COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

MEMO TO FILE

Date: 7/18/2018

Specialist: T. Cazier Signed:

Subject/Operator/Operation/File No. High Grade Mill liner system is NOT considered an environmental protection facility (EPF) / Cresson Project / M-1980-244

Type of Interaction: Meeting Phone (Other)

Person(s) contacted and affiliation: CC&V Newmont environmental group (Feb. 2018)

History

After Newmont took over the management of the Cresson Project from Anglo Gold, some process fluid releases from the High Grade Mill (HGM) were not reported. This was primarily due to Newmont misinterpreting the liner under the HGM as an EPF. On February 5, 2018 I sent several members of Newmont's CC&V environmental staff an email explaining why the HGM liner was NOT an EPF. The following summary encompasses the details of that February 5, 2018 email.

Summary

The HGM was built on as much as 125 feet of fill. To my knowledge, no mill has been built on such a large depth of fill. In addition, this fill supports a significant area of the SGVLF dual liner. The Division's concerns with regard to the mill platform were twofold: 1) The stability of the fill with respect to slope failure and the impact such a failure would have on both the SGVLF and the HGM (both designated as EPFs); and 2) Whether the continuous vibratory load from the mill might induce differential settling in the 125 feet of fill (compromising mill integrity) or the vibration causing wear on the SGVLF liner leading to leakage. As such, the certification report was required for the mill platform (also considered an EPF as its construction and performance was and is critical to the two EPFs it supports performance). Therefore, regardless of how Newmont has interpreted the acceptance of the Mill Platform certification report, the HGM liner was never considered an EPF, but only tertiary containment.

Future Concerns:

Subsequent to the review and approval of the mill platform in Amendment 10, the Division learned the HGM liner has some significant storage capacity as a subsurface lined berm on the southwest

corner of the mill platform (reference attached Drawing A320, Rev. 3, dated 8/16/12 in Vol. 1, Mill Site Earthworks Project, Final Report, Quality Assurance Monitoring and Test Results, dated January 31, 2014). The depth of storage is as much as 7 feet, based on Figure 4 provided in TR-81, received August 8, 2016 – see below. At this point in time there is no way to gravity drain the water infiltrating the mill platform and captured by the liner. The DRMS has concerns related to permanent water storage under the mill after reclamation and its influence on stability after pumping ceases. The DRMS has informally told CC&V/Newmont that a revised reclamation plan for the HGM liner is required to allow free drainage of water infiltrating the mill platform.

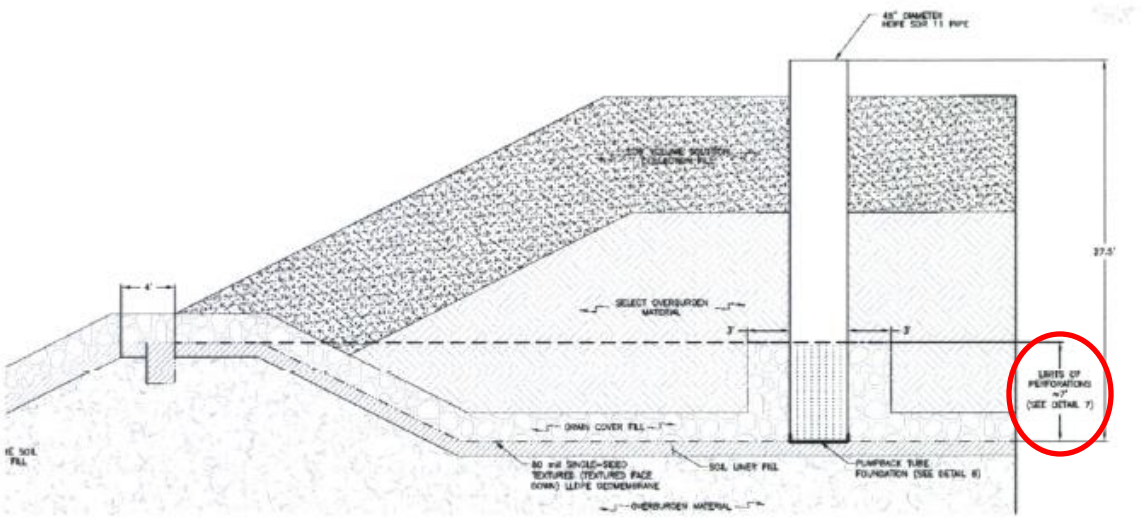
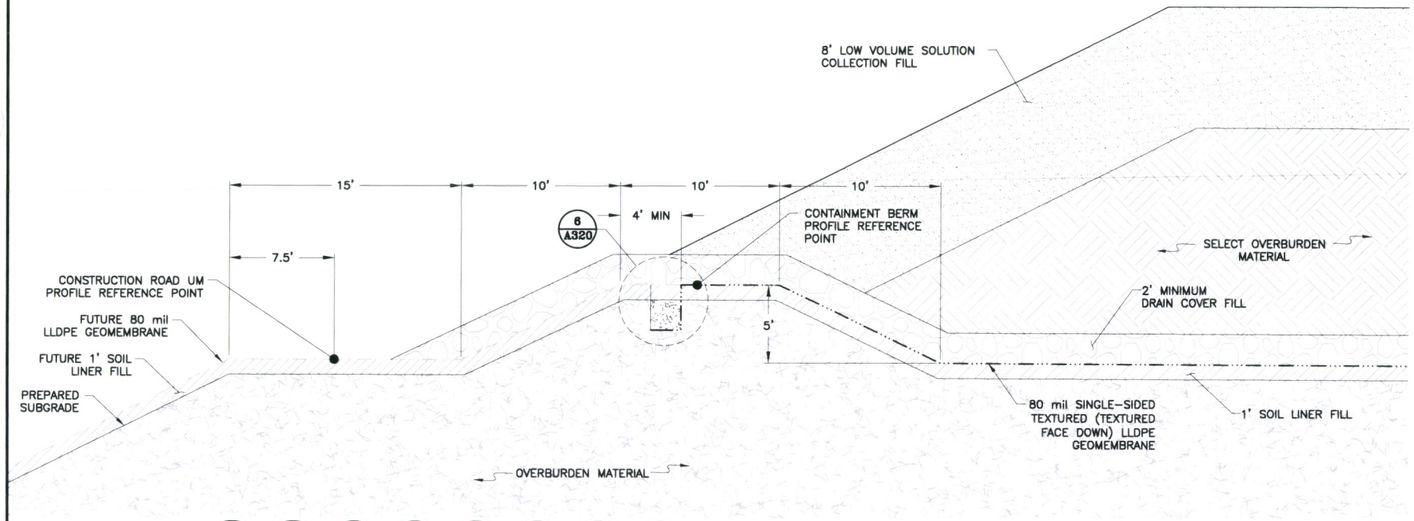


