LCDO_Comments, BLM_NM <blm_nm_lcdo_comments@blm.gov>

Comments on Draft Environmental Impact Statement for the Copper Flat Mine

1 message

candi Browne Ex 6 Mon, Mar 28, 2016 at 1:21 PM
To: BLM_NM_LCDO_Comments@blm.gov

RE: Copper Flat Copper Mine, Draft Environmental Impact Statement (DEIS), November 2015,

New Mexico Copper Corporation (NMCC) submitted to the BLM the Copper Flat Mine Plan of Operations (MPO), dated December 2010 and revised June 2011.

Copper Flat, located near Hillsboro in Sierra County, NM on BLM managed public land.

RE: HDPE geomembrane Liner for the Tailings Storage Facility (TSF) & any other uses of liners for Waste Rock Storage or Water Holding Pond storage, etc.

From: Candace Browne

Ex 6

Continuing with the ongoing Scoping process which began for the public in February 2012. Noting that Scoping is meant to bring to light '*significant issues related to a proposed action*.' (40 CFR 1501.7).

6.3 '*Scoping is the process by which the BLM solicits internal and external input on the issues, impacts, and potential alternatives that will be addressed in an EIS or EA as well as the extent to which those issue and impacts will be analyzed in the NEPA document which need to be addressed .*'

BLM NEPA Handbook H-1790-1, including Scoping Sections

Thank you for the opportunity to make these comments on the Draft EIS.

In 2012, I and others submitted Comments pertaining to Concerns about any HDPE geomembrane liner planned for use at Copper Flat as an impermeable barrier under the 541 acre Tailings Storage Facility (TSF)

and other designated areas to contain the toxic materials stored in these areas.

The 2012 Scoping Comments, that I am aware of, sent in about – any HDPE geomembrane liner(s) – are attached in full. They are:

1. *Memorandum on HDPE Liners at Copper Flat Mine*, January 21, 2012, submitted by Max Yeh

2. 10 *Tailings Impoundment –after monitoring stops*;

11 *Liner; 11A HDPE Geomembrane Liner – Long term effect*;

12A *Liner Seams*;

24 *HDPE Geomembrane Liner – no detailed information in MPO*;

12B *HDPE geomembrane Liner – Wells*;

12C & 12D *Tailings Liner – Breach/Break – Greyback Arroyo*;

12E *Tailings Liner – Breach/Break – Electricity*;

12F *Pit Wall or Tailings liner – Breach/Break – Acid Rock Drainage*;

12 *Waste Rock (Stock Piles)*;

26 *Data Missing from the NMCC Mining Plan of Operation*

Submitted by Candi Browne, electronically March 4, 2012.

My 2012 Scoping Comments/Concerns about any HDPE geomembrane liner system were/are based on the **NMCC Mining Plan of Operation, Appendix D: Tailings Impoundment Conceptual Design Report (Golder, 2010), *Golder Associates Inc, November 17, 2010, COPPER FLAT PROJECT Conceptual Design Report, 103-92557.***

As well as research about HDPE geomembrane liners. For sources see my attached 2012 Comments

Additional Resources:

1.) Geotechnical Construction Quality Assurance (CQA) Plan for Construction of the Composite Liner System at Gregory Canyon Landfill ; Prepared for: Bryan A. Stirrat & Associates (BAS) 16885 West Bernardo Drive, Suite 305 San Diego, CA 92127 ; Prepared by: GeoLogic Associates, same address, San Diego, CA, May 2003. See Attached: pdf: appndx_n

2.)*United States Environmental Protection Agency Guide for Industrial Waste, Part IV, Protecting Ground Water, Chapter 7: Section B, Designing and Installing Liners: Technical Considerations for New Surface Impoundments, Landfills, and Waste Piles. See attached pdf: chap7b

3.) Layfield Environmental Containment; www.layfieldgroup.com

4.) HARDROCK MINING IN NEW MEXICO, 2006

EARTHWORKS 2007, Cathy Carlson and Jonathan Schwartz

www.earthworksactio.org

Abandoned Mines: The counties with the most abandoned mines are Grant, McKinley and **Sierra**.

