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EPA541-R99-057
1999

EPA Superfund
Record of Decision Amendment:

Cleveland Mill Site
Silver City, NM
9/20/1999

AMENDED RECORD OF DECISION

CLEVELAND MILL SUPERFUND SITE
Grant County, New Mexico

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 6 SUPERFUND DIVISION

SEPTEMBER 1999

CONCURRENCES

Kathleen Aisling — 8/27/99

Kathleen A. Aisling
Remedial Project Manager

Date

Donald H. Williams — 8/27/99

Donald H. Williams, Leader
New Mexico/Technical Assistance Team

Date

9/17/99

Carl E. Edlund, Chief
Louisiana/New Mexico Superfund Program Branch

Date

8/31/99

James E. Costello
Senior Attorney

Date

08/31/99

Mark A. Peycke, Chief
Litigation And Enforcement Branch

Date

9/10/99

Lawrence E. Starfield
Office of Regional Counsel

Date

9/17/99

Myron O. Knudson, P.E., Director
Superfund Division

Date

DECLARATION
CLEVELAND MILL SUPERFUND SITE
AMENDED RECORD OF DECISION

No Further Action is Required and Five-Year Reviews Will be Performed

SITE NAME AND LOCATION

Cleveland Mill Superfund Site
Grant County, New Mexico

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Cleveland Mill Superfund Site (hereinafter, the "Site"), in Grant County, New Mexico, developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act (SARA), ("CERCLA"), 42 U.S.C. §9601 et seq., and to the extent practicable, the National Contingency Plan 40, CFR Part 300. This decision is based on the Administrative Record for the Site.

The State of New Mexico concurs on the selected remedy.

DESCRIPTION OF THE REMEDY

The Environmental Protection Agency, the lead agency for the Site, has determined that no further response actions are necessary to protect public health or welfare or the environment. However, ground water and surface water monitoring, operation and maintenance (O&M) of the constructed remedy, and implementation of the existing institutional controls (e.g., deed notices warning against the use of ground water, and to advise future owners about the risks of disturbing the cover and/or the underlying material), will continue to be performed at the Site.

STATUTORY DETERMINATIONS

The environmental threat at the Site was addressed by an EPA time-critical removal action through which the waste material in the mill area and in the stream was excavated, the waste material was treated with limestone to neutralize its acidity, the treated material was disposed of in a limestone cell constructed at the Site, and the cell was covered by a multi-layered cap. At the completion of the removal action, the streambed and all sediment met the Site remediation goals which were specified in the 1993 Record of

Decision (ROD) for the Site. Therefore, no further long-term remedial actions to address tailings and sediment in the streambed need be implemented at the Site.

Because the time-critical removal action involved disposal of the neutralized waste material in an on-site disposal cell, hazardous substances will remain on-site. Therefore, as required by CERCLA, this ROD Amendment requires that a review of the remedy will be conducted every five years with the first statutory five-year review to be conducted within five years after commencement of the response action, (i.e., by September 2002). The reviews will be conducted to ensure that the human health and the environment are being protected by the response action as required by CERCLA Section 121, 42 U.S.C. § 9621.

Tom Becker for

Gregg A. Cooke
Regional Administrator

9/20/99
Date

AMENDMENT TO THE RECORD OF DECISION

CLEVELAND MILL SUPERFUND SITE
GRANT COUNTY, NEW MEXICO

INTRODUCTION AND STATEMENT OF PURPOSE

Site Name and Location

Cleveland Mill
Grant County, New Mexico

Identification of Lead Agencies and Support Agencies

Lead: U.S. Environmental Protection Agency (EPA)
Support: New Mexico Environment Department (NMED)

CERCLA Section 117(c) and NCP Section 300.435(c)(2)(ii)

This Amendment to the Record of Decision (ROD Amendment) is prepared in fulfillment of the EPA's public participation responsibilities under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also called "Superfund"), 42 U.S.C. § 9617(c). Section 117(c) provides that after adoption of a final remedial action plan, if any remedial action, enforcement action, settlement or consent decree under Section 106 or Section 122 of CERCLA (42 U.S.C. §§ 9606 or 9622) is entered into, and if such action, settlement, or decree differs in any significant respects from the final plan, the lead agency shall publish an explanation of significant differences and the reasons such changes were made. The EPA is the lead agency at this Site.

Moreover, pursuant to the NCP, the EPA is required to publish a ROD Amendment when, after adoption of the ROD, the remedial action taken, the enforcement action taken, or the settlement or consent decree fundamentally alters the basic features of the selected remedy with respect to scope, performance, or cost (40 CFR § 300.435(c)(2)(ii)).

This document presents only a summary of the available information regarding the Cleveland Mill Superfund Site ("the Site"). The complete information, and the documents which form the basis for the EPA's response action at the Site are located in the Administrative Record for the Site. Pursuant to the requirements of the NCP (40 CFR §300.825(a)(2)), this ROD Amendment (and the documents which form the basis for the ROD Amendment) will become part of the Administrative Record for the Site.

Date of ROD Signature

The ROD for the Site was signed on September 22, 1993 (the "1993 ROD").

Summary of Circumstance that Led to the Need for a ROD Amendment

This document is an EPA ROD Amendment for the Site. In the May 26, 1999, Amended Proposed Plan of Action, the EPA proposed that no further action be taken at the Site, other than the continuation of ground water and surface water monitoring, operation and maintenance (O&M) of the constructed remedy, and implementation of the existing institutional controls (e.g., deed notices warning against the use of ground water, and to advise future owners about the risks of disturbing the cover and/or the underlying material). Ground water and surface water monitoring are considered part of the O&M phase of the Site; however, ground water and surface water monitoring are listed as individual tasks throughout this ROD Amendment for consistency with previous Site documents.

The course of action selected in this Amended ROD differs from the plan selected in the 1993 ROD. In the 1993 ROD, the EPA detailed the original remedy selected to address the contamination at the Site. The overall Site remedy, as described in the 1993 ROD, would have addressed the current and potential threats to human health and the environment at the Site through excavation of the waste material, transportation of the waste material to a reprocessor for treatment, and disposal of the residuals at the reprocessing facility in an area where other tailings and residuals from ore-processing were disposed.

The reason that the 1993 ROD remedy was not implemented and, instead, a time-critical removal action was initiated is that the search for an acceptable off-site disposal facility was ultimately unsuccessful, and, during the search, unanticipated weather events caused extensive contaminant migration at the Site. This contaminant migration increased the potential risk to human health and the environment and made the risk more immediate.

The environmental threat at the Site was addressed by an EPA time-critical removal action through which the waste material in the mill area and in the stream was excavated, the waste material was treated with limestone to neutralize its acidity, the treated material was disposed of in a limestone cell constructed at the Site, and the cell was covered by a multi-layered cap. For a complete description of the cell, the cap and the excavation process, see the August 27, 1997, Removal Action Work Plan and the December 10, 1998, Removal Action Final Report which are part of the Administrative Record for the Site.

