FOURTH FIVE-YEAR REVIEW REPORT FOR ATLAS ASBESTOS MINE

AND

FIFTH FIVE-YEAR REVIEW FOR COALINGA ASBESTOS MINE

SUPERFUND SITES FRESNO & SAN BENITO COUNTIES, CALIFORNIA

PREPARED BY
U.S. Army Corps of Engineers
Seattle District
FOR
U.S. Environmental Protection Agency
Region IX

Approved by: Date:

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Executive Summary

This is the fourth Five-Year Review (FYR) for the Atlas Asbestos Mine Site and the fifth FYR for the Coalinga Asbestos Mine Site (collectively referred to as Sites). The Coalinga Asbestos Mine Site is located in Fresno County, California, and the Atlas Asbestos Mine Site spans land in both Fresno County and San Benito County, California. The purpose of this FYR is to review information to determine if the remedy is and will continue to be protective of human health and the environment.

The Atlas Asbestos Mine Superfund Site consists of two operable units (OUs): the Atlas Mine Area OU and the City of Coalinga OU (City OU). In addition, two areas of interest were identified in the Record of Decision (ROD): the Clear Creek Management Area (CCMA) and Arroyo Pasajero Ponding Basin (Ponding Basin). The CCMA and Ponding Basin were discussed in the ROD because of concerns that asbestos mining and milling waste from the Atlas Mine Area were being transported to these areas by water or wind. The Coalinga Asbestos Mine Superfund Site consists of two OUs: the Johns-Manville Mill OU (JMM OU) and the previously mentioned City OU.

The Atlas Mine Area is an abandoned asbestos mine within the New Idria formation, a region of naturally-occurring asbestos minerals. The Atlas Mine Area included surface stockpiles of asbestos waste material generated from three open-pit asbestos mines, an abandoned mill building, a settling pond, and debris. The area is drained by intermittent streams, which drain into a tributary to the Ponding Basin. During historic heavy flooding, asbestos-laden water has filled the Ponding Basin and been released into the California Aqueduct. The CCMA consists of approximately 75,000 acres surrounding the asbestos mine areas and is managed by BLM. The CCMA and Ponding Basin are periodically inspected to ensure the mine remedies are functioning as intended to keep asbestos-laden sediment out of the surrounding lands. Because the CCMA and Ponding Basin do not have remedies implemented, they are only briefly discussed in this 5YR. The JMM OU consists of a former asbestos mine, former processing mill, former support buildings, and asbestos tailings. The area is drained by Pine Canyon Creek, which flows into the Los Gatos Creek, a tributary to the Ponding Basin. Asbestos product from both the Atlas Mine Area OU and the JMM OU was transported offsite to the City OU, where it was stored prior to handling and shipment.

Based on concentrations of asbestos detected at these Sites, risk assessments concluded that the levels of asbestos presented an elevated risk of lung cancer due to the potential for exposure to airborne asbestos. The Atlas and Coalinga Asbestos Mines were placed on the National Priorities List on September 21, 1984. Subsequently, separate Records of Decision (RODs) were published to select the preferred remedial action for cleanup of the Sites.

The selected remedies for the Atlas Mine Area OU and the JMM OU included the removal of contaminated material, stabilization of erosion-prone areas, structural improvements and additions, access control, and institutional controls. The remedy for the City OU included the removal and burial of contaminated soils and materials beneath an onsite cap and institutional controls. The Coalinga Asbestos Mine Site (JMM OU and City OU) was deleted from the Superfund National Priorities List on April 24, 1998. The Atlas Mine Area OU remains on the list.

The remedial action objectives (RAOs) used at the time of the remedy are still valid. The remedies in place are functioning as intended and progressing as expected toward meeting the RAOs in the decision documents.

The exposure assumptions, toxicity data, risk assessment methods, exposure pathways, cleanup standards, and RAOs used at the time of the remedy selection are still valid. There have been no changes affecting the protectiveness of the remedy.

There is no other information that calls into question the protectiveness of the remedy.

The remedy at the Atlas Mine Area OU is protective of human health and the environment due to the removal of contaminated material, stabilization of erosion prone areas, structural improvements and additions, as well as the installation of access controls and warning signs, along with regular inspections and maintenance. The Atlas area is remote and difficult to access. In addition, BLM manages the surrounding Clear Creek Management Area, which has restricted some public use under the 2014 BLM ROD for the CCMA due to asbestos exposure concerns that arise during use. The 2010 ESD to the Atlas ROD removed the requirement to file LUCs on the Atlas parcel until the property is transferred to a new owner. The entities that previously owned private land parcels of the Atlas Site have since gone through bankruptcy proceedings and have been dissolved. The ESD accounts for the fact that deed restrictions for privately owned orphaned parcels cannot be recorded since there is no discernible property owner to record the restriction under California Civil Code 1471. Any future property owners will have to file an LUC in order to meet the Bona Fide Prospective Purchaser (BFPP) conditions, or lose their protected status from becoming a potentially responsible party (PRP) when acquiring the property.

The remedy at the Johns-Manville Mill OU currently protects human health and the environment because of the remedy in place: removal of contaminated material, diversion of water around erosion prone surfaces/materials, stabilization of erosion prone areas, and structural improvements and additions, as well as the installation of access controls and warning signs, along with regular inspections and maintenance. A deed restriction for the Johns-Manville Mill site was recorded by Fresno County in September 2011 at the request of Pine Canyon Land Company (the property owner, as wholly owned subsidiary of BNSF). This deed restriction encumbers the site and prohibits the site from ever being used as a residence, hospital for humans, public or private school for persons under 21 years of age, or a day care center for children. The deed restriction requires that any contaminated soils be managed according to State and Federal laws and that any soil material cannot be removed from the site unless a Soil Management Plan is approved by the CERCLA Lead Agency. Several other activities are prohibited by the deed restriction including drilling wells, extracting groundwater for any other purpose besides remediation, alteration of existing drainage patterns or engineered contours, and alteration of site access controls.

The remedy at the City of Coalinga OU is protective of human health and the environment due to the removal and consolidation of contaminated soils and other materials beneath an onsite cap (the

Waste Management Unit); restriction of future uses through a deed restriction recorded with Fresno County in 2010; the installation of access controls and warning signs; and regular inspections and maintenance.

