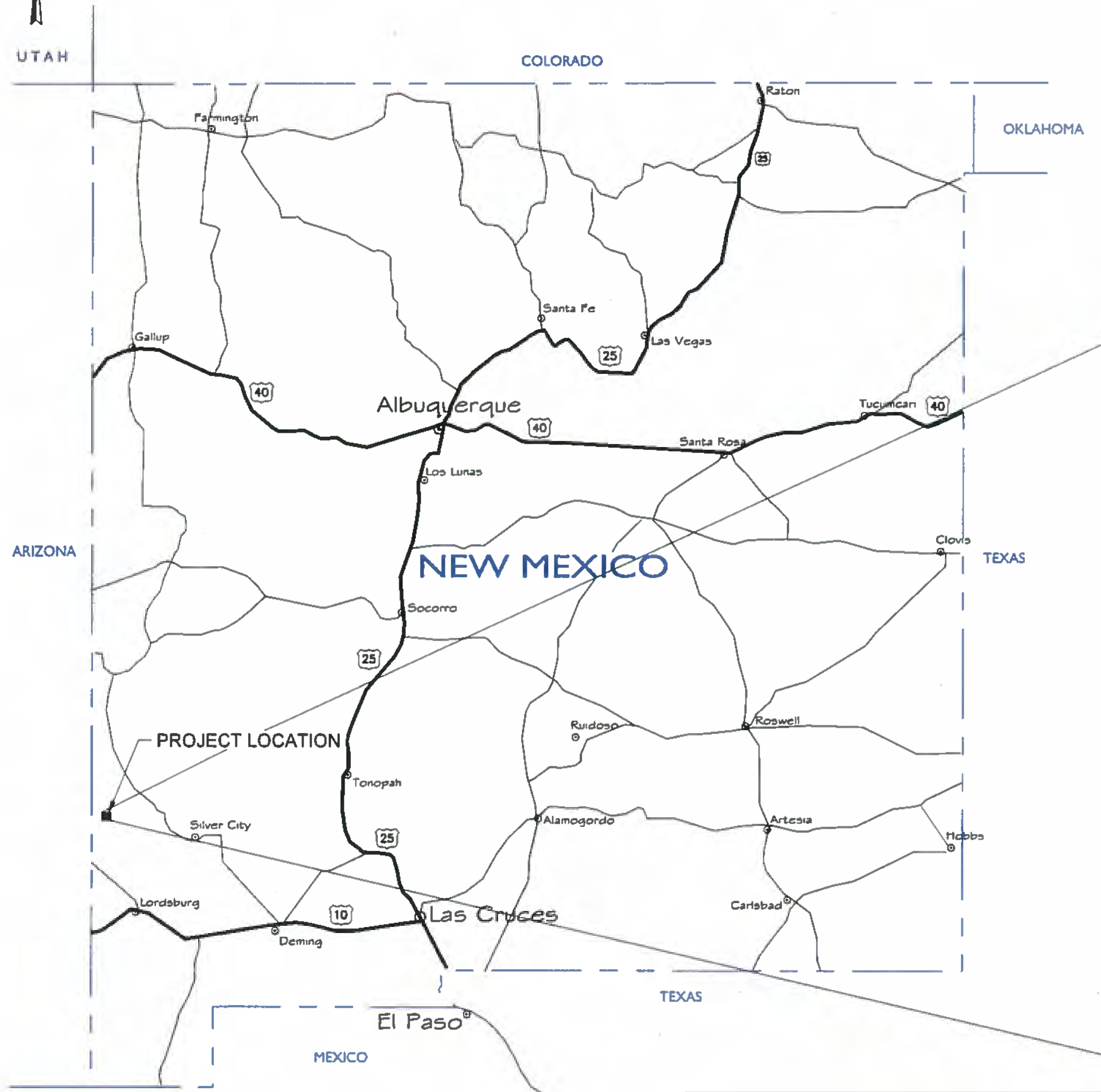
ATTACHMENT A
DRAWINGS

SUMMIT MINE

WASTE ROCK DUMP CORRECTIVE PLAN

GRANT COUNTY, NEW MEXICO

EDWARD C. WELLMAN NEW MEXICO 18364 PROFESSIONAL ENGINEER
exp 12/31/2019



LIST OF DRAWINGS

DRAWING No.	DRAWING TITLE
100	LOCATION MAP AND DRAWING INDEX
200	PROPOSED CORRECTIVE GRADING AND SECTIONS
300	PROPOSED CORRECTIVE GRADING AND SECTIONS
400	PROPOSED CORRECTIVE GRADING AND SECTIONS

0 150000 300000
FEET

REFERENCE: SRK, 2018 ANALYSIS OF SUMMIT MINE DMS DUMP INSTABILITY AND PROPOSED REMEDIATION PLAN. CONSULTANT'S REPORT DATED JULY 17, 2018 ISSUED TO PYRAMID PEAK MINING LLC, 16P.

REVISIONS

REV	DESCRIPTION	DATE
A	SUBMITTED FOR CLIENT REVIEW	07.02.2018
0	ISSUED FOR CONSTRUCTION	07.16.2018

FILE NAME: 511800-030-300_Title-sht_Rev01_20180712.dwg

DESIGN: KH
DRAWN: JS / KH / CW
REVIEWED: KH
APPROVED: KH

IF THE ABOVE BAR DOES NOT MEASURE 1 INCH, THE DRAWING SCALE IS ALTERED

PREPARED BY: srk consulting

PREPARED FOR: ELKO MINING GROUP LLC

DRAWING TITLE: LOCATION MAP AND DRAWING INDEX

DATE: 07.17.2018
REVISION: 0
DRAWING NO: 100
SRK PROJECT NO: 511800.030

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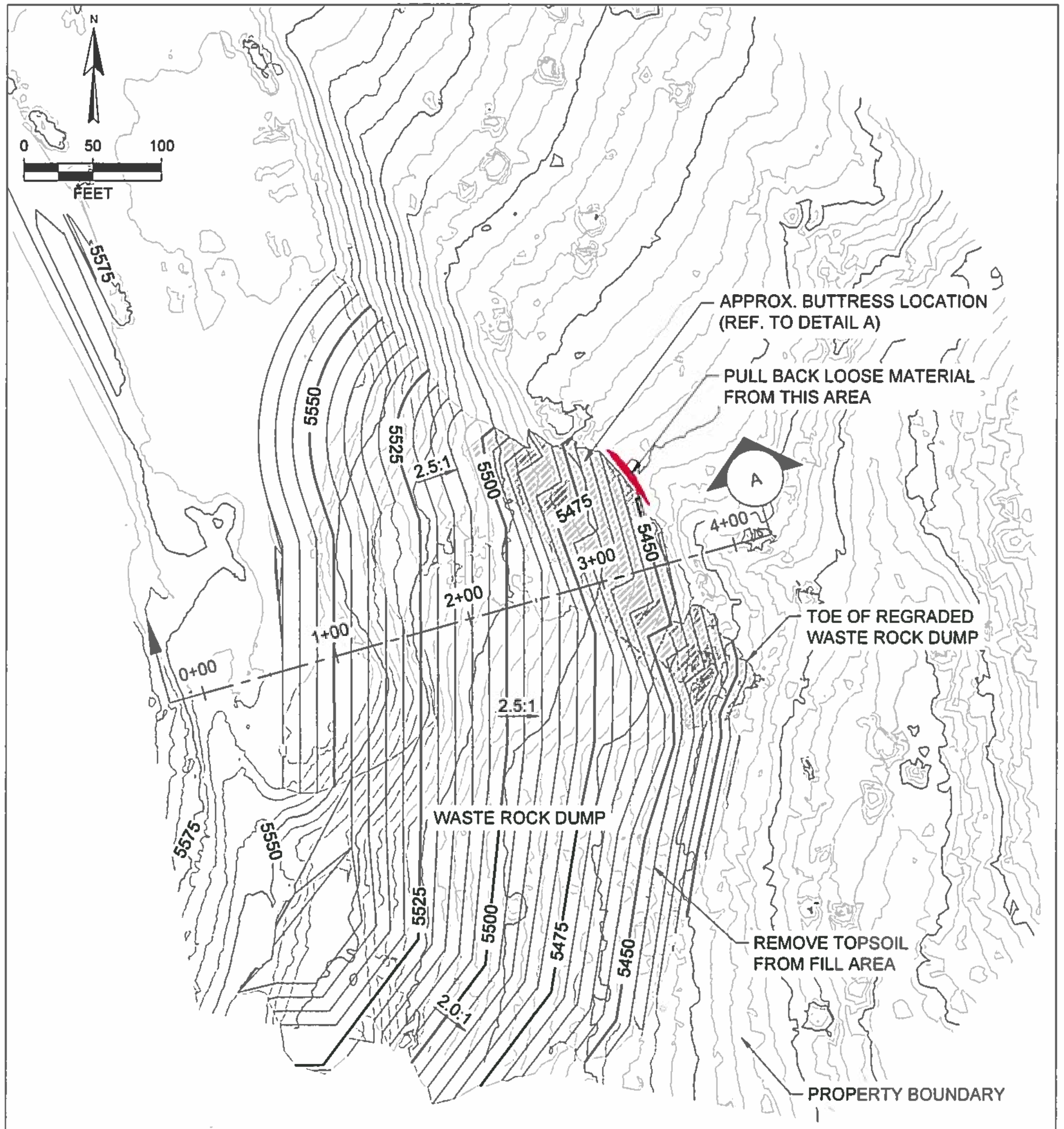
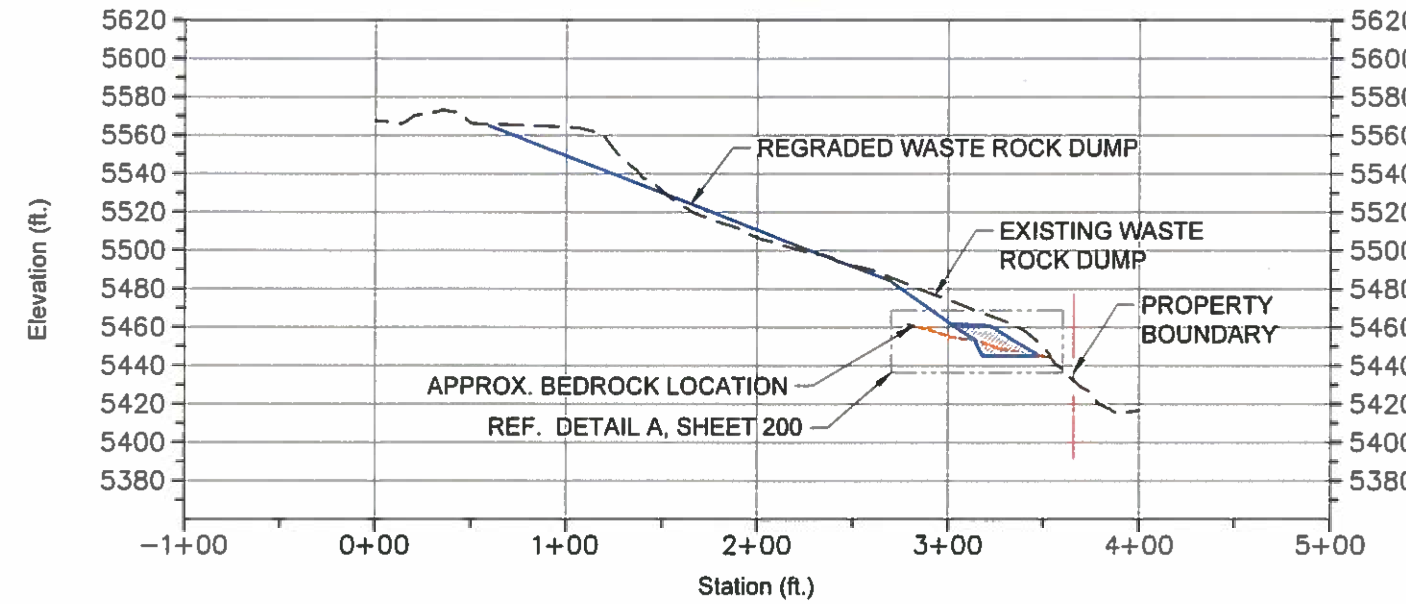


WASTE ROCK DUMP CORRECTIVE GRADING

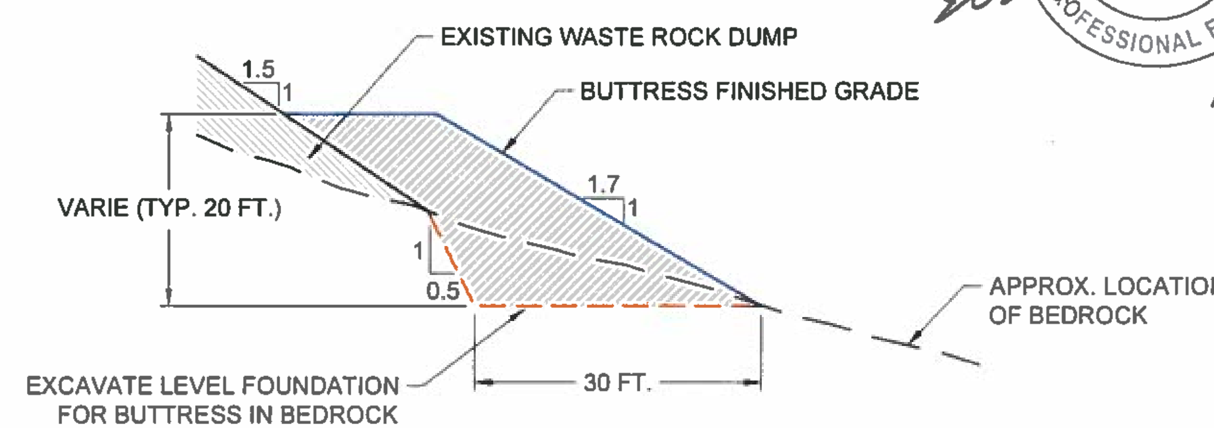
SCALE: 1" = 100'



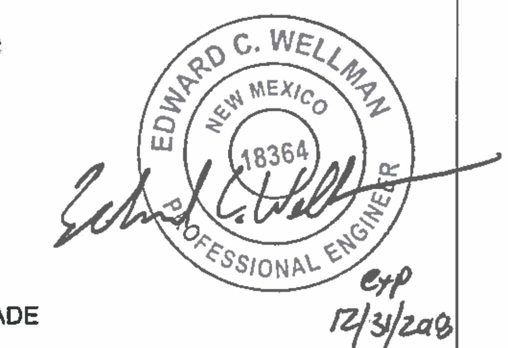
WASTE ROCK DUMP SECTION A-A

SCALE: 1" = 100'

NOTE:
FILL SLOPE 2.5:1 OVER EXISTING DUMP
2.0:1 WHERE TOPSOIL HAS BEEN REMOVED
1.3:1 BELOW 5440 ELEV.



A BUTTRESS DETAIL (TYP.)



PROJECT SPECIFICATIONS:

1. AREAS WHERE THE DUMP WILL BE EXPANDED NEED TO BE CLEARED AND GRUBBED OF ALL VEGETATION AND SURFACE SOILS TO COMPETENT ROCK.
2. FIELD INSPECTION OF ROCK FILL BUTTRESS SHEAR KEY SHOULD BE CONDUCTED TO CONFIRM IN-SITU SOIL THICKNESS AND TO VERIFY THE ROCK MASS QUALITY IN KEYWAY. LABORATORY TESTING MAY BE REQUIRED IF WEAK ROCK OR SOILS ARE OBSERVED, OR ADDITIONAL EXCAVATION BELOW THE DESIGN DEPTH TO COMPETENT ROCK AS DETERMINED BY A QUALIFIED ENGINEER.
3. THE THICKNESS OF EACH LIFT OF THE ENGINEERED ROCK BUTTRESS LIFT SHOULD NOT BE LESS THAN 1 FOOT OR EXCEED 3 FEET. THE LIFT SIZE SHOULD NOT BE LESS THAN THREE (3) TIMES THE 90TH PERCENTILE PARTICLE DIAMETER. FOR 90% PASSING 12-INCH, THE LIFT SIZE SHOULD BE 3 FEET. FOR 90% PASSING 8-INCH, THE LIFT SIZE SHOULD BE 2 FEET.
4. EACH LAYER OF ROCK FILL SHALL BE COMPACTED BY AT LEAST FOUR PASSES OVER THE ENTIRE SURFACE BY A TRACK OF A CRAWLER-TYPE TRACTOR WEIGHING AT LEAST 20 TONS.
5. CONSTRUCTION OBSERVATION SHOULD BE COMPLETED BY A QUALIFIED INDEPENDENT MATERIAL TESTING LABORATORY.