SUMMARY OF SITE HISTORY, CONTAMINATION, AND THE ORIGINALLY SELECTED REMEDY

Site Characteristics and History

The Site is located at the headwaters of a small tributary of the Little Walnut Creek, 5.5 miles north of Silver City, in Grant County, New Mexico (See Figure 1). The Site occupies approximately 4 acres in mountainous terrain at an elevation of 7,100 feet above mean sea level (MSL), and it also occupies approximately 14 acres which extend down a drainage area and into the streambed of Little Walnut Creek. The Site is located in a rapidly developing residential area that is adjacent to the Gila National Forest and private lands. Downstream residences are concentrated along Little Walnut Creek. The nearest residence is located about 3,200 feet southwest of the Site. The population within a 3-mile radius of the Site is estimated to be 1,200.

The Site is a former ore processing area adjacent to the Cleveland Mine. The Cleveland Mine, located approximately ½ mile northeast of the mill area, is one of the Cleveland Group of Mines located in the West Pinos Altos Mining District. The first of the Cleveland Mining claims was staked in the early 1900s and included a milling operation at the Site. The milling operation employed a gravity separator until 1916, and a flotation process from 1916 until at least 1919. Approximately 125,000 tons of lead, zinc, and copper ore were produced from the Cleveland Mine during the period from about 1900 until 1919. After this time, the Site was leased for mining and grazing.

Mining activities steadily declined in the West Pinos Altos Mining District after 1950. The foundations of the former mill, a pump house foundation, and a small reservoir are all that remain of the original mill where ore was processed at the Site. The Site subsequently changed owners through corporate mergers and various sales. Most of the Site is currently owned by Mining Remedial Recovery Company and Bayard Mining Corporation.

Disposal of mill tailings and mine waste rock occurred in several areas of the Site during mining activities and processing related to the nearby Cleveland Mine. Prior to completion of the time-critical removal action, the Site contained waste material in several areas including two main tailings piles (east and west), a cobbed ore pile (unprocessed, low grade ore), western hillside piles, dust piles and in the roadbed of the road encircling the Site. (See Figure 2). The east and west tailings piles were deposited onto the sides of the valley at the headwaters of a small tributary to Little Walnut Creek. Other waste areas on the Site included the mine spoils located in a small drainage area near the Cleveland Mine portal, and tailings sediment located within the streambeds of the mill valley tributary and Little Walnut Creek. These areas contained tailings and sediment contaminated with metals such as arsenic, beryllium, cadmium, copper, lead, and zinc from the ore processing. (In this document the terms "waste material" and "contaminated material" are used interchangeably to describe the tailings and sediment at the Site described in the 1993 ROD.)