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List of Abbreviations

AAQS	ambient air quality standards
aka	also known as
ARAR	applicable or relevant and appropriate requirement
BFPP	bona fide prospective purchaser
BLM	Bureau of Land Management
BNSF	Burlington Northern Santa Fe Railway
Cc	cubic centimeter
CCMA	Clear Creek Management Area
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
City OU	City of Coalinga Operable Unit
DTSC	California State Department of Toxic Substances Control
DWR	California Department of Water Resources
EPA	U.S. Environmental Protection Agency
ESD	Explanation of Significant Differences
FLPMA	Federal Land Policy and Management Act
FYR	Five-Year Review
g	gram
IC	institutional control
IRIS	EPA's Integrated Risk Information System
JMM OU 1	Johns-Manville Mill Operable Unit
LUC	land use covenant
m^3	cubic meter(s)
µg	micrograms
Northrop	Northrop Grumman Space & Mission System Corporation
NPL	National Priority List
O&M	operations and maintenance
OU	operable unit
OU-1	Atlas Mine Area Operable Unit
OU-2	City of Coalinga Operable Unit (City OU)
PCLC	Pine Canyon Land Company
PCM	phase contrast microscopy
PLM	polarized light microscopy
PM	particulate matter
Ponding Basin	Arroyo Pasajero Ponding Basin
ppm	parts per million
PRP	potentially responsible party
RAO	remedial action objective
RMP	resource management plan
ROD	Record of Decision
Sites	Atlas Asbestos Mine and Coalinga Asbestos Mine Superfund Sites
SPTC	Southern Pacific Transportation Company
SUV	sport utility vehicle
TWA	time-weighted average
UU/UE	unlimited use and unrestricted exposure

USC	United States Code
Vinnell	Vinnell Mining and Minerals Corporation
Wheeler	Wheeler Properties, Inc.
WMU	Waste Management Unit

1 Introduction

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR report pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, 40 Code of Federal Regulation (CFR) Section 300.430(f)(4)(ii) of the National Contingency Plan and EPA policy.

This is the fourth FYR for the Atlas Asbestos Mine Superfund Site, and fifth FYR for the Coalinga Asbestos Mine Superfund Site (collectively referred to as Sites). The triggering action for this statutory review is the date of the previous FYR, August 3, 2011. This FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the Sites above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Atlas Asbestos Mine Superfund Site consists of two geographically distinct operable units (OUs): the Atlas Mine Area OU (aka OU-1) and the City of Coalinga OU (City OU aka OU-2). In addition, two areas of interest were identified in the Record of Decision (ROD): the Clear Creek Management Area (CCMA) and the Arroyo Pasajero Ponding Basin (Ponding Basin). The Coalinga Asbestos Mine Site consists of the Johns-Manville Mill Operable Unit (JMM OU) and the previously-mentioned City OU (OU-2), which is also considered part of the Coalinga Asbestos Mine Site due to historic operations. These features are identified in Figure 1.

The FYR for the Sites was led by EPA. Participants included the following:

- Sara Goldsmith – EPA Site Attorney
- Cynthia Wetmore – EPA FYR Coordinator
- Lynn Keller – EPA Remedial Project Manager
- Jackie Lane– EPA Community Involvement Coordinator
- Cathy Martin – U.S. Army Corps of Engineers Technical Lead
- Kayla Patten - U.S. Army Corps of Engineers Site Inspection Lead

The review began on October 30, 2015. Documents utilized in this review are listed in Appendix A.

Table 1: Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Atlas and Coalinga Asbestos Mines Superfund Sites		
EPA ID: CAD980496863 (Atlas) and CAD980817217 (Coalinga)		
Region: 9	**State:** California	**City/County:** Coalinga/Fresno & San Benito Counties
SITE STATUS		
NPL Status: Other – Coalinga Sites (JMM or OU-1) and the City OU (OU-2) were deleted from the NPL April 24, 1998. Atlas Mine Area OU (OU-1) remains on the NPL.		
Multiple OUs? Yes	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name (Federal or State Project Manager): Lynn Keller		
Author affiliation: EPA		
Review period: 8/4/2011 – 8/30/2016		
Date of site inspection: 5/24-26/2016		
Type of review: Statutory		
Review number: 5th review for City OU and JMM OU, 4th review for Atlas Mine Area OU		
Triggering action date: 8/3/2011		
Due date *(five years after triggering action date)*: 8/3/2016		

Note: NPL = National Priority List

1.1 Background

1.1.1 Physical Characteristics

The Sites are located near the City of Coalinga in Fresno County, California, on the western margin of the central San Joaquin Valley in an area that includes the foothills of the Southern Diablo Range Mountains. In 2016, the population of the City of Coalinga was estimated to be 18,000 (City of Coalinga, 2016). The New Idria Formation is located approximately 20 miles northwest of Coalinga in the Diablo Range and is the largest known serpentine deposit in the Coalinga region.
The formation consists of a 30,000-acre outcrop of naturally occurring chrysotile asbestos, as well as

other serpentine minerals. Extensive mining has been conducted in the southeastern third of the New Idria Formation for chromite ore, chrysotile asbestos ore, and other serpentine-related minerals. Refer to Figure 1 for more detail on the location of all OUs and areas of interest.

1.1.2 Atlas Mine Area OU

The Atlas Mine Area (Figure 2) is an abandoned asbestos mine within the New Idria Formation. It is approximately 20 miles northwest of Coalinga in Fresno County, California. The mine area is approximately 140 acres and between 4,000 and 5,000 feet above sea level. The Atlas Mine Area is also located within the Bureau of Land Management's (BLM's) CCMA, which includes approximately 75,000 acres of public land. The portion of the CCMA located within the New Idria Formation is designated a Hazardous Asbestos Area, and is managed by BLM.

The Atlas Mine Area is not suitable for any recreational, commercial, or residential uses at this point or at any time in the future. The only use for the site is open space and ecological habitat. Adjacent land uses at the Atlas Mine Area include mining, ranching, farming, and recreation (camping, hiking, hunting, and mineral collection).

1.1.3 Johns-Manville Mill OU

The JMM OU (Figure 3) is part of the Coalinga Mine OU. It consists of a former asbestos mine, processing mill, support buildings, and asbestos tailings. JMM OU is a privately-owned, 120-acre tract of land in upper Pine Canyon on the southern flank of Joaquin Ridge in the Diablo Range in western Fresno County, California. This rural site is approximately 0.5 miles downslope from the main outcrop of the New Idria Formation. The City of Coalinga is the nearest population center and is 16 miles to the southeast.