REVISIONS

REV	DESCRIPTION	DATE
A	SUBMITTED FOR CLIENT REVIEW	07.02.2018
0	ISSUED FOR CONSTRUCTION	07.16.2018

FILE NAME: 511800-030-300_GRD01_Rev01_20180712.dwg

DESIGN: KH
DRAWN: JS / KH / CW
REVIEWED: KH
APPROVED: KH

IF THE ABOVE BAR DOES NOT MEASURE 1 INCH, THE DRAWING SCALE IS ALTERED

PREPARED BY: srk consulting

PREPARED FOR: ELKO MINING GROUP LLC

DRAWING TITLE: PROPOSED CORRECTIVE GRADING AND SECTIONS

DATE: 07.17.2018
REVISION: 0
SRK PROJECT NO.: 511800.030
DRAWING NO.: 200

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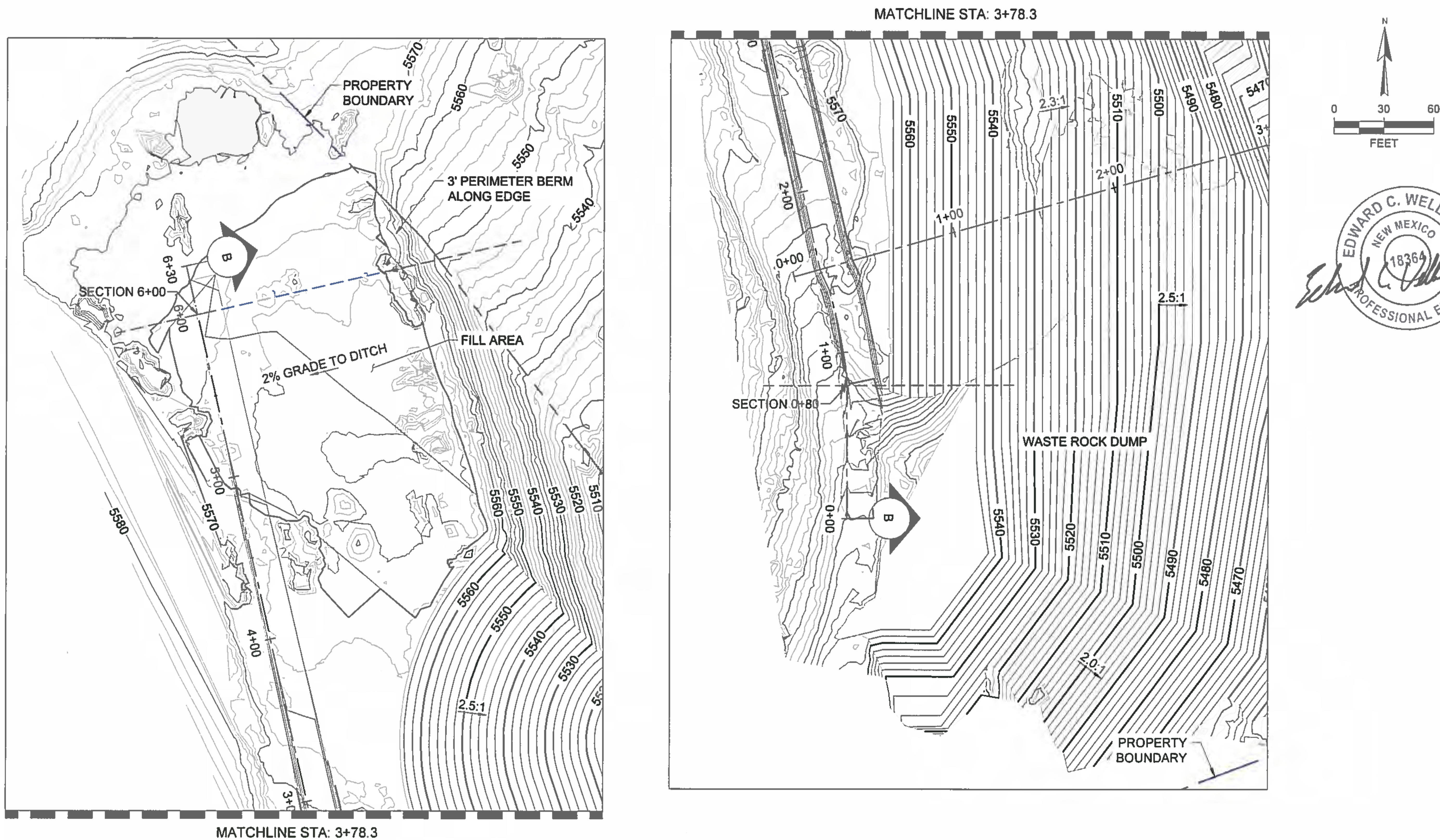

EDWARD C. WELLMAN NEW MEXICO 18364 PROFESSIONAL ENGINEER
exp 12/31/2019

WASTE ROCK DUMP CORRECTIVE GRADING

SCALE: 1" = 60'

REV	DESCRIPTION	DATE
A	SUBMITTED FOR CLIENT REVIEW	07.02.2018
0	ISSUED FOR CONSTRUCTION	07.16.2018

DESIGN: KH
DRAWN: JS / KH / CW
REVIEWED: KH
APPROVED: KH

IF THE ABOVE BAR DOES NOT MEASURE 1 INCH, THE DRAWING SCALE IS ALTERED

PREPARED BY: srk consulting

PREPARED FOR: ELKO MINING GROUP LLC

DRAWING TITLE: PROPOSED CORRECTIVE GRADING AND SECTIONS

DATE: 07.17.2018
REVISION: 0
DRAWING NO: 300
SRK PROJECT NO: 511800.030

FILE NAME: 511800-030-300_GRD03_AND_GRD04_20180711.dwg

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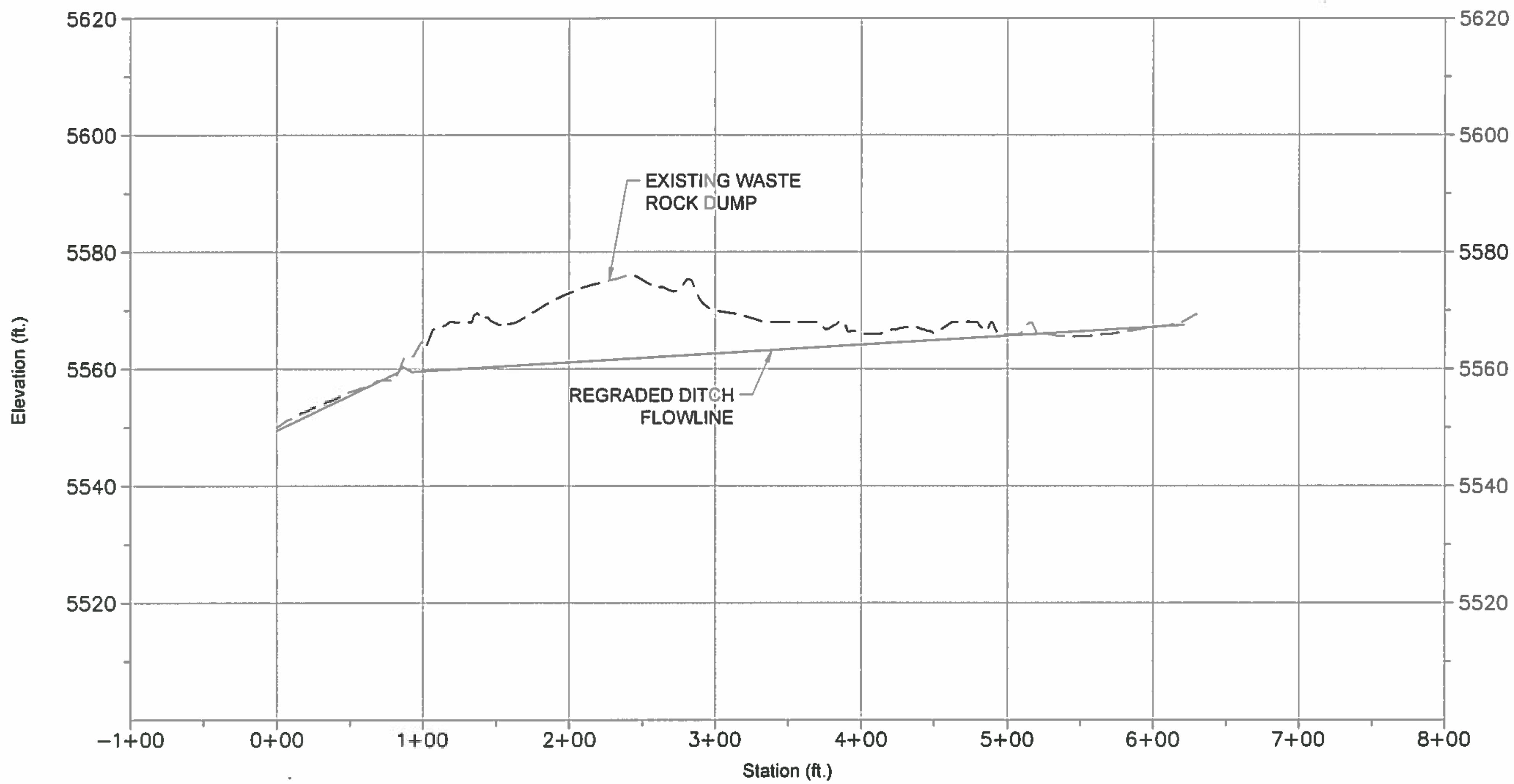
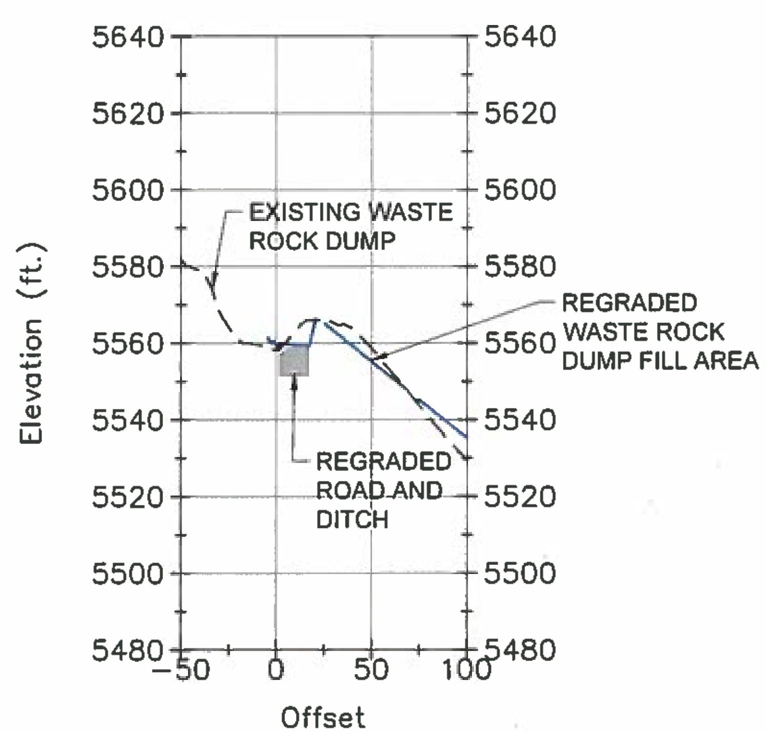


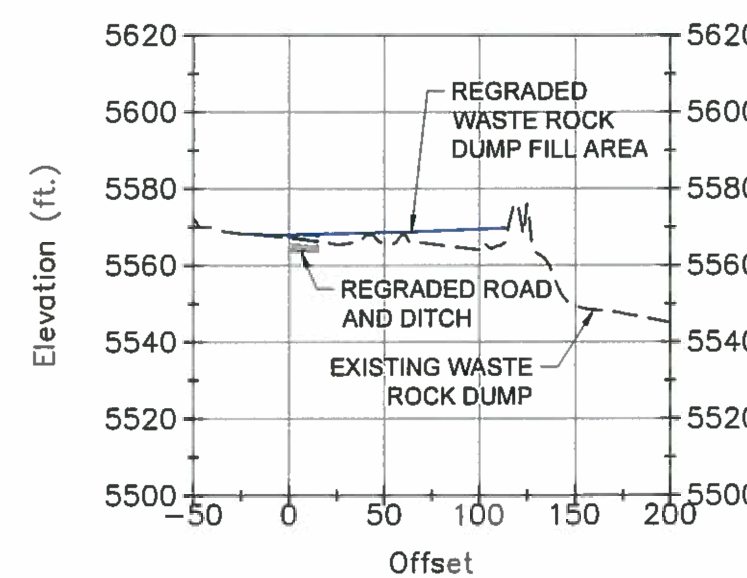
WASTE ROCK DUMP PROFILE B

SCALE: 1" = 100'
HORIZONTAL: VERTICAL = 1:4



WASTE ROCK DUMP PROFILE B: SECTION 1+50

SCALE: 1" = 100'
HORIZONTAL: VERTICAL = 1:2



WASTE ROCK DUMP PROFILE B: SECTION 7+00

SCALE: 1" = 100'
HORIZONTAL: VERTICAL = 1:2

EDWARD C. WELLMAN NEW MEXICO 18364 PROFESSIONAL ENGINEER
Exp 12/31/2019

REVISIONS

REV.	DESCRIPTION	DATE
A	SUBMITTED FOR CLIENT REVIEW	07.02.2018
0	ISSUED FOR CONSTRUCTION	07.18.2018

FILE NAME: 511800-030-300_GRD03_AND_GRD04_20180711.dwg

DESIGN: KH
DRAWN: JS / KH / CW
REVIEWED: KH
APPROVED: KH

IF THE ABOVE BAR DOES NOT MEASURE 1 INCH, THE DRAWING SCALE IS ALTERED

PREPARED BY: srk consulting

PREPARED FOR: ELKO MINING GROUP LLC

DRAWING TITLE: PROPOSED CORRECTIVE GRADING AND SECTIONS

DATE: 07.17.2018
REVISION: 0
SRK PROJECT NO.: 511800.030
DRAWING NO.: 400

H:\Elko Mining Group\511800.030_Summit Mine Work Plan\040_Drafting\Task_300_Stability_Analysis\511800-030-300_GRD03_AND_GRD04_20180711.dwg

ATTACHMENT B
PHOTOGRAPHS

Photograph 1: DMS Slide Looking Northwest

Photograph 2: Highwall and Tension Cracks

Photograph 3: Surface Tension Cracks

Photograph 4: Alluvial Material at Toe

Photograph 5: Seepage at Toe

Photograph 6: Boundary Flagging Looking North

Photograph 7: Boundary Flagging Looking South

Photograph 8: Boundary Flagging Looking South

Photograph 9: Boundary Flagging Looking South

Photograph 10: Base of Slope Treatment Area

Photograph 11: Base of Slope Treatment Area

ATTACHMENT C
MATERIAL CHARACTERIZATION

Lordsburg Mining Company
Metallurgical study by Froth Flotation
Metcon Project M-829-01

ICP Scan on Head Samples

Element	Unit	Ore Sample
Al	%	0.39
As	ppm	27
Ba	ppm	57
Bi	ppm	3
Ca	**%**	**2.89**
Cd	ppm	3
Co	ppm	5
Cr	ppm	19
Cu	ppm	101
Fe	**%**	**1.62**
Hg	ppm	<1
K	%	0.17
La	ppm	6
Mg	%	0.14
Mn	**ppm**	**1695**
Mo	ppm	14
Na	ppm	1211
Ni	ppm	8
P	ppm	162
Pb	ppm	184
Sb	ppm	8
Sc	ppm	1
Sr	ppm	36
Ti	ppm	54
Tl	ppm	13
V	ppm	14
W	ppm	6
Zn	ppm	240
Zr	ppm	3

Lordsburg Mining Company
Metallurgical Study by Froth Flotation
Metcon Project M-829-01

ICP Whole Rock Analysis

Compose	Unit	Ore Sample
Al_2O_3	%	4.17
BaO	%	0.02
CaO	%	4.32
Cr_2O_3	%	0.01
Fe_2O_3	%	2.55
K_2O	%	1.22
LOI	%	**4.00**
MgO	%	0.44
MnO	%	0.23
Na_2O	%	1.02
P_2O_5	%	0.04
SiO_2	%	**81.32**
$Ti0_2$	%	0.12

Lordsburg Mining Company

Metcon Project M-829-01

Metallurgical Study by Froth Flotation

Sulfur Speciation on Head Sample

Compose	Unit	Ore Sample
S_T	%	0.10
S^o	%	<0.01
$SO_4^=$	%	0.04
$S^=$	%	0.06

ATTACHMENT D

STABILITY ANALYSIS TECH MEMO

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exp 12/31/2018

Technical Memorandum

To:	Andrew Conover	**Date:**	July 17, 2018
Company:	Pyramid Peak Mining, LLC	**From:**	Karena Carpenter Edward Wellman, PE NM #18364
		Reviewed by:	John Tinucci
Subject:	Analysis of Summit Mine DMS Dump Instability and Proposed Remediation Plan	**Project #:**	511800.030

Introduction

Elko Mining Group LLC commissioned SRK Consulting (U.S.), Inc. (SRK) to conduct a slope stability assessment of proposed modifications to the Development Material Stockpile (DMS). The modifications are to an existing DMS landslide (slide) that occurred at the Summit Mine, located in New Mexico. This memorandum presents the results of the stability analysis. All work performed for this analysis by SRK was completed under the direction of Edward C Wellman, PE #18365, a New Mexico Registered Professional Engineer (PE). The scope of work was provided to Pyramid Peak Mining in "Change Order #01 for SRK Work Plan for Summit Mine Construction Assistance – Slope Stability Analysis" dated June 6, 2018.