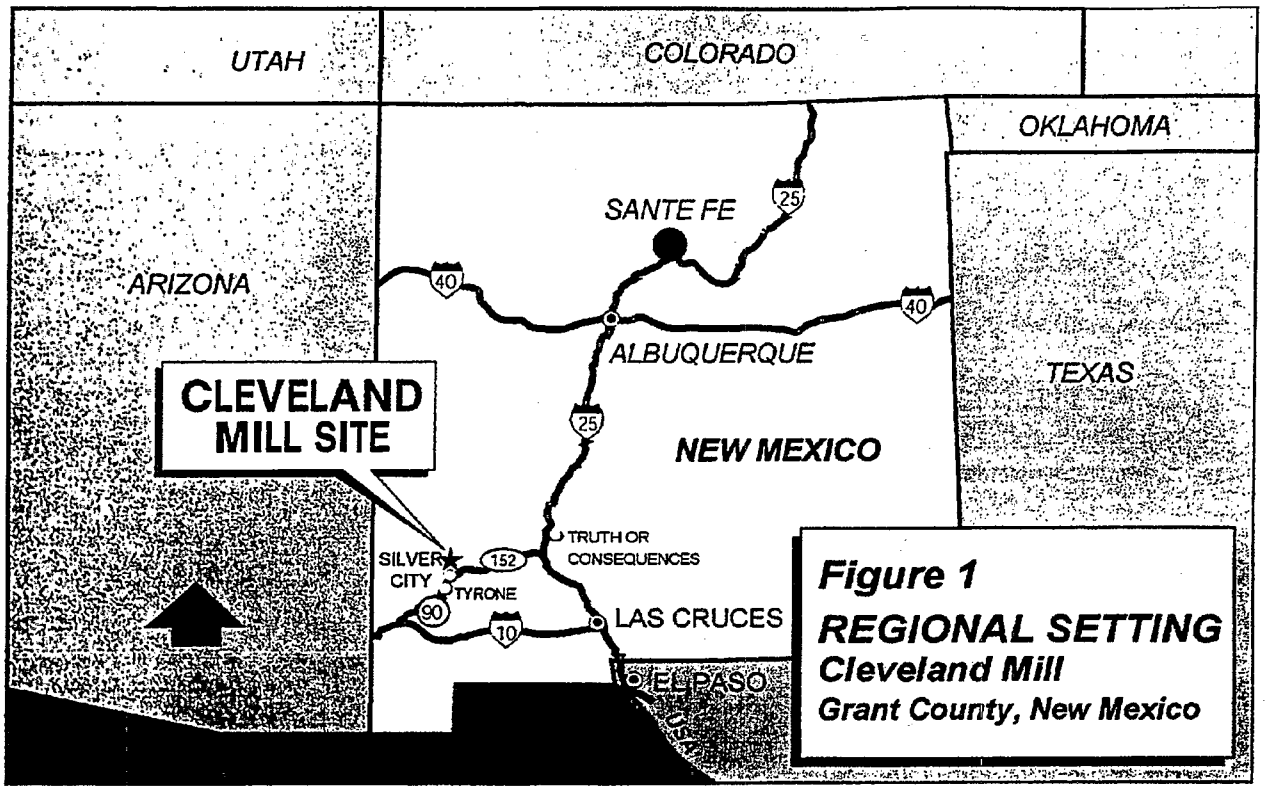

Figure 1
REGIONAL SETTING
Cleveland Mill
Grant County, New Mexico

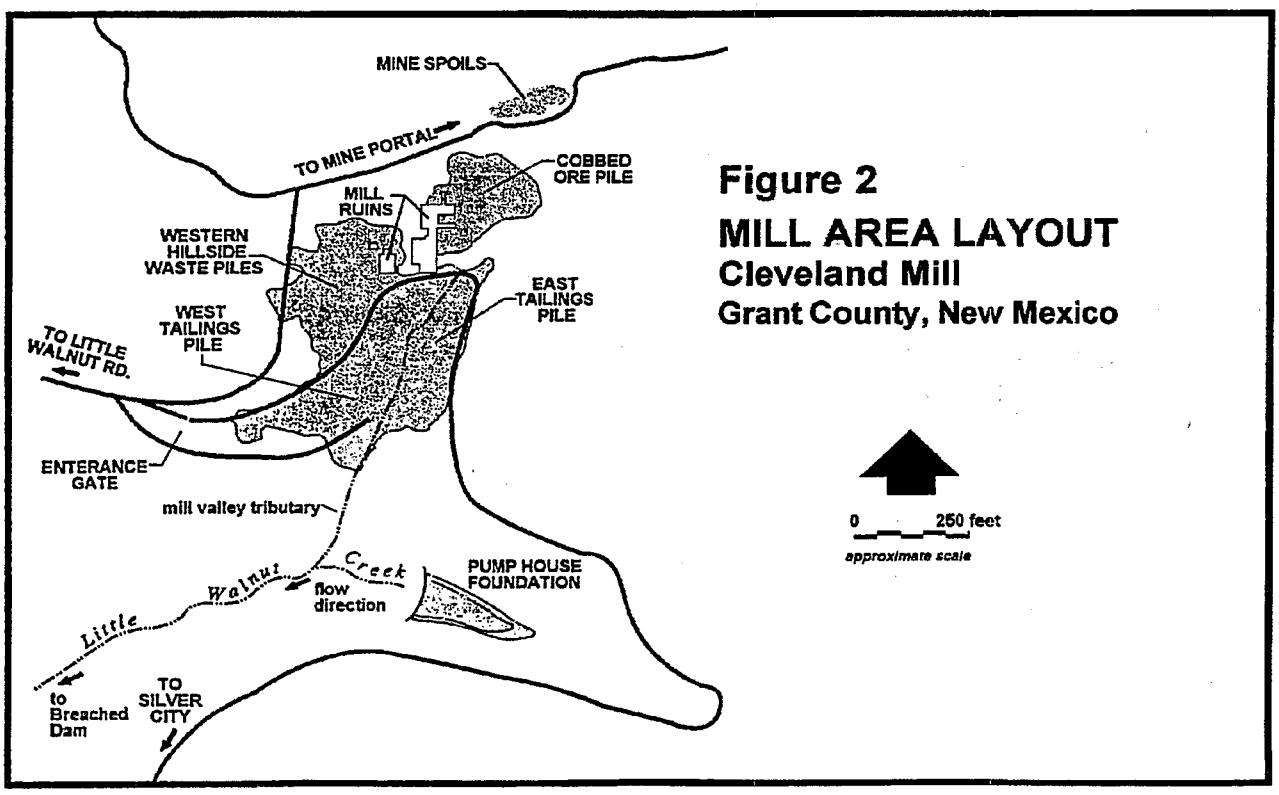

Figure 2
MILL AREA LAYOUT
Cleveland Mill
Grant County, New Mexico

Approximately 170,000 cubic yards of waste material were ultimately found to contain metals at concentrations that exceed standards based on risk to human health (in this document, referred to as risk-based health standards.) This contaminated material was excavated, treated, and contained in an onsite disposal cell during the time-critical removal action.

The March 1993 Remedial Investigation (RI) report stated that a shallow on-site aquifer at the toe of the tailings was also contaminated with beryllium and cadmium, and residential wells downstream from the Site showed effects from the Site. The residential wells showed elevated concentrations of sulfates which are also found in the tailings, but the wells did not have any contaminants at concentrations exceeding risk-based health standards.

BASIS FOR THE AMENDED ROD

Information Supporting the Remedy Change

In the 1993 ROD, the EPA presented the selected remedy for the Site cleanup. The 1993 ROD addressed remediation of all contaminated media at the Site including tailings (surface soil) and sediment found in the intermittent Little Walnut Creek. The 1993 ROD also required surface and ground water monitoring and institutional controls. The 1993 ROD remedy called for excavation of the contaminated material at the Site and reclamation (restoration) of the excavated areas. The selected remedy also called for transportation of contaminated material to a reprocessing facility, and reprocessing of this material in order to reclaim useful metals. Under the remedy selected in the 1993 ROD, the residuals from the reprocessing of the contaminated material were to be disposed of with other tailings and residuals from ore-processing operations at the reprocessing facility that was to be identified during the Remedial Design phase.

Bayard Mining Corporation ("Bayard"), Mining Remedial Recovery Company ("MRRC"), and Viacom International Inc. ("Viacom") (Viacom is participating as a result of a merger with Paramount Communications Inc.) (hereinafter, these companies are referred to as the "participating companies") agreed to implement the remedy selected in the 1993 ROD pursuant to the judicial Consent Decree styled United States of America and New Mexico Office of the Natural Resources Trustee v. Bayard Mining Corp. et al., No. 95-0285 MV/LFG (D. New Mexico (Albuquerque)) which was entered June 12, 1995 ("the 1995 CD").

Immediately after the 1995 CD was entered (i.e., made effective by the court), the participating companies began planning for the cleanup of the Site in accordance with the 1993 ROD and the 1995 CD. The participating companies solicited bids from ore processing facilities, but no ore processing facilities which were technically capable of reprocessing the contaminated material from the Site would accept the contaminated material under conditions which were acceptable to the EPA. Bidding and negotiations with potential reprocessors were extended and continued until the summer of 1996; however, no acceptable reprocessing facility was found.

In 1996, it became apparent that no acceptable mill could be found to reprocess the waste material from the Site. Accordingly, the participating companies and the EPA, in consultation with the NMED, undertook an approximately year-long search for alternative off-site disposal areas and acceptable disposal designs for those areas. However, no acceptable, cost-effective alternative disposal area and method were found. Meanwhile, conditions at the Site worsened. Specifically, the rate of migration of waste material unexpectedly increased due to an early season of unusually heavy rains, causing contamination to spread much faster, and increasing the potential risk to human health and the environment.

By the spring of 1997, it became clear that expeditious action had to be taken on-site to address the source of the contamination. Accordingly, on July 11, 1997, the EPA, with the concurrence of the NMED, issued an Action Memorandum that authorized a time-critical removal action to physically address the Site contamination and to restore affected surface areas at the Site. The participating companies agreed to implement this action through an EPA Administrative Order on Consent (AOC) which became effective on September 23, 1997. The field activities required by the AOC were completed on November 19, 1998, the date on which the last area of the Site was seeded. Completion of the final AOC requirement (except for certain requirements such as record retention that are not directly related to the cleanup) occurred on December 10, 1998, the date the participating companies submitted the Removal Action Final Report. The Action Memorandum, the AOC, and the Removal Action Final Report are part of the Administrative Record File for the Site.

In accordance with several written agreements, including the 1995 CD for the remedial action and the AOC for the removal action, the participating companies have funded all Site activities. That is, the participating companies paid the EPA for all the costs incurred in the investigation phase of the project, performed the design activities, implemented all the response activities, and funded EPA and NMED oversight of the project. Under the 1995 CD, the participating companies also paid to the Federal and State natural resource trustees a cash settlement, in the amount of $210,000 in damages for injuries to natural resources. Section 107 (f)(1) of CERCLA (42 U.S.C. § 9607 (f) (1)) requires that damage awards be used to restore, replace, or acquire the equivalent of the injured natural resources. In accordance with this requirement, the trustees used the award to conduct restoration of riparian ecosystems in the general vicinity of the Site.

Concurrent with this amendment to the 1993 ROD, the EPA plans to amend the 1995 CD to reflect the changes which are documented in this ROD Amendment. Because the time-critical removal action authorized in the Action Memorandum addressed only the removal of the source of contamination at the Site, and did not address the monitoring and potential remediation of on-site ground water or any of the other actions (e.g., Operation and Maintenance of the remedy) described in the 1993 ROD, this ROD Amendment pertains only to the contaminant source control part of the remedial action described in the 1993 ROD. Portions of the 1993 ROD addressing ground and surface water, Operation and Maintenance (O&M), and institutional controls will be incorporated into and continued through this ROD Amendment. That is, parts of the 1993 ROD which address ground water and surface water monitoring, O&M, and

institutional controls are still in effect, and will remain in effect under this ROD Amendment, and under the Amended Consent Decree. The EPA expects that the amended CD will include similar cost provisions for financing of EPA and NMED oversight of the O&M phase of the project. The participating companies will also continue to implement and pay for O&M.