The area is drained by Pine Canyon Creek, which flows into Los Gatos Creek, a tributary to the Ponding Basin which is designed to hold floodwaters. Areas adjacent to the JMM OU are rural. Adjacent land uses include mining, ranching, farming, and recreation (camping, hunting, hiking, mineral collecting, and riding off-highway vehicles). The JMM OU is currently in an access-restricted area, achieved through fencing and signage, and is not suitable for residential, recreational, or commercial uses.

1.1.4 City OU

The City OU (Figure 4) is located along California State Highway 198 at the southwestern end of the City of Coalinga in Fresno County, California. The City OU consists of approximately 107 acres situated between Fourth Street and the intersection of Lucille Avenue and Highway 198.
The Southern Pacific Railroad property within the 107-acre City OU consisted partly of a portion of the original operating right-of-way acquired by Southern Pacific Railroad Company (a predecessor of the Southern Pacific Transportation Company [SPTC]) pursuant to the July 27, 1866, Act of Congress, and partly of ancillary lands acquired pursuant to the same Act passed July 10, 1894.

During SPTC's ownership, several properties were leased to various entities active in the milling, manufacture, storage, and/or transportation of asbestos materials from the mid-1950s until approximately 1980. Over time, most of SPTC's holdings were sold. The land that contains the City Waste Management Unit (WMU) is within the City OU and is currently owned by the City of Coalinga pursuant to a "Stipulated Judgment Quieting Title, APN: 900-700-12 (formerly APN 083-020-59SU)", issued by the United States District Court for the Eastern District of California on October 21, 2005 (Case: 1:05-CV-00210-OWW-SMS). The WMU is restricted by a 2010 deed restriction signed between the California Department of Toxic Substances Control (DTSC) and the City of Coalinga, with EPA listed as a third-party beneficiary.

Currently, commercial and residential redevelopment has occurred or is in progress on portions of the City OU that were remediated to unrestricted use clean-up standards. The contaminated soil from the City OU was scraped up and consolidated in the WMU, which is the only portion of the City OU with an LUC. Redevelopment in the area has included construction of retail stores, restaurants, social services offices, law enforcement offices, medical offices, service business offices, and residential developments.

1.1.5 CCMA and Ponding Basin

The CCMA is an area of interest associated with the Atlas Mine Area OU. A location map of the CCMA is provided in Figure 1. The designated Hazardous Asbestos Area in BLM's CCMA has been mined for mercury, chromite, asbestos, and other minerals since the mid-1800s, and contains numerous mines and exploration cuts, as well as hundreds of roads and trails.

The San Benito Mountain Research Natural Area that comprises approximately 4,082 acres and is located within the Hazardous Asbestos Area. This area was designated because of the unique vegetative communities associated with the serpentine soils. Its primary purpose is to provide research and educational opportunities while protecting this unique assemblage of vegetation.

Until 2008, the natural area was also used by off-highway vehicle enthusiasts, hikers, campers, hunters, and rock-collectors. In May of 2008, the EPA published an Asbestos Exposure and Human Health Risk Assessment for the CCMA. Subsequently, BLM issued a temporary closure order for the CCMA based on the results of the Exposure and Human Health Risk Assessment.

The Ponding Basin is an area of interest associated with the Atlas Mine OU (Figure 2). It is approximately 30 miles east of the Atlas Mine Area. It is located between California State Highway 198 and Gale Avenue west of the California Aqueduct. Intermittent streams in the Atlas Mine Area and JMM OU drain into Los Gatos Creek, a tributary to the Ponding Basin. The Ponding Basin is designed to hold floodwaters from the Arroyo Pasajero alluvial fan.