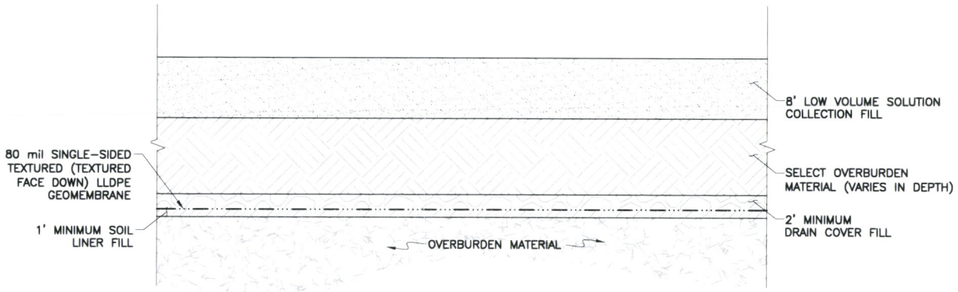
Figure 4: Cross sectional view of the mill platform area showing the liner, drain cover fill (dcf), select overburden material, low volume solution collection fill, the 48"standpipe used to remove fluid from the basin, and approximately five feet of freeboard. Source: Mill Site Earthworks, Re-issued for Construction, August 16, 2012: Overburden Storage Area, Pumpback tube, Plan View and Details, Rev 1, p. 9.

Figure 4 from TR-81 submittal (note ~7 ft berm height)

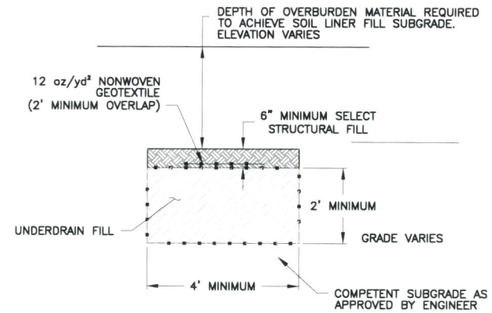
ec: Russ Means, Michael Cunningham, Elliott Russell, Amy Eschberger (DRMS)