DESCRIPTION OF SIGNIFICANT CHANGES AND THE ALTERNATIVES

Overall Site Remediation Strategy

An operable unit is a discrete action that comprises an incremental step toward comprehensively addressing Site contamination. There was only one operable unit at the Site--the contaminant source control operable unit. This ROD Amendment details the EPA's changes to the way in which EPA intends to address the source control operable unit. In the 1993 ROD, the contaminated tailings and sediment were identified as the principal threat wastes at the Site. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably controlled and that present a significant risk to human health and the environment should exposure occur. The reason the EPA is changing the source control remedy described in the 1993 ROD is that, through the time-critical removal action, the principal threat wastes at the Site were addressed.

Under this ROD Amendment, ground water and surface water will continue to be monitored to ensure that removal of the source of the contamination (the tailings and sediment) was successful and that the remedy continues to be protective of the ground water and surface water. In addition, O&M of the disposal cell area, O&M of the excavated on-site areas, and the ongoing institutional controls (e.g. deed restrictions), would still be implemented as detailed in the 1993 ROD. With the exception of the activities described in the two immediately preceding sentences, this ROD Amendment calls for no further action at the Site. The EPA does not expect that it will develop any additional decision documents (e.g., Action Memoranda, or RODs).

Because the removal action included an on-site disposal of Site materials in a containment cell, access to the cell must be restricted, and access to the containment cell cap must be limited, but, otherwise, the removal action had no major impact on land use at the Site. The removal action addressed the source of the contamination on the Site; therefore, this ROD Amendment, stating that no further action be taken to address on-site contamination, is appropriate.

Changes to the 1993 ROD

Because the time-critical removal action employed a different clean-up method than the one specified in the 1993 ROD, the EPA is making the following changes and additions to the 1993 ROD in this ROD Amendment, based on current Site conditions:

Long Term O&M: The 1993 ROD called for O&M of the excavated areas which included Site restoration to ensure that erosion of the Site did not adversely affect the environment. Because the waste material was neutralized and disposed of on-site during the time-critical removal action, O&M must also be performed on the disposal cell. O&M required in this ROD Amendment shall include maintenance of the integrity of the disposal cell and the cap on the disposal cell in addition to the O&M of the excavated areas detailed in the 1993 ROD.

As part of the O&M, the 1993 ROD called for ground water and surface water monitoring to ensure that removal of the source of contamination was protective of the ground water and the surface water. Additional monitoring will be required under this ROD Amendment due to the construction of the on-site disposal cell. Therefore, ground water monitoring required in this ROD Amendment shall include monitoring the wells that were installed in the disposal cell area prior to the time-critical removal action, in addition to the rest of the ground water monitoring detailed in the 1993 ROD.

Institutional Controls: The 1993 ROD called for institutional controls limiting access to and limiting use of the mill area ground water as long as the ground water does not meet the EPA Safe Drinking Water Maximum Contaminant Levels (MCLs), 40 CFR Part 141, Subpart B (MCLs are defined at 40 CFR § 141.2) and New Mexico Water Quality Control Commission Standards. These institutional controls will remain in effect under this ROD Amendment.

Because the waste material was neutralized and disposed of on-site during the time-critical removal action, institutional controls were also implemented limiting access to and use of the disposal cell area. Continuing institutional controls required in this ROD Amendment shall include access restrictions, and deed restrictions to advise future owners about the risks of disturbing the cover and/or the underlying material. Under this ROD Amendment, the deed notices explaining the dangers of disturbing the disposal cell (described in the 1993 ROD) shall remain in effect. Access to the disposal cell has already been restricted somewhat by boulders dispersed on the top of the cell, and by fencing along sides of the cell which are adjacent to the road. This ROD Amendment requires that access to the cell continue to be restricted by the dispersed boulders and the fencing, and it also calls for the deed restrictions placed in the county property records to remain.

Five-Year Review: The requirement that a five-year review be conducted was not included as part of the 1993 ROD because the contaminated material would have been taken off-site under the selected remedy. Since the time-critical removal action involved disposal of the neutralized waste material in an on-site disposal cell, hazardous substances (i.e., treated tailings and sediment) will remain on-site. Therefore, as required by CERCLA, this ROD Amendment requires that a review of the remedy will be conducted every five years with the first statutory five-year review to be conducted within five years after commencement of the response action, (i.e., by September 2002). The reviews will be conducted to ensure that the human health and

the environment are being protected by the remedial action as required by CERCLA Section 121, 42 U.S.C. § 9621. In addition, the EPA and the NMED will continue oversight of the participating companies' O&M activities.

Changes from the Action Memorandum

In the Action Memorandum, the EPA anticipated that small amounts of tailings and sediment might remain in the streambed, after implementation of the removal action, which would have to be addressed as part of a long-term remedial action. However, at the completion of the removal action, the streambed and all sediment met the Site remediation goals. Therefore, no further long-term remedial actions to address tailings and sediment in the streambed need be implemented at the Site.

Summary of Site Risks

Previous Site Risks: Site risks prior to implementation of the time-critical removal action were discussed in the March 1993 RI and in the 1993 ROD which are included in the Administrative Record for the Site. As discussed in the following section, Remediation Objectives, the Site cleanup goals for the tailings and sediment were met, allowing unlimited residential use of all surficial Site areas except the disposal cell. As a precaution, institutional controls have been placed on the ground water below the disposal cell restricting future residents from using that water. As described in the following paragraph, use of the mill area ground water has been restricted also.

Except for 1992 RI data from the mill area well (MW1), ground water data indicates that all wells currently in the Site monitoring network (including off-site residential wells and the new wells ringing the disposal cell), do not have contamination at concentrations exceeding risk-based health standards. During the cleanup, the original monitoring well that was located at the toe of the large tailings pile in the mill area (MW1) was demolished so that it would not interfere with the excavation of the tailings. A new well, installed in the same area, has not produced sufficient water for sampling. Consequently, the quality of the ground water in the mill area is not known at this time. Under this ROD Amendment, if the ground water or the surface water show contamination above the standards set in the 1993 ROD, the contingency provisions in the 1993 ROD may be employed. The residual risk, if any, from the ground water in the mill area and surface water in the intermittent Little Walnut Creek will be evaluated when enough monitoring data from quarterly monitoring is collected to perform a statistical analysis.

Because of the RI results and the lack of recent ground water data in the mill area, institutional controls, in the form of restrictive covenants limiting the use of the mill area ground water, are in place and will remain in effect until the water in that area meets MCLs. Therefore, except for the disposal cell area and the ground water in the mill area, the EPA has determined that the entire Site is fit for unlimited use as a residential area.

Land Use: The 1993 ROD anticipated a future land use of the Site as residential based on the rapid development in the Silver City area. This continues to be the most likely future land use at the Site. Should the participating companies sell the Site, a residential use of the land is likely, given the recent development of several large tracts south of the Site and the planned development of several areas contiguous to the Site. The 1993 ROD anticipated unlimited residential land use at the Site (except for use of the contaminated ground water at the toe of the tailings) after implementation of the preferred alternative and cleanup to residential standards.