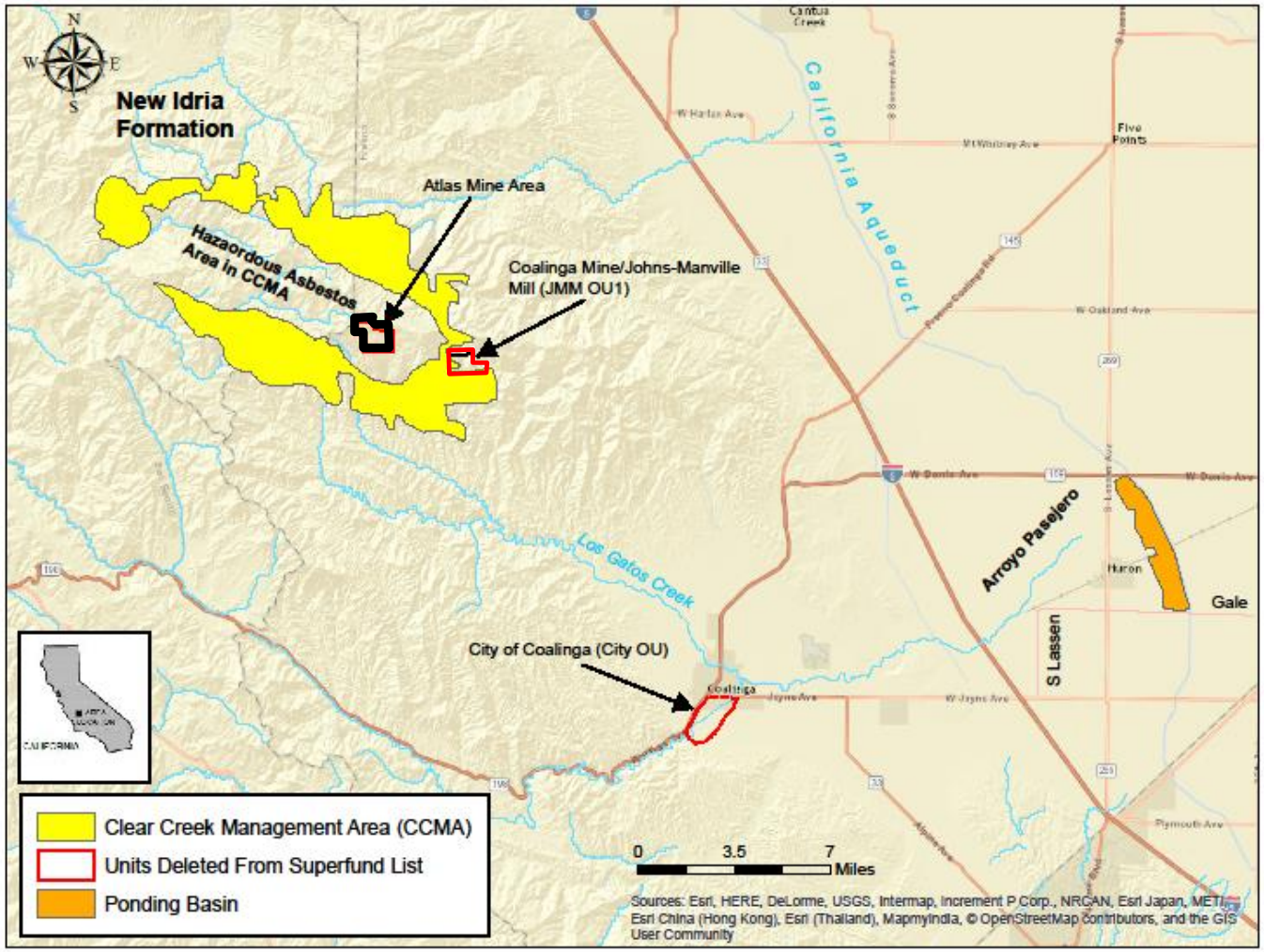

Figure 1: Site Location Map

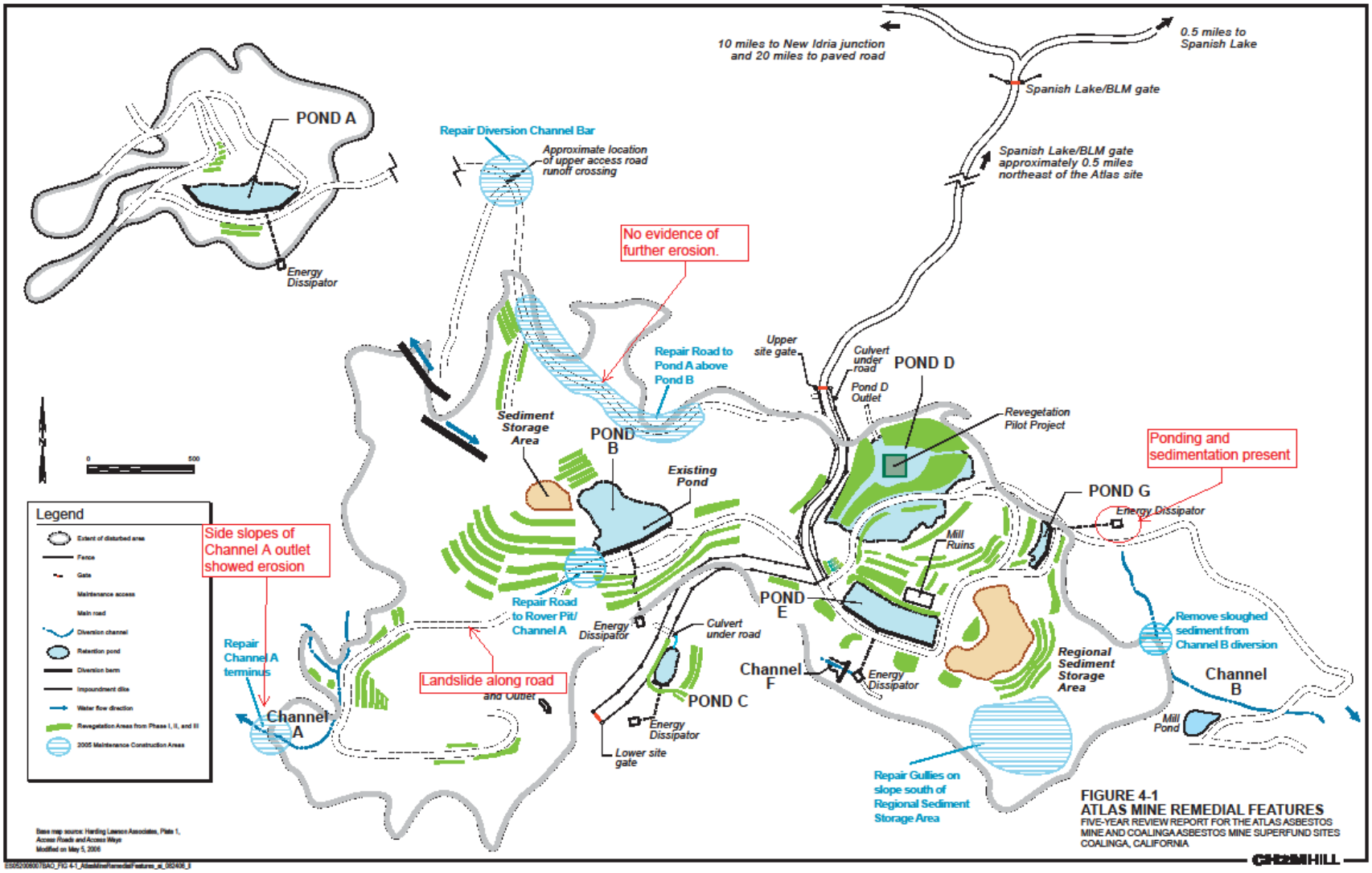

Figure 2: Atlas Mine Area OU Remedial Components

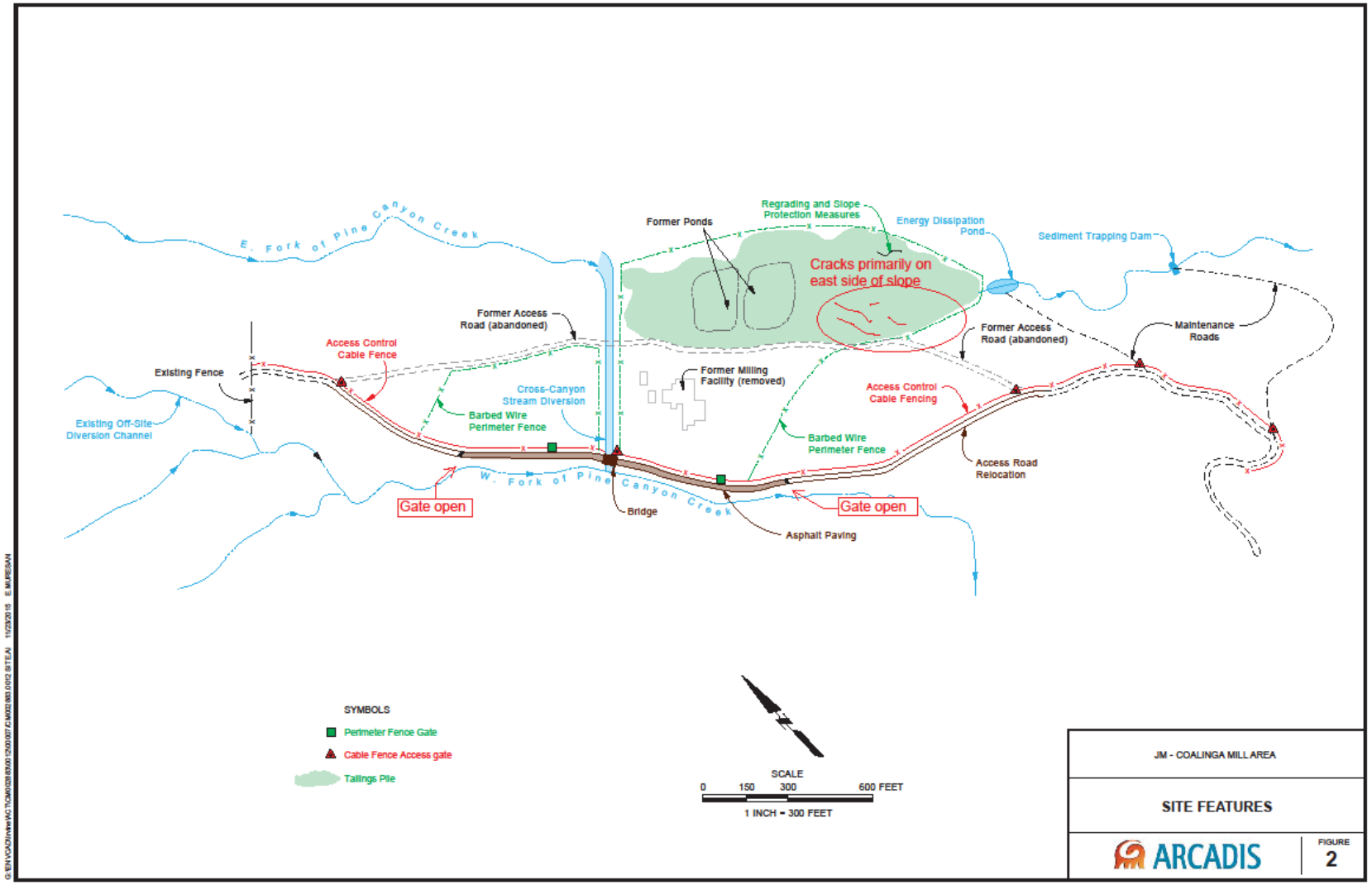

Figure 3: Johns-Manville Mill OU Remedy Components

FIGURE 4-3
CITY OF COALINGA OPERABLE UNIT
FIVE-YEAR REVIEW REPORT FOR THE ATLAS ASBESTOS MINE AND COALINGA ASBESTOS MINE SUPERFUND SITES
COALINGA, CALIFORNIA

Figure 4: City of Coalinga OU Remedial Components

1.2 Hydrology/Geology/Climate

The Coalinga, California area is semi-arid and is characterized by moderately low precipitation and relatively high rates of evaporation. The mean annual precipitation and evaporation are estimated to be 7.46 inches and 88.7 inches, respectively.

The Sites lie with the Pleasant Valley sub-basin of the San Joaquin Valley. The sub-basin includes the older and younger alluvium of the San Joaquin Valley. Geologic units comprising the Pleasant Valley sub-basin include Holocene alluvium, the Plio-Pleistocene Tulare Formation, and possibly the upper part of the San Joaquin Formation. Specific yield is estimated to be 8.4 percent for the sub-basin.

The unconsolidated sediments in these geologic units range in thickness from less than 100 feet to several thousand feet. The sediments underlying the Sites consist of interbedded gravels, sands, silts, and clays. These sediments have markedly different hydraulic conductivities and porosities. The depth to groundwater in Coalinga is approximately 100 to 150 feet, and the groundwater is used primarily for irrigation.