The state does not have dedicated funding for cleaning up pollution from abandoned mines. The

New Mexico Abandoned Mine Land Bureau gets funding from the federal Surface Mining

Control and Reclamation Act to mitigate only physical hazards at abandoned hardrock mines.

5.) What is Metallic Sulfide Mining?
http://waterlegacy.orgt/sulfide_mining
Metallic sulfide mining is a Midwest US term for hardrock mining for metals in sulfur-bearing rock, as differentiated from coal, iron ore, or gravel extraction.
Metallic sulfide mining is the practice of extracting metals from a sulfide ore body.
These metals include copper and gold.
Toxic metals in acid mine drainage (AMD) have polluted waters everywhere.
The U.S. EPA (Environmental protection Agency) has extensive information about AMD
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NOTE: The NMCC Mining Plan of Operation, as the main document needed for any interested &/or concerned public to read and use to make comments, is not now, nor has it ever been available to the

General public neither at the Truth or Consequences Public Library nor at the Hillsboro Public Library.

Extracts from the **GOLDER** design report:

Page 1, states *'NMCC has commissioned Golder Associates Inc (Golder) to develop the conceptual design of a new tailings storage facility (TSF) (for the Copper Flat property near Hillsboro in Sierra County, New Mexico).'*

Page 3 **GOLDER** states: *'…the ore reserve has been increased from the 60 million tons identified by Quintana, to approximately 100 million tons.*

Ore will be mined at a rate of 17,500 tons per day (tpd).

'The **GOLDER** *report presents the conceptual design of a tailings storage facility (TSF) capable of supporting tailings*

disposal for the currently identified ore reserve.'

Page 4 **GOLDER** states: *'Tailings will be delivered at a rate of 17,500 tons per day (tpd)*

at an anticipated solids content of 50% by weight.

At 92 per cent availability, the annual tailings deposition rate will be 5.88 million tons.'

Personal added computation:

5.88 per year x 17 years = 99.96 million tons of tailings sitting on the 514 acre TSF with its 0.80 inch thick HDPE geomembrane liner.

Questions/ Comments:

Will this Golder TSF design be adequate for the newly Proposed Alternative, Alternative 1

or Alternative 2 now delineated in the November 2015 DEIS?

These new alternatives will speed up, to almost twice, the amount of the tailings production daily (tpd) (from 17,500 to 30,000 tons) as the mining & milling process proceeds 24/7, 360 days a year.

How will this speed up of tons per day (tpd) of tailings material impact the ongoing, field construction of the liner?

The new Alternatives change the liquid portion of the tailings to a higher content of water.

Will water drain through the tailings more quickly? Will this put additional strain and pressure on the underdrain collection pond and other aspects of the liner system?

How will this extra water affect the supernant pool within the TSF?

What will happen if there is a storm event? Will there be adequate storage capacity for the extra water taking into consideration the extra water used to mill the ore using Alternatives 1 & 2?

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GOLDER Drawing 6 *Notes* state: '*Drawings present the conceptual design of a new and expanded tailings storage facility with a capacity of 100 million tons at an assumed dry density of 85 pounds per cubic foot.*

GOLDER on page 6: **3.4 TSF Liner System** the Report states*: 'The TSF liner will consist of an HDPE geomembrane placed on a minimum 6-inch thick layer of liner bedding fill.*

Beneath the starter dam and embankment underdrain, an 80 mil (0.80 inches) geomembrane is proposed

while within the impoundment interior, the geomembrane thickness will be ***60 mil.***

The underdrain collection pond liner will consist of a lower 60 mil and upper 80 mil HDPE geomembranes

separated by a drain net. '

Comments, Questions, Concerns, Inadequacies*:*

Is the minimum 6-inch thick layer of ***liner bedding fill*** adequate?

Is the 60 mil geomembrane within the ***impoundment interior*** adequate?

Is there documentation within the DEIS, showing scientific testing proving the adequacy of these two critical elements?