The participating companies cleaned up the Site to residential standards during the time-critical removal action, but because the waste material was neutralized and disposed of on-site, a portion of the Site (the disposal cell) may not be used for residential development. The disposal cell covers 2.8 acres of land which must be maintained in perpetuity to ensure that the remedy remains protective. All surface areas of the Site, except the disposal cell, may potentially be used for residential purposes without any resident being exposed to hazardous substances at concentrations that exceed risk-based health standards (for cadmium, lead, and zinc) or background concentrations (for arsenic and beryllium). As described above, ground water use has been limited in the cell area and in the mill area through the filing of restrictive covenants.

Remediation Objectives

The 1993 ROD listed the Remedial Action Goals (RAGs) for the Site. The NCP requires the EPA to establish remediation goals for remedial actions (See 40 CFR § 300.430). The RAGs in the 1993 ROD are the remediation goals for the Site. A RAG is the allowable concentration of a contaminant which may remain in a specific medium (such as soil, surface water or ground water) at the Site, after implementation of the ROD. The RAGs are protective of human health and the environment, and serve as goals for Site cleanup to attain. For the Site, the RAGs for cadmium, lead, and zinc were set to risk-based health standards, while the RAGs for arsenic and beryllium were set to background concentrations of these contaminants. (Background concentrations are slightly above the risk-based health standards.)

The participating companies performed the time-critical removal action at the Site in accordance with the AOC which incorporated the Site RAGs (i.e., the remediation goals) from the 1993 ROD. Because the time-critical removal action met the 1993 ROD goals, it achieved the same reduction of risk in the contaminated areas that would have been achieved by the 1993 ROD. In some areas of the Site, in order to meet the RAGs, the waste material was excavated until bedrock was encountered. In effect, this excavation to bedrock reduced the risk from exposure to the soil media to negligible levels, much lower than the RAGs. The time-critical removal action also met the remedial action objective for the Site soil presented in the 1993 ROD: to prevent contact, ingestion of, and inhalation of contaminated tailings and sediment. Through the ground water and surface water monitoring which will occur as part of Site O&M, the EPA and the NMED will be able to evaluate whether or not the remedial objective for the Site, returning the shallow perched aquifer at the toe of the tailings to a condition where the concentration of contaminants is below MCLs and New Mexico water quality standards, has been met.

Summary of Alternatives

This ROD Amendment concludes that no further remedial action shall be performed on the source of contamination at the Site. No new alternatives were considered in this ROD Amendment because, through the time-critical removal action, all sources of Site contamination were excavated, treated, and contained. For a detailed description of the alternatives evaluated in the 1993 ROD, see the July 1993 Feasibility Study and Section VIII of the 1993 ROD, both of which are part of the Administrative Record for the 1993 ROD. A brief summary of the original remedy, the response action taken under the Action Memorandum, and the current Site conditions are shown in Table 1.

EVALUATION OF ALTERNATIVES

In a ROD Amendment, the EPA evaluates the cleanup alternatives for the site in question under nine evaluation criteria in order to determine which alternative provides the best balance of trade-offs among alternatives with respect to the evaluation criteria and which would be the best alternative to implement at that site. Although this evaluation generally is not performed when a no-further-action alternative is selected, the EPA is providing the following abbreviated analysis to show why a no-further-action alternative has been selected for the Site.

- Overall Protection of Human Health and the Environment - Under the Overall Protection of Human Health and the Environment criterion, EPA determines whether a cleanup alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment. The current conditions at the Site show no threats to human health and the environment. The waste material which had acted as the source of the contamination to Site soils, ground water, and surface water has been excavated and placed in a disposal cell and the ground water is being monitored. Therefore, the no-further-action alternative is protective of human health and the environment.

Disposal of the neutralized tailings and sediment in an on-site containment cell, constructed as part of the time-critical removal action completed in December 1998, eliminated the direct contact threat posed by the contaminated tailings and sediment through engineering controls and treatment. Although the original remedy in the 1993 ROD called for off-site treatment of the contaminated tailings and sediment through reprocessing and reclamation of beneficial metals, it required a reprocessor to implement the remedy. Since an acceptable reprocessor could not be located, the original remedy could not be implemented as selected. Site conditions changed due to heavy rains and the time-critical removal action was warranted to address the surficial contamination and to restore affected areas at the Site.

Under this ROD Amendment, ground water and surface water will be monitored, as detailed in the 1993 ROD. The residual risk, if any, from the ground water in the mill area and from the surface water in the intermittent Little Walnut Creek will be evaluated when enough quarterly

Table 1

ORIGINAL REMEDY 1993 ROD	REMOVAL ACTION Completed 12/98	CURRENT SITE CONDITIONS, 9/99
• Excavation of soils, including, but not limited to, tailings and sediment contaminated above Remedial Action Goals (RAGs)	• Excavation of soils, including, but not limited to, tailings and sediment contaminated above Remedial Action Goals (RAGs)	• All contaminated tailings and sediment excavated
• Off-site treatment of the contaminated soils, including, but not limited to, tailings and sediment through reprocessing/reclamation of beneficial metals	• On-site treatment of the contaminated soils, including, but not limited to, tailings and sediment through neutralization with limestone	• All soils treated and neutralized on-site
• Disposal of the treatment residuals at the off-site reprocessing facility	• Disposal of the treated material in an on-site disposal cell/capping of the disposal cell	• All treated material placed in capped disposal cell
• Restoration and erosion control of the disturbed areas at the Site	• Restoration and erosion control of the disturbed areas at the Site	• Restoration and erosion control measures in place
• Ground water and surface water monitoring		• Continuing ground water and surface water monitoring
• Long term O&M		• Expanded O&M to include disposal cell
• Institutional controls		• Continuing institutional controls (already in place) on cell and ground water

monitoring data are collected to perform a statistical analysis. Should the ground water or the surface water show contamination above the standards set in the 1993 ROD, the contingency provisions in the 1993 ROD may be employed.

In addition, the participating companies will continue to implement institutional controls (e.g., deed restrictions to advise future owners about the risks of disturbing the cell cover and/or the underlying the containment cell.) The source of the contamination has been removed and ground water and surface water monitoring, operation and maintenance, and continued implementation of institutional controls, as required by the 1993 ROD and explained in this ROD Amendment, will be conducted under this ROD Amendment to verify that no unacceptable exposure to hazardous substances posed by conditions at the Site occurs in the future. A five-year review will also be conducted within five years from date of the commencement of the removal action to ensure that the remedy remains protective.

- Compliance with ARARs - Under the Compliance with ARARs criterion, EPA evaluates whether a cleanup alternative meets Federal and state environmental statutes, regulations, and other requirements that pertain to the Site or whether a waiver is justified. This criterion is not directly applicable to the no-further-action alternative. The time-critical removal action was compliant with the ARARs established in the Action Memorandum which were modeled after the ARARs established in the 1993 ROD. Although the original remedy in the 1993 ROD calling for off-site treatment, reprocessing, and reclamation would have complied with ARARs, the remedy could not be implemented as selected. Site conditions changed, and the change warranted a time-critical removal action. Current conditions at the Site have not changed since the time-critical removal action was completed, and, therefore, the Site remains ARAR-compliant. Ground water and surface water monitoring, operation and maintenance, and continued implementation of institutional controls, as required by the 1993 ROD and as explained in this ROD Amendment, will be conducted in a manner which complies with ARARs.