Since at least 1951, the water quality of the aquifer in Pleasant Valley has been poor. The sulfate concentrations in the groundwater in wells near Coalinga have exceeded the Federal Maximum Contaminant Levels under the Safe Drinking Water Act by as much as six times the recommended concentration. Based on the Department of Water Resources' (DWR's) records of mineral analysis of groundwater for the period from 1978 to 1985, the water quality of four selected wells in the Pleasant Valley area show moderate to high sodium sulfate concentrations. The total major anion concentrations range from 1,000 to 2,600 parts per million (ppm) with a mean of 1,700 ppm. Sulfate concentrations in the groundwater range from 660 to 1,900 ppm, with a mean of 1,300 ppm. The percentage of sodium concentration relative to major anion concentration ranges from 45 to 53 percent with a mean of 49 percent. For this reason, virtually all drinking water for Coalinga is drawn from the California Aqueduct.

2 Remedial Actions Summary

2.1 Basis for Taking Action

The primary contaminant of concern for the Atlas Asbestos Mine and Coalinga Asbestos Mine Superfund Sites is asbestos. Elevated levels of nickel have also been detected in soil and ore waste at the City OU. Asbestos is a known carcinogen and causes other lung diseases. It has been released to soil, water, and air from the Sites.

The two routes of exposure to asbestos at the Sites are inhalation and ingestion with the transport mechanisms being erosion, wind, and water. The potentially exposed populations include:
1) individuals who trespass onto the Atlas Mine Area or JMM OUs; 2) individuals who use public

areas in the CCMA for recreational off-highway vehicle driving, camping, hunting, ranching, and other public uses; and 3) individuals who live in proximity to the Atlas Mine Area OU, the JMM OU, and the CCMA. Based on concentrations of airborne asbestos detected in the area, the risk assessment concluded that levels of asbestos at the Sites present an elevated risk of lung cancer, triggering the need for a response action.

