APPENDIX D

Tailings Impoundment Conceptual Design Report (Golder, 2010)

REPORT

COPPER FLAT PROJECT

Conceptual Design Report

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EXECUTIVE SUMMARY

Copper Flat is a porphyry copper mine that was briefly operated by Quintana Minerals Corp. (Quintana) in 1981 and 1982. After approximately 1 year of operation, mining was halted due to depressed copper prices, and the facility was decommissioned. New Mexico Copper Corporation (NMCC) has acquired an option on the Copper Flat property and is evaluating resuming mining and milling operations. Based on a recent NI 43-101 compliant preliminary economic assessment (PEA, [SRK, 2010]), 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). This report presents the conceptual design of a tailings storage facility (TSF) capable of supporting tailings disposal for the currently identified ore reserve.

During the 1981-82 operating period, high concentrations of total dissolved solids and sulfate were detected in groundwater immediately downgradient from the existing Quintana 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 impoundment. Existing tailings are now drained and lie above the local groundwater table, however, leaching by meteoric water potentially contributes additional sulfate and dissolved solids to groundwater. Impacted groundwater and tailings from the 1981-82 operations are the subject of ongoing abatement actions. Groundwater compliance issues associated with the Quintana operation have led NMCC to propose construction of a lined TSF for future operations.

The starter dam from the earlier operations remains in place, however, in order to provide the required increase in storage capacity, while limiting future dam height and maintaining gravity delivery of tailings, the facility will be expanded approximately 1,000 feet to the east. It is assumed that the existing starter dam will be used as a borrow source for new embankment construction.

Approximately 1.2 million tons of tailings were placed in the north disposal cell prior to the suspension of operations in 1982. It is assumed that future TSF construction will require the incorporation of measures to mitigate potential groundwater impacts from existing tailings in order to meet groundwater contamination abatement actions. Several options for the management of existing tailings have been considered at a preliminary level. These include:

- Capping existing tailings in-place beneath a low permeability cover such as a geomembrane or composite cover;
- Utilize existing tailings as fine grained bedding fill for the future TSF geomembrane liner; and
- Place existing tailings inside the new TSF on top of the new geomembrane liner.

All options are considered to provide similar benefits relative to mitigating groundwater impacts associated with existing tailings.

The method of tailings embankment construction selected by Quintana was upstream raise construction with peripheral discharge of spigotted whole tailings. The proposed method of construction for the new TSF is by centerline raises with cycloned tailings sand. The tailings surface will rise approximately 80 feet in the first two years of operation. Centerline raising with cycloned sand was selected as the construction method because as a general rule, the tailings rate of rise should be less than 10 feet per year for upstream construction. NMCC's ability to develop a drained and consolidated foundation suitable for upstream raise construction using peripherally spigotted discharge of whole tailings is questionable due to the high rate of rise, which will not drop below 10 feet per year in the first 5 years of operation.

Initial construction will include a toe berm to buttress the tailings embankment and a starter dam for placement of the tailings header line and cyclones. Sand (cyclone underflow) will be placed on the embankment while the tailings slimes (cyclone overflow) will be discharged to the impoundment interior. The TSF geomembrane liner will be placed beneath the starter dam and anchored on the crest of the toe berm. An underdrain system consisting of a filter compatible soil and drainage collection pipes will be placed on top of the geomembrane liner, beneath the sand dam footprint, to facilitate drainage and consolidation of the cycloned sand. The underdrain system will extend into the impoundment interior in the area that will underlie the free water pond. Underdrainage will be routed to a lined underdrain collection pond located downstream of the toe berm.

The TSF can be constructed in a phased manner. During initial construction phases, diversion ditches can be constructed to divert stormwater from upstream catchment areas within the area contributory to the impoundment. The contributory area is approximately equivalent to the ultimate TSF footprint as only minor peripheral areas drain into the TSF. At final buildout, there is minimal potential for surface water runon from external areas. Throughout most of the life of the facility, stormwater management requirements will be limited to direct precipitation.

A review of available aerial photographs indicates no human habitations adjacent to the drainages below the proposed TSF. Based on the rules and regulations of the New Mexico State Engineer, the Copper Flat TSF would be classified as a large dam having significant hazard potential. The impoundment will be required to contain the equivalent of 75 percent of the probable maximum precipitation (PMP) during operations. A spillway capable of passing 75 percent of the PMP will be required upon closure.

Geotechnical investigation (SHB, 1980) of the existing TSF area was extensive, however, a portion of new TSF will occupy ground that has not been evaluated for geotechnical and hydrogeological conditions. A preliminary site investigation plan is presented in this conceptual design report.

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1.0 INTRODUCTION

1.1 Scope of Work

New Mexico Copper Corporation (NMCC) has acquired an option on the Copper Flat property, located near Hillsboro in Sierra County, New Mexico. Copper Flat is a porphyry copper deposit that was briefly mined by Quintana Resources in 1981 and 1982 before depressed copper prices forced the suspension of mining and milling operations. During the Quintana operation, the identified ore reserve was approximately 60 million tons. Further drilling completed since cessation of mining operations has increased the ore reserve from 60 million to approximately 100 million tons. NMCC has commissioned Golder Associates Inc. (Golder) to develop the conceptual design of a new tailings storage facility (TSF) capable of containing tailings from the expanded mining operation. Conceptual design of the new TSF, as well as plans for geotechnical investigation of the expanded TSF footprint and fulfilling data collection requirements necessary to advance the TSF design to feasibility and construction level are presented in this report.

1.2 Project History

The Quintana operation included open pit mining, conventional milling and off-site shipment of copper concentrate. Tailings were thickened to a solids content of 50 percent by weight (oral communication, Jack Bailey, 10/02/2010) and transported by gravity flow to the existing TSF located approximately 1 mile east of the open pit. Impoundment construction and operation were typical of the industry practices of the day. Whole tailings were discharged into the impoundment via a tailings header line and spigots placed peripheral to the impoundment. The TSF constructed for the Quintana operation remains in-place to this date. Remaining facilities include the starter embankment, internal splitter dikes, concrete decant towers and presumably, buried under drain pipes. Approximately 1.2 million tons of tailings were deposited in the existing north tailings cell.

The tailings thickener is reported to have been partially decommissioned and buried. The tailings delivery system has been removed. The Greyback Wash diversion, electrical supply lines, a water supply well field and water supply pipeline, groundwater monitoring wells and pumpback wells also remain. Milling and processing facilities were decommissioned and removed from the site.

During Quintana operations, elevated sulfate and dissolved solids were detected in groundwater in the vicinity of the existing tailings dam. Permeable foundation materials encountered during site investigation and construction of the 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. Impacted groundwater and the existing tailings are the subject of an ongoing abatement action. Management of existing tailings to mitigate existing and ongoing groundwater impacts is considered a parallel objective of TSF design.

2.0 SITE DESCRIPTION

2.1 Existing Conditions

The location of the proposed TSF is shown on Drawings 1 and 2. Elevation in the TSF basin area ranges from approximately 5,160 feet above mean sea level (amsl) near the base of the toe berm to over 5,500 feet on the ridges northwest of the impoundment footprint. Natural slopes range from 2 horizontal to 1 vertical (2H:1V) adjacent to the perimeter ridges to less than 10H:1V in the lower portion of the basin.

Previous disturbance of the TSF area is widespread. Existing features can be seen in the aerial photograph on Drawing 1. Drawing 2 shows the location of the proposed TSF projected on existing topography. Placer mining disturbance that predates the Quintana operation can be seen in most of the drainages in the TSF basin, and other drainages radiating from the mine area. More recent disturbance associated with the Quintana mining operation includes tailings deposits, the old starter dam and splitter dikes, construction material borrow areas and tailings delivery and reclaim water pipeline routes. Two concrete decant towers and concrete reclaim pipe foundations also remain in place and while not visible, buried reclaim water pipes also occur. A series of monitoring wells have been placed around the toe of the old starter dam.

The TSF site is located in the upper reaches of a shallow basin. The basin is bounded by low hills on the southwest, west and north sides such that the ultimate TSF will occupy most of the area that could contribute surface water runoff to the TSF. While diversions will be required in the early stages of the operation to divert stormwater runoff, peripheral areas contributing stormwater runon during the later stages of the future operations will be limited to a few acres on the northwest side of the TSF.

2.2 TSF Area Geology and Foundation Conditions.

The existing TSF site was extensively explored by Sargent, Hauskins and Beckwith (SHB) in 1979 and 1980 as part of the SHB design effort. No additional field work was conducted as part of conceptual design efforts. The upper layer of soils in the vicinity of the existing starter dam consists of sandy materials. Surficial sand is underlain by a wedge of silty clays, clayey and clayey silts that appears to thicken in a easterly direction. Gravels underlie the silts and clays and outcrop in the upper portion of the TSF basin. These gravels appear to have been the borrow source for the existing dam.

Permeable basalt was encountered in the lower portion of the tailings basin. The basalt is presumed to occupy a paleo-drainage cut in the local foundation soils. It can be seen in outcrop and subcrop south of the existing splitter dike and was intercepted in several exploratory boreholes completed in the central starter dam area. Due to its permeable nature, the basalt has been identified as the likely pathway for seepage and contaminants from the existing impoundment. This potential was identified during the design of the existing impoundment, and an attempt was made to cap the basalt with fine grained, low permeability soils to inhibit seepage.

2.3 Climate

The Copper Flat property experiences on the order of 10 to 13 inches per year of precipitation with the majority of rainfall occurring in the summer months associated with short duration, high intensity thunderstorms. Winter rains are associated with Pacific storms that generally migrate from west to east across the desert southwest. Summer temperatures exceed 100 degrees while winters are generally mild with limited snow and ground freezing.

In general, evaporation exceeds precipitation in desert lowlands across the region. It is anticipated that the tailings impoundment will be operated at net negative water balance, with periodic, temporary accumulation of stormwater from direct precipitation. Stormwater will be recovered with tailings supernatant water and reused in milling and processing. The effect of stormwater accumulation will be a reduction in raw make-up water requirements.

3.0 PROPOSED TAILINGS STORAGE FACILITY DESCRIPTION

3.1 TSF Geometry

The proposed method of tailings embankment construction is by the method of centerline raises. The basis for selection of this method is due to the high rate of tailings rise that will be experienced during the first 3 to 4 years of operation. Construction by upstream raises typically requires a rate of tailings rise of approximately 10 feet per year or less in order to allow consolidation and drainage of impounded tailings, and the development of conditions suitable for supporting upstream raises. The centerline method of construction using cycloned sand will allow the embankment to be constructed on a foundation of well drained sand.

A toe berm will be constructed around the periphery of the TSF which will serve as a buttress to the embankment outslopes. An internal starter dam is proposed for placement of the tailings discharge header pipe. Tailings will be delivered at a rate of 17,500 tpd at an anticipated solids content of 50 percent by weight. At 92 percent availability, the annual tailings deposition rate will be 5.88 million tons.