- Long-term Effectiveness and Permanence - Under the Long-term Effectiveness and Permanence criterion, EPA considers the ability of a cleanup alternative to maintain protection of human health and the environment over time. Currently, there are no problems with the effectiveness and permanence of the on-site containment cell, which was constructed as part of the time-critical removal action. Placing the waste material in the on-site containment cell is protective of human health and the environment in that it addressed the immediate threat from direct contact that contaminants posed to trespassers and future Site residents. Further, the time-critical removal action has an even greater long-term effectiveness because it included the on-site treatment component of neutralization with limestone. In addition, the containment cell has been capped, so future unacceptable exposures to hazardous substances are highly unlikely. Containment cell technology is well understood and is used extensively at sites with similar contaminants. Although the original remedy selected in the 1993 ROD (off-site treatment, reprocessing, and reclamation) would have also reduced the inherent hazards posed by the contaminants at the Site, it could not be implemented as selected. Site conditions changed and

the time-critical removal action was warranted to address immediate threats to human health and the environment. As long as the containment cell remains effective, there are no unacceptable exposures to future residents or trespassers at the Site, and the no-further-action alternative is appropriate.

Ground water and surface water monitoring, operation and maintenance, and continued implementation of institutional controls, as required by the 1993 ROD, and as explained in this ROD Amendment, will be conducted to verify that no unacceptable exposure to potential hazards posed by conditions at the Site occurs in the future. A five-year review will also be conducted within five years from date of the commencement of the removal action to ensure that the remedy remains effective.

- Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment - Under the Reduction of Toxicity, Mobility or Volume of Contaminants through Treatment criterion, EPA evaluates a cleanup alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present. There are no contaminants at the Site that require treatment, so the proposed no-further-action remedy is appropriate. The containment cell constructed as part of the time-critical removal action included the on-site treatment component of neutralization with limestone prior to disposal of the Site contaminants into the containment cell. This treatment reduced the mobility of Site contaminants by neutralizing the contaminated material with limestone, raising the pH and making the contaminants less soluble. The volume of material excavated and treated was the same volume that would have been excavated and treated in the remedy selected in the 1993 ROD. Although the original remedy selected in the 1993 ROD included off-site treatment and off-site disposal of treatment residuals at an off-site processing facility, the remedy could not be implemented as selected because an acceptable reprocessor could not be located. Since Site conditions changed due to an early season of unusually heavy rains at the Site, the time-critical removal action (which included a treatment component) was employed to address the immediate threats to human health and the environment.

Ground water and surface water monitoring, operation and maintenance, and continued implementation of institutional controls, as required by the 1993 ROD and as explained in ROD Amendment, will be conducted under the no-further-action alternative to verify that no unacceptable exposure to hazardous substances posed by conditions at the Site occurs in the future. The EPA will also conduct a review within five years of the date of commencement of the response action to ensure that the reduction in toxicity and mobility of the contaminants remains effective.

- Short-term Effectiveness - Under the Short-term Effectiveness criterion, EPA considers the length of time needed to implement a cleanup alternative and EPA also considers the risks the alternative poses to workers, residents, and the environment during implementation. This criterion is not applicable to the no-further-action alternative called for in this ROD Amendment because there are no short-term effects from implementation of a no-further-action remedy.

Although the remedy selected in the 1993 ROD would have been effective in the short term, it could not be implemented because no acceptable reprocessing facility could be located. Site conditions changed and a time-critical removal action was warranted to address the immediate Site risks to human health and the environment.

- Implementability - Under the Implementability criterion, EPA considers the technical and administrative feasibility of implementing a cleanup alternative such as relative availability of goods and services. This criterion is not applicable to the no-further-action alternative because a no new remedial actions will be implemented under the no further action remedy. The reprocessing component of the remedy selected in the 1993 ROD was considered to be implementable because favorable responses indicating interest from reprocessing facilities were received during the public comment period for the 1993 ROD. As the initial step toward implementing the remedy selected in the 1993 ROD, the participating companies solicited bids from ore processing facilities. No ore processing facilities which were technically capable of reprocessing the contaminated material from the Site would accept the contaminated materials under conditions which were acceptable to the EPA. Since an acceptable reprocessor could not be located, the original remedy could not be implemented as selected. Site conditions changed due to heavy rains and the time-critical removal action was warranted.

Ground water and surface water monitoring, operation and maintenance, and continued implementation of institutional controls, as required by the 1993 ROD, and as explained in this ROD Amendment, were recognized as implementable in the 1993 ROD, and these elements of the proposed alternative remain implementable.

- Cost - Under the Cost criterion, EPA considers the cost of implementing a cleanup alternative including the estimated capital and operation and maintenance costs as well as present worth costs. Although the remedy selected in the 1993 ROD would have been cost effective, it could not be implemented because no acceptable reprocessing facility could be located. Site conditions changed, and a time-critical removal action was warranted to address the threats to human health and the environment. Currently, all waste material at the Site has been neutralized with limestone and disposed of in a capped cell. Erosion controls, including revegetation and engineering controls, have been instituted at all affected Site areas. These activities were completed during the time-critical removal action and will be monitored during the O&M phase to ensure their effectiveness.

Ground water and surface water monitoring, operation and maintenance, and continued implementation of institutional controls, as required by the 1993 ROD and explained in this ROD Amendment, will be conducted under the proposed no-further-action alternative in order to verify that no unacceptable exposure to potential hazards posed by conditions at the Site occurs in the future. There will be a minimal cost increase for the O&M for the no-further-action remedy compared to the O&M costs estimated in the 1993 ROD. The increase in O&M costs is due to the added costs of O&M for the disposal cell. Because the cell has been seeded and engineering controls are already in place, and because the ground water monitoring wells were

installed prior to placement of the cell, this O&M cost increase is expected to be a negligible percentage of the original O&M cost estimate.

- State/Support Agency Acceptance - Under the State/Support Agency Acceptance criterion, EPA considers the State's position and key concerns related to EPA's preferred remedial alternative and the other alternatives described in the Proposed Plan, and also considers State comments on ARARs or the proposed use of waivers. The State of New Mexico supported the remedy selected in the 1993 ROD, and the State also supported the need for a time-critical removal action. The State agreed that the ARARs were properly identified in the 1993 ROD, and the State also agreed that the ARARs were properly identified in the Action Memorandum. The State also supports this ROD Amendment. See the Support Agency Comments section of this document.

- Community Acceptance - Under the community acceptance criterion, EPA determines which components of the remedial alternatives identified in the Proposed Plan interested persons in the community support, have reservations about, or oppose. Comments received on the Proposed Plan are an important indicator of community acceptance. The community participated in interviews and an open house and supplied the EPA with comments on the remedy selected in the 1993 ROD. The EPA has kept the community informed of Site activities through public open house meetings. Public comment on the time-critical removal action was solicited during a public open house meeting prior to finalization of the Action Memorandum. A formal public meeting was held on June 9, 1999. The public supported the removal action, and the public does not have any concerns about implementation of the no-further-action alternative. Please see the Public Participation Activities section of this document for additional detail regarding public involvement.

SUPPORT AGENCY COMMENTS

The NMED has reviewed this ROD Amendment. The State's support for this ROD is documented in Appendix A.