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Page 3, **GOLDER** states options:

'Utilize existing tailings (from Quintana's 3 month 1982 mining venture) as fine grained bedding fill for the future TSF geomembrane liner

(Or)

Place existing tailings inside the new TSF on top of the new geomembrane liner.'

On page 4 **GOLDER** states: *'The TSF can be constructed in a phased manner.'*

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The details on the liner listed so far within this Comment are all the details about the HDPE geomembrane liner given by **GOLDER** Associates.

COMMENT:

This is not adequate information to make an informed decision about the HDPE geomembrane liner design portion of the NMCC Mining Plan of Operation; therefore the information is lacking also in the DEIS. The additional needed information and the reasons for this are included within this Comment document.

Comments, Concerns, Inadequacies:

As stated by *Layfield Environmental Containment; www.layfieldgroup.com*, a company in the geosynthetics industry:

'It is normal practice to completely track all materials from manufacture to final inspection; qualify technicians and welding equipment each day before welding and every 4 hours after that; and to test each and every seam made in the field.'

Within another resource:

United States EPA Guide for Industrial Waste, Part IV, Protecting Ground Water, Chapter 7: Section B, Designing and Installing Liners: Technical Considerations for New Surface Impoundments, Landfills, and Waste Piles (EPA Guide);

'*Section VI discusses construction* **quality assurance and quality control**'

Additional points from the EPA Guide will be sited in following pages.

Comments, Concerns, Inadequacies:

In the DEIS there are:

no specifics about exactly which **resin** will be used

nor any detailed information about testing of the geomembrane rolls for defects,

nor manufacturing requirements,

nor installation requirements,

nor qualification of the Company hired to do the manufacturing nor the installation,

no detailed plan for ground preparation

no detailed plan for installation over the gradual increase of the footprint of the TSF over the years the mine is producing tailings.

ETC.

There is **no** information within the NMCC Mining Plan of Operation giving information on these vital issues. My Comments & Concerns on the HDPE geomembrane are within the NEPA Rules & Regulations which states: *'Scoping also helps to begin identifying **incomplete or unavailable information** and evaluating whether that information is essential to a **reasoned** choice among alternatives.'*

Reasons for concerns about this unavailable or incomplete information:

As stated in "Sulfide Mining and Sulfuric Acid Mine Drainage in Michigan's Upper Peninsula"; AMR Clearinghouse.org; Orange WaterNetwork.org (EPCAMR's Website); IMWA-International Mine Water Association; INAP-International Network of Acid Prevention; Acid Mine Drainage Blog; http://sweetwatervisions.com/Pages/sulfidemine.html

'Acid mine drainage (AMD) is a known and accepted problem. It is a significant issue with known toxic environmental impacts. One significant source of acid mine drainage comes from tailings contained in the Tailings Storage Facility. Other sources are waste rock piles, any water draining through the mining plant, the pit lake area, etc. These areas of potential AMD remain at the mining site after the mining operation is shut down. If not properly contained & monitored they will present an ongoing danger (of environmental pollution) of AMD into perpetuity.'

Within the **Golder Associates report**, the *existing problem*(s) & potential problem(s) at Copper Flat mine are clearly defined in these sections:

Page 3 : '*During the (Quintana), 1981-82 operating period, high concentrations of total dissolved solids and sulfate were detected in groundwater immediately downgradient from the existing Quintana (unlined) TSF. Local seepage of contaminated groundwater, which has been attributed to the existence of permeable geologic units in the TSF foundation, allowed process water and tailings seepage to migrate from the (TSF) impoundment.*'

Page 1*: 'Permeable foundation materials encountered during site investigation and construction of the (Quintana) TSF have been identified as the potential pathway for seepage from the TSF. Meteoric water leaching of tailings from the Quintana operation potentially contributes additional sulfate and dissolved solids to local groundwater. Management of existing tailings to mitigate existing and ongoing groundwater impacts is considered a parallel objective of TSF design.'*

Page 2 - **2.2** *'The existing TSF site was extensively explored by Sargent, Hauskins & Beckwith (SHB) in 1979 and 1980 as part of the SHB design effort. No additional field work was conducted as part of (this- Golder Assoc) conceptual design efforts.*'

'…the (TSF) facility [for NMCC] will be expanded approximately 1,000 feet to the east.'