Cyclones on the tailings header line will be used to separate the sand fraction (cyclone underflow) from the whole tailings stream. Tailings sand will be used for embankment construction while the fine fraction of the tailings, the tailing slimes (cyclone overflow), will be discharged into the impoundment interior. The resulting tailings impoundment surface will slope away from the embankment and force tailings supernatant and stormwater into the interior of the impoundment. The locations of the toe berm and starter dam are shown on Drawing 3.

The crest elevation of the starter dam and toe berm have initially been set at 5,220 feet amsl. Adjustments to the height of these structures will be evaluated in detailed design studies. Starter dam height will be determined by the dry freeboard required to maintain stormwater storage capacity and the volume of sand that will be available for dam construction during operations. The availability of sand will be determined by the degree of ore milling. A finer grind will reduce sand content and could require a higher initial starter dam height while a coarser grind will provide more sand and allow an increased rate of sand deposition. Toe berm height will be influenced by the stability of the tailings embankment. The embankment sand and underdrain will be placed over a geomembrane liner. Interface friction at the liner/subgrade and the liner/underdrain interfaces will be reduced relative to the friction developed at a soil to tailings interface. The berm may be required to buttress the embankment toe to enhance stability. Toe berm and initial starter dam heights will be evaluated when tailings products representative of the future processing plan are available for evaluation and geotechnical testing.

Above the elevation of the initial starter dam and toe berm, these structures will be constructed parallel to existing topography with a constant height above foundation level. Progressive lateral extension of the tailings distribution points up the starter dam will enable the dam to be raised in level manner.

Tailings gradation data presented in the various reports prepared for Quintana are somewhat contradictory. Based on metallurgical pilot studies conducted for Quintana and reported by SHB (1980), the sand fraction (the plus 200 standard sieve fraction) of the tailings is approximately 30 percent with 95 percent finer than 65 mesh (208 microns). Measurements collected by Quintana mill personnel between May and June of 1982 (oral communication, Jack Bailey, 10/1/2010) showed a minus 65 mesh fraction of 84 to 89 percent, suggesting a courser tailings grind with a higher sand fraction was produced under operating conditions. The gradation presented in the SHB geohydrological study (SHB, 1981) indicates tailings that are 100 percent finer than 65 mesh with a sand fraction of 55 percent. Preliminary volumetric estimates indicate that embankment construction will require approximately 15 percent of future tailings, suggesting that the centerline approach is feasible. Evaluation of tailings samples produced in pilot or bench scale simulation of future milling and processing will be required to verify sand availability throughout the life of the operation.

The impoundment has been sized based on a post-deposition dry density of 85 pounds per cubic foot (pcf). The estimated maximum final tailings surface elevation is 5,375 feet amsl. The maximum toe to crest height of the tailings embankment will be approximately 215 feet. At final buildout, the TSF and underdrain collection pond will occupy an area of approximately 541 acres. The anticipated configuration of the TSF at the end of mining and milling operations is shown on Drawing 4. TSF cross sections are shown on Drawing 5.

The tailings surface will slope inward from peripheral points of deposition at approximately ½ to 1 percent forming a depression in the interior of the impoundment. The internal depression will serve as a storage area for supernatant solutions and stormwater.

Embankment outslopes shown on the drawings are 2.67H:1V. Outslopes may also be subject to modification based on geotechnical testing of tailings properties.

3.2 Hazard Classification

The rules and regulations of the New Mexico State Engineer indicate that the Copper Flat TSF will be classified as 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 results 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.*

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. A dam breach and flood routing analysis will be required by the State Engineer (19.25.11.12 C (1) NMAC) to verify this classification.

The spillway design flood for dams with significant hazard potential (19.25.12.11 C(1) (c) is 75 percent of the probable maximum precipitation (PMP). A preliminary estimate of the PMP is on the order of 25 inches. The TSF and ore processing facilities will be operated as a closed, non-discharging system during tailings disposal operations and storage capacity for the design storm event will be maintained within the TSF. A permanent spillway capable of passing the design flood will be required at closure after the tailings surface has been regraded and a reclamation cover is in place.

3.3 Site Preparation

The TSF will be a geomembrane lined structure. Site preparation will include clear and grubbing, salvage and stockpiling of topsoil and grading to prepare a smooth surface for geomembrane liner installation.

It is anticipated that the existing starter dam and associated splitter dikes will be used as a fill material borrow source for the new toe berm and starter dam. Additional borrow areas for structural fill, liner bedding materials and drainage media will be developed within the TSF footprint where possible. Previous geotechnical investigation of the site indicates a range of fine grained soils and granular materials occur within the existing disturbance area.

Approximately 1.2 million tons of tailings were discharged into the existing TSF during the Quintana operation. Existing tailings deposits will be evaluated as a source of liner bedding fill material. If placed or “capped” under a low permeability TSF liner, the potential for leaching sulfate and dissolved solids from existing tailings in the future will be alleviated. Alternatively, existing tailings could be placed on the new TSF liner however, utilization of the tailings as liner bedding fill material is anticipated to be less costly and will provide similar benefits in terms of mitigating leaching potential.

The existing decant towers will be demolished. Demolition debris will be buried locally or placed in a waste rock disposal facility. Demolition requirements for buried decant pipelines will be evaluated as part of ongoing site investigation and design efforts.

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

3.4 TSF Liner System

Proposed liner system details for the TSF and underdrain collection pond are shown on Drawings 6 and 7. 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 (0.080 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. The drain net will route potential leakage through the upper liner to a leakage collection and recovery sump.

Geomembrane liner will be placed on a minimum 6-inch thick layer of liner bedding fill. As noted above, the liner bedding fill can be constructed with existing tailings if they meet moisture content and compaction requirements. Additional liner bedding fill material can be derived from crushing and/or screening of selected native soils. A minus 3/8-inch material is suitable for protection of the liner.

3.5 Underdrain System

An underdrain will be placed beneath the starter dam and cycloned sand embankment. The underdrain system is shown on Drawing 6. The purpose of the embankment underdrain is to facilitate drainage and consolidation of cycloned sand placed in the tailings embankment. The underdrain will consist of graded sand and gravel that is filter compatible with the tailings sand. A series of perforated drain pipes will be placed within the underdrain layer to carry tailings drainage to the underdrain collection pond.

The under drain will be extended into the impoundment interior beneath the area that will be occupied by the supernatant pool. Production of drainage material that is filter compatible with the tailings slimes discharged into the impoundment interior will not be feasible. The impoundment underdrain will be separated from the tailings slimes by a geotextile filter fabric cover. Impoundment underdrainage will be routed to the underdrain collection pond in a piping system that is separate from the embankment under drain.

The pond layout presented as part of the conceptual design has a capacity of over 40 million gallons and represents the maximum potential construction area required for underdrain pond installation. Water balance and drainage analyses that will be completed during engineering design studies will be used to determine the underdrain collection pond size required to manage tailings underdrainage.

3.6 Water Reclaim

A water reclaim ramp with be constructed on top of the TSF liner system. The ramp will provide access to the free water pool for reclaim of supernatant solution and stormwater. The ramp will be raised and extended as deposition continues and the impoundment surface rises. The reclaim pump works will be progressively moved northward as the operation proceeds.

The ramp will be constructed with borrowed fill or waste rock from the mining operation. A cushioning layer will be placed beneath the initial ramp fill to protect the underlying geomembrane. The ramp presents an opportunity to dispose of potentially acid generating waste rock in an environment where ongoing tailings disposal will result in the ramp fill being encapsulated within low permeability tailings slimes.

3.7 Tailings Distribution

It is anticipated that a new thickener will be constructed at the location of the Quintana thickener (Drawing 2) and a tailings delivery pipeline will be routed to the impoundment through the existing tailings delivery pipeline cut. At the impoundment, a wye in the delivery pipeline will allow the tailings to be directed to the east and west to the starter dam crest. A series of discharge points and cyclones around the periphery of the impoundment will be used to direct cyclone underflow to the tailings embankment and cyclone overflow into the impoundment interior. Discharge will be cycled around the impoundment to raise the embankment in a level manner.

Regrading and compaction of the cycloned sand deposited on the dam crest will be conducted on a regular basis to densify the tailings embankment and achieve the design embankment outslope.

Drawing 8 presents a height versus capacity plot for the new TSF. There is potential to increase the capacity of the TSF beyond that shown on the plot, however, distribution of tailings above the elevation of 5,375 feet amsl is likely to require pumping of the whole tailings slurry. In addition, a tailings booster pump may be required in the later years of operation to maintain adequate pressure for cyclone operation.

3.8 Surface Water, Underdrainage, Stormwater and Supernatant Management

The intent of design is to allow the TSF to be operated as a zero discharge facility. Drainage from the tailings will be collected in an underdrain system, routed to a lined underdrain collection pond and recycled as process water. Potential runon from peripheral contributory areas will be prevented from contacting the tailings and diverted into natural drainages. Stormwater, which will result primarily from direct precipitation and supernatant will be contained within the impoundment.

3.8.1 Surface Water Diversion

During initial construction, perimeter diversions will be constructed across the west periphery of the impoundment. The approximately location of Phase 1 surface water diversions is shown on Drawing 3. As the impoundment is expanded in subsequent construction phases, diversion ditches will be relocated westward.

Potential runoff from peripheral areas west of the impoundment during the later stages of operation will be evaluated during design studies. Where runon is significant, diversion ditches will be investigated.

As noted above, at final buildout the TSF will occupy the majority of the area that can contribute surface water runon into the tailings impoundment. Only limited areas west of the impoundment might require late stage and post-closure diversion.

3.8.2 Stormwater and Supernatant Management

During operations, capacity will be maintained within the TSF for storage of direct precipitation and tailings supernatant. Upon discharge into the impoundment, tailings will form a beach sloping away from the point of discharge at ½ to 1 percent. The resulting depression on the tailings surface in the interior of the impoundment will be used for water storage. Additional storage capacity, if needed, will be developed by maintaining reserve freeboard on the tailings embankment crest.

A detailed water balance will be developed as part of the design studies to evaluate internal storage and embankment freeboard requirements. Water balance inputs include process water inflows, direct precipitation and runon. Losses include process water reclaim, beach and tailings pond evaporation, underdrainage and entrainment of process water within the tailings pore space. The rates of underdrainage, entrainment and tailings supernatantliberation on discharge will be determined through geotechnical testing of representative tailings samples.

Water storage requirements include:

- Dead storage (water that cannot be recovered by the reclaim system);
- Storage of the normal process water inventory to facilitate continuous operations;
- Normal stormwater storage which will vary on a seasonal basis due to changes in monthly precipitation and evaporation rates; and
- Storage for the design storm event, which is currently assumed to be 75 percent of the PMP.

The water balance will be coupled with a discharge model that will track the rate of tailings rise and simulate beach slopes and the topography of the tailings surface. The water balance and discharge model can then be used to estimate internal storage capacity and requirements for embankment freeboard through the life of the facility.