PUBLIC PARTICIPATION ACTIVITIES

Community relations activities have been conducted at the Site in support of the remedial action since 1991. The public participation requirements of CERCLA, Subsection 113(k)(2)(B)(i-v) and CERCLA Section 117, 42 U.S.C. §§ 9613(k)(2)(B)(i-v) and 9617, were met during the initial remedial action decision-making process which culminated in an April 27, 1993, public meeting in Silver City to announce proposed response action alternatives and to solicit public comment. Public comment was incorporated into the selected remedy which was memorialized in the 1993 ROD. On June 3, 1997, EPA held a public open house meeting to announce the proposed Removal Action. Verbal and written public reaction to the announcement was overwhelmingly positive. On October 6, 1997, an informational meeting to advise the public of the initiation of construction at the Site was held.

An Amended Proposed Plan recommending that the 1993 ROD remedy be amended to "no-further-action" was mailed to the individuals whose names appear on the Site mailing list in May 1999. On May 23, 1999, a notice was published in the Silver City Sun News that the Administrative Record File was available for public review and comment. A public meeting was held in Silver City on June 9, 1999, to explain the change to the remedy, to answer questions, and to solicit comments from community members. Also, a 30-day written public comment period from, May 26, 1999, through June 25, 1999, was provided. There were no public comments which specifically addressed the change in the remedy proposed by the May 26, 1999, Amended Proposed Plan. Based on the overwhelmingly positive public response to the proposed removal action, the successful completion of that action, and the lack of negative response to the May 26, 1999, Amended Proposed Plan, it is clear that the change in the remedy is supported by the interested public. Several comments were received which pertained to O&M of the remedy. These comments are addressed in Appendix B, the Responsiveness Summary.

STATUTORY DETERMINATION

Because this remedy will result in hazardous substances, pollutants or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, the first statutory review will be conducted within five years after initiation of the response action (i.e., by September 2002) and every five years thereafter to ensure that the remedy is protective of human health and the environment.

APPENDIX A:
STATE LETTER OF CONCURRENCE

State of New Mexico
ENVIRONMENT DEPARTMENT
Ground Water Quality Bureau
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-2918 phone
(505) 827-2965 fax

GARY E. JOHNSON
GOVERNOR

PETER MAGGIORE
Secretary

PAUL RITZMA
Deputy Secretary

September 9, 1999

Myron O. Knudsen, P.E.
Director
Superfund Division
U.S. EPA, Region VI
1445 Ross Ave.
Dallas, Texas 75202-2733

RE: Amended ROD for the Cleveland Mill Site near Silver City, New Mexico
CERCLIS ID No.: NMD981155930

Dear Mr. Knudsen:

The purpose of this letter is to provide you with the written concurrence you requested from the New Mexico Environment Department (NMED) for the Amended ROD for the Cleveland Mill site near Silver City, New Mexico. NMED has reviewed the Amendment to the Record of Decision prepared by EPA in August 1999. NMED agrees with the no further action conclusion of the document for this site based on the results of the removal action performed over the past year by the Responsible Parties. It is understood by NMED that the continuation of ground water and surface water monitoring, operation and maintenance of the constructed cap, and implementation of institutional controls will all be required for proper site closure.

NMED appreciates the coordination efforts put forth by EPA to reach a successful conclusion to remedial activities at the Cleveland Mill site. If you have any questions regarding this site, please contact me at (505) 827-1758 or Robert King at (505) 827-0078.

Sincerely,

Greg Lewis
Director
Water and Waste Management Division

GL:rk

cc: Peter Maggiore, NMED
Maura Hanning, NMED
Kathleen Aisling, USEPA

APPENDIX B:
RESPONSIVENESS SUMMARY

Vegetation

1) What is the status of the reseeding efforts at the Site?

The disturbed areas of the Site were seeded using hydromulch in the fall of 1998. Hydromulching is a method whereby seeds are mixed with fertilizer, mulch, and water and broadcast over an area. Once dry, the mulch forms a webbing that holds the seeds in place and protects the seeds from animals until the seeds can germinate. The seed mixture used at the Site was a mixture of seeds that germinate in different seasons. Most of the varieties are drought resistant.

At the time of the Amended Record of Decision Proposed Plan public meeting in June 1999, the seeds had not yet germinated because of the lack of rain in the area. Since that time, many of the grasses have sprouted in the disposal cell, mill, and mine areas as a result of the seasonal monsoonal rains.

The participating companies, with the oversight of the EPA and NMED, will continue to inspect the Site vegetation on a regular basis in accordance with the Site Operation and Maintenance (O&M) Plan. Revegetation, along with other engineering controls, is intended to control erosion at the Site, and its success will be judged on that basis. The cap and excavated areas will be inspected so that, if obvious areas of erosion exist, they can be repaired. Repairs may include terracing and other engineering controls designed to prevent erosion. Runoff from the Site will be measured to ensure that Site-produced sediment does not cause problems in Little Walnut Creek or other surface water bodies.

Future Use of the Site

2) What will be the future use of the Site and how will future owners of the Site be notified of the history of the Site?

The Site and many acres of property adjacent to the Site are owned by one or more of the participating companies. The disposal cell and the ground water in the mill area will continue to have land use restrictions. These land use restrictions are called restrictive covenants, and notices describing these covenants have been recorded as part of the permanent land title record. The restrictive covenants will limit activities at the disposal

cell so that the protective cap that covers the cell will remain intact and continue to act as a barrier that prevents rainwater from infiltrating the treated waste material. The ground water restrictions will limit use of the mill area ground water if it is found to contain concentrations of contaminants that exceed drinking water standards.

Ground water quality is checked by testing the quality of water in monitoring wells on the Site. The original monitoring well that was located at the toe of the large tailings pile in the mill area was demolished so that it would not interfere with the excavation of the tailings. A new well, installed in the same area, has not produced sufficient water for sampling. Consequently, the quality of the ground water in the mill area is not known at this time.

Except for the disposal cell area and the restricted mill area ground water, the Site was cleaned up to residential standards and is available for reuse. The participating companies have stated that they have no immediate plans to sell or develop the Site, but that in the future they might sell the land to a developer. Future purchasers of the Site will discover the Site ownership history, including the restrictive covenants, when deed records are examined during the title search that typically accompanies land sales. Moreover, companies that finance land development generally undertake a study known as a Phase I Environmental Investigation, and such studies specifically search for notices like the restrictive covenants that have been placed on the Site.

Records in the Silver City Pubic Library

3) The library does not have enough space to continue storing all the public records for the Site.

EPA has been in contact with the reference librarian at the Silver City Public Library. By the fall of 1999, EPA will replace the paper administrative record file with a CD-ROM version.

Ground Water and Surface Water

4) What is the quality of the ground water and the surface water in the area?

The participating companies (with oversight from EPA and NMED) have been sampling approximately eight to ten ground water wells in the area on a quarterly basis since mid-1997. These wells have included on-site wells as well as residential wells. Some of the residential wells sampled are located at the nearest residence south of the Site. Wells south of the Site were selected because the tailings have generally moved to the south down Little Walnut Creek. Other residential wells located at the confluence of Little Walnut Creek and Picnic Creek were also sampled because most of the tailings that were

transported in runoff settled upstream of the confluence of the two creeks. The residential wells have met and continue to meet health-based standards. The Site monitoring wells have also continued to meet standards. The participating companies will continue to monitor the wells in the monitoring network (including the residential wells) in accordance with the Site ground water sampling and analysis plan. At this point in the project, the schedule specifies quarterly monitoring.