2.2 Remedy Selection

The remedial action objectives (RAOs) are the overarching goals for the Sites and are listed in the RODs and the Explanation of Significant Differences (ESD) for each OU. These decision documents include the following:

- Atlas Mine Area OU1 ROD – issued February 14, 1991 (EPA, 1991).
- Atlas Mine Area OU1 ESD (EPA, 2010) – issued September 15, 2010, clarifies measures in place to ensure that the Atlas Mine Area OU remains protective of human health and the environment. Appendix B1 contains additional detail regarding the ESD.
- Atlas OU2 ROD (City of Coalinga OU) – issued on July 19, 1989 (EPA, 1989).
- Coalinga OU2 ROD (City of Coalinga OU) – issued on July 19, 1989 (EPA, 1989).
- JMM OU ROD – issued September 21, 1990 (EPA, 1990)

2.2.1 Remedial Action Objectives

RAOs selected in the decision documents are listed below.

2.2.1.1 Atlas Mine Area OU

Asbestos waste at the Atlas Mine Area OU presented three major problems: 1) vehicular or other human disturbance generated airborne asbestos on-site; 2) transport of asbestos from the Atlas Mine Area OU to external areas by vehicles that traveled through the Atlas Mine Area; and 3) release of asbestos from the Atlas Mine Area OU into local creeks during heavy rains, which created potential for asbestos to become airborne or contaminate water supplies at downstream locations.

The RAOs of the remedy include controlling the release of asbestos into air and local streams from the Atlas Mine Area OU, and restricting access to the Atlas Mine Area OU using engineering and institutional controls to provide long-term protection of human health and the environment. Per the ROD, the following items were selected and implemented as the remedy at Atlas: fencing and site access restriction, paving roads through the mine area, constructing stream diversions and sediment trapping dams to minimize release of asbestos into local creeks, revegetation pilot project to increase stability and decrease erosion, dismantling the mill and disposing of debris, filing deed restrictions, and implementing an operation and maintenance program.

2.2.1.2 Johns-Manville Mine OU

The RAOs for the JMM OM include maintaining the effectiveness of the sediment trapping dam by minimizing the hydraulic transport rate of asbestos waste material into Pine Canyon Creek, and

restricting access to the JMM OU to prevent exposure to asbestos. Specifically, per the ROD, the following items were selected and implemented as the remedy at JMM: grading tailings piles to reduce slope and increase stability, improving the cross-canyon stream diversion to channel surface water away from tailings piles, improvements to the sediment trapping dam, fencing and site access restrictions, deed restrictions, revegetation pilot project to increase stability and decrease erosion, road paving or engineering alternative, mill dismantling and debris disposal, and implementing an operation and maintenance program.

2.2.1.3 City OU

The RAOs for the City OU include maintaining the effectiveness of the asbestos, chromium, and nickel contaminated waste contained within the capped WMU. Annual visual inspections are required at the WMU per the ROD.

2.2.2 Remedy Components

The selected Site remedies consist of the following components:

2.2.2.1 Atlas Mine OU

The selected remedy from the 1991 ROD (EPA, 1991) includes the following:

- Fencing or other appropriate controls to restrict access to the Atlas Mine Area OU.
- Paving the road through the Atlas Mine Area OU or implementing an appropriate road maintenance alternative.
- Constructing stream diversions and sediment trapping dams to minimize the release of asbestos into local creeks.
- Conducting a revegetation pilot project to determine whether revegetation is an appropriate means of increasing stability and minimizing erosion of the disturbed areas, and implementing revegetation if it is found to be appropriate.
- Dismantling the mill building and disposing of debris.
- Filing deed restrictions on privately held lands at Atlas Mine Area OU.
- Implementing an operations and maintenance (O&M) program.

Stabilization and control of asbestos waste were implemented to minimize the release of asbestos, to provide long-term protection of human health and the environment. The ROD included implementation of an O&M program to ensure the effectiveness of the response action.

2.2.2.2 Johns-Manville Mill OU

The major components of the JMM remedy selected in the ROD include (EPA, 1990):

- Constructing a cross-canyon stream diversion to divert water flow away from the tailings pile.
- Improving the existing sediment trapping dam to minimize the release of asbestos into Pine Canyon Creek.

- Conducting a revegetation pilot project to determine whether revegetation is a practical means of increasing stability and minimizing erosion of the disturbed areas.
- Dismantling the mill building and disposing of debris.
- Performing road paving or an appropriate engineering alternative.
- Filing deed restrictions.

2.2.2.3 City OU

The major components of the remedy selected in the ROD (EPA, 1989) included the following:

- Removing and consolidating the asbestos- and nickel-contaminated soils that: 1) exceed 1 area-percent asbestos using polarized light microscopy (PLM), 2) display the light-gray coloring characteristics of asbestos-contaminated soils, and/or 3) contain nickel at levels in excess of background concentrations.
- Removing and consolidating waste materials and equipment that exceed contaminant levels set forth in the bullet above.
- Decontaminating buildings to less than or equal to 1 area-percent by PLM.
- Constructing an underground, onsite WMU to permanently bury the consolidated contaminated substances under an impermeable cap. The impermeable cap was to consist of a compacted soil foundation layer overlain by an impermeable clay mat, covered by a second soil layer.
- Using strict dust control measures to limit the release of asbestos fibers from the site during implementation of the remedy.
- Performing confirmation sampling to ensure achievement of the cleanup standards.
- Performing groundwater monitoring and continuous monitoring of soil moisture content using neutron probes.
- Re-grading areas where contaminated soils were removed.
- Filing a deed restriction on the property to prevent disturbance of the WMU and cap.

2.2.2.4 CCMA and Ponding Basin

The Atlas Mine Area OU ROD (EPA, 1991) included a discussion of the CCMA and Ponding Basin. Their inclusion as areas of interest in the ROD was based on their potential relationship to the contamination at the Atlas Mine Area OU. For both areas, it was decided that immediate action would not be taken by EPA because other agencies were addressing the potential risks posed by asbestos located in these areas.

For both the CCMA and Ponding Basin, the Atlas Mine OU ROD provided that EPA would evaluate the effectiveness of the management activities implemented by the BLM (for the CCMA), and USBR, and DWR (for the Ponding Basin) in protecting human health and the environment.

