# DEMING MILL & MILL TAILINGS DEMING, NEW MEXICO

Mining and Minerals Division Permit No. LU009RE

Deming Mill and Mill Tailings Closeout Plan And Financial Assurance Proposal

Prepared For:

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#### MILL CLOSEOUT PLAN

#### **1. PROJECT DESCRIPTION**

This Closeout/Reclamation Plan for the Deming Mill Site (Site), Mill Tailings and Borrow Pit (Tailings) and 79.163 acres of vacant land shown as Tracts 12 and 13 in Figure 1 (Land), previously owned by ASARCO Incorporated (ASARCO) has been prepared by GEO SOUTHWEST, LP (GEO SW) pursuant to Section (§)69-36-IIB of the New Mexico Mining Act of 1993 (Act) and the New Mexico Mining Act Rules (Rules). This Closeout/Reclamation Plan references and will be part of Permit No. LU009RE (currently in standby status) which was transferred to GEO SW by the Mining and Minerals Division (MMD) of the New Mexico Energy, Minerals and Natural Resources Department on August 5, 2014. On April 9, 2014, GEO SW purchased from the ASARCO Multi-State Custodial Trust (Trust) 1193.84 acres (Property) near Deming, New Mexico (see Figure 2, General Location Map). The Property included in the Permit Area consists of approximately 208 acres including the Site, Tailings and Land.

GEO SW purchased the Property with the intent of renovating and operating the mill to process ore. The Site is located on County Road 394 in Sections 20 and 21, Township 23 South, Range 9 West, approximately one mile northwest of Deming, New Mexico. The Site is within the Chihuahuan desert scrub habitat on the desert floor of the lower Mimbres Basin. Mesquite *(Prosopis)* and Yucca *(Yucca)* are the dominate vegetation in the immediate vicinity of the Site. A portion of the Mimbres River crosses the Property approximately 0.35 miles north of the Site. This portion of the Mimbres River is ephemeral, flowing only in response to storm events.

The purpose of this Closeout/Reclamation Plan is to establish the amount of financial assurance that will be required from GEO SW for Permit No. LU009RE.

#### 2. SITE HISTORY & CURRENT STATUS

The Site includes an existing mill, ancillary buildings, shipping and utilities infrastructures, and paved roadways. The mill was constructed in 1949, and operated by ASARCO with periodic shutdowns until 1979. It was designed as a custom mill and used primarily for the processing of lead and zinc ores from the ASARCO Groundhog Mine located approximately 50 miles north of the mill. During the early years of operation, the Site accepted and processed ore on a custom basis from non-ASARCO mines. From May, 1989 until August, 1995, Cyprus Pinos Altos Corporation leased the Site to produce copper/zinc concentrate from ore shipped from the Cyprus Pinos Altos mine. At the time of this lease, ASARCO sold a tract of land across the road

from the Site to Cyprus for construction of a tailings impoundment.

ASARCO deeded the Property to the Trust on December 9, 2009 and provided funds for remediation of any environmental issues associated with the Site, Tailings or Land. The Trust hired ENVIRON to oversee the Property and to complete any necessary environmental remediation. ENVIRON removed contaminated driveway material from the Site and added it to the Tailings. Sand and gravel taken from the borrow pit located in the Permit Area was used to replace the removed driveway material and to cover the contaminated material added to the Tailings. This addition to the Tailings was sown to native vegetation which has become well established. ENVIRON completed remediation of all known environmental issues and this remediation has been approved by MMD. In addition, a Voluntary Remediation Program (VRP) related to the Deming Mill Windblown Tailings Site (VRP Site No. 53043001) was begun by ASARCO with the Trust completing the documentation with the New Mexico Environment Department (NMED) which issued a Covenant Not to Sue to GEO SW for contamination associated with the wind-blown tailings.