4.0 CLOSURE AND RECLAMATION

The conceptual closure plan for the TSF is illustrated on Drawing 9. The conceptual closure plan includes the following:

- Final grading of embankment outslopes to establish erosion controls and controlled surface water drainage (best management practices);
- Placement of a soil or rock cover and revegetation of the embankment outslope;
- Placement of riprap and erosion controls in embankment surface water drainage facilities;
- Regrading or depositional modification of the impoundment surface to promote drainage to a permanent spillway;
- Placement and vegetation of a soil cover over the tailings surface;
- Armoring of surface drainage channels and implementation of best management practices for erosion control; and
- Management of underdrainage.

Final grading of the impoundment surface can be accomplished with earthmoving equipment, or through modification of tailings disposal patterns during the final years of operation. Tailings discharge from selected locations can be used to relocate the supernatant pool to a location adjacent to the post-closure spillway, thereby reducing grading requirements and limiting earthmoving operations in areas where working conditions are expected to be difficult due to the presence of soft and saturated tailings. At the location of the spillway shown on Drawing 9, a bedrock foundation is anticipated. If the spillway channel is erodible, grouted riprap or other erosion controls will be applied.

Consolidation seepage into the underdrain system can be anticipated to continue at declining rates for an indefinite period following the cessation of tailings disposal operations. Underdrainage will be pumped from the underdrain collection pond to the surface of the tailings impoundment where it can be evaporated or used for reclamation cover irrigation. When underdrainage is reduced to an acceptably low flow rate, the underdrain pipes beneath the embankment can be sealed with grout and the underdrain collection pond can be decommissioned.

5.0 DATA COLLECTION AND DESIGN STUDY REQUIREMENTS FOR ADVANCING TSF DESIGN

The following defines work to be completed to advance the design of the new TSF to feasibility study and construction level.

5.1 Geotechnical Investigation

5.1.1 Existing TSF Area

The area occupied by the Quintana TSF area was extensively investigated by SHB (1980). Approximately 30 boreholes were drilled along the starter dam alignment. The majority of the borings were completed by hollow stem auger (HSA) and locally included in-situ permeability testing and diamond coring. Additional borings were completed in the impoundment interior. Test pits were excavated inside the impoundment on an approximate 500 foot by 500 foot grid.

Additional exploration will be undertaken in the area investigated by SHB to identify borrow areas for liner bedding fill and drainage media. This work is expected to require a test pit exploration program with native soil samples subjected to gradation analysis, Atterburg limits, permeability and compaction testing. This program will include sampling of existing tailings for compaction and permeability testing.

TSF Expansion Area investigation should include the following:

- A seismic velocity survey to evaluate the depth to bedrock and/or competent materials beneath the new embankment axis;
- Hollow stem auger drilling with standard penetration testing to obtain foundation material samples and measure in-situ density. Borehole spacing on the order of 300 to 500 feet is proposed along the new embankment axis.
- Selected HSA borings will be converted to core drilling to enable recovery of bedrock samples and support measurement of in-situ permeability by packer testing.
- Falling head or constant head permeability testing may also be performed in selected borings.
- Shelby tube and split spoon drive ring samples will be collected from selected intervals for analysis of in-situ density, natural moisture content and settlement potential.
- Test pit excavation will be performed in the expansion area to identify potential construction materials outside the previously explored area. Required materials include structural fill for the toe berm and starter dam, liner bedding fill and drain fill.

5.2 Tailings Characterization

NMCC reports that ore processing at Copper Flat will closely follow the process flow sheet developed by Quintana for 1981-82 operations. The characteristics of future tailings will impact operation of the new TSF. There are limited data concerning tailings properties from the Quintana operation, and production records (Oral communication, J. Bailey, 2010) indicate a coarser tailings product was produced during operations than would be predicted based on the pilot study tailings data presented in the original TSF design report (SHB, 1980).

Pilot or bench scale milling and flotation studies are recommended in support of final design studies to determine the physical and geochemical properties of future tailings. The primary objectives of the proposed study include:

- Evaluation of the partitioning of residual sulfides between cyclone underflow and overflow, and assessment of the acid generating and metal leaching potential of both the sand and slimes fractions;
- Determination of the gradation of future whole tailings and the quantity of sand that can be recovered for embankment construction;
- Evaluation of the flow characteristics of the whole tailings slurry;
- Measurement of the shear strength of tailings sand; and
- Measurement of the permeability of tailings sand and slimes under anticipated disposal conditions.

The milling and flotation test work should produce a sufficient quantity of tailings to enable a cyclone simulation to be performed in order to produce samples of both cyclone overflow and underflow. At minimum, the cyclone simulation will require a 55 gallon drum of tailings solids. The sand and slimes fractions produced in the simulation will be sufficient to support a full range of geotechnical and geochemical tests. Tailings should be subjected to the following tests:

- Gradation (sieve and hydrometer), Atterberg Limits, specific gravity (whole tailings, cyclone underflow and overflow);
- Compaction testing (cyclone underflow);
- Slurry consolidation testing (cyclone underflow and overflow);
- Staged triaxial consolidated, undrained shear strength testing with pore pressure measurement (cyclone underflow);
- Air drying (cyclone overflow);
- Shrinkage limit (cyclone overflow); and
- 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 with drilling and well installation can be used in conjunction with existing data to evaluate hydrogeological conditions in the TSF expansion area.

5.4 Climatological Characterization

Estimation of normal precipitation and evaporation rates will be required to develop an impoundment water balance. It is assumed that a climatological model will be developed using a combination of locally collected weather data combined with regional weather records from National Weather Service monitoring stations.

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;
- 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.

6.0 USE OF THIS REPORT

This report has been prepared exclusively for the use of New Mexico Copper Corporation (NMCC) for specific application to the Copper Flat Project. No third party engineer or consultant shall be entitled to rely on any of the information, conclusions, or opinions contained in this report without prior written approval from NMCC or Golder Associates, Inc (Golder).

The conclusions and recommendations in this report have been prepared in a manner consistent with the level of care and skill ordinarily exercised by engineering professionals currently practicing under similar conditions, subject to the time limits and financial and physical constraints imposed on, or otherwise applicable to, Golder's analyses.

In preparing its conclusions and recommendations, Golder has relied upon information provided by the client. Golder is not responsible for errors or omissions in the information provided by NMCC.

GOLDER ASSOCIATES INC.

DAVID ALAN KIDD
NEW MEXICO
13778
REGISTERED PROFESSIONAL ENGINEER
11-17-10

Eugene Muller, P.E.
Senior Engineer

David A. Kidd, P.E.
Principal, Geotechnical Practice Leader

GM/DAK/br

7.0 REFERENCES

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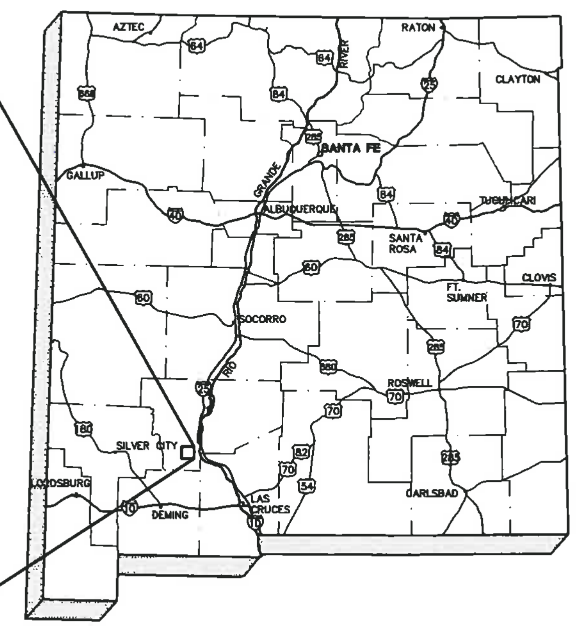
DRAWINGS

COPPER FLAT PROJECT
TAILINGS STORAGE FACILITY
CONCEPTUAL DESIGN STUDY
SIERRA COUNTY, NEW MEXICO

LIST OF DRAWINGS

AERIAL PHOTOGRAPH OF PROPOSED TAILINGS DISPOSAL SITE

NOT TO SCALE



STATE OF NEW MEXICO

NOT TO SCALE

GENERAL NOTES

1. EXISTING FIVE (5) FOOT TOPOGRAPHY AND PERMIT BOUNDARY PROVIDED BY NEW MEXICO COPPER CORPORATION.
2. AERIAL PHOTOGRAPHY © GOOGLE 2010, NMRGIS 2010.
3. DRAWINGS PRESENT THE CONCEPTUAL DESIGN OF A PROPOSED NEW AND EXPANDED TAILINGS STORAGE FACILITY WITH A CAPACITY OF 100 MILLION TONS AT AN ASSUMED DRY DENSITY OF 85 POUND PER CUBIC FOOT.
4. FINAL DESIGN WILL BE COMPLETED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE NEW MEXICO STATE ENGINEER, THE NEW MEXICO ENVIRONMENT DEPARTMENT (NMED) AND THE NEW MEXICO MINING AND MINERALS DIVISION (NM MMD).
5. AERIAL PHOTOGRAPH SHOWS EXISTING TAILINGS DISPOSAL AREA DISTURBANCE FROM MINING, MILLING AND TAILINGS DISPOSAL OPERATIONS CONDUCTED BY QUINTANA RESOURCES IN 1981-82.
6. EXISTING TAILINGS FROM THE QUINTANA 1981-82 OPERATIONS ARE THE SUBJECT OF AN ONGOING ABATEMENT ACTION. THE CONCEPTUAL DESIGN CONSIDERS CAPPING EXISTING TAILINGS BENEATH THE FUTURE IMPOUNDMENT LINER SYSTEM THROUGH THEIR INCORPORATION IN THE LINER BEDDING FILL LAYER, OR PLACEMENT OF EXISTING TAILINGS ON THE NEW IMPOUNDMENT LINER. ALTERNATIVES FOR MANAGEMENT OF EXISTING TAILINGS WILL BE DEVELOPED IN CONSULTATION WITH NMED.