Following activity-based sampling, EPA released the report *CCMA Asbestos Exposure and Human Health Risk Assessment* on May 1, 2008. The report stated that the exposures measured by EPA for many recreational activities at CCMA are “above the EPA acceptable risk range of lifetime cancers.” It also notes that children “have greater risk than adults due to higher exposure measurements [and] are of special concern because their exposures occur earlier in their lives.”

Based on the findings in this 2008 report, BLM enacted an immediate temporary closure of 31,000 acres of the CCMA to all public access/entry while it developed a Resource Management Plan (RMP). The RMP was developed pursuant to the Federal Land Policy and Management Act (FLPMA) in order to determine the long-term management of the area. The RMP was combined with the BLM ROD for the CCMA and issued in February 2014 (BLM, 2014). This document identifies sustainable multiple use management goals, intermediate objectives, and actions and options for meeting those objectives on lands administered by the BLM.

To date, no remedy has been implemented in the CCMA or the Ponding Basin. EPA will continue to conduct informal inspection of this area during 5YRs.

2.2.3 Cleanup Standards

The cleanup standard selected for the Sites is less than 1 area-percent asbestos fibers. This standard was verified at the City OU in 2009 when EPA published a memorandum confirming the protectiveness of the remedy based on the results of activity-based sampling.

2.3 Remedy Implementation

This section describes the implementation of the remedies for all OUs selected in the RODs and ESD.

2.3.1 Atlas Mine Area OU

Remedial activities began on October 20, 1994, and continued intermittently due to weather delays until they were completed on November 14, 1996. The remedial actions consisted of construction of stream diversions and sediment trapping dams; grading and other slope stabilization elements; performing a revegetation pilot study; road paving; mill dismantling; disposal of debris; implementation of access restrictions; and development of an O&M plan.

Two sediment storage areas were constructed. One near Ponds A and B that has at least a 1-year pond capacity and one near Pond E that has at least a 6-year site capacity. Channels were constructed to prevent further erosion by diverting water from tailings piles. The two channels, Channel A and Channel B, were constructed to prevent further erosion by diverting water from tailings piles and are located, respectively, on the west and northeast areas of the Atlas Mine Area OU. The roadside ditch along the Pond A access road was constructed to intercept surface water flow and divert the water away from the site toward Diversion Channel B.

Two steel storage tanks containing asbestos and miscellaneous scrap metal were demolished from the former Mill Site area. The scrap metal and material were buried in the disposal area.

The selected remedy specified by the ROD (EPA, 1991) required that a revegetation study be conducted to evaluate whether native vegetation could be established on disturbed areas of the Atlas Mine Area OU. Consequently, in 1994, BLM conducted a revegetation project for the site. A visual

survey conducted in 1999 showed that the pilot was successful. Following the pilot study, full-scale planting was implemented in three phases. Overall, each successive phase of planting was increasingly successful and ultimately the disturbed areas were considered to be revegetated.

A double bituminous paved cap was constructed on the main access road through the Atlas Mine Area OU to minimize dust emissions and provide improved access for future maintenance activities. A soil stabilizer was applied to ponds access roads to minimize dust emissions. Dust emission at the ponds is minimized by application of soil stabilizer.

Portions of the perimeter of the Atlas Mine Area OU have been fenced, and berms along White Creek road have been constructed by the BLM to discourage access to the OU. The OU is routinely inspected by BLM to discourage trespassing and to identify activities of vandalism. In addition, access to the OU is further limited by two locked gates on White Creek Road above the site and two locked gates on the same road below the site. Signs are clearly posted and maintained by BLM. The locks are managed by BLM.

A construction completion inspection was conducted by EPA on August 22, 1996. Based upon this inspection, EPA confirmed that the construction phase of the remedy was completed and operating properly. A preliminary closeout report for the Atlas Mine Area OU was issued on September 2, 1999 (EPA, 1999).

The remedial features of the Atlas Mine OU are presented in Figure 2.

The deed restriction called for in the ROD (EPA, 1991) was not filed due to a conflict between the ROD and the Consent Decree. An ESD was published by EPA in 2010 to fully explain why deed restrictions are not required at this time for the three Atlas parcels, and that the measures in place that ensure protectiveness of the Atlas Mine Area OU.

2.3.2 Johns-Manville Mill OU

Remedial action at the JMM OU commenced on May 17, 1993. The remedial action consisted of mill dismantling, grading, cross-canyon stream diversion, improvements to an existing sediment trapping dam, implementing access restrictions, performing a revegetation pilot study, and road paving. The PRPs also carried out a program to revegetate disturbed areas of the site with native plants even though the Consent Decree required only a pilot study. Remedial features at the JMM OU are presented in Figure 3. The remedy was certified as operational and the pre-final inspection performed on April 28, 1994. EPA issued a preliminary closeout report for the JMM OU in March 1995 confirming that the construction phase of the remedy was completed and operating properly.

A deed restriction was recorded on July 2, 1993, prohibiting interference with the implementation of the remedy at JMM OU. Additional details regarding the status of institutional controls at the JMM OU are provided in Appendix B2 and Table 3.

As of 1998, EPA determined that all appropriate response actions had been taken at the Coalinga Superfund Site (the JMM OU and City OU). On April 24, 1998, the Coalinga Site was removed from the NPL. After the delisting of the site, the DTSC took oversight responsibilities for the two OUs. A deed restriction for the WMU was recorded on September 24, 2010 to encumber the landfill property with restrictions against certain types of uses due to the nature of the consolidated and capped contamination underneath the surface.

2.3.3 City OU

Southern Pacific Transportation Company (predecessor PRP to the Union Pacific Railroad Company) implemented the selected remedy for the City OU. The contaminated structures and areas at the site were divided into four areas based on geography:

- The Marmac Warehouse located on Elm Avenue (Highway 198).
- The storage yard located approximately 1 mile south of the Marmac Warehouse on Elm Avenue.
- The Atlas shipping yard located in the vicinity of Glenn Avenue and Sixth Street.
- The U.S. Asbestos Company at the southern border of the site that contained piles of raw asbestos ore.

Remedial activities began in October 1989. Cleanup of the site included the removal and consolidation of contaminated soils that exceeded one area-percent asbestos using PLM; soils that contained nickel at levels in excess of background; and any soils that displayed light-gray coloring characteristics of asbestos contamination. These consolidated soils, equipment, and other waste materials were permanently buried in the onsite WMU. Two buildings known as the Marmac Warehouse and the Echo Transport Building were dismantled, and the contaminated material was also placed in the WMU. After completion of the WMU, the vadose zone was monitored for increases in moisture, and it was determined that groundwater would not interfere with the remedy. The remaining steel superstructures of the buildings were left onsite after being decontaminated by steam cleaning and application of an encapsulant. Figure 4 presents the location of the WMU in the City OU.