"*Geotechnical investigation (SHB, 1980) of the existing TSF area was extensive, however, a portion of the new TSF will occupy ground that has <u>not</u> (my emphasis) been evaluated for geotechnical and hydrogeological condition. A <u>preliminary site investigation plan</u> (my emphasis) is presented in this (Golder Assoc., Inc) conceptual design report."*

Page ES-2 & page 5: **3.2 Hazard Classification**:

'*Based on the rules and regulations of the NM State Engineer, the Copper Flat TSF would be classified as a large dam having significant hazard potential." According to the New Mexico Administrative Code (19.25.12.10 B NMAC)'*

'Dams assigned the significant hazard potential classification are those dams where failure or misoperation result in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in populated areas with significant infrastructure.'

Page 5: 3.2 Hazard Classification

'*The TSF lies within the Greyback Wash drainage. Inspection of aerial photographs (Google Earth) indicates no human habitations in or adjacent to Greyback Wash between the TSF facility and* ***Caballo Lake, into which Greyback Wash ultimately discharges.*** ***[Caballo Lake is a reservoir of the Rio Grande River.*** (My addition)]

A dam breach and flood routing analysis will be required by the State Engineer (10.25.11.12 C (1) NMAC) to verify this classification.'

Page 6: '*Approximately* ***18 wells*** *appear to lie within the* ***TSF expansion area****. Existing wells in the TSF expansion will require abandonment in accordance with NM Environment Department (NMED) Office of the State Engineer (OSE). For wells that intercept groundwater, this will include removal of casings if possible, and sealing the entire well bore with cement of bentonite grout placed by tremmie pipe. '*

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Comments, Concerns, Inadequacies:

All the above information alerts BLM, other Governmental Agencies & the Public to the problems at the Copper Flat mine site concerning any future tailings storage facility. It is obvious that any conceptual plans, technical plans and construction quality assurance for a new TSF & and HDPE geomembrane liner need to be scrutinized with great care.

Wisdom indicates that to protect the water & all aspects of the environment with the highest quality technology; there needs to be included in the NMCC Mining Plan of Operation and the required EIS (or any Permit involving environmental aspects) a Construction Quality Assurance Plan for any HDPE geomembrane liners. This would include a highly qualified business that can independently do the necessary testing at each step in the process of any HDPE geomembrane.

Quoting highlights from this reference:

The *EPA Guide, Chapter 7, Section B,

Designing and Installing Liners:

Technical Considerations for New Surface Impoundments, Landfills, and Waste Piles (see attached):

[Although it is necessary to read the document to get a full understanding; here are a few highlighted points. See the attached document for further details]

***EPA Guide** page 2: '*If the risk evaluation recommended the use of a single liner, the next step is to determine the type of single liner system most appropriate for the site. Determining which material, or combination of materials, is important for protecting human health and the environment* [1].'

Following this is detail on Clay, geosynthetic clay liners & ***geomembrane liners****.*

*EPA Guide page 10: B. '*Geomembrane or flexible membrane liners are used to contain or prevent waste constituents*

and leachate from escaping a waste management unit.'

Geomembrane or Flexible Membrane Liners

*EPA Guide page 11: What are the thickness recommdations for geomembrane liners? *'Recommended minimum thicknesses ensure that the liner material will*

withstand the stress of construction

and the weight load of the waste,

and allow adequate seaming to bind separate geomembrane panels.