SRK's work scope included:

- Analyze existing failure geometry and back-analyze material properties based on previous stability analyses, existing laboratory testing data, and updated stability modeling using a two-dimensional (2D) method of slides,
- Review existing data sets for clarification of material in the foundation of the DMS;
- Evaluate strength parameters for material previously modeled as bedrock at 45 degrees;
- Provide a proposed modification of the DMS to meet a minimum Factor of Safety (FOS) requirement as an Autocad (dxf) surface;
- Construct a 2D limit equilibrium analysis, run model, and calculate a FOS on the revised DMS geometry; and
- Prepare this technical memorandum, which references the previous analysis, emphasizes the updated DMS geometry and modeling parameters, addresses the stability of the planned facility, and provide recommendation for additional field investigation as needed.

Background/ Previous Work

Summit Mine is an underground precious metals operation located entirely on patented claims owned by Pyramid Peak Mining (PPM) within the Steeple Rock Mining District in Grant County, New Mexico. Activities at the Mine and within the mining district date back to the late 1800s. Summit Mine is currently operated under Permit GR011ME (Permit) and is classified as a Minimal Impact Existing Mining Operation (i.e., less than ten acres of surface disturbance). The Permit was originally granted to Saint Cloud Mining Company in 1998 with an update in 2002. The permit was transferred to the Lordsburg Mining Company (LMC) in 2008. Active mining occurred during LMC's tenure but was stopped in 2013. Subsequently PPM assumed control of the Mine in February 2016. Activity at the site is currently limited to site maintenance and security.

DMS Construction

Development of the underground workings and construction of the DMS was completed by LMC from 2009 to 2013. The DMS was constructed by end dumping non-economic material in the area from the Summit Portal area and advancing south. The DMS was partially constructed to house ancillary facilities for mining, including the administrative and maintenance areas which are generally located at the north portion of the facility.

Topography in the project area is steep and variable with slopes ranging from 2.5 horizontal to 1 vertical (2.5H:1V) in the south to 4H:1V in the north. The foundation area consists of a shallow sandy alluvial material ranging from 0.5-foot to 1.5 feet deep overlaying bedrock. Rock outcrops are present throughout the downgradient area. Bedrock at the site is volcanic and volcanoclastic in origin based on the State of New Mexico geologic map (Geology Tirf silicic flows, domes, and associated pyroclastic rocks (Phanerozoic | Cenozoic | Tertiary). Lower Oligocene silicic (or felsic) flows, domes, and associated pyroclastic rocks and intrusions; includes Mimbres Peak Formation)

At the end of construction, the facility contained approximately 175,000 cubic yards (yd^3) of development material. The final pre-slide footprint measured approximately 3.75 acres with a total height of 135 feet. All slopes were constructed at the angle of repose.

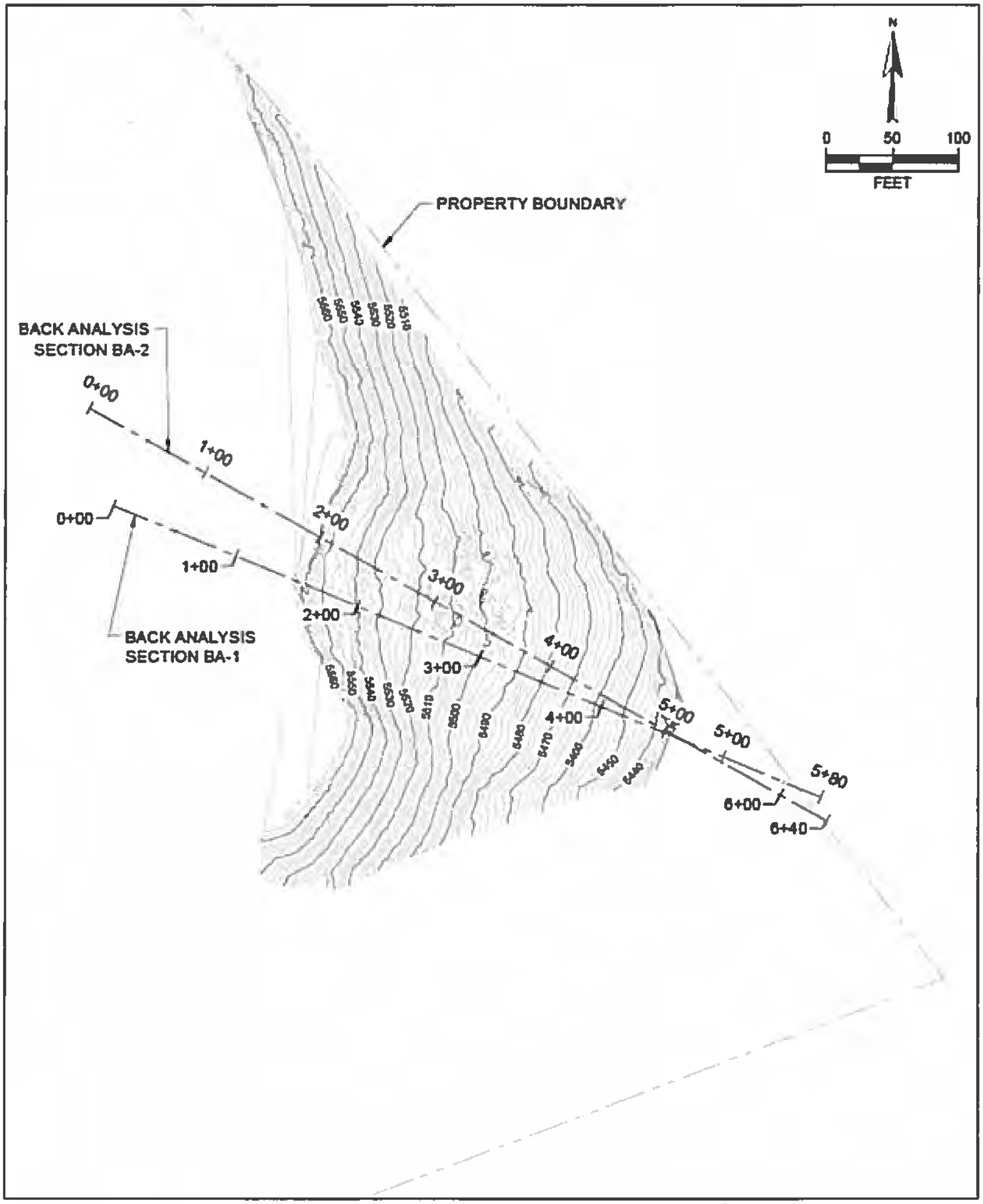
DMS Failures

The DMS has undergone two separate failures. The first and most significant occurred during early 2017. An approximately 250-foot wide section of the facility toe moved downgradient a maximum of 150 feet. The slope failed at the highest point of the facility and toe movement resulted in a highwall forming in the facility crest. Tension cracks formed on the DMS surface after the slide. In the aftermath of the slide, PPM initiated a monitoring program on the tension cracks to identify the risk of further movements. In addition, equipment which was located near the slide area was relocated to the north.

A second lessor slide occurred during the fall of 2017 during the rainy season. The second slide was limited in extent and consisted of minor downgradient movement of the toe and additional failures of the highwall. Additional tension cracks became visible on the facility surface. The tension cracks observed at the crest of the slope are illustrated on Figure 1. The tension cracks are located at the 5560 ft elevation and a location map of the post failure topography is shown on Figure 2.

Source: SRK

Figure 1: Tension Cracks at the Top of the DMS Failure



Source: SRK

Figure 2: Back-Analysis Section Locations

Geotechnical Model

The DMS is underlain by volcaniclastic rock consisting of silicic flows, domes, and associated pyroclastic rocks. These rocks can have highly variable strength characteristics. A thin 6-inch to 18-inch thick soil layer is also present across the site, which has weak strengths based on laboratory testing and back-analysis of the existing slide. This soil layer is likely the controlling factor for the slide mechanism on the DMS dump. This layer is assumed continuous across the site unless it is removed by clearing and grubbing prior to re-grading the DMS. The DMS and run-of-mine waste rock is modeled based on surveyed topography and extends to the pre-mine topography surface.

Field estimates of properties are based on the Axelrod report (Axelrod, 2018). Mr. Kent Harley, of SRK, conducted a site visit on April 24, 2018 to observe field conditions. Field estimates of properties are based on Mr. Hartley's observations and photographs. Edward Wellman, PE made the engineering evaluation of material properties to be used in the stability analysis.

Back-Analyses of Existing Slide

As a part of the study, SRK conducted a back-analysis of DMS slide to verify the reasonableness of the laboratory strength test results, and to estimate the strength of the foundation materials at the time of the failure. The objective of the back-analysis was to estimate the strength to be used in forward modeling of the remediated slope. To perform the back-analysis SRK constructed two cross sections through the main part of the failure. The location of these sections is illustrated on Figure 1.

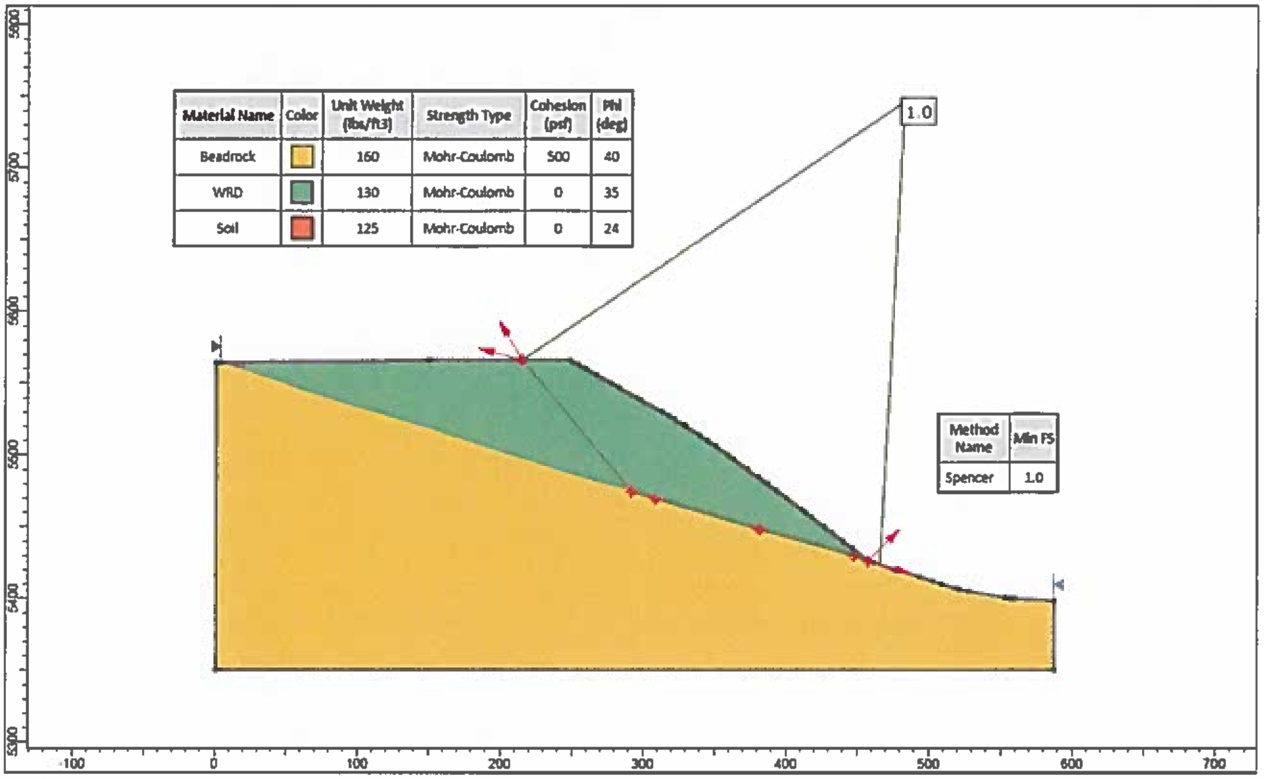
Timing of the failure and its movement is uncertain. Reports indicate that the total displacement may have happened over two events. No documentation indicating the date or time of the failure(s) was available. Field observations by others, including Axelrod Engineering, indicated that seeps were observed at the toe of the DMS dump at the time of his field inspection in October 2017 (Axelrod, 2018). The effect of rainfall or infiltration on the failure was not determined.

Topography for the back-analysis was estimated based on an angle-of-repose DMS dump from the pre-failure crest elevation. Due to the lack of information, a phreatic surface was not explicitly modeled in the back-analysis. As a result, the forward analysis is an effective stress model using the back-calculated strengths. This means that the same groundwater conditions at the time of the original failure are assumed present for the forward analysis. The back-analysis reproduced the observed tension cracks and location of displacement at the toe of the slope. The back-analysis section locations are illustrated on Figure 2.

Based on the back-analysis results, SRK estimates that the foundation soil layer below the DMS dump has the following Mohr-Coulomb properties for an effective stress analysis:

- Angle-of-internal friction = 24 degrees; and
- Cohesion = 0 to 50 psf.

The back analysis was conducted using the limit equilibrium method and the FOS was computed with Spencer's method of slices (Spencer, 1967) Analysis of the post failure geometry using these properties, indicate that the FOS may range from 1.0 to 1.2, without remediation. The soil foundation layer controls the critical surface and failure geometry. The back-analysis section is illustrated on Figure 3.



Source: SRK

Figure 3: Back-Analysis Section 1

Forward-Analysis Assumed Material Properties

Material properties for the soil used in the forward stability analysis were based on back-analysis and laboratory testing. Mohr-Coulomb material properties for the waste rock, bedrock, and compacted engineered fill materials were based on field observations and engineering judgement.

Foundation Soil Layer Properties

The strength of the soil foundation layer was discussed in the back-analysis section. The material properties were determined based on back-analysis of the failure and comparison with laboratory testing results performed by Testing, Research and Consulting Field Service (TRI) included as an appendix to Axelrod's 2018 report. Laboratory testing results indicate that the soil layer at the base of the failure is a fat clay with sand (CH). Small scale direct shear test results indicate an angle of internal friction (phi) of 22.9 degrees and a cohesion of 244.8 pound per square foot (psf).

Other Material Properties

The following material properties listed in Table 1 were estimated based on field observations engineering judgement. The bedrock for the stability analysis was estimated by SRK based on the geologic characteristics of the foundation material. The strength was reduced from that used by Axelrod (2018) to reflect the volcanic origin of substrate. Run-of-mine (RoM) fill was estimated based on the size distribution of waste rock, which is generally 8-inch minus. Compacted engineered fill was estimated assuming RoM waste rock would be compacted in 1-foot lifts during construction.

Table 1: Soils and Foundation Material Properties (Mohr-Coulomb)

Material	Unit Weight (pcf)	Cohesion (psf)	Phi (°)
Bedrock	160	500	40
DMS Dump	130	0	35
Compacted Engineered Fill	135	0	38
Foundation Soil	125	0 to 50	23

Design Criteria

SRK has conducted the slope stability evaluation of the redesign DMS to meet the compliance requirements for the State of New Mexico. Additionally, the redesign is in general conformance to industry standards reported in Guidelines for Mine Waste Dump and Stockpile Design (Hawley and Cunning, 2017).

For sites without foundation data the target FOS for a remediation is 1.5. However, site specific foundation data is available for the site based on lab testing and back-analysis which reduces the FOS target to 1.3. The target FOS for the regraded slopes is 1.3 for static conditions. For seismic conditions and pseudo static analysis the minimum FOS is 1.1 based on the guidelines for Mine Waste Dump Design.

Seismicity

Earthquake loading was considered in the geotechnical model as a horizontal acceleration in the form of a percentage of acceleration due to gravity. Project design criteria include a site-specific seismic Peak Ground Acceleration (PGA) of 0.108g. The source of this seismic information is the 2008 USGS, Interactive National Seismic Hazard Map. The seismic acceleration was chosen for a 5% a seismic acceleration was chosen for a 2% probability of occurrence in 50 years (2,475-year return period).

Pseudo Static Coefficient, Kh

The ground-motion parameter used in a pseudo static analysis is referred to as the seismic coefficient "Kh." The selection of a seismic coefficient has relied heavily on engineering judgment and local code requirements because there is no simple method for determining an appropriate value. The seismic coefficient Kh is not equivalent to the peak horizontal ground acceleration value, either probabilistic or deterministic; therefore, the PGA of 0.108 g should not be used as a seismic coefficient in pseudo static analyses. The use of PGA will usually result in overly conservative FOS (Seed, 1979; Chowdhury, 1978).

The Kh value is used to simulate the horizontal force caused by a potential earthquake. This horizontal force is added to the overall equilibrium computation for the individual slices composing the critical surface. The value of Kh is taken as approximately one-half the value of the PGA. For this stability assessment, the Kh value was reduced by a factor of 0.5, and subsequently, the value of 0.054 g was selected for the 2,475-year return period event.