DAVID ALAN KIDD
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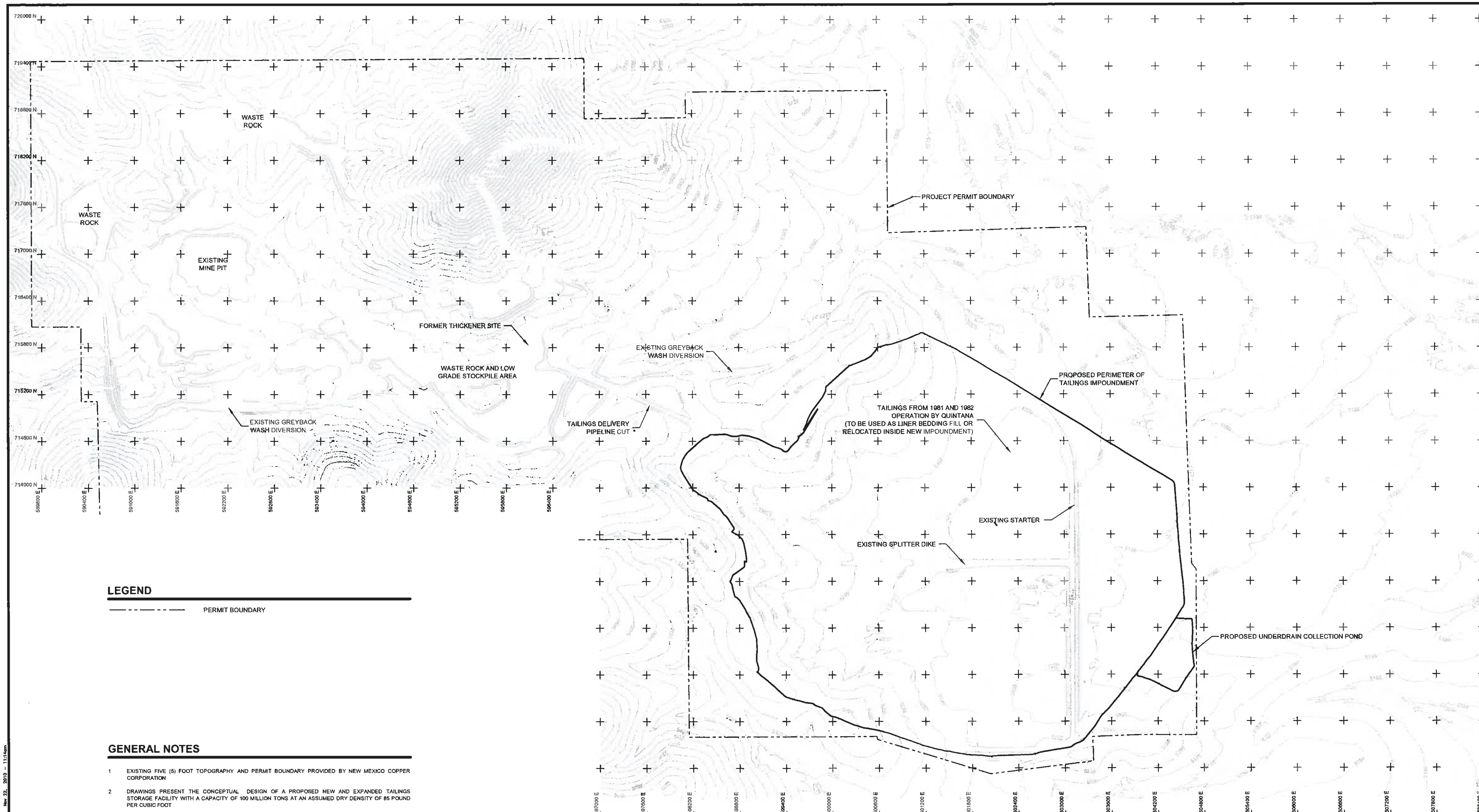
REGISTERED PROFESSIONAL ENGINEER
11-17-10

DRAWING USE	PROJECT
CONCEPTUAL DESIGN NOT FOR CONSTRUCTION	COPPER FLAT PROJECT TAILINGS STORAGE FACILITY CONCEPTUAL DESIGN STUDY SIERRA COUNTY, NEW MEXICO
	TITLE: TITLE SHEET

Golder Associates

PROJECT No.		103-92557	FILE No.	10392557A001
DESIGN	CDJ	10/25/10	SCALE AS SHOWN	REV. C
CADD	ANV	10/27/10	DRAWING	1
CHECK	GM	10/29/10		
REVIEW	DAK	11/17/10		

EBID
Exhibit 12



LEGEND

— - — - — PERMIT BOUNDARY

GENERAL NOTES

1 EXISTING FIVE (5) FOOT TOPOGRAPHY AND PERMIT BOUNDARY PROVIDED BY NEW MEXICO COPPER CORPORATION

2 DRAWINGS PRESENT THE CONCEPTUAL DESIGN OF A PROPOSED NEW AND EXPANDED TAILINGS STORAGE FACILITY WITH A CAPACITY OF 100 MILLION TONS AT AN ASSUMED DRY DENSITY OF 85 POUND PER CUBIC FOOT

3 FINAL DESIGN WILL BE COMPLETED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE NEW MEXICO STATE ENGINEER, THE NEW MEXICO ENVIRONMENT DEPARTMENT (NMED) AND THE NEW MEXICO MINING AND MINERALS DIVISION (NM MMD)

4 TOPOGRAPHY IN THE MINE AREA AND TAILINGS STORAGE FACILITY REPRESENTS EXISTING CONDITIONS AND DISTURBANCE ASSOCIATED WITH QUINTANA 1981-82 MINING OPERATIONS

5 PROPOSED TAILINGS STORAGE FACILITY FOOTPRINT IS FOR A NEW FACILITY WITH A CAPACITY OF 100 MILLION TONS AT AN ASSUMED DRY DENSITY OF 85 POUND PER CUBIC FOOT

600 0 600 1200
SCALE FEET

DAVID ALAN KIDD
NEW MEXICO
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REGISTERED PROFESSIONAL ENGINEER
11-17-10

DRAWING USE	PROJECT
CONCEPTUAL DESIGN NOT FOR CONSTRUCTION	COPPER FLAT PROJECT TAILINGS STORAGE FACILITY CONCEPTUAL DESIGN STUDY SIERRA COUNTY, NEW MEXICO
	TITLE: **GENERAL SITE LAYOUT**

Golder Associates

PROJECT No.		103-92557	FILE No. 10392557A002
DESIGN	CDJ	10/25/10	SCALE AS SHOWN · REV. B
CADD	ANV	10/27/10	DRAWING
CHECK	GM	10/29/10	2
REVIEW	DAK	11/17/10	

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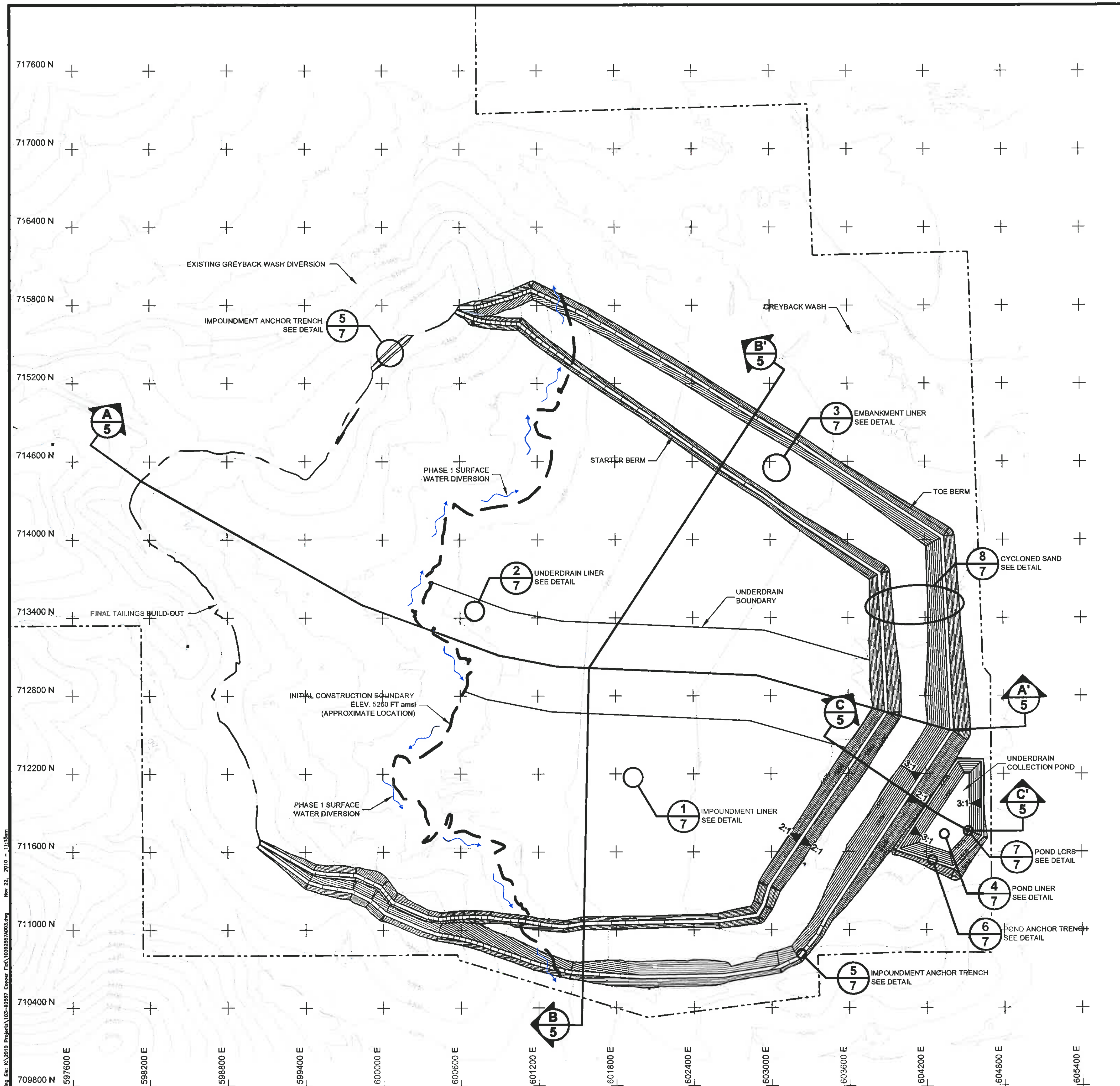
EBID
Exhibit 12



LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- PHASE 1 SURFACE WATER DIVERSION FLOW ARROW
- PERMIT BOUNDARY
- INITIAL CONSTRUCTION BOUNDARY
- FINAL TAILINGS BUILD-OUT
- DETAIL CALL-OUT
- CROSS-SECTION CALL-OUT