Reducing the potential for tearing or puncture, through proper construction and quality control, is essential for a geomembrane to perform effectively. '

'What issues should be considered in the design of a geomembrane liner? *'…determining appropriate material properties and testing to ensure these properties are met, understanding how the liner will interact with the intended waste stream, accounting for all stresses imposed by the design, and ensuring adequate friction.'*

Material Properties & Selection: '*When designing a geomembrane liner, you should examine several properties of the geomembrane material in addition to thickness, including:*

tensile behavior,

tear resistance,

puncture resistance,

susceptibility to environmental stress cracks,

ultraviolet resistance,

and carbon black content. '

Puncture & tear resistance: *'…subject to tearing during installation due to HIGH WINDS or handling.'*

Susceptibility to environmental stress cracks: *'In surface impoundments …cracks can also result where the geomembrane liner… .. has greater exposure to atmosphere and temperature changes, such exposure can increase the potential for environmental stress cracking.'*

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Ultraviolet resistance: *'…especially in cases where the liner might be exposed to ultraviolet radiation for prolonged periods …..which often occur in* ***surface impoundments****……can cause degradation and cracking.*

Adding carbon black or other additives….can increase ultraviolet resistance.

Backfilling over exposed geomembrane…works to prevent degradation due to ultraviolet radiation.'

*EPA Guide Pages 11-12: Interactions With Waste *'…chemical resistance is a critical consideration. Testing for chemical resistance … American Society for Testing materials (ASTM) has also adopted standards for testing the chemical compatibility of various geosynthetics, including geomembranes, with lechates from waste management units. ASTM D-5747 provides a standard for testing the chemical compatibility of geomembranes. [7]'*

Stresses Imposed by Liner Design: *'…include:*

the differential settlement in foundation soil,

strain requirements at the anchor trench,

strain requirements over long, steep side slopes,

stresses resulting from compaction,

and seismic stresses. '

Designing for Adequate Friction: *'Adequate friction between the geomembrane liner and the soil subgrade, as well as between any geosynthetic components, is necessary to prevent extensive slippage or sloughing on the slopes of a unit.'*

Several points are explored. *'An evaluation of these issues can affect the choice of*

geomembrane material,

polymer type,

fabric reinforcement,

thickness,

and texture necessary to achieve the design requirements. '

What issues should be considered in the construction of a geomembrane liner?:

'….appropriate shipment and handling procedures,

perform testing prior to construction,

prepare the subgrade,

consider temperature effects,

and account for wind effects

….select a seaming process,

determine a material for and method of backfilling

AND plan for testing during construction.'

*EPA Guide Pages 12-13: Shipment, Handling, and Site Storage *'You should follow quality assurance and quality*

control procedures to ensure proper handling of geomembranes. ' '…provide for proper storage (on site).'

Subgrade Preparation: *'..subgrade material should*

meet specified grading,

moisture content,

and density requirements.'

'see Chapter 3 of EPA's Technical Guidance Document: Quality Assurance and Quality Control for Waste Containment Facilities (U.S. EPA, 1993c)'

Testing Prior to Construction: *'Before any construction begins, it is recommended that you test both the geomembrane materials from the manufacturer and the installation procedures.*

Acceptance and conformance testing is used to evaluate the performance of the manufactured geomembranes. Constructing test strips can help evaluate how well the intended construction process and quality control procedures will work.' Details are given with ASTM Methods sited.

*EPA Guide Page 14: Temperature Effects: *'Liner material properties can be altered by extreme temperatures. High temperatures can cause geomembrane liner surfaces to stick together (blocking).*

Low temperature can cause the liner to crack when unrolled or unfolded.

Recommended maximum and minimum allowable sheet temperatures for unrolling/unfolding 50^{o}C (122^{o}F) and 0^{o}C (32^{o}F).'

Wind Effects: *'Windy conditions can increase the potential for tearing…..panels can be weighted down with sand bags.'*

Seaming Processes: *'..a critical step involves field-seaming the separate panels or rolls together.*

*For more information, '*Technical Guidance Document: Inspection Techniques for the Fabrication of Geomembrane Field Seams. (U.S. EPA, 1991c).

Consistent quality in fabricating field seams is paramount to liner performance.

Conditions that could affect seaming should be monitored and controlled during installation.

Factors influencing seam construction and performance include:

ambient temperature,

relative humidity,

wind uplift,

changes in geomembrane temperature,

subsurface water content,

type of supporting surface used,

skill of the seaming crew,

quality and consistency of chemical or welding materials,

preparation of liner surfaces to be joined,

moisture at the seam interface,

and cleanliness of the seam interface.'