G A100 G A160 G A170 G A200 G A270 G A300 G A310 G A430 **BENCH GEOMEMBRANE TIE-IN**
NTS



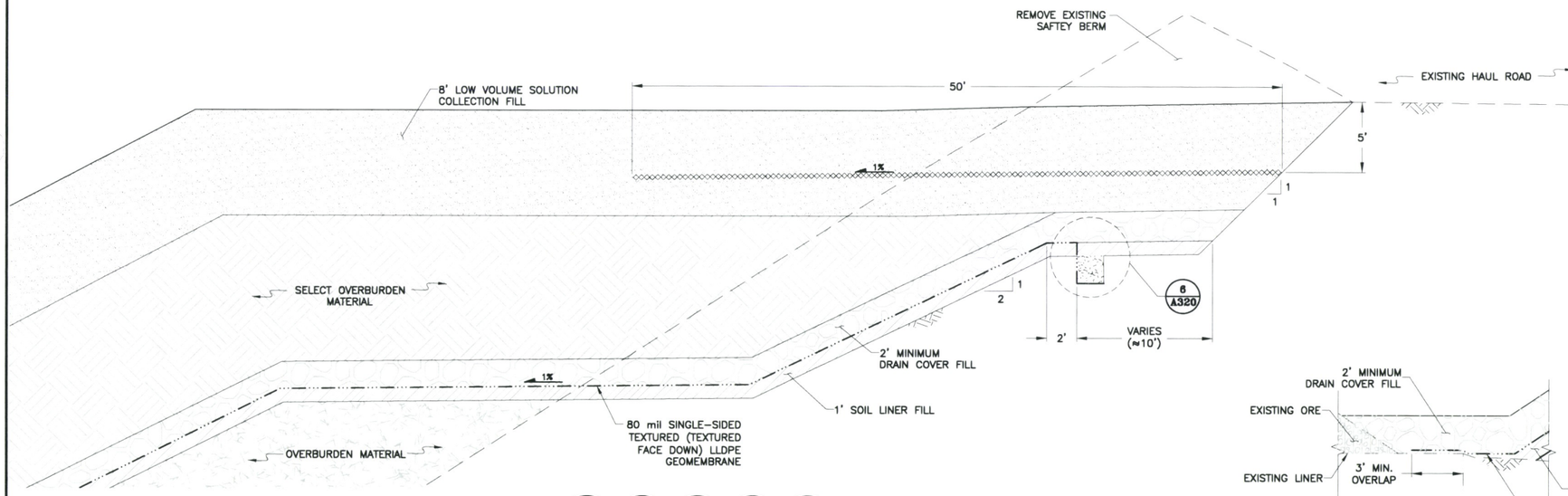
H A100 H A120 H A200 H A270 H A300 H A310 **TYPICAL COVERED LINER DETAIL**
NTS



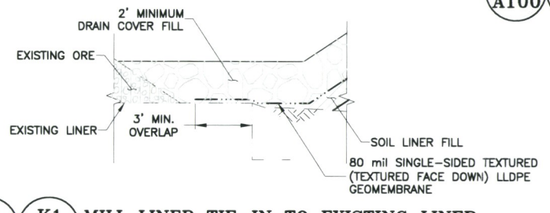
NOTES:

1. CONFIGURATION OF UNDERDRAIN TRENCHES MAY BE MODIFIED PROVIDED MINIMUM CROSS SECTIONAL AREA SHOWN ABOVE IS ACHIEVED.
2. UNDERDRAIN SHALL BE INSTALLED ON A MINIMUM 1.0% GRADE.
3. AS REQUIRED BY LOCALIZED GRADING, THE UNDERDRAIN CAN BE INSTALLED WITH A MINIMUM SLOPE OF 0.5% WITH APPROVAL FROM THE EINGINEER.

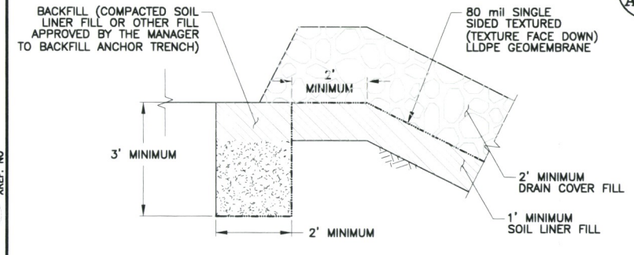
L A100 L A200 **SECONDARY UNDERDRAIN**
NTS



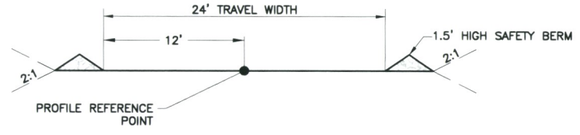
J A100 J A200 J A270 J A300 J A310 **GEOMEMBRANE TIE-IN ALONG HAUL ROAD**
NTS



K1 A100 K1 A120 K1 A270 K1 A300 **MILL LINER TIE-IN TO EXISTING LINER**
NTS



6 A300 6 A310 6 A320 6 A420 6 A425 **ORE STORAGE AREA ANCHOR TRENCH**
NTS



K A200 K A300 K A310 K A410 **ACCESS ROAD SECTION**
NTS

3	8/16/12	RE-ISSUED FOR CONSTRUCTION	JNM / CMT
2	3/09/12	RE-ISSUED FOR CONSTRUCTION	JNM / CMT
1	3/02/12	RE-ISSUED FOR CONSTRUCTION	JNM / CMT
0	1/24/12	ISSUED FOR CONSTRUCTION	JNM / CMT

COLORADO REGISTERED JANNEY-MOORE PROFESSIONAL ENGINEER 37511 8-16-12

CLIENT: CRIPPLE CREEK & VICTOR GOLD MINING COMPANY

PROJECT: MILL SITE EARTHWORKS

TITLE: OVERBURDEN STORAGE AREA & FUTURE MILL PLATFORM GRADING SECTIONS AND DETAILS SHEET 3 OF 3

DESIGNED BY	CMT	CHECKED BY	JNM
DRAWN BY	CMT	APPROVED BY	JNM

FILENAME: 74201125KD03 | DRAWING No.: A320 | REV: 3

XREF: NO

PLOT SCALE