As previously stated in this responsiveness summary, the replacement well for the mill area well that was sampled during the remedial investigation has not produced enough water for sampling to take place. The water quality in the original well, located at the toe of the tailings, and most likely, in a perched water zone within the tailings, did not meet ground water standards. The participating companies will continue to try to sample the replacement well in accordance with the ground water sampling and analysis plan. Institutional controls restricting the use of ground water in the mill area will remain in effect.

Concentrations of metals in the surface water have remained relatively constant over time. Now that the tailings removal is complete and erosion controls are in place, Site-related impacts on surface water should be minimal. The surface water will continue to be monitored on a regular basis. At this point in the project, the schedule specifies quarterly monitoring.

5) What about the ground water of the residents living downhill of the north-northwestern side of the disposal cell in the Web Gulch Area? Will these residents have their wells tested? There is a possibility of these residential wells being affected if the cell fails from ground water flow through fractured bedrock. Also, the wells ringing the disposal cell are too close to the treated waste material to detect a leak in the cell.

Since receiving this comment, EPA directed the participating companies to do a survey in the Web Gulch area to see if a residential well could be found to sample. EPA's intention was to determine the current condition of well water in the Web Gulch Area (current condition is referred to as the "baseline"), so that in the future, well results could be compared to this baseline to determine if any changes occurred and if the changes were caused by a leak in the disposal cell. The commenter does not yet have a well, so the participating companies asked other residents if their wells could be used to establish a baseline. These other residents either could not be contacted or would not give the participating companies permission to sample their wells.

There is very little chance that the wells in the Web Gulch Area will be impacted by contaminants from the Site. These wells are safe from Site contaminants because the containment cell that is storing the contaminants has redundant safeguards. These safeguards make it very unlikely that contaminants could escape, because the geology of the cell is such that it will not allow contaminants to escape, and because a continuous

ground water pathway between the cell and the residential wells in Web Gulch most likely does not exist. These reasons are detailed below:

a) The cell was constructed with several redundant safeguard containment features designed to prevent contaminants from escaping. These containment features include the admixing of limestone to neutralize acidic Site tailings and sediment in order to prevent acidic leachate generation. The quantity of limestone used is far greater than was necessary to neutralize any Site tailings and sediment. The cap that was placed on top of the cell is another containment feature. The cap is ten to fifteen feet thick which is eight to thirteen feet thicker than called for in the original design. The cap as designed included a 12 inch bedding layer of crushed excavated rock (3/4") overlain by 20 mil PVC liner. A 12 inch protective layer was placed on top of the liner. The protective layer consisted of crushed excavated rock (3/4" minus). It was overlain by a 10 -15 foot cover of random fill (nominal 12" minus.) The top of the cover was seeded. The cap will greatly reduce the possibility of surface runoff and precipitation coming into contact with the Site waste material.

b) The geology of the cell was thoroughly mapped and analyzed. Although there were fractures present, these fractures were filled with carbonate minerals and did not appear to have a high permeability. This low permeability means that it is unlikely that the fractures will act as a preferential pathway for ground water. In addition, the cell was placed about 25 feet above the seasonal high ground water table. Since there is not an obvious preferential pathway for the ground water through the cell, the monitoring wells were placed close to the cell, the appropriate location to detect contamination.

c) The ground water pathway in fractured bedrock is discontinuous. The vertical separation between the cell monitoring wells, about 70 feet deep, and the residential wells, in the range of 200-300 feet deep, is hundreds of feet. In addition, the residential wells are located approximately one mile away horizontally. It is unlikely that the metals from the cell could leach from the tailings and migrate in the ground water through the discontinuous series of fractures over such large distances and depths to a residential well screen.

6) One commenter was concerned that the surface water downhill from the disposal cell could be affected by runoff from the containment cell. The commenter asked what EPA planned to do about erosion control.

While designing the disposal cell, EPA, NMED, and the participating companies considered the possibility that the clean cap material might erode. The cell was designed and constructed to minimize erosion. An erosion resistant bedrock lip was left around the cell during construction. Grasses planted on the cell will also serve to inhibit erosion. The Site O&M Plan includes inspection of the cell on a regular basis and more often when heavy rains fall. EPA believes that these engineering controls and

inspections will minimize the chance that erosion will have an impact on the surface water in the Site area. As stated above, runoff from the Site will be measured to ensure that Site-produced sediment does not cause problems in Little Walnut Creek. Should residents have specific concern during a high rainfall event, they may call the local representative of the participating companies at 505-538-5220, NMED at 505-827-0078, or EPA at 1-800-533-3508.

Condition of the Road

7) A commenter requested that the part of the Cleveland road that stretches from the cattle guard gate to the gate for the residents be regraveled.

At the time Site removal activities began in September 1997, the road to the Cleveland Mill and Mine was in poor condition with numerous ruts, boulders, and areas where water would pool. After rain, the road became difficult to use because of the natural clays underlying the rock. So that the road would be passable during the clean-up, the participating companies improved the road by placing gravel on the road, grading it, and widening it. During inspection of the road in mid-July1999, on several rainy days, EPA and the participating companies did not find any areas that are in worse condition than they were prior to the initiation of Site removal activities. The road remains in a greatly improved condition and will not be regraveled.

Integrity of the Disposal Cell

8) U.S. Fish and Wildlife Service (USFWS) states that the Amended Proposed Plan was general in its description of the inspections for erosion and vegetative success, and the USFWS requested that either the Amended ROD or the Revised Reclamation and Revegetation Plan discuss in detail the manner in which vegetative restoration success will be evaluated. In addition, the USFWS requests that a plan be put in place to identify, repair and prevent damage to the disposal cell by small animals.

EPA agrees that the Amended ROD does not address the actions described by USFWS with great specificity. EPA agrees that these actions should be more thoroughly described in additional documentation. With respect to revegetation and erosion, EPA has taken the approach that the Site revegetation must be such that it maintains the effectiveness of the remedy, but that revegetation need not do more than maintain the effectiveness of the remedy. For this Site, one measure of effectiveness of the remedy is that the disposal cell cover stays intact. Another measure is that the amount of sediment eroded from the disposal cell cover and from the excavated areas does not cause an unacceptable amount of sediment to become suspended in the surface water. Currently, measurements are being taken of the amount of sediment in the sediment retention

structures. In addition, comparisons are being made between the total suspended solids in natural tributaries to Little Walnut Creek and the total suspended solids in areas where runoff from the Site is present. Numerical standards are a part of this performance standard. These standards are a part of the Site O&M Plan which is currently in draft and are also a part of the Site Revised Revegatation and Reclamation Plan.

EPA has agreed to give the participating companies two years (this two-year period began in fall 1998) to evaluate the success of the initial planting. During the months of July and August 1999, most of the reseeded areas (except those areas excavated to bedrock) showed signs of new growth. The cell area in particular had a new grass cover. If this success does not continue and an unacceptable amount of erosion is present, EPA can either compel the participating companies to add engineering controls, to seed the area again, or to do both.

EPA does not believe that small mammals will present a significant risk to the integrity of the disposal cell because the 10- to 15-foot-thick cover layer, along with the bedding layer, the geosynthetic layer and the protective layer, should be capable of preventing small mammals from causing a disturbance that would allow rainwater to infiltrate the cell. A large disturbance in the cover (for instance, if a colony of small mammals forms on the cell) would be identified during the periodic inspections. At that time, the regulating agencies will be consulted regarding a plan for restoration of the cover.

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