Proposed Remediation Design

Since the current dump slope is unstable, SRK recommends a buttress at the base of the slide, especially where the slope has failed over the property line. A keyway will be excavated into the foundation to form a flat foundation. Rock slopes in the keyway may be excavated at inclinations of 63° (0.5H:1V). The maximum rock excavation height should be 30-feet. SRK estimates that the foundation rock is ripable with a Caterpillar D9 size dozer or equivalent. Once the keyway has been excavated to rock, engineered rockfill will be placed to build up the buttress. SRK recommends placing the rock fill in 1-foot to 3-foot lifts and track walking and compacting the lifts to construct the buttress. The engineered rockfill should consist of hard durable rock. The engineered rockfill consists of the RoM waste rock and is expected to be 8-in minus distribution in size. It should not contain more than 15% fines including clay and silt particles.

Key elements of regrading of slope remediation design are as follows:

- Clearing, grubbing and removal of soil in any new foundation areas, and from the keyway;
- Excavation of 30-foot wide keyway into rock foundation;
- Placement of 20-foot high buttress at a 30-degree slope inclination (1.75H:1V) the buttress in 1 ft to maximum 3 ft lifts and will track walk the entire surface of each lift;
- The lift height will be based on the size distribution of the rockfill; and
- Regrading of existing DMS dump to 2.5H:1V slope.

The remediation design is illustrated on Figure 4.

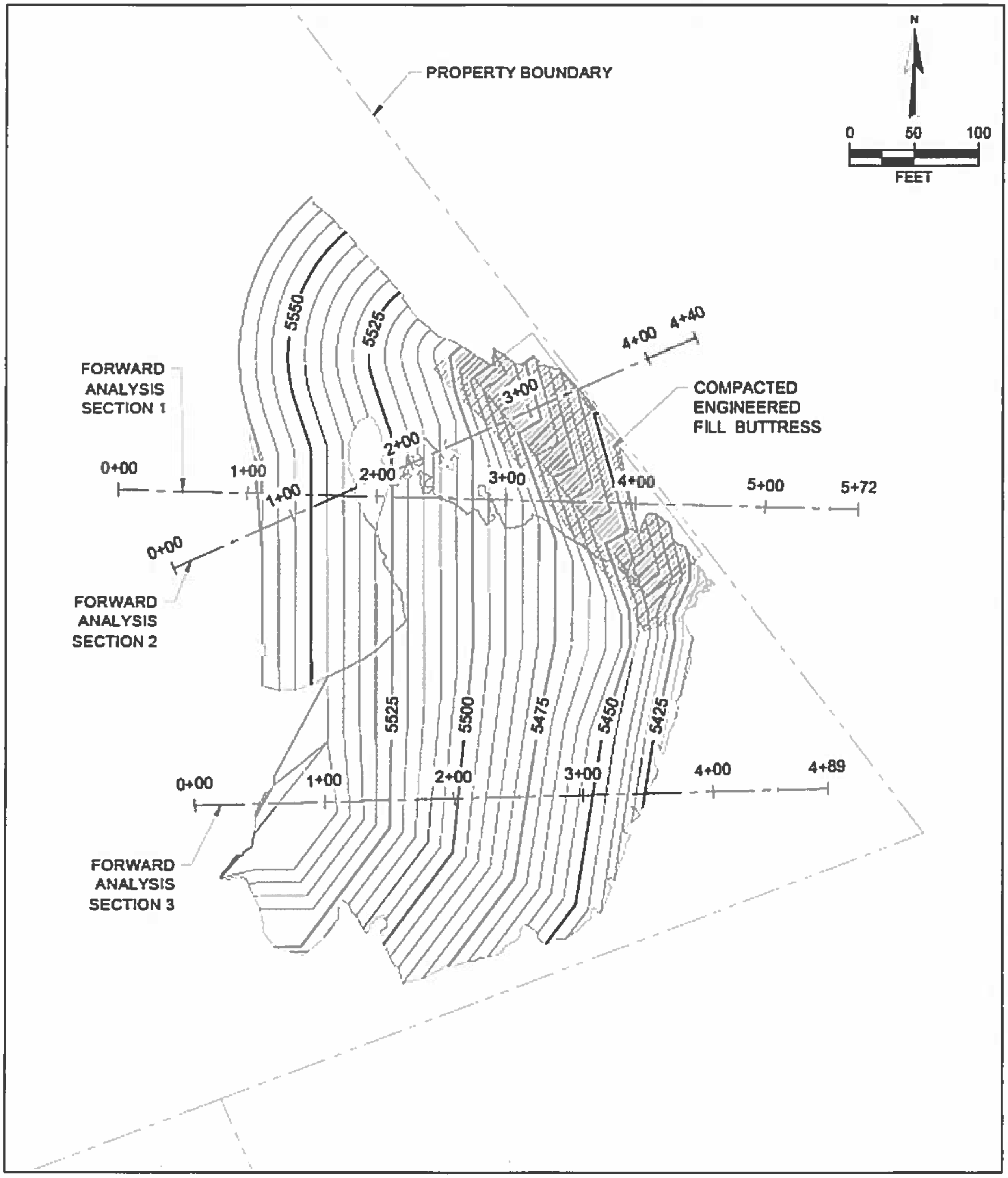


Figure 4: Remediation Design

Analysis of Proposed Remediation

Analysis Software

SRK performed the analysis using the software package SLIDE 6.0 (Rocscience Inc.), which provides 2D stability calculations for rock and soil slopes. The FOS is equal to the resisting forces divided by the driving forces, and a search is used to determine the minimum FOS value for reporting. Searching of the critical slip surface is performed within the limits of a grid.

Analysis Method

In accordance with Guidelines for Mine Waste Rock Stability, a 2D Limit equilibrium approach was used to determine the FOS of the remediation:

- Mohr-coulomb strength criterion is used for waste rock materials, engineered compacted fill, foundation soils, and volcanic bedrock;
- Both circular and non-circular searches were analyzed, but in most case the non-circular path through the foundation soil layer is the more critical surface;
- Materials used in the analysis are based on the geotechnical model. Strengths vary as a function of the confining pressure at depth (Leps, 1970);
- The FOS is calculated using Spencer's Method of Slices, which solves for both force and moment equilibrium between the slices (Spencer, 1967);
- The grading plan for the proposed remediation was developed by SRK;
- Pseudo static models were run to simulate seismic loading; and
- The analysis of the remediation design is an effective stress analysis. Strength Conditions of soil used reflect the pore pressure conditions at the time of the back-analyzed failures.

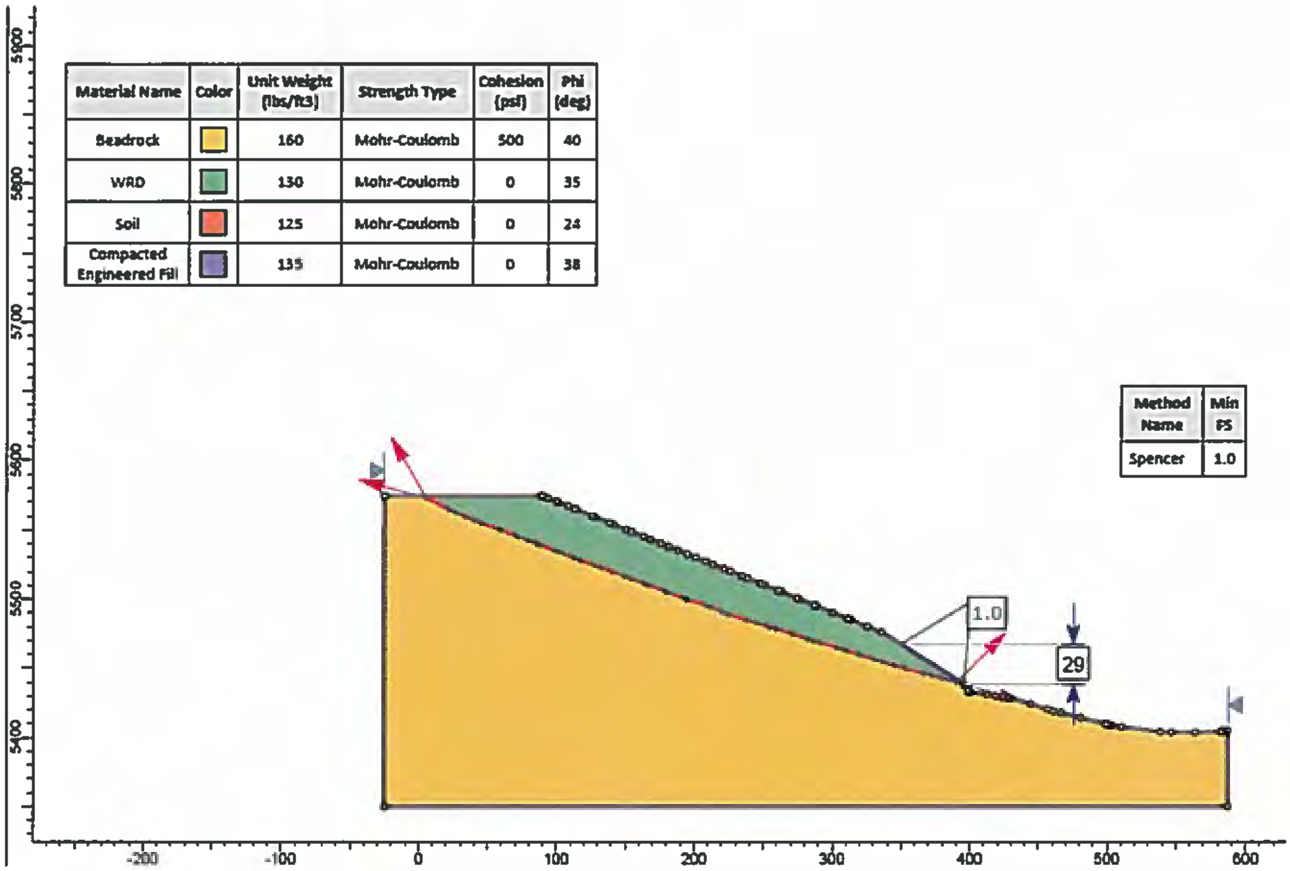
Construction

The three analysis sections were chosen based on the height of the remediation, proximity to the Bureau of Land Management (BLM) boundary, and for new fill slope locations. The location of the stability sections is illustrated on Figure 4.

Construction Stability

There is a risk of addition slope movement and failures during construction of the keyway and remediation program. This is a result of the daylighting the existing weak soil foundation, below the existing DMS dump.

When the keyway is excavated the FOS will approach limit equilibrium (i.e., FOS of 1.0). A critical surface with may develop at the toe of the slope as illustrated in Figure X. Failure cracks and movement of the slope is possible during construction and excavation of the keyway. A slope monitoring and observation will be required for construction safety during the remediation. This monitoring plan should focus on observing the slopes for tension crack development, and may include the use of prisms, pin-sets, and wireline extensometers.



Source: SRK

Figure 5: Minimum FOS of 1.0 during construction

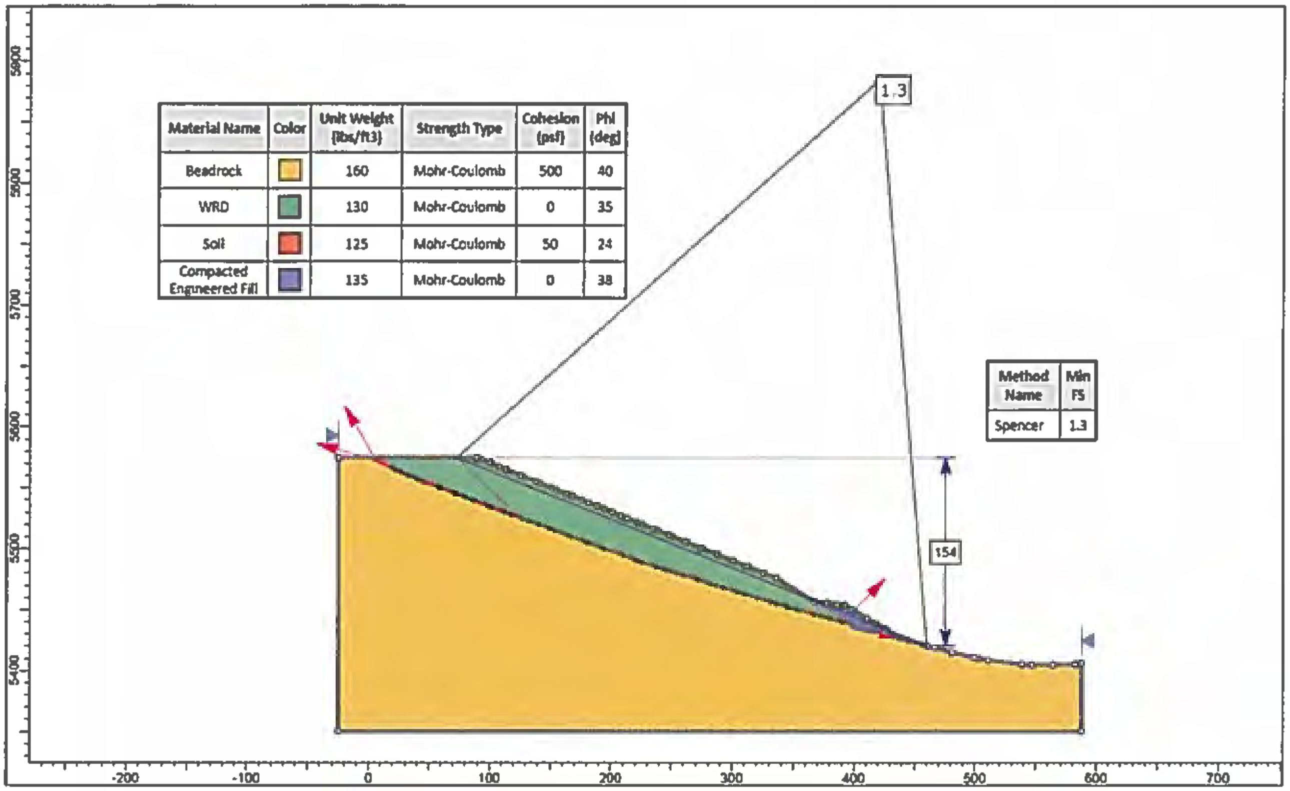
Post Construction

The conventional limit equilibrium method was used to investigate the equilibrium of the soil mass tending to slide down under the influence of gravity. Transitional or rotational movement is assumed for potential critical slip surfaces within the soil or rock mass. The minimum FOS calculated for the analysis is for the critical slip surface for each analysis. A check for foundation failure mechanisms was also run on each analysis section.

The analysis section line locations are shown in Figure 3. Individual results for each section are discussed below. Additional runs are also included in an attachment. The final results are discussed below.

Section 1

Section 1 is cut through the engineered fill buttress on the north end of the DMS dump. The critical surface on Section 1 starts at the toe of the buttress, and then continues along foundation soils, until it breaks through to just behind the crest of the regraded slope. The minimum FOS is 1.3 as shown on Figure 6. The height of the critical surface is approximately 150 feet.

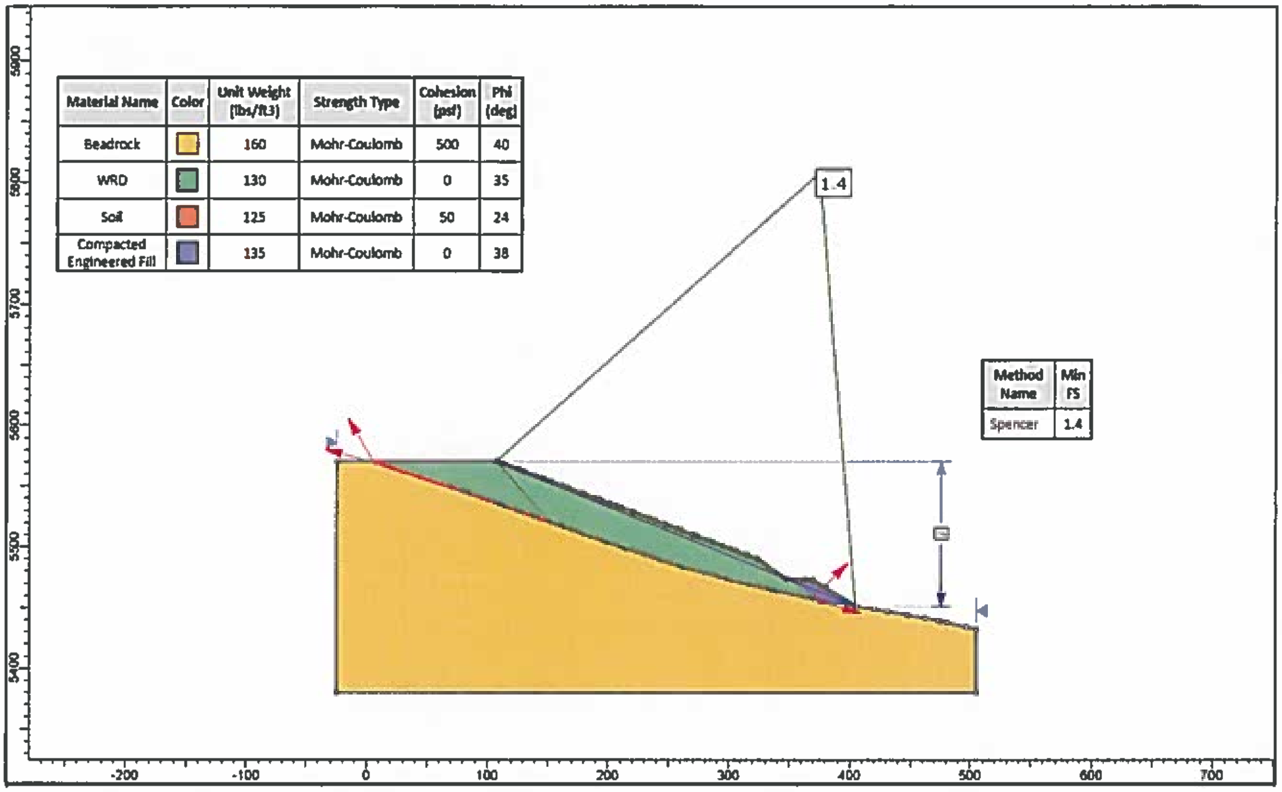


Source: SRK

Figure 6: Section 1 Stability Analysis Results

Section 2

Section 2 is cut obliquely to the slope through the engineered fill buttress. The critical surface on Section 2 starts at the toe of the buttress and then continues along foundation soils, until it breaks through to just behind the crest of the regraded slope. The minimum FOS is 1.4 as shown on Figure 7. The height of the critical surface is approximately 120 feet.