NOTES

1. 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 POUND PER CUBIC FOOT.
2. FINAL DESIGN WILL BE COMPLETED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE NEW MEXICO STATE ENGINEER, THE NEW MEXICO ENVIRONMENT DEPARTMENT (NMED) AND THE NEW MEXICO MINING AND MINERALS DIVISION (NM MMD).
3. EXISTING FIVE (5) FOOT TOPOGRAPHY AND PERMIT BOUNDARY PROVIDED BY NEW MEXICO COPPER CORPORATION.
4. TOPOGRAPHY IN THE VICINITY OF THE QUNITANA STARTER DAM AND TAILINGS CELLS APPROXIMATED BY GOLDER TO REPRESENT PRECONSTRUCTION TOPOGRAPHY FOLLOWING DEMOLITION (BORROW) OF THE EXISTING STARTER EMBANKMENT, RELOCATION OF EXISTING TAILINGS AND REGRADING IN FORMER BORROW AREAS AND EXISTING DISTURBANCE AREAS. TOPOGRAPHY IN OTHER LOCATIONS REPRESENTS EXISTING CONDITIONS. A SITE WIDE TAILINGS DISPOSAL FACILITY GRADING PLAN WILL BE DEVELOPED IN FUTURE DESIGN STUDIES.
5. EXISTING TAILINGS FROM THE QUINTANA 1981-82 OPERATIONS ARE THE SUBJECT OF AN ONGOING ABATEMENT ACTION. THE CONCEPTUAL DESIGN CONSIDERS CAPPING EXISTING TAILINGS BENEATH THE FUTURE IMPOUNDMENT LINER SYSTEM THROUGH THEIR INCORPORATION IN THE LINER BEDDING FILL LAYER, OR PLACEMENT OF EXISTING TAILINGS ON THE NEW IMPOUNDMENT LINER. ALTERNATIVES FOR MANAGEMENT OF EXISTING TAILINGS WILL BE DEVELOPED IN CONSULTATION WITH NMED.
6. PHASE 1 CONSTRUCTION LIMITS ARE APPROXIMATELY LOCATED. PHASE 1 AND SUBSEQUENT CONSTRUCTION PHASE LIMITS AND SURFACE WATER DIVERSION REQUIREMENTS WILL BE DETERMINED IN FUTURE ENGINEERING DESIGN STUDIES.
7. EMBANKMENT RAISES WILL BE CONSTRUCTED BY THE CENTERLINE RAISE METHOD USING CYCLONE UNDERFLOW (TAILINGS SAND). CYCLONE OVERFLOW (SLIMES) WILL BE DISCHARGED INTO THE INTERIOR OF THE TAILINGS STORAGE FACILITY.
8. DURING OPERATION, STORMWATER WILL BE CONTAINED WITHIN THE TAILINGS STORAGE FACILITY AND UTILIZED AS PROCESS MAKE-UP WATER. A PROJECT WATER BALANCE WILL BE DEVELOPED IN FUTURE ENGINEERING DESIGN STUDIES.

DAVID ALAN KIDD · NEW MEXICO · 13778 · REGISTERED PROFESSIONAL ENGINEER · 11-17-10

SCALE 400 0 400 800 FEET

DRAWING USE: CONCEPTUAL DESIGN NOT FOR CONSTRUCTION

PROJECT: COPPER FLAT PROJECT
TAILINGS STORAGE FACILITY
CONCEPTUAL DESIGN STUDY
SIERRA COUNTY, NEW MEXICO

TITLE:

TAILINGS STORAGE FACILITY PLAN

Golder Associates

PROJECT No.		103-92557
DESIGN	CDJ	10/25/10
CADD	ANV	10/27/10
CHECK	GM	10/29/10
REVIEW	DAK	11/17/10

FILE No. 10392557A003 · SCALE AS SHOWN · REV. B · DRAWING 3

EBID Exhibit 12

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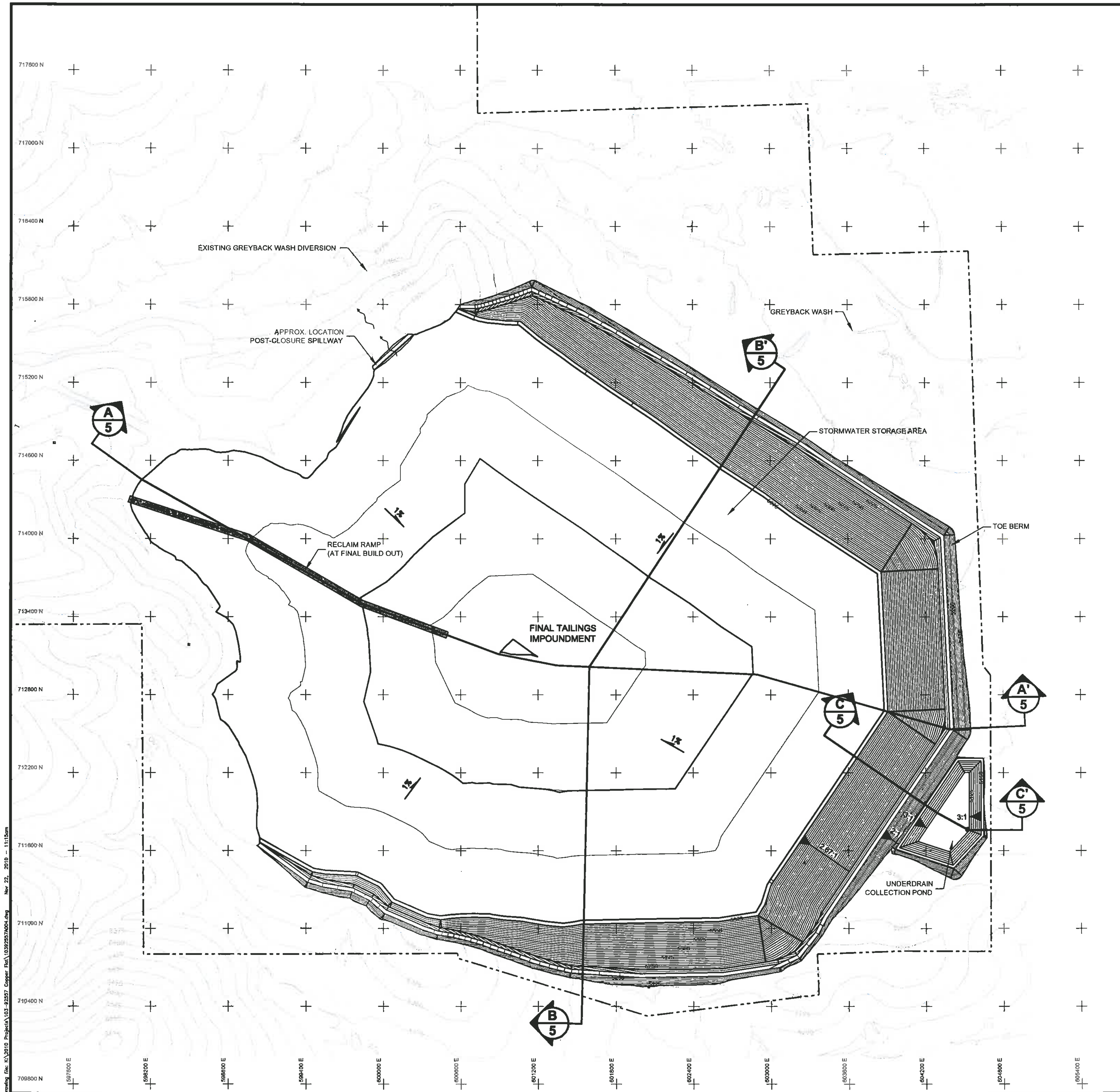
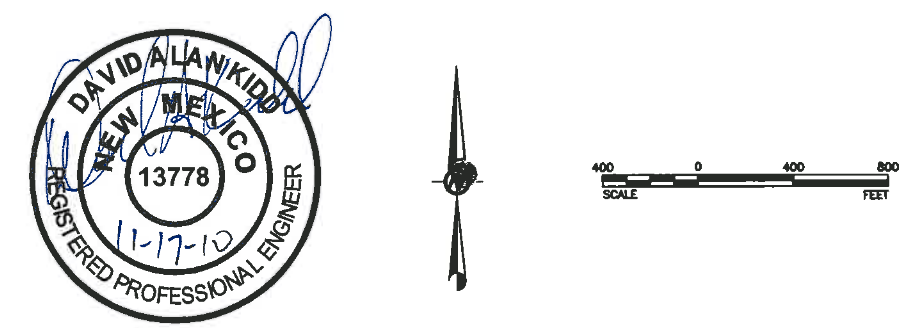


LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- PERMIT BOUNDARY
- CROSS-SECTION CALL-OUT

NOTES

1. 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 POUND PER CUBIC FOOT.
2. FINAL DESIGN WILL BE COMPLETED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE NEW MEXICO STATE ENGINEER, THE NEW MEXICO ENVIRONMENT DEPARTMENT (NMED) AND THE NEW MEXICO MINING AND MINERALS DIVISION (NM MMD)
3. EXISTING FIVE (5) FOOT TOPOGRAPHY AND PERMIT BOUNDARY PROVIDED BY NEW MEXICO COPPER CORPORATION.
4. FINAL EMBANKMENT CREST HEIGHT WILL BE APPROXIMATELY 5,375 FEET AMSL. TAILINGS SURFACE CONFIGURATION SHOWN REPRESENTS CONDITIONS AT THE CESSATION OF MINING OPERATIONS. APPROXIMATE LOCATION OF A POST-CLOSURE SPILLWAY SHOWN. TAILINGS DISCHARGE LOCATIONS MAY BE MODIFIED IN LATE STAGE OPERATIONS TO GRADE THE IMPOUNDMENT SURFACE AND FACILITATE POST-CLOSURE DRAINAGE TO THE PERMANENT SPILLWAY.
5. SELECTION OF A DESIGN STORM EVENT FOR STORMWATER STORAGE AND SPILLWAY CAPACITY WILL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW MEXICO STATE ENGINEER.



DRAWING USE
CONCEPTUAL DESIGN
NOT FOR CONSTRUCTION

PROJECT
COPPER FLAT PROJECT
TAILINGS STORAGE FACILITY
CONCEPTUAL DESIGN STUDY
SIERRA COUNTY, NEW MEXICO

TITLE
TAILINGS STORAGE FACILITY AT FINAL BUILD-OUT

Golder Associates

PROJECT No.		103-92557	FILE No.	10392557A004
DESIGN	CDJ	10/25/10	SCALE AS SHOWN	REV. C
CADD	ANV	10/27/10	DRAWING	
CHECK	GM	10/29/10	4	
REVIEW	DAK	11/17/10		

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EBID
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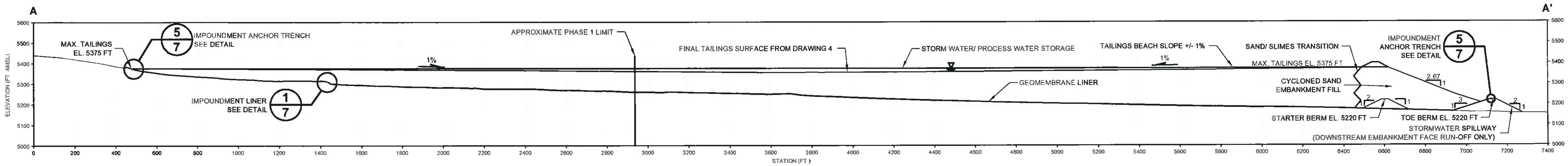