## **3. SITE CHARACTERISTICS**

The Site is completely fenced with a 6' tall chain link fence and includes the following components:

- Rail siding
- Ore receiving (grizzly)
- Conveyor system
- Ore crushing building
- Ore transfer building
- Fine ore storage bins
- Ore sampling building
- Mill building
- Reagent mixing building
- Temporary office building (mobile)
- Machine shop
- Office and laboratory building
- Change house building
- North and south siding buildings
- Two water wells with pumps
- Water tank, tower, and distribution system
- Electrical substation
- Rail and truck scales and scale houses
- Concentrate thickeners
- Concentrate load-out slab
- Lime circulating tank
- Pole barn

These structures are presented in Figure 3, Detailed Site Plan; and Appendix B, Photographs.

### 4. POST-CLOSEOUT LAND USE

A. The proposed post-closeout land use for the Site is a non-mining-dependent industrial facility. Even though the Site is not a mine, the term post mining land use (PMLU) is used in this Closeout/Reclamation Plan to be consistent with MMD terminology.

The City of Deming has recently established an industrial park on land that the City owns adjoining the Property; hence, there would likely be good demand for an industrial facility at the Site location. Closeout/reclamation activities necessary to convert the Site to a non-mining-dependent industrial facility include demolition and removal of all mine-specific processing equipment and buildings.

All contaminated soil at the Site was removed and replaced by ENVIRON but subsequent leaking of rainwater out of a large thickener tank containing a zinc/copper concentrate has discolored the soil south of this thickener tank. The concentrate will be removed and shipped to a refinery prior to the demolition of the thickener tank. The soil contaminated by the leakage of rainwater will be removed and disposed of in an approved waste facility and replaced by soil from a new borrow pit. A plan to evaluate and correct possible future soil contamination along with appropriate financial assurance will be part of the requirements for GEO SW to upgrade Permit Number LU009RE to active status in order to begin operation of the mill.

The purpose of this Closeout/Reclamation Plan is to have the Site become a productive industrial facility and a viable addition to the City of Deming Industrial Park. The potential economic viability of the Site is based on the following: quality of construction and size of the buildings; proximity of the Site to Deming, rail lines, and Interstate 10; and existing on-site infrastructure. Details of Closeout/Reclamation activities are described in Section 5, and cost estimates are provided in Table 1 on page 15 of this document.

B. The most likely post-closeout use of the Tailings is for the grazing of livestock.

C. The most likely post-closeout use of the Land is for the grazing of livestock.

### 5. DESCRIPTION OF CLOSEOUT/RECLAMATION ACTIVITIES

A. Reclamation for the Site would require the removal of the following mining-specific equipment:

- Ore receiving (grizzly)
- Conveyor system
- Ore crushing building
- Ore transfer building
- Fine ore storage bins
- Ore sampling building
- Processing equipment located within mill building
- Concentrate thickeners
- Lime circulating tank

Specific components to remain at Site for industrial use include the following:

- Mill building
- Reagent mixing building
- Machine shop
- Office and laboratory building
- Temporary office building (mobile)
- Change house building
- North and south siding buildings
- Two water wells with pumps
- Water tank, tower and distribution system
- Electrical substation
- Truck and rail scales and scale houses
- Pole barn
- Concentrate load-out slab

B. Reclamation of the Tailings has been completed and native vegetation is well established. A vegetation survey was conducted in 2019 and second one is scheduled for November, 2020.
GEO SW has initiated the process necessary to have the Tailings released from Permit No. LU009RE.

C. Reclamation of the Land will require the covering of exposed tailings on the north slope of the Cypress tailings and on an area north of the Mimbres River and south of the Tailings plus stabilization and protection of a portion of the north bank of the Mimbres River. Figure 4 depicts the approximate location and size of these three areas of concern.

The eroded area on the north side of the Cypress tailings (approximately 5 acres) and the area of exposed tailings north of the river tailings (approximately 2 acres) will be covered to a depth of three feet with material taken from a new borrow pit to be dug on Tract 12 (Figure 1). This material will be a mixture of soil and gravel similar to that from the current borrow pit which was successfully used to cover the existing tailings. The sloping area on the north side of the

Cypress tailings will be bench leveled to prevent new erosion. Both areas plus the new borrow pit (2 acres) will then be planted to native vegetation.