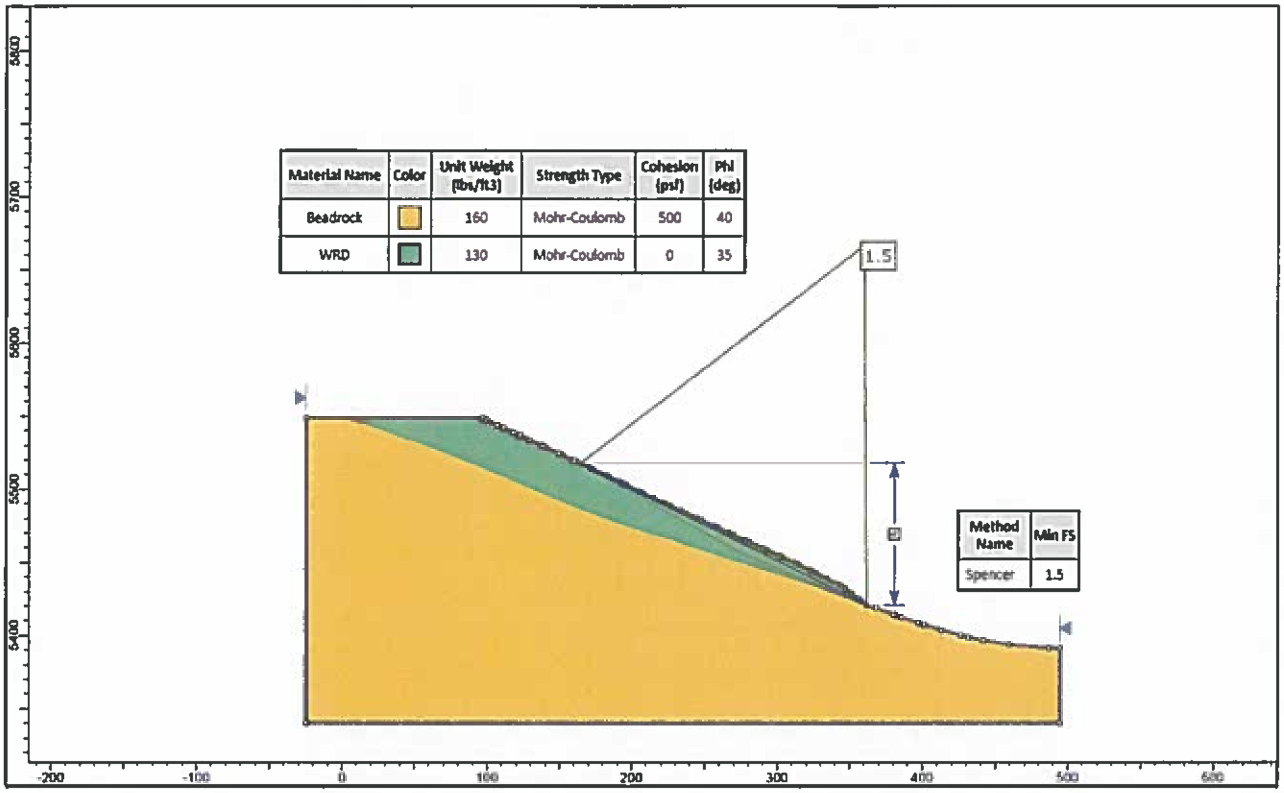


Source: SRK

Figure 7: Section 2 Stability Analysis Results

Section 3

Section 3 is on the south end of the proposed remediation. Foundation soils will be removed at this location and the area cleared and grubbed of vegetation. As a result, the critical surface does not pass through the rock foundation. The critical surface on Section 2 starts at the toe of the fill slope and extends two-thirds of the way up the slope through the new DMS dump fill area. The minimum FOS is 1.5 as shown on Figure 8. The height of the critical surface is approximately 100 feet.



Source: SRK

Figure 8: Section 3 Stability Analysis Results

Table 2 summarizes the results of the stability analysis of the proposed DMS dump remediation plan. The proposed remediation plan at final construction meets the FOS criteria for guidelines on waste rock dump design, with a minimum FOS of 1.3 for a site with foundations with testing. The sections also meet the criteria for of a FOS of 1.1 during the design seismic event.

Table 2: Proposed Remediation FOS

Section Line	Minimum FOS		
	Static	Pseudo Static 2,475 yr. Return period	Critical Surface Height
	Kh= 0	Kh = 0.054 g	(ft)
Section 1	1.3	1.1	154
Section 2	1.4	1.2	119
Section 3	1.5	1.3	97

Source: SRK

The proposed remediation plan at final construction meets the FOS criteria for guidelines on waste rock dump design.

Conclusions and Recommendations

SRK back-analyzed and determined material properties that resulted in a failure on the existing DMS dump. SRK then provided recommendations for a remediation plan for the DMS dump.

SRK performed a stability analysis on the proposed remediation plan. The proposed remediation plan at final construction meets the FOS criteria for guidelines on waste rock dump design, with a minimum FOS of 1.3 for a site with foundations with testing. The sections also meet the criteria for of a FOS of 1.1 during the design seismic event.

There is a risk of addition slope movement and failures during construction of the keyway and remediation program. This is a result of the daylighting the existing weak soil foundation below the existing DMS dump. A slope monitoring program should be implemented during construction consisting of daily inspections, monitoring of tension cracks with prisms, extensometers and or pin sets should be established. This risk can be mitigated to some degree by not opening the entire keyway at the same time.

The following should be inspected by a qualified professional engineer during construction:

- Areas where the DMS dump will be expanded need to be cleared and grubbed of all vegetation and surface soils to competent rock;
- Field inspection of rock fill buttress shear key should be conducted to confirm soil thickness and analysis sand to verify the rock mass quality in keyway. Laboratory testing may be required if weak rock or soils are observed, or additional excavation below the design depth to competent rock as determined by a qualified engineer;
- The thickness of each lift of the engineered rock buttress lift should not be less than 1-foot or exceed 3-feet. The lift size should not be less than 3 times the 90th percentile particle diameter. For 90% passing 12-inch the lift size should be 3-feet, for 90% passing 8-inch inch the lift size should be 2-feet.
- Each layer of rock fill shall be compacted by at least four passes over the entire surface by a track of a crawler-type tractor weighing at least 20 tons;
- Construction observation should be completed by a qualified independent material testing laboratory;
- A set of project plans and specifications should be developed and issued for construction for the DMS dump corrective plan; and
- A post construction report should be completed to document the as-built conditions at the completion of construction.

Limitations

This memorandum titled Analysis of Summit Mine DMS Dump Instability and Proposed Remediation Plan was prepared by SRK Consulting (U.S.), Inc., under the supervision of Edward C. Wellman, New Mexico Professional Engineer, (Registration No. 18364). The findings and interpretations of data are presented within the limits of the available information at the time the report was prepared, in accordance with generally accepted professional geological engineering reporting practices and within the requirements by the Client. There is no other warranty, either expressed or implied.

References

Axelrod, Inc. (2018) Stability Analysis and Corrective Measures Design, Summit Mine Waste Rock Stockpile. Prepared for Pyramid Peak Mining, LLC. Consultant's report Dated January, 2018. 7 pages with figures.

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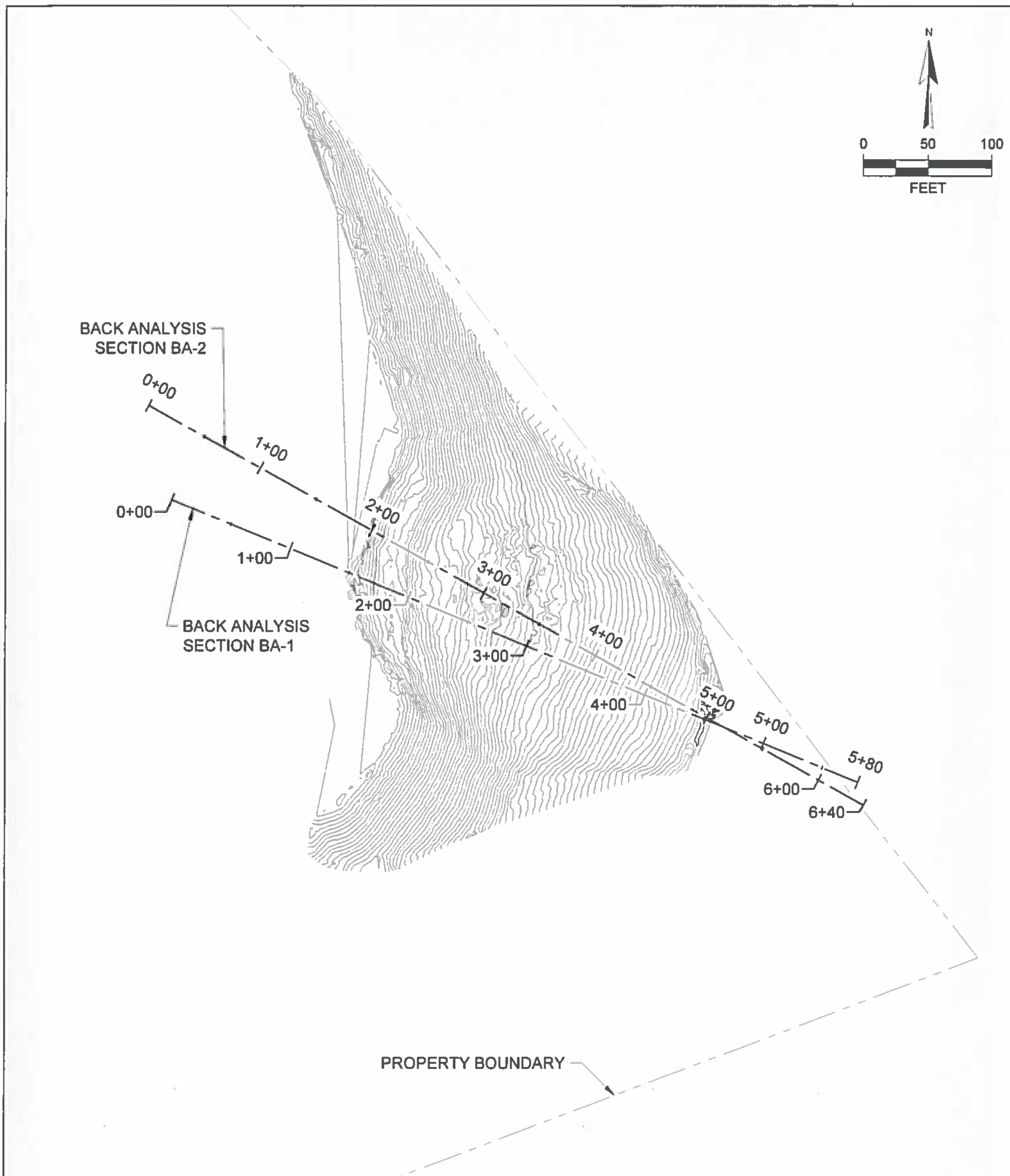

DESIGN: KEC/EW	PREPARED BY: srk consulting	DRAWING TITLE: BACK ANALYSIS LOCATION MAP OF SECTIONS		
DRAWN: KEC				
REVIEWED: EW				
APPROVED: EW	PROJECT:	DATE: 06/28/2018	REVISION: ---	DRAWING NO.: FIGURE 1
IF THE ABOVE BAR DOES NOT MEASURE 1 INCH, THE DRAWING SCALE IS ALTERED	SUMMIT MINE WORK PLAN WASTE ROCK DUMP SLOPE STABILITY	SRK PROJECT NO.: 511800.030.300		

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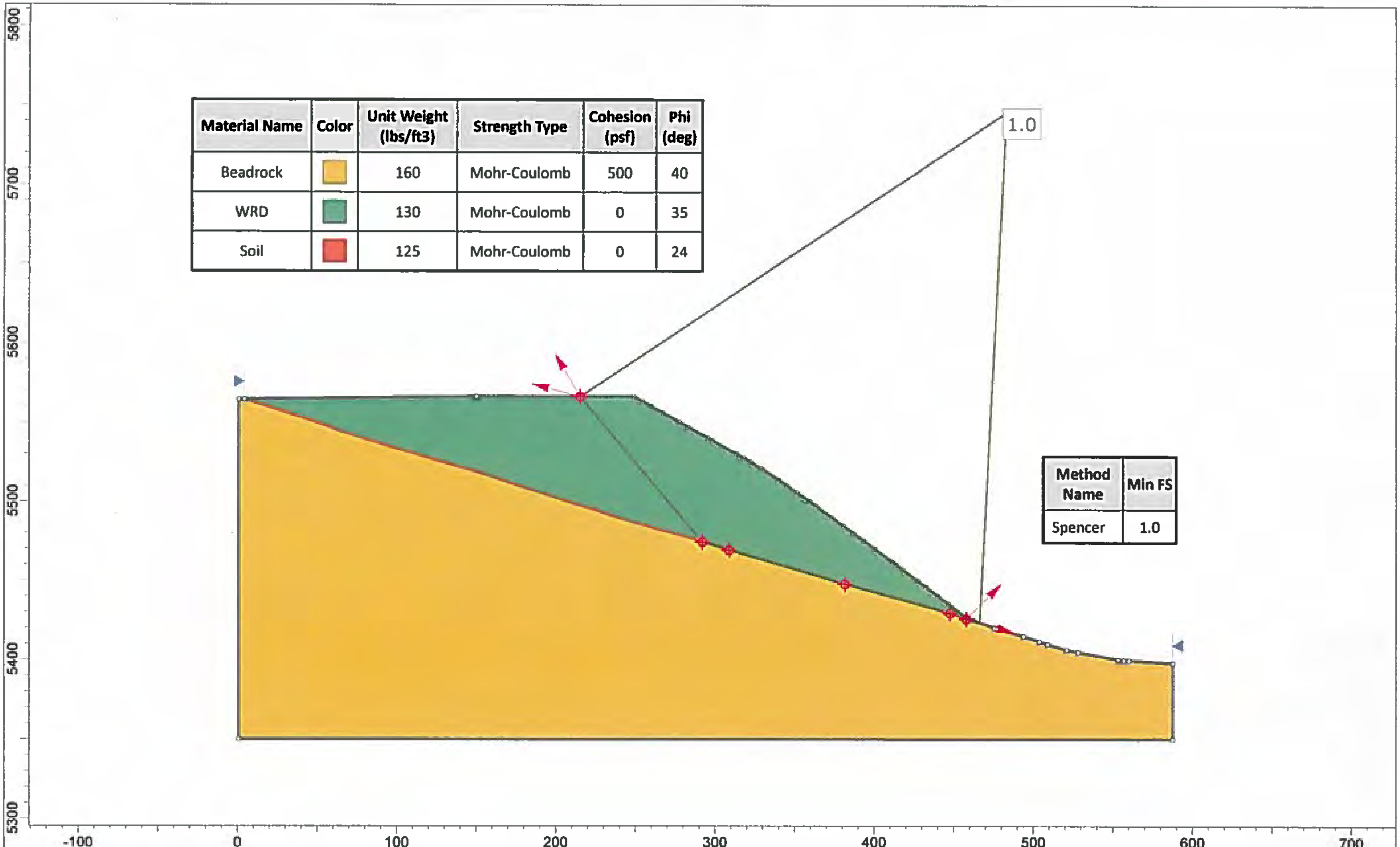