A/5 **CROSS SECTION A-A'**

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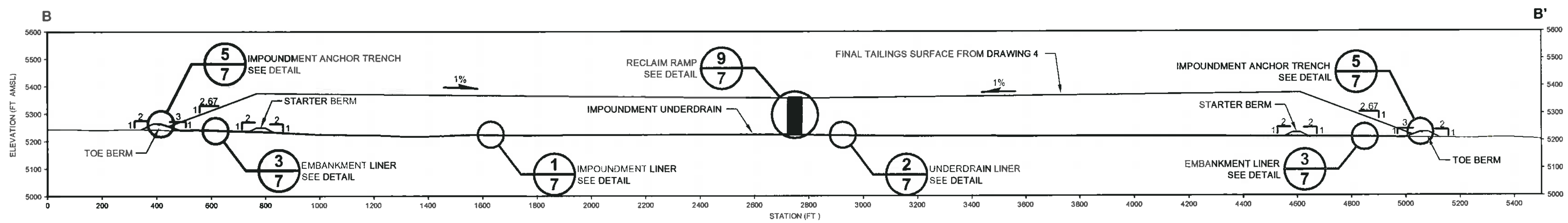
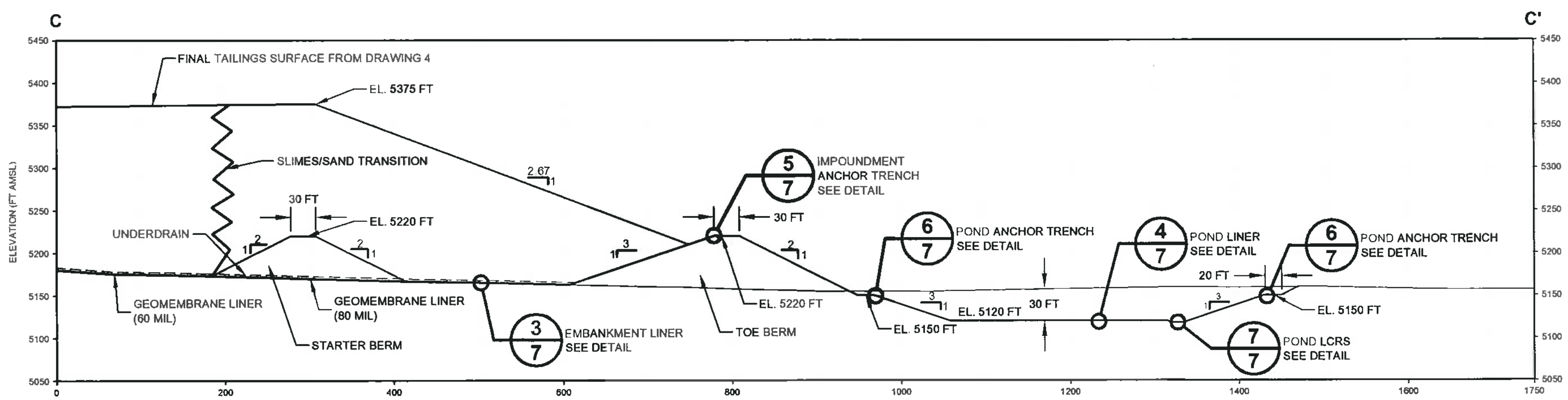


B/5 **CROSS SECTION B-B'**

250 0 250 500 SCALE FEET



C/5 **CROSS SECTION C-C'**

100 0 100 200 SCALE FEET

DAVID ALAN KIDD NEW MEXICO 13778 REGISTERED PROFESSIONAL ENGINEER 11-17-10

DRAWING USE	PROJECT				
CONCEPTUAL DESIGN NOT FOR CONSTRUCTION	COPPER FLAT PROJECT TAILINGS STORAGE FACILITY CONCEPTUAL DESIGN STUDY SIERRA COUNTY, NEW MEXICO				
	TITLE: TAILING FACILITY STORAGE CROSS-SECTIONS				
	Golder Associates	PROJECT No.	103-92557	FILE No.	10392557A005
		DESIGN	CDJ	10/25/10	SCALE AS SHOWN REV. C
		CADD	ANV	10/27/10	DRAWING
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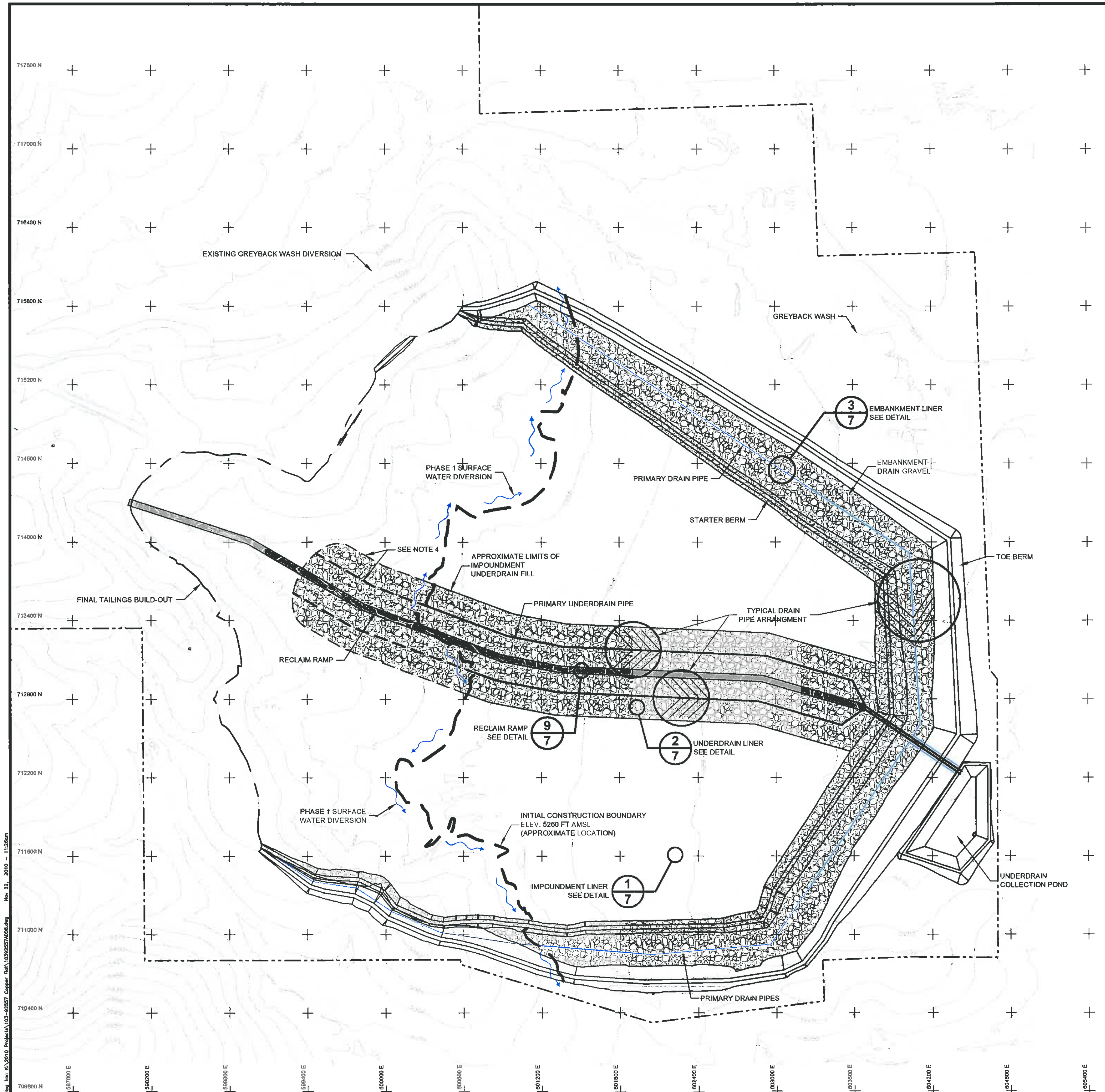
EBID Exhibit 12



LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- PHASE 1 SURFACE WATER DIVERSION FLOW ARROW
- PERMIT BOUNDARY
- PHASE 1 BOUNDARY
- FINAL TAILINGS BUILD-OUT
- PRIMARY UNDERDRAIN PIPE
- PRIMARY DRAIN PIPE
- UNDERDRAIN FILL
- DETAIL CALL-OUT

NOTES

1. 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 POUND PER CUBIC FOOT.
2. FINAL DESIGN WILL BE COMPLETED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE NEW MEXICO STATE ENGINEER, THE NEW MEXICO ENVIRONMENT DEPARTMENT (NMED) AND THE NEW MEXICO MINING AND MINERALS DIVISION (NM MMD)
3. EXISTING FIVE (5) FOOT TOPOGRAPHY AND PERMIT BOUNDARY PROVIDED BY NEW MEXICO COPPER CORPORATION.
4. APPROXIMATE LIMITS OF UNDER DRAIN SYSTEM SHOWN. EMBANKMENT UNDERDRAIN WILL BE A GRADED SAND AND GRAVEL DRAIN THAT IS FILTER COMPATIBLE WITH CYCLONED TAILINGS SAND. IMPOUNDMENT UNDER DRAIN WILL BE GEOTEXTILE FABRIC WRAPPED. THE IMPOUNDMENT UNDERDRAIN WILL BE EXTENDED DURING PHASED CONSTRUCTION.

DAVID ALAN KIDD NEW MEXICO 13778 REGISTERED PROFESSIONAL ENGINEER 11-17-10

SCALE 400 0 400 800 FEET

DRAWING USE
CONCEPTUAL DESIGN
NOT FOR CONSTRUCTION

PROJECT
COPPER FLAT PROJECT
TAILINGS STORAGE FACILITY
CONCEPTUAL DESIGN STUDY
SIERRA COUNTY, NEW MEXICO

TITLE
TAILINGS STORAGE FACILITY UNDERDRAIN PLAN

Golder Associates

PROJECT No.		103-92557	FILE No.	10392557A006
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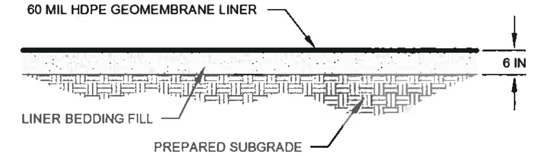
EBID
Exhibit 12



1/7 IMPOUNDMENT LINER DETAIL
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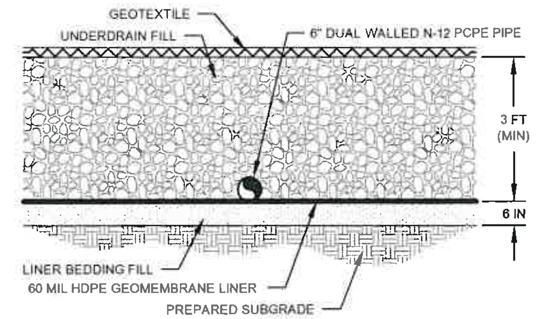

2/7 UNDERDRAIN AREA LINER DETAIL
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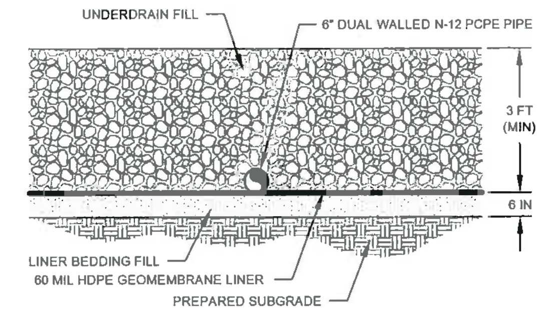