The north bank of the Mimbres River in an area where old ASARCO tailings are exposed will be stabilized by covering the river bank with concrete rip-rap or similar material. The area that needs to be stabilized is approximately 200 ft. long and 20 ft. wide. The concrete rip-rap or similar material will be pushed over the edge of the bank to slide down the bank. An average depth of 12 in. of material is planned and will include a mixture of sizes with the largest approximately 3 ft. in width. The mature trees and other vegetation currently growing on the river bank will be disturbed as little as possible. An added benefit of this material will be the blocking of a trail where ATV's are contributing to the erosion problem.

Prior to undertaking the above outlined reclamation of the Land, test pitting with a backhoe and hand tools will clarify the best options related to placement of cover, bedding and concrete riprap and/or some partial removal and consolidation of tailing material. Also to be considered will be the possible use of weirs jutting out into the flow of the river to modify flow and reduce erosion of covered/armored tailings left in place.

## 6. DEMONSTRATION OF PMLU IMPLEMENTATION

The following criteria have been developed to demonstrate that the PMLU has been achieved:

- 1. The activities outlined above (Section 5) have been completed.
- 2. The Site has been inspected by a certified engineer to ensure the integrity of the remaining structures.
- 3. MMD and NMED personnel have inspected and approved the plugging of the monitoring well, covering of exposed tailings, stabilization of the river bank and establishment of native vegetation.

Once the MMD has determined that the PMLU has been implemented, the MMD will release GEO SW from the financial assurance obligations in accordance with 19.10.12.1210 NMAC of the Rules.

## 7. CLOSEOUT/RECLAMATION PLAN COST ESTIMATES

A. Cost estimates for Closeout/Reclamation tasks for the Site are based upon R S Means Heavy Construction Cost Data (24<sup>th</sup> Annual Edition, 2010). The cost of \$7.61 per sq. ft. that was

given for demolition of large metal bridges was consider appropriate for the type of demolition required in this plan. This cost was reduced by 50% for the removal of equipment from the mill building since the building is to be left in place. The removal and replacement of contaminated soil near a thickener tank is estimated at \$3,000.

B. Cost estimate for covering the exposed tailings on Land is \$1.10 per yard of material or \$5,325 per acre. The cost estimate for seeding native vegetation on the reclaimed areas and new borrow pit is \$350 per acre. The cost estimate for plugging the monitor well is \$2,000.

C. The cost estimate for placing concrete rip-rap or similar material on the river bank is \$10,000.

Cost estimates are detailed in Table 1 (page 15). No consideration has been given to salvage and scrap values for removed equipment and metal scrap which would likely exceed the projected demolition costs. These cost estimates were increased by 39% to provide for a number of indirect cost items including the following:

- Reclamation contract management fee 10%
- Engineering redesign 2%
- Mobilization and demobilization 5%
- Contingencies 7%
- Profit and overhead 15%

### 8. ENVIRONMENTAL STANDARDS COMPLIANCE

ASARCO ceased operations at the Site in 1979, prior to requirements for permitting under New Mexico environmental protective legislation. Documentation and analysis of Site conditions pursuant to guidelines for Environmental Standards Compliance is beyond the scope of this permitting process. GEO SW will submit an Erosion Control Plan to MMD for approval 90 days prior to implementation of Closeout/Reclamation activities. The Erosion Control Plan will describe the following:

- 1. Containment of sediment and runoff within the disturbed area during closeout/reclamation activities.
- 2. Protection of surface water resources from sedimentation due to ground disturbance and other activities.
- 3. Protection of topsoil and closeout/reclamation materials from erosion.

In addition to upgrading Permit Number LU009RE to active status, GEO SW will need other permits in order to operate the mill including a groundwater discharge permit for a new tailings

impoundment and an air quality permit for the crushing unit. Current plans include tailings impoundments below the size requiring a dam site permit.