Seaming Process – Field Seams: Continued on page 15: *'To help control some of these factors, no more than the amount of sheeting that can be used during a shift or a work day should be deployed at one time.*

To prevent erosion, ambient temperature increase caused by carbon black, the subgrade should not be wet, etc. '

'Regardless of how well a geomembrane liner is designed, its ability to meet performance standards depends on proper quality assurance and quality control during installation.'

EPA Guide Page 15: Protection and Backfilling: *'For soil covers, three considerations determine the amount of slack to be placed in the underlying geomembrane*

……appropriate type of soil,

using proper type of equipment,

establishing a placement procedure for the soil.

'… prevent wrinkling

….vehicles do not drive directly on the liner,

…prevent damage caused by covering the liner with too much (page 16)soil too quickly.

'Preventing premature liner failure can be faster and more cost-effective than having to repair a damaged liner.'

*EPA Guide Page 16: Testing During Construction:

Testing during construction enables assessment of the integrity of the seams connection the geomembrane panels. ….categorized as either destructive *or* nondestructive.*'*

'For increased quality assurance, it is recommended that peel and shear tests on samples from the installed geomembrane be PERFORMED BY AN INDEPENDENT LABORATORY."

See many additional details in the document.

'If test results for the seam or sheet samples do not meet the acceptance criteria for the destructive tests, you should continue testing the area surrounding the rejected sample to determine the limits of the low quality seam….then corrective measures…and retesting.'

Nondestructive Testing is done differently – see the document for details.

*EPA Guide Page 23 - IV Double Liners (Primary and Secondary Lined Systems) For details see report.

*EPA Guide Page 24 – V Leachate Collection and Leak Detection Systems For details see report.

My Comment & Concerns voicing Omissions and Inadequacies about the above issues highlighted from the EPA Guide are that the November 2015 DEIS is woefully incomplete and inadequate without a detailed CQA Plan included in the Draft EIS so that the EPA considerations will be covered & the CQA Plan can be evaluated by the BLM and all the other Departments involved, plus the public before the Environmental Impact Statement goes forward.

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Included with my comments is an attachment pdf titled *'appndx_n.pdf'*. The pdf details a **Geotechnical Construction Quality Assurance (CQA) Plan for Construction of the Composite Liner System at Gregory Canyon Landfill**

Prepared for: Bryan A. Stirrat & Associates (BAS) 16885 West Bernardo Drive, Suite 305 San Diego, CA 92127 and Prepared by: GeoLogic Associates, same address, San Diego, CA, May 2003

This **CQA Plan** pdf details the role of the *Construction Quality Assurance (CQA) for Geotechnical Monitoring for Geosynthetics* including:

their manufacturing,

transportation & handling,

storage,

conformance testing,

installation,

including earthworks

HDPE placement,

field seaming,

construction testing,

field testing,

laboratory testing,

identification of defects

and repair procedures,

wrinkles,

& anchor trench quality plus more.

For groundwork they offer details about geosynthetic clay liner delivery, conformance testing, sampling, installation, surface preparation & repairs.

This **CQA Plan** pdf also details the interrelationship between the CQA company, owner, engineer, construction manager, geosynthetic subcontractor (basically the installation firm), geotechnical CQA officer (daily quality assurance), and other experts as well as the independent testing laboratory, project documents, drawings & specifications & other companies.

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Geomembrane technology has many uses. It is, however, known for its problems & failures.