3/7 EMBANKMENT AREA LINER DETAIL
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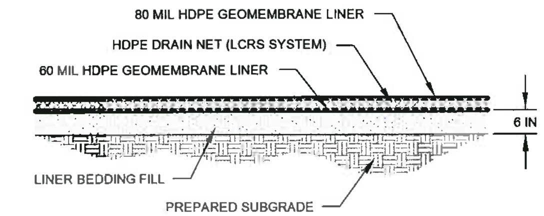

4/7 POND LINER DETAIL
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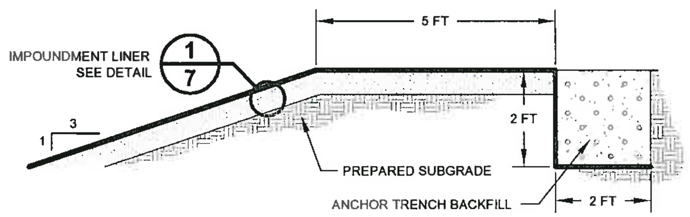
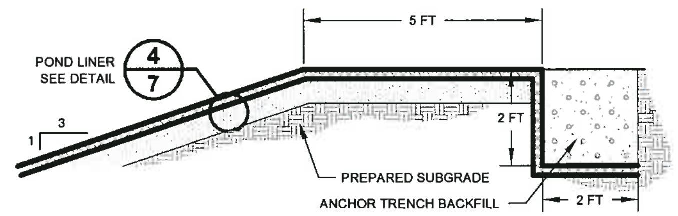
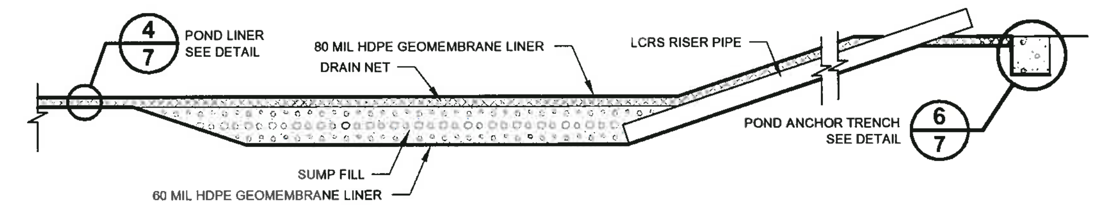


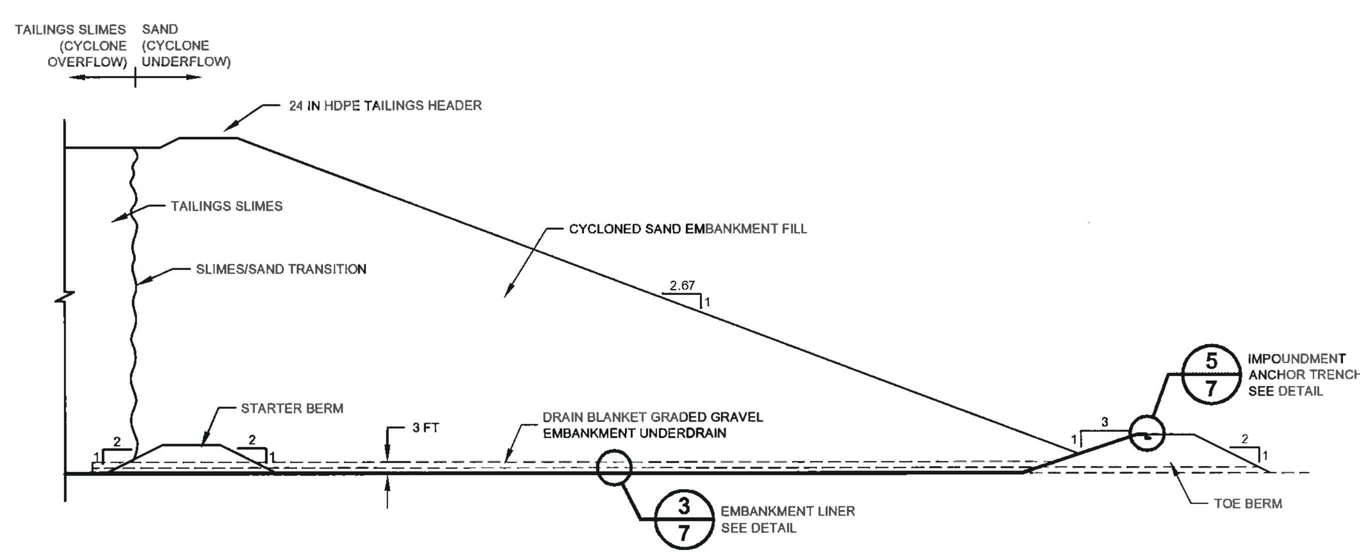
5/7 IMPOUNDMENT ANCHOR TRENCH DETAIL
NOT TO SCALE



6/7 POND ANCHOR TRENCH DETAIL
NOT TO SCALE



7/7 POND LEAK COLLECTION AND RECOVERY SYSTEM (LCRS) DETAIL
NOT TO SCALE



8/7 CYCLONED SAND EMBANKMENT DETAIL
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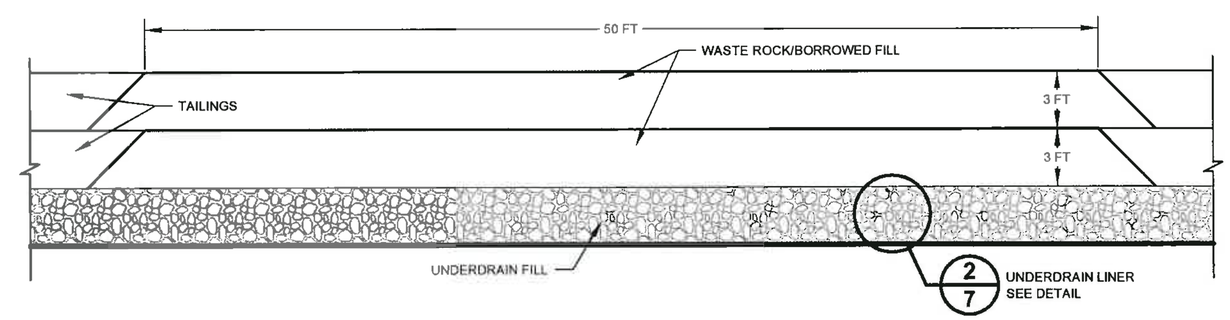

9/7 PROCESS WATER RECLAIM RAMP DETAIL
NOT TO SCALE

DAVID ALAN KIDD
NEW MEXICO
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REGISTERED PROFESSIONAL ENGINEER
11-17-10

DRAWING USE	PROJECT
CONCEPTUAL DESIGN NOT FOR CONSTRUCTION	COPPER FLAT PROJECT TAILINGS STORAGE FACILITY CONCEPTUAL DESIGN STUDY SIERRA COUNTY, NEW MEXICO
	TITLE: TAILINGS STORAGE FACILITY DETAILS

Golder Associates

PROJECT No.		103-92557	FILE No.	10392557A007
DESIGN	CDJ	10/25/10	SCALE AS SHOWN	REV. C
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CHECK	GM	10/29/10	7	
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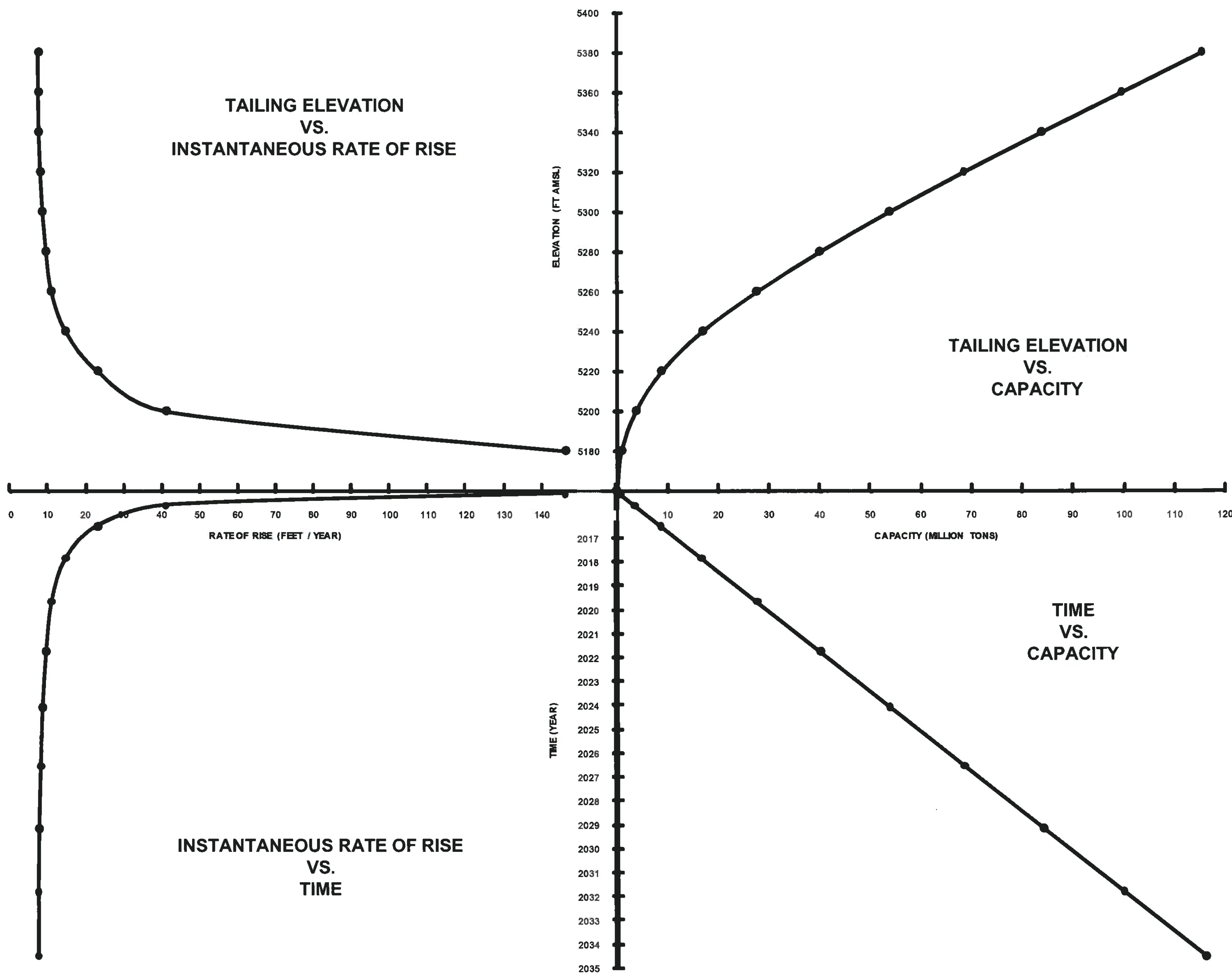
EBID Exhibit 12



NOTES

1. CAPACITY ESTIMATED USING EXISTING FIVE (5) FOOT TOPOGRAPHY PROVIDED BY NEW MEXICO COPPER CORPORATION AND A DRY DENSITY OF 85 PCF.
2. TAILING MAXIMUM ELEVATION IS 5,375 FT AMSL AT LOCATION OF DISCHARGE POINT.
3. RATE OF RISE IS CALCULATED FROM THE PRODUCTION RATE OF 17,500 TONS PER DAY AT 93% AVAILABILITY FOR AN ANNUAL PRODUCTION OF 5,940,375 TONS.
4. ASSUMED START-UP DATE 2015 ACTUAL START DATE TO BE DETERMINED.