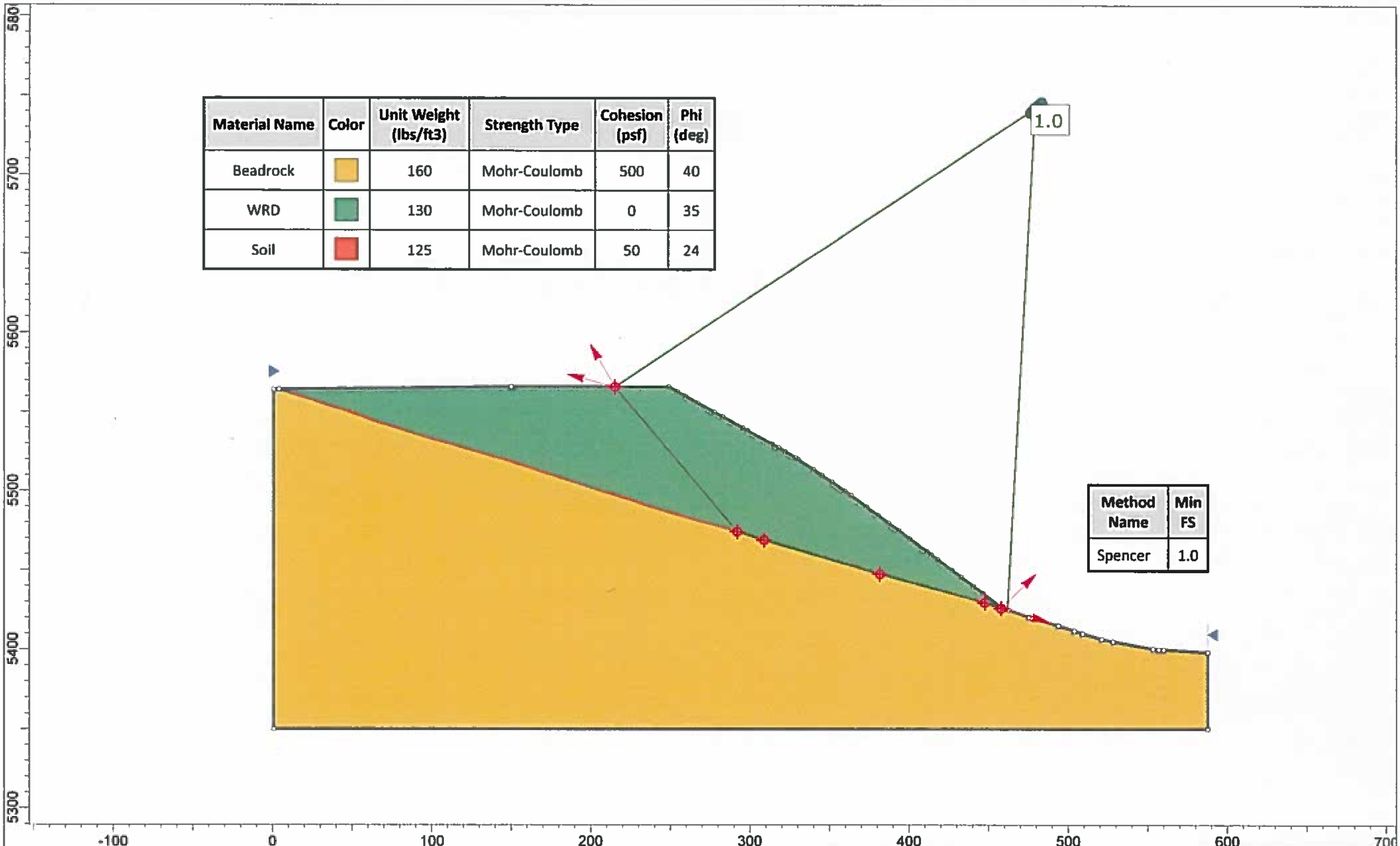
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Beadrock		160	Mohr-Coulomb	500	40
WRD		130	Mohr-Coulomb	0	35
Soil		125	Mohr-Coulomb	0	24

Method Name	Min FS
Spencer	1.0

srk consulting

SLIDEINTERPRET 7.036

Project Name Summit Mine Work Plan - WRD		*Analysis Description* Back Analysis - 1	
Drawn By KC; Checked By EW	*Scale* 1:1000	*Scenario* BA-1 Failure	
Date 6/28/2018	*File Name* 511800-030-300_SummitMine_WRD_BA-1_Coh_0.slmd		



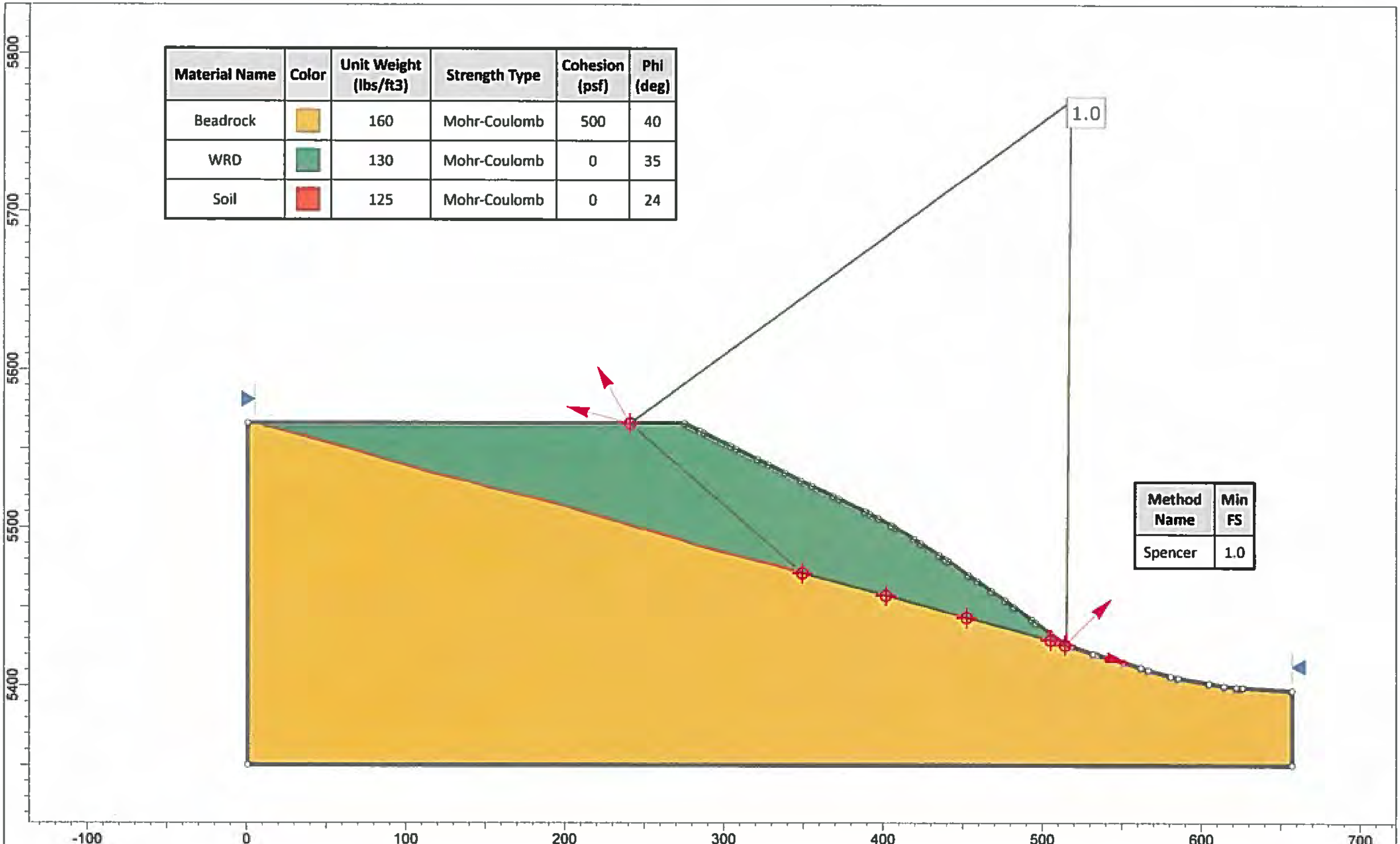
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Beadrock		160	Mohr-Coulomb	500	40
WRD		130	Mohr-Coulomb	0	35
Soil		125	Mohr-Coulomb	50	24

Method Name	Min FS
Spencer	1.0

srk consulting

Project Name	Summit Mine Work Plan - WRD
Analysis Description	Back Analysis - 1
Drawn By	KC; Checked By EW
Scale	1:1000
Scenario	BA-1 Failure
Date	6/28/2018
File Name	511800-030-300_SummitMine_WRD_BA-1_Coh_50.slmd

SLIDEINTERPRET 7.036



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Beadrock		160	Mohr-Coulomb	500	40
WRD		130	Mohr-Coulomb	0	35
Soil		125	Mohr-Coulomb	0	24

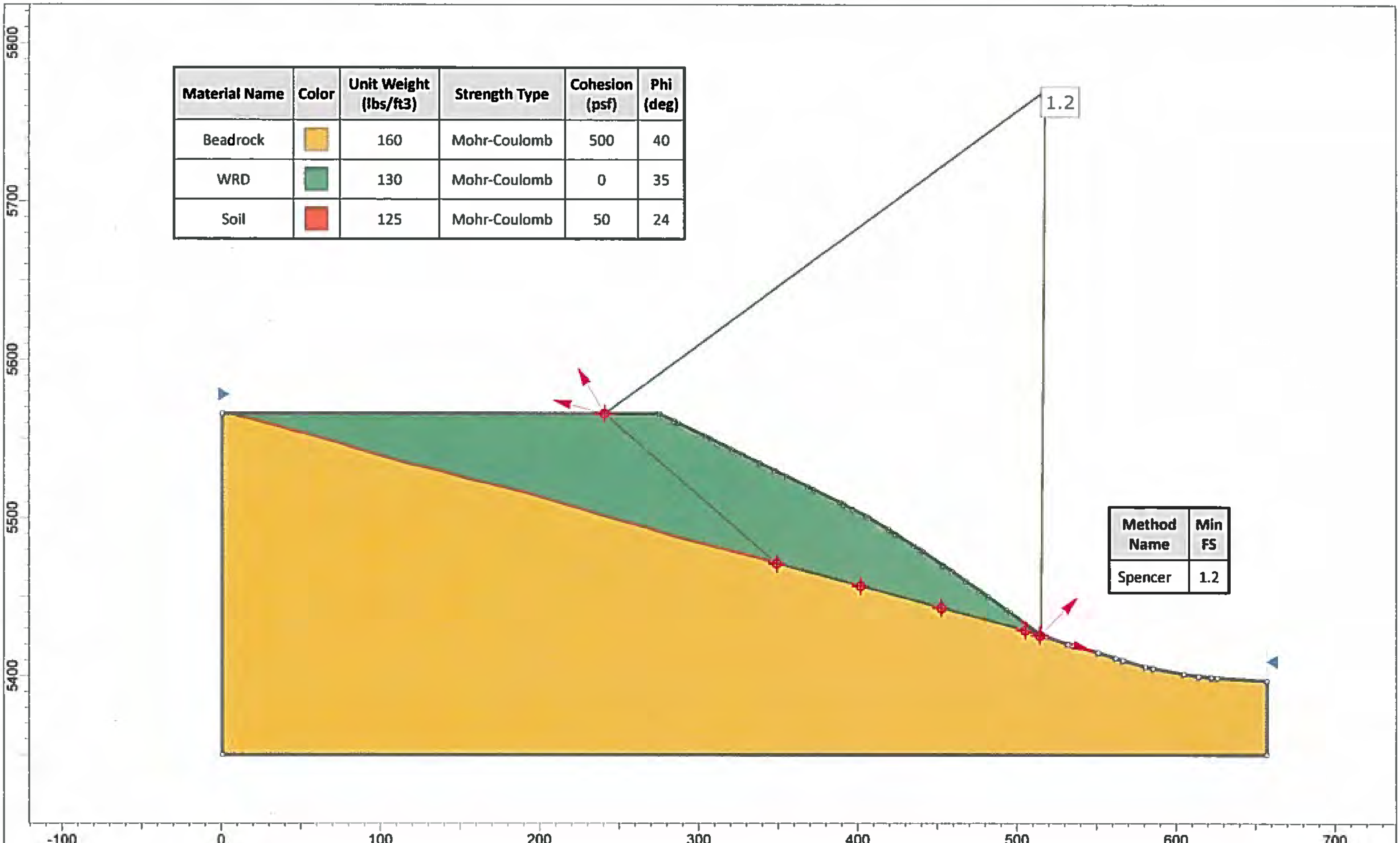
Method Name	Min FS
Spencer	1.0

srk consulting

SLIDEINTERPRET 7.036

Project Name	Summit Mine Work Plan - WRD
Analysis Description	Back Analysis 2
Drawn By	KC; Checked By EW
Scale	1:1000
Scenario	BA-2 Failure
Date	6/28/2018
File Name	511800-030-300_SummitMine_WRD_BA-2_coh_0.slmd

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Beadrock		160	Mohr-Coulomb	500	40
WRD		130	Mohr-Coulomb	0	35
Soil		125	Mohr-Coulomb	50	24

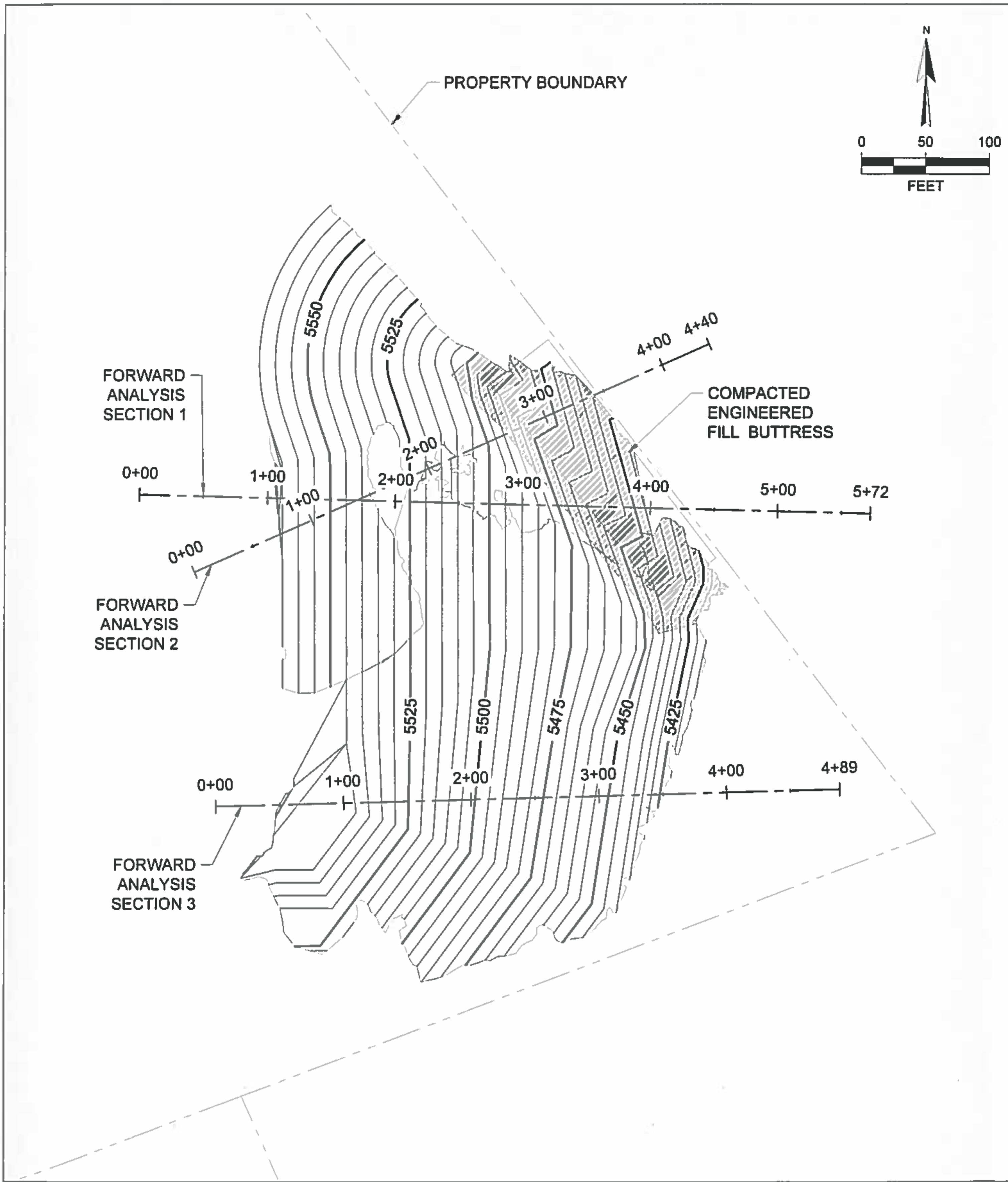


Method Name	Min FS
Spencer	1.2

srk consulting

Project Name: Summit Mine Work Plan - WRD		Analysis Description: Back Analysis 2	
Drawn By: KC; Checked By EW	Scale: 1:1000	Scenario: BA-2 Failure	
Date: 6/28/2018	File Name: 511800-030-300_SummitMine_WRD_BA-2_coh_50.slmd		