A Stormwater Pollution Prevention Plan (SWPP) for the Site that outlines stormwater controls will also be required. The SWPP will be modified prior to the implementation of the Closeout/Reclamation Plan and submitted to the MMD for approval. The modifications will reflect the proposed changes to the Site and ensure that surface water will be protected from activities that were or will be conducted at the Site. The SWPP will include procedures to collect samples of stormwater. In addition, the SWPP will outline the actions necessary to prevent stormwater from negatively affecting surface water. Surface water samples will be collected in accordance with 40 CFR Part 136. Surface water sample analytical results will be reported to the Surface Water Quality Board of the NMED.

#### 9. CLOSEOUT/RECLAMATION PLAN SCHEDULE

The Site will be a custom facility, not associated with any particular mine, and therefore could potentially continue to operate indefinitely. However, Closeout/Reclamation activities would require from six to ten months to complete should GEO SW choose to close the mill.

### **10. CLOSEOUT/RECLAMATION PERMITTING, NOTIFICATION, APPROVALS**

The Site has been annexed by the City of Deming which has issued a special use permit for operation of the mill. This area is zoned for commercial use and adjoins an industrial park recently created by the City. Depending upon the type of business that may utilize the Site and its potential impact to the environment, State as well as City permits may be required.

NMED requires notification of demolition activities 10 days prior to initiation of work. The purpose of the notification is to inform NMED of the presence or absence of asbestos. In addition, lead emissions, particulate matter and/or dust emissions, and emissions resulting from remedial activities may be governed by state and federal regulations. If potential emissions exceed the threshold levels as specified in the regulations, GEO SW may have to file a Notice of Intent and/or obtain an air quality permit.

### **FINANCIAL ASSURANCE (FA)**

### **1. CLOSEOUT COST**

The estimated direct cost of the Closeout/Reclamation Plan for the Deming Mill Permit No. LU009RE as detailed in Table 1 (page 15) is \$185,090 plus indirect costs of \$72,185 for a total cost of \$257,275.

### **3. FINANCIAL ASSURANCE SUBMISSION**

In conformance with Subpart 12 of the Rules, GEO SW will submit FA in excess of the \$257,275 required for accomplishing the Closeout Plan for the Site, the Land reclamation and the implementation of the PMLU for the Site. This FA shall consist of a Collateral Bond in the form of a perfected first-lien security interest in real property with a right to sell granted to the State of New Mexico. This real property is a portion of the Property purchased by GEO SW from the Trust but does not include any of the 208-acre Permit Area. The 20% margin that MMD requires for collateral bonds will increased the required value of the collateral to \$321,594.

Figure 1. Permit Area Land









# Table 1 Cost Estimates

# **Direct Costs**

		Demolitio	on Costs
Mill Site Closeout	Area sq ft	\$/sq ft	Total
Mill building equipment removal	9,000	3.805	\$ 34,245
Thickener, 36 ft diameter	1,017	7.61	7,740
Thickener, 30 ft diameter	707	7.61	5,380
Thickener, 25 ft diameter	490	7.61	3,728
Ore receiving (grizzly)	900	7.61	6,850
Conveyor systems	720	7.61	5,480
Conveyor tunnel	2,250	7.61	17,122
Ore crushing building	2,160	7.61	16,438
Ore transfer building	225	7.61	1,712
Conveyor tower building	650	7.61	4,946
4 fine-ore bins & ore sampling building	3,000	7.61	22,830
Lime circulating tank	400	7.61	3,044
Remove and replace soil near thickener	tank		3,000
Total			\$132,515

Land	Cost
North slope of Cypress tailings (5 acres @ \$5,325)	\$ 26,625
Area north of river (2 acres @ \$5,325)	10,650
Plant native vegetation on reclaimed area and borrow pit (10 acres@ \$350)	3,500
Place concrete rip-rap on river bank	10,000
Plug monitoring well	2,000
Total	\$ 52,775
Total Direct Costs	\$185,090

## **Indirect Costs**

Item	%	Total_
Reclamation contract management fee	10	\$ 18,509
Engineering redesign	2	3,702
Mobilization & demobilization	5	9,255
Contingencies	7	12,956
Profit & overhead	15	<u>27,763</u>
Total Indirect Costs		\$ 72,185
Total Costs		\$257,275



Deming Mill (LUNA Electric Generation Plant in Background)