See:

J.P Giroud's 2005 Vienna Terzaghi Lecture, "Geosynthetics Engineering: Successes, Failures, and Lessons Learned." And his book "Lessons Learned from Failures Associated with Geosynthetics"

www.geosynthetica.net/geosynthetics-risk-management-program-2004/"Looking Back: The Geosynthetics Risk Management Program" by Chris Kelsey, April 2, 2015

Peggs, "Geomembrane Liner Durability: contributing Factors and Status Quo" 2003

Beck, Smith, and Sample, "Design Considerations for the Use of Geomembranes for Phosphate Tailings Impoundments" 2009

Peggs "The Pond Edge: Geomembrane Liners in Wastewater Treatment Ponds: Whales, and Their Prevention" 2006

Smith "SIP in Geomembrane Liners: An Acceptable Condition?" 2001

Duvall and Edwards "Oxidative Degradation of High Density Polyethylene Pipes from Exposure to Drinking Water Disinfectants" 2009

Beginning on page 11- 12 & 13 of the **GOLDER** report they give long list of studies that need to be done for the TSF:

5.1 Geotechnical Investigation

These include studies within these areas:

5.1.1 Existing TSF Area - Multiple test that are needed are listed.

5.2 Tailings Characterization – *'The characteristics of future tailings will impact operation of the new TSF.'*

One study listed is:

'Acid base accounting,

net acid generation (NAG),

total metals,

major oxides by x-ray florescence (XRF),

leach extraction testing,

and mineralogy by x-ray diffraction (XRD) (cyclone underflow and overflow).

5.3 Hydrogeological Characterization: *'Local monitoring wells that will be decommissioned during TSF expansion will require replacement in the area below the new toe berm and underdrain collection pond. Water level measurements and in-situ permeability tests conducted concurrently well drilling and well installation can be used in conjunction with existing data to evaluate hydrogeological conditions in the TSF expansion area.'*

5.4 Chimatological Characterization

Not mentioned, but I suggest the need for a study of the impact of high wind conditions on techniques for laying out rolls of HDPE geomembrane and successfully seaming the edges together.

Concern:

What will the impact be to the quality of laying out & seaming the geomembrane during times of high wind conditions that are so prevalent & continuous during certain seasons in Sierra County?

5.5 Engineering Studies

The following is a listing of design studies that will be required to complete the design of the TSF:

Foundation settlement analyses;

Tailings drainage analyses;

Seismic hazard analysis:

Static and dynamic embankment stability analyses, including estimation of displacement

under seismic loading;

> *[*The assumed lateral load an earthquake might cause to act upon a structural system in any horizontal direction. Over the life of the TSF. Hundreds of years?]

Seismic and static (monotonic loading, flow slide) liquefaction potential analyses;

Evaluation of tailings sand availability, mass balance and deposition modeling;

Liner seepage assessment;

Foundation hydrogeological assessment;

Water balance;

Tailings basin hydrologic assessment for surface water diversion sizing;

Estimation of design storm event (PMP) precipitation;

Dam breach analysis as per OSE requirements.

COMMENT, CONCERNS, INADEQUACES:

My Comments about the above list of studies *that need to be done* is that the November 2015 DEIS is woefully incomplete and inadequate without these studies having been completed and the data included in the Draft EIS so that the studies can be evaluated by the BLM and all the other Departments involved, plus the public before the Environmental Impact Statement goes forward.

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In the November 2015 DEIS, the Golder Associates Report is not listed in the 19 page Reference section. Since Golder's is a report that gives information on the tailings storage facility (TSF) & since it is obvious that the wording concerning the TSF used on many pages in the DEIS is taken verbatim from the Golder Report; it seems inappropriate that it is not listed on the pages where the obvious Golder excerpts are used. Also it needs to be listed in the Reference section with information on how to view the original document. Adding this reference material would provide the needed documentation to assist with the Scoping process. NEPA requirements call for & BLM asks for input from the public; therefore we, the public need to have the reports & studies made available to us in clear, easy-to-locate ways.

NOTE: The NMCC Mining Plan of Operation is not now nor ever has been available to the general public at the Truth or Consequences Public Library nor at the Hillsboro Public Library.

Earth is 78% water.

Only .01% is pure & drinkable. 95% of this is polluted.

800 million people on Earth have no source of pure drinkable water. Something to think about.

Thank you for your consideration of these comments, concerns, omissions and inadequacies.

4 attachments

2012 Scoping Comments RE- HDPE geomembrane liner.docx
40K

Backup of HDPEfor BLM.wbk
29K

appndx_n.pdf
7841K

chap7b.pdf
578K