SLIDEINTERPRET 7.036

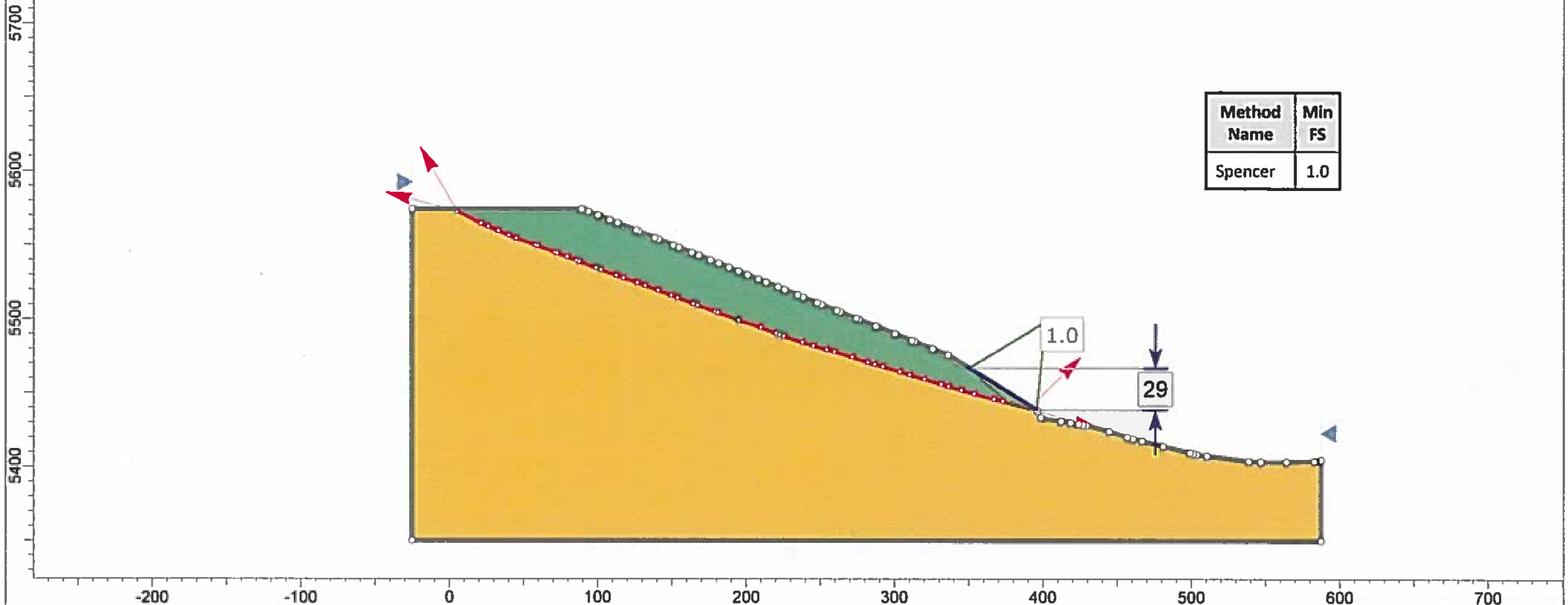


DESIGN: KEC/EW	PREPARED BY: srk consulting	DRAWING TITLE: FORWARD ANALYSIS LOCATION MAP OF SECTIONS	
DRAWN: KEC			
REVIEWED: EW			
APPROVED: EW	PROJECT:		
IF THE ABOVE BAR DOES NOT MEASURE 1 INCH, THE DRAWING SCALE IS ALTERED	SUMMIT MINE WORK PLAN WASTE ROCK DUMP SLOPE STABILITY	DATE: 07/09/2018 REVISION: --- SRK PROJECT NO.: 511800.030.300	DRAWING NO.: FIGURE 2

H:\Elko Mining Group\511800 030_Summit Mine Work Plan\040_Drafting\Task_300_Stability_Analysis\511800-030-300_Slope_Stability_Profiles.dwg

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Beadrock		160	Mohr-Coulomb	500	40
WRD		130	Mohr-Coulomb	0	35
Soil		125	Mohr-Coulomb	0	24
Compacted Engineered Fill		135	Mohr-Coulomb	0	38

Method Name	Min FS
Spencer	1.0

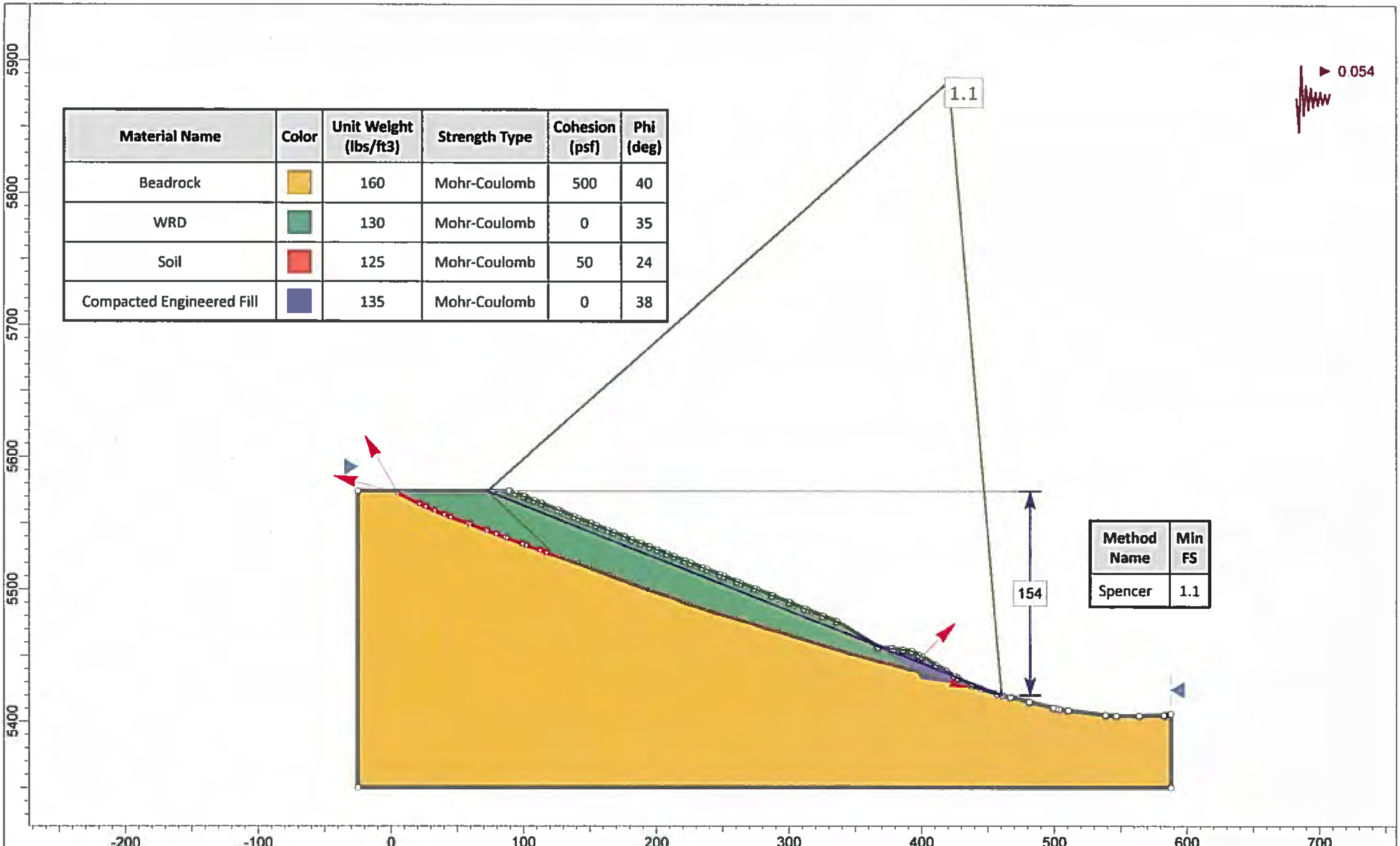


srk consulting

Project Name: Summit Mine Work Plan - WRD		Analysis Description: Forward Analysis 1	
Drawn By: KC; Checked By EW	Scale: 1:1200	Scenario: Section 1 - Construction	
Date: 6/28/2018	File Name: 511800-030-300_SummitMine_WRD_FA-1_Section1_Construction_coh_0.slmd		

SLIDEINTERPRET 7.036

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Beadrock		160	Mohr-Coulomb	500	40
WRD		130	Mohr-Coulomb	0	35
Soil		125	Mohr-Coulomb	50	24
Compacted Engineered Fill		135	Mohr-Coulomb	0	38

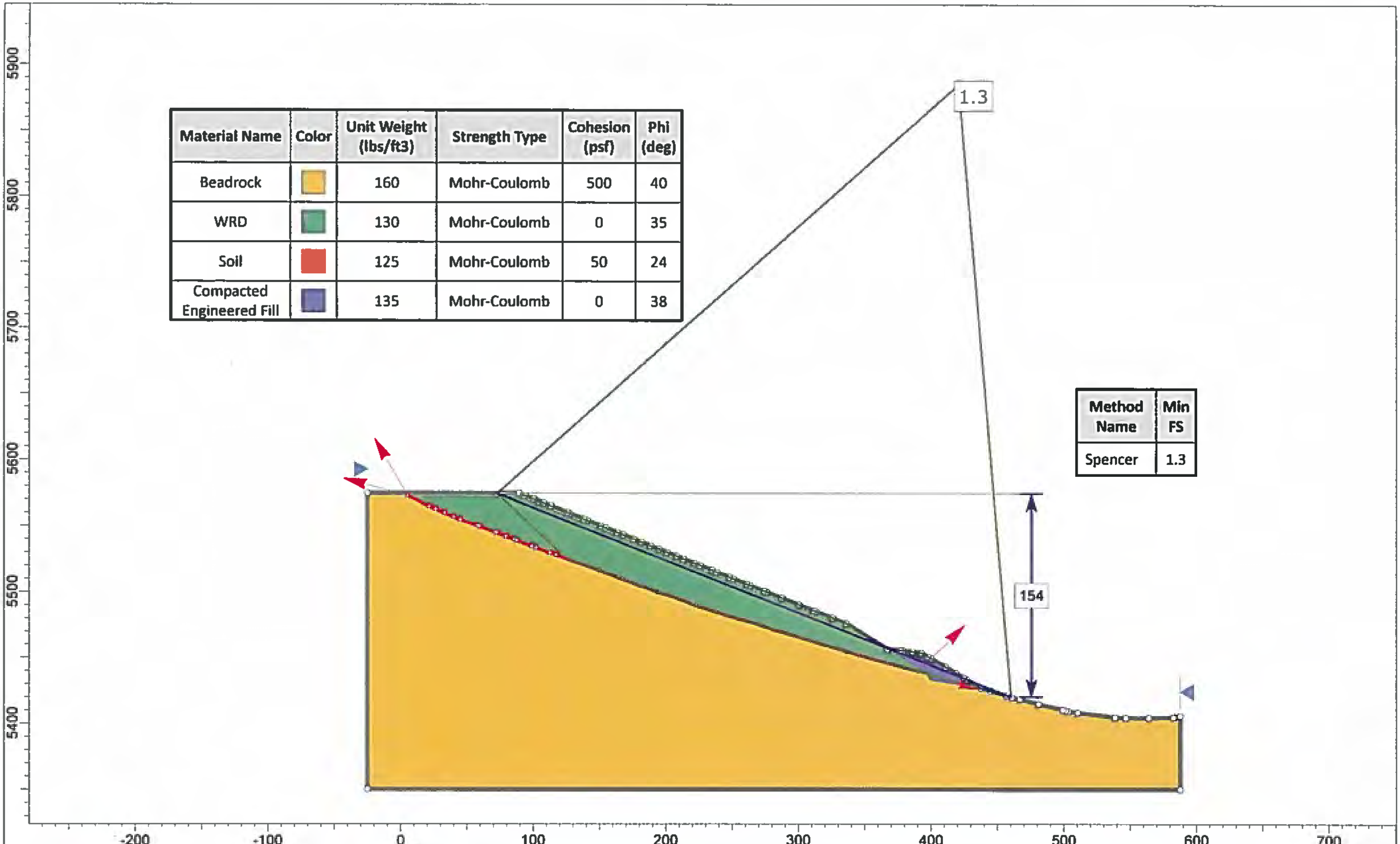


Method Name	Min FS
Spencer	1.1

srk consulting

Project Name	Summit Mine Work Plan - WRD
Analysis Description	Forward Analysis 1
Drawn By	KC; Checked By EW
Scale	1:1200
Scenario	Section 1
Date	6/28/2018
File Name	511800-030-300_SummitMine_WRD_FA-1_Section1.slmd

SLIDEINTERPRET 7.036



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Beadrock		160	Mohr-Coulomb	500	40
WRD		130	Mohr-Coulomb	0	35
Soil		125	Mohr-Coulomb	50	24
Compacted Engineered Fill		135	Mohr-Coulomb	0	38

Method Name	Min FS
Spencer	1.3

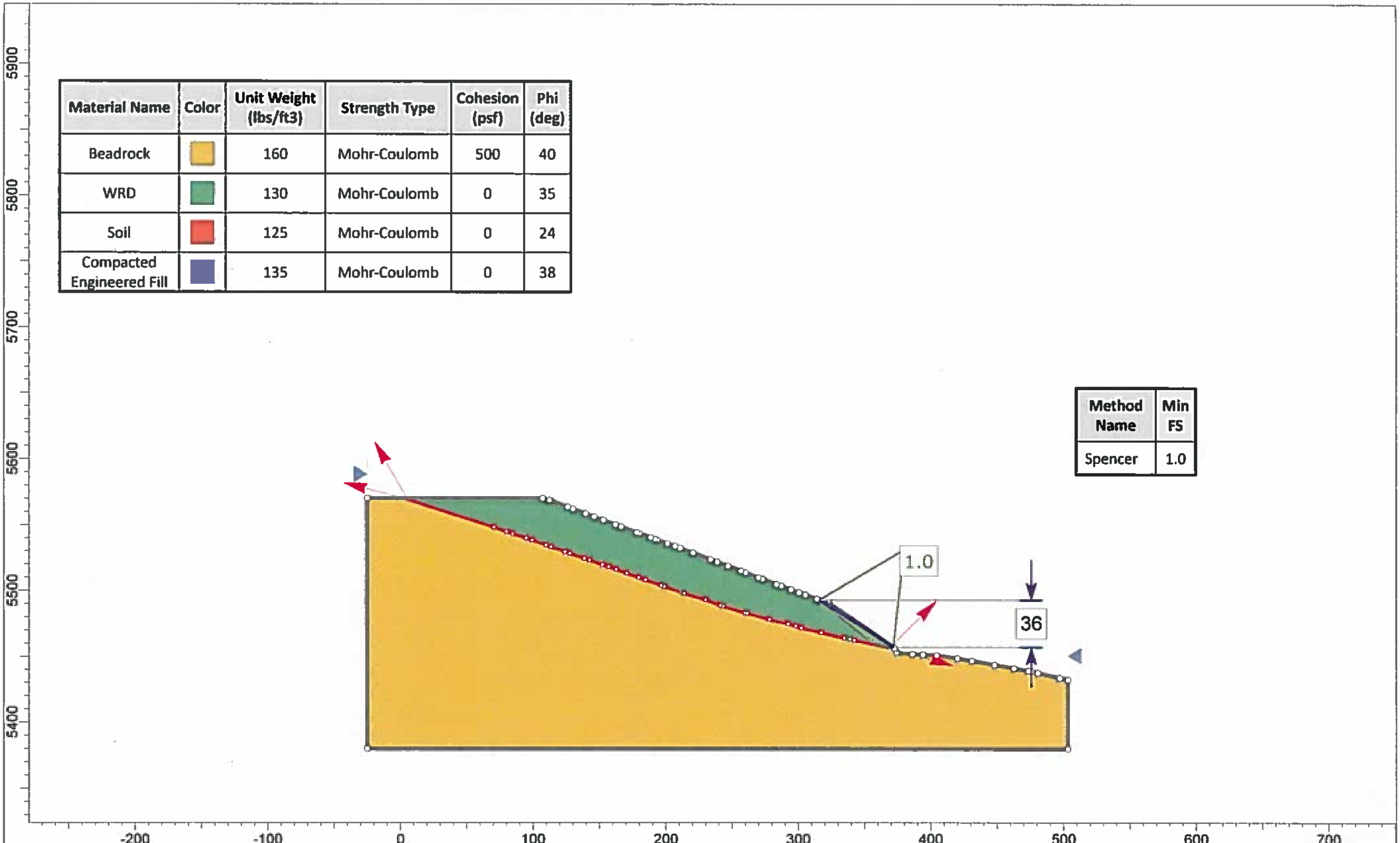
srk consulting

Project Name Summit Mine Work Plan - WRD		*Analysis Description* Forward Analysis 1	
Drawn By KC; Checked By EW	*Scale* 1:1200	*Scenario* Section 1	
Date 6/28/2018	*File Name* 511800-030-300_SummitMine_WRD_FA-1_Section1.slmd		

SLIDEINTERPRET 7.036

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Beadrock		160	Mohr-Coulomb	500	40
WRD		130	Mohr-Coulomb	0	35
Soil		125	Mohr-Coulomb	0	24
Compacted Engineered Fill		135	Mohr-Coulomb	0	38