DAVID ALAN KIDD
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REGISTERED PROFESSIONAL ENGINEER
11-17-10

DRAWING USE
CONCEPTUAL DESIGN
NOT FOR CONSTRUCTION

PROJECT
COPPER FLAT PROJECT
TAILINGS STORAGE FACILITY
CONCEPTUAL DESIGN STUDY
SIERRA COUNTY, NEW MEXICO

TITLE

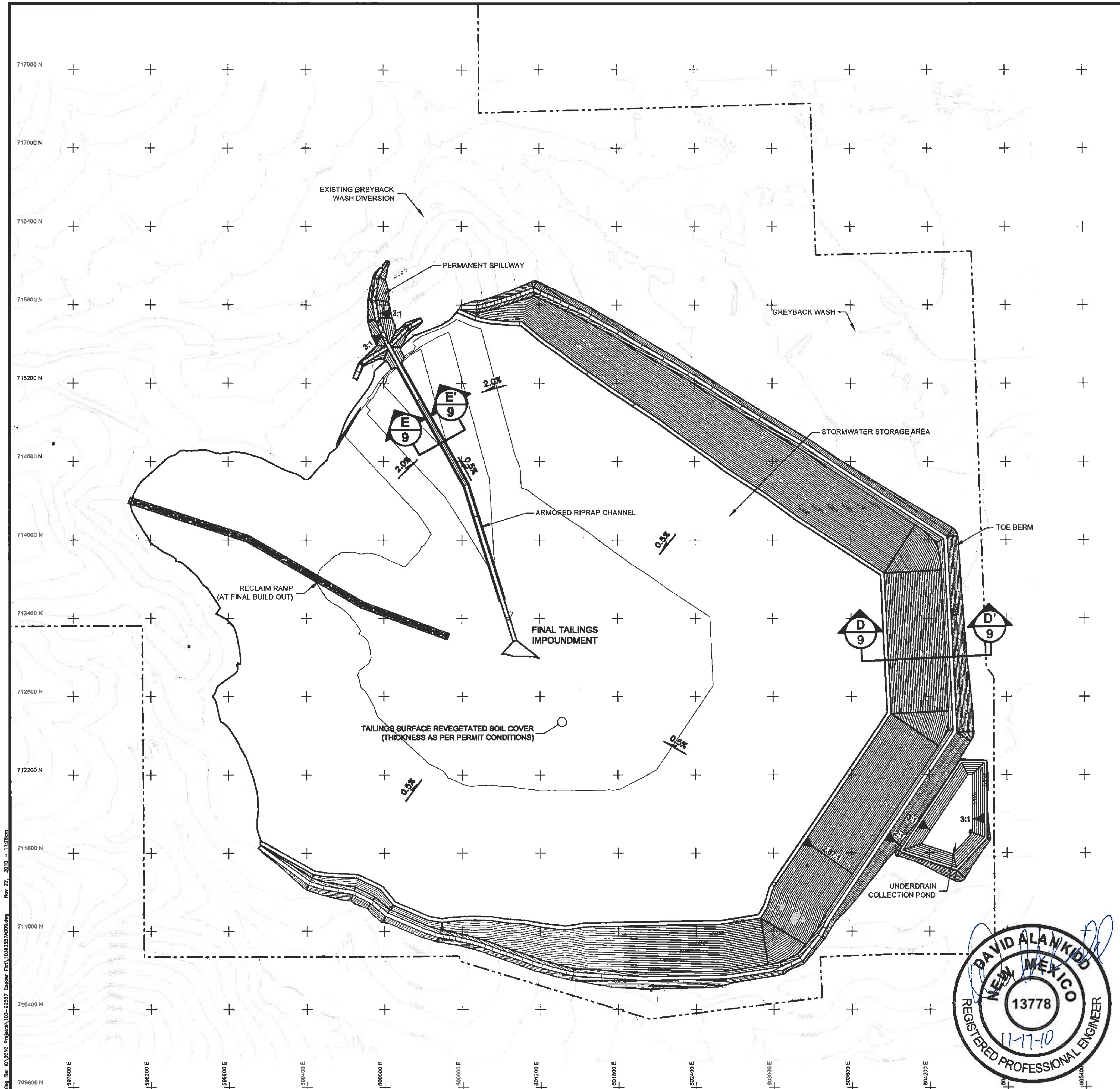
HEIGHT VS. CAPACITY PLOT

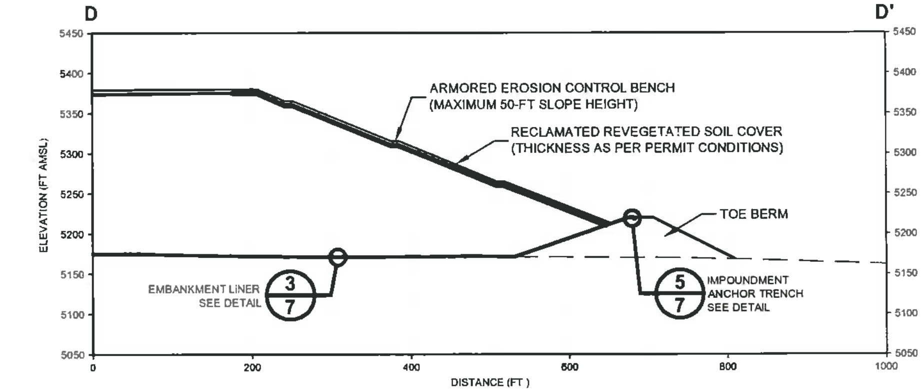
Golder Associates

PROJECT No.		103-92557	FILE No.	10392557A008
DESIGN	CDJ	10/25/10	SCALE N.T.S.	REV. C
CADD	ANV	10/27/10	DRAWING	
CHECK	GM	10/29/10	8	
REVIEW	DAK	11/17/10		

Drawing file: K:\2010 Projects\103-92557 Copper Flat\10392557A008.dwg Nov 22, 2010 - 11:28am

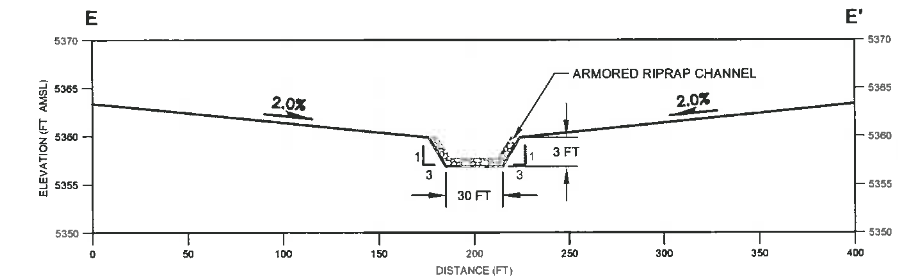
EBID
Exhibit 12





D/9 CROSS SECTION D-D'

SCALE 120 0 120 240 FEET



E/9 CROSS SECTION E-E'

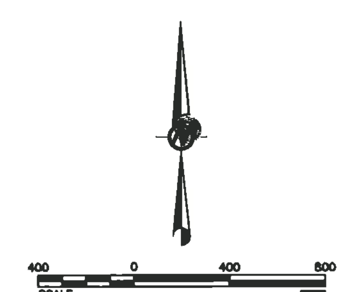
SCALE (x5 VERTICAL EXAGGERATION) 50 0 50 100 FEET

LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- PERMIT BOUNDARY
- CROSS-SECTION CALL-OUT

NOTES

1. 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 POUND PER CUBIC FOOT.
2. FINAL DESIGN WILL BE COMPLETED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE NEW MEXICO STATE ENGINEER, THE NEW MEXICO ENVIRONMENT DEPARTMENT (NMED) AND THE NEW MEXICO MINING AND MINERALS DIVISION (NM MMD)
3. EXISTING FIVE (5) FOOT TOPOGRAPHY AND PERMIT BOUNDARY PROVIDED BY NEW MEXICO COPPER CORPORATION.
4. FINAL EMBANKMENT CREST HEIGHT WILL BE APPROXIMATELY 5,375 FEET AMSL. TAILINGS SURFACE CONFIGURATION SHOWN REPRESENTS CONDITIONS AT THE CESSATION OF MINING OPERATIONS. APPROXIMATE LOCATION OF A POST-CLOSURE SPILLWAY SHOWN. TAILINGS DISCHARGE LOCATIONS MAY BE MODIFIED IN LATE STAGE OPERATIONS TO GRADE THE IMPOUNDMENT SURFACE AND FACILITATE POST-CLOSURE DRAINAGE TO THE PERMANENT SPILLWAY.
5. SELECTION OF A DESIGN STORM EVENT FOR STORMWATER STORAGE AND SPILLWAY CAPACITY WILL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW MEXICO STATE ENGINEER.
6. TAILINGS SURFACE REGRADED AT CLOSURE OR TAILINGS DEPOSITION PATTERNS MODIFIED DURING LATE STAGE OPERATION TO CONTOUR THE TAILINGS SURFACE.
7. UNDERDRAINING TO BE COLLECTED AND EVAPORATED ON IMPOUNDMENT SURFACE UNTIL UNDERDRAIN PIPES CAN BE PLUGGED AND UNDERDRAIN COLLECTION POND BACKFILLED.



DRAWING USE	PROJECT
CONCEPTUAL DESIGN NOT FOR CONSTRUCTION	COPPER FLAT PROJECT TAILINGS STORAGE FACILITY CONCEPTUAL DESIGN STUDY SIERRA COUNTY, NEW MEXICO

TITLE

TAILINGS STORAGE FACILITY CONCEPTUAL CLOSURE PLAN

Golder Associates

PROJECT No.	103-92557		FILE No.	10392557A009
DESIGN	CDJ	10/25/10	SCALE AS SHOWN	REV. C
CADD	ANV	10/27/10	DRAWING	
CHECK	GM	10/29/10		9
REVIEW	DAK	11/17/10		

EBID
Exhibit 12

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