Method Name	Min FS
Spencer	1.0

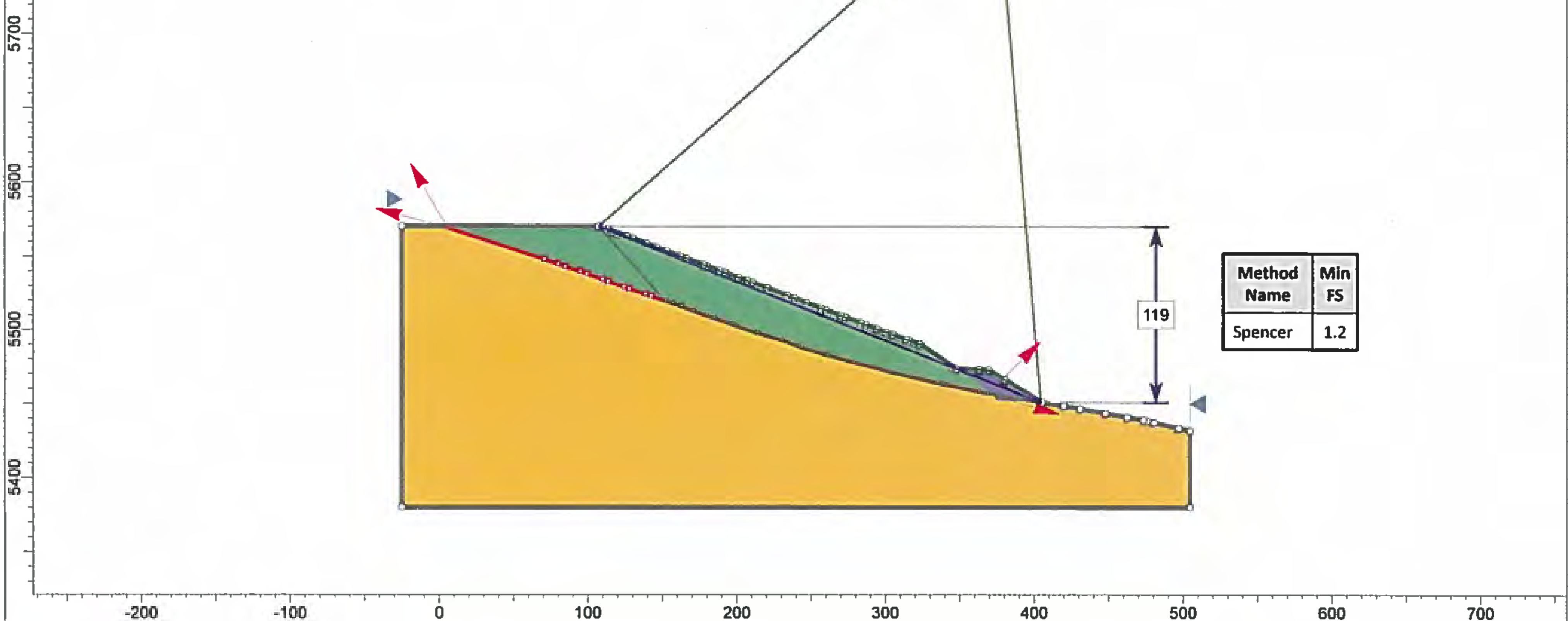


srk consulting

Project Name: Summit Mine Work Plan - WRD		Analysis Description: Forward Analysis 1	
Drawn By: KC; Checked By EW	Scale: 1:1200	Scenario: Section 2 - Construction	
Date: 6/28/2018	File Name: 511800-030-300_SummitMine_WRD_FA-3_Section2_Construction_coh_0.slmd		

SLIDEINTERPRET 7.036

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Beadrock		160	Mohr-Coulomb	500	40
WRD		130	Mohr-Coulomb	0	35
Soil		125	Mohr-Coulomb	50	24
Compacted Engineered Fill		135	Mohr-Coulomb	0	38

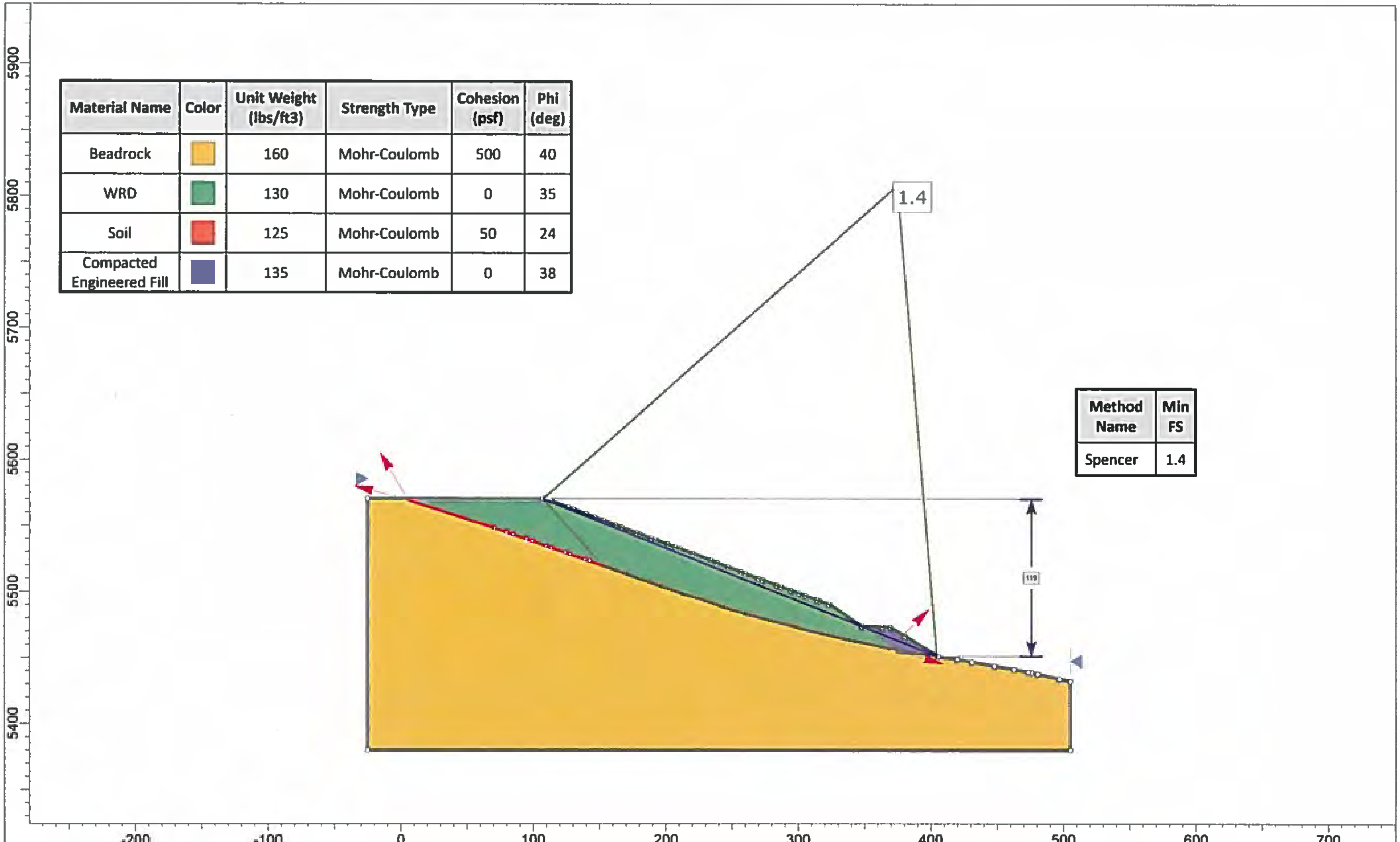


Method Name	Min FS
Spencer	1.2

srk consulting

Project Name	Summit Mine Work Plan - WRD	Analysis Description	Forward Analysis 1
Drawn By	KC; Checked By EW	Scale	1:1200
Scenario	Section 2		
Date	6/28/2018	File Name	511800-030-300_SummitMine_WRD_FA-3_Section2.slmd

SLIDEINTERPRET 7.036



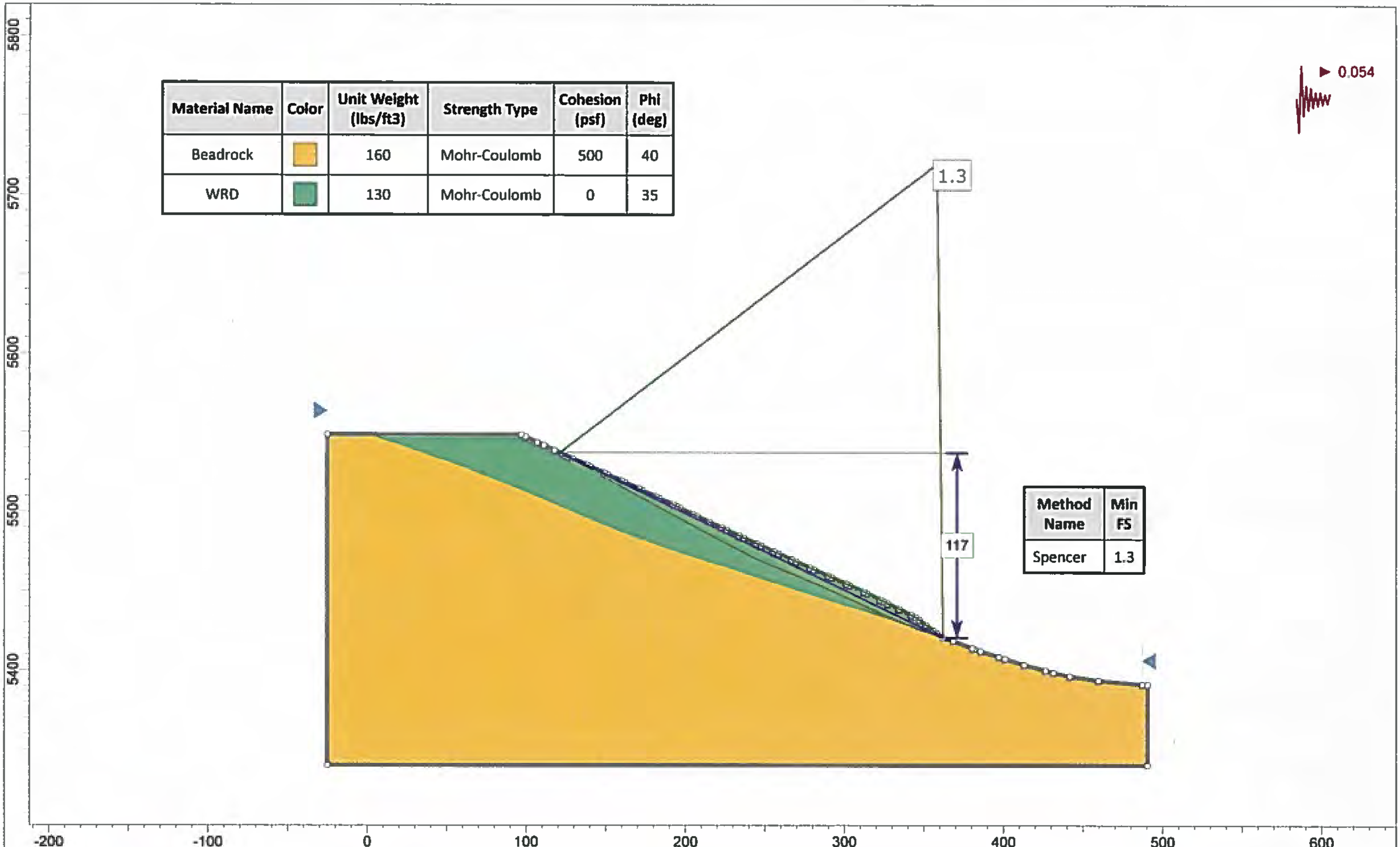
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Beadrock		160	Mohr-Coulomb	500	40
WRD		130	Mohr-Coulomb	0	35
Soil		125	Mohr-Coulomb	50	24
Compacted Engineered Fill		135	Mohr-Coulomb	0	38

Method Name	Min FS
Spencer	1.4

srk consulting

Project Name: Summit Mine Work Plan - WRD		Analysis Description: Forward Analysis 1	
Drawn By: KC; Checked By EW	Scale: 1:1200	Scenario: Section 2	
Date: 6/28/2018	File Name: 511800-030-300_SummitMine_WRD_FA-3_Section2.slmd		

SLIDEINTERPRET 7.036



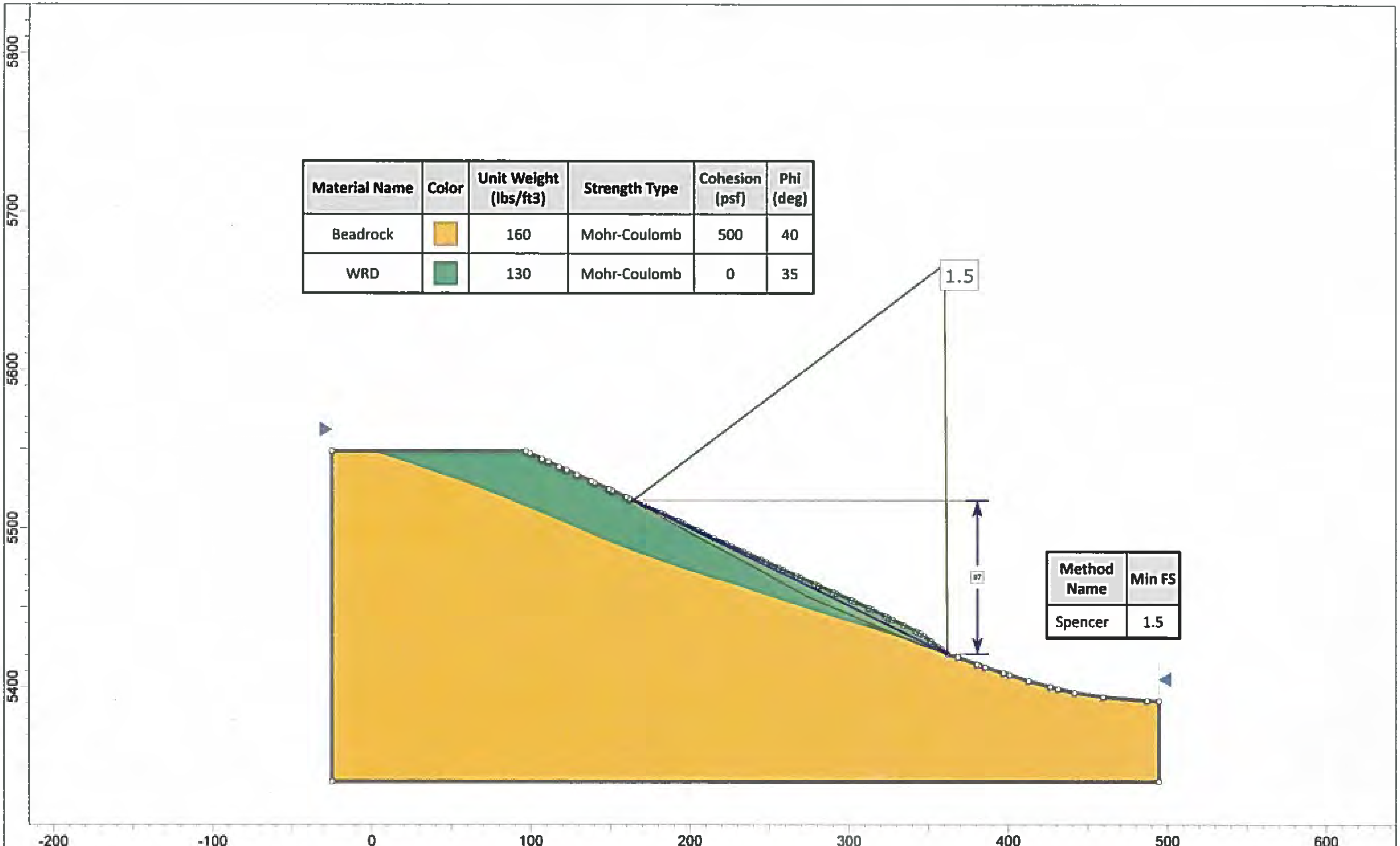
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Beadrock		160	Mohr-Coulomb	500	40
WRD		130	Mohr-Coulomb	0	35

Method Name	Min FS
Spencer	1.3

srk consulting

Project Name	Summit Mine Work Plan - WRD
Analysis Description	Fill Design
Drawn By	KC; Checked By EW
Scale	1:1000
Scenario	Section 3 - Non-Circular
Date	6/28/2018
File Name	511800-030-300_SummitMine_WRD_Fill_Section3.slmd

SLIDEINTERPRET 7.036



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Beadrock		160	Mohr-Coulomb	500	40
WRD		130	Mohr-Coulomb	0	35

Method Name	Min FS
Spencer	1.5

srk consulting

Project Name: Summit Mine Work Plan - WRD		Analysis Description: Fill Design	
Drawn By: KC; Checked By EW	Scale: 1:1000	Scenario: Section 3 - Non-Circular	
Date: 6/28/2018	File Name: 511800-030-300_SummitMine_WRD_Fill_Section3.slmd		

SLIDEINTERPRET 7.036