After the construction of the WMU, confirmation sampling indicated that the cleanup levels had been met, and a final inspection was conducted in October 1991. The final remedial action report and an O&M plan for the WMU were approved by EPA in April 1992, and a certificate of completion was issued to the City OU on May 18, 1993 (EPA 1993).

A deed restriction was originally recorded on June 22, 1990 for the WMU. On September 24, 1992, an amended deed restriction was recorded, which provided a legal description of the area restricted under the original deed restriction. In 2006, EPA determined that the deed restriction and amended deed restriction were not legally enforceable documents because they were not consistent with DTSC regulations. On September 24, 2010, an updated deed restriction was lodged with the Fresno County Recorder's Office.

As mentioned in the previous sub-section, the Coalinga Asbestos Mine Superfund Site, including the JMM OU and City OU, was removed from the NPL on April 24, 1998.

2.3.4 CCMA and Ponding Basin

As specified by the ROD for the Atlas Mine Area OU (EPA, 1991), EPA issued a public notice in 1992 regarding the status of the CCMA and Ponding Basin. EPA stated it would remain involved in BLM's planning and analysis process for the CCMA in order to help ensure protection of public health and the environment from the asbestos in the area. EPA determined that the administration of the Ponding Basin, performed by DWR and USBR, was adequate to address the threat from asbestos in the basin. Plans to address issues in these areas included 1) planting cover crops to reduce exposure to airborne asbestos and 2) expanding the Ponding Basin to reduce chances of asbestos runoff from entering the California Aqueduct. EPA stated it would take no further action regarding the Ponding Basin under CERCLA.

Although EPA did not take action under CERCLA at either the Ponding Basin or CCMA, EPA will continue to conduct informal inspections of these areas during FYRs, and will continue to be available as a resource to both BLM and DWR for issues related to asbestos exposure.

EPA collaborated with BLM in assessing the risk posed to humans working and performing recreational activities within the CCMA. EPA conducted a human health risk assessment, which was released on May 1, 2008 (EPA 2008). A discussion of this assessment and the subsequent temporary emergency closure of the CCMA by BLM can be found in the Fourth FYR (EPA, 2011).

Table 2: Summary of Planned and/or Implemented ICs

Media, Engineered Controls, and Areas That Do Not Support UU/UE Based on Current Conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Atlas Mine Area OU (SSID 0934, OU1)					
Soil	Yes	Yes	030-250-004-0 (Northrop)	Limits future land use and prevents disturbance of remaining contaminated material at the OU.	a) Consent Decree Section VI, Notice of Obligations to Successors-in Title (1992) requires the Defendants to file a copy of the Consent Decree with the Fresno County Recorder's office (completed prior to 2010). b) EPA to ensure that if Northrop sells the property, future owners will file a Deed Restriction that runs with the land.
Soil	Yes	Yes	45-240-09 (Wheeler); 45-240- 12 (Wheeler)	Clarifies the measures in place that ensure the Atlas Mine Area OU remains protective of human health and the environment while remaining consistent with the Consent Decree. The two abandoned Wheeler properties cannot have a deed restriction recorded until a viable future owner records one, or loses their BFPP status.	Explanation of Significant Differences (September 15, 2010)

Media, Engineered Controls, and Areas That Do Not Support UU/UE Based on Current Conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Johns-Manville Mill (JMM) (SSID 0935, OU1)					
Soil	Yes	Yes	063-030-03S	Intended to restrict future land uses and to prevent disturbance of the contaminated material remaining at the site.	Deed Restriction (July 2, 1993) was filed without environmental restrictions and was not legally enforceable and did not run with the land. A land use covenant (LUC) was recorded in 2011 that encumbers the property and restricts type of use, allowed activities, and site disturbances.
Soil	Yes	Yes	063-030-03S	Verifies that there have been no changes in ownership of the JMM, and that there are no other documents recorded that would impact the effectiveness of institutional controls at the JMM.	Limited title search (2011)

Media, Engineered Controls, and Areas That Do Not Support UU/UE Based on Current Conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
City of Coalinga (SSIDs 0934 and 0935, OU2)					
Soil	Yes	Yes	083-020-58 083-020-59[1]	To prevent disturbance of the cap at the WMU and limit future use of the site	a) Deed restriction (June 22, 1990) b) Amended deed restriction with a legal description of the restricted area (September 14, 1992) c) New Land Use Covenant with grantee designated and power to enforce the deed restriction. (September 24, 2010)
Soil	Yes	Yes	083-020-58 083-020-59[1]	The purpose is to verify that there have been no changes in ownership of the WMU, and that there are no other documents recorded with the County recorder's office that would impact the effectiveness of institutional controls at the WMU	Limited title search (August 2016)

1 The 2005 Quiet Title Judgement noted that APN 083-020-59 was re-titled 900-700-12.
Note: IC = Institutional Control

2.4 Operation and Maintenance

This section summarizes the operation and maintenance (O&M) activities performed at the Atlas and Coalinga Superfund Sites during this FYR period. O&M activities are performed to protect the public health, welfare, and environment from the release of asbestos by ensuring the effectiveness of engineering and institutional controls.

2.4.1 Atlas Mine Area OU

PRPs have conducted routine site inspections and O&M activities at the Atlas Mine Area OU since 1996, when construction of the remedy was completed. An O&M Plan, dated November 15, 1999, was developed for engineered systems at the OU and was included in the Remedial Action Completion Report (ESC, 1999). BLM is the designated O&M manager for the OU and has been administering the O&M plan. Northrop Grumman also monitors the remedy and executes maintenance of the system as needed.

The O&M plan (ESC, 1999) originally specified that routine inspections of the engineering systems and access restrictions should occur quarterly for the first two years and thereafter be conducted semiannually for the remaining 28 years of the implementation period. However, in a letter dated January 2000, EPA approved a reduction in the inspection frequency to annually. Northrop Grumman performs annual inspections to evaluate the remedy at Atlas and determine if and when maintenance is needed. Additionally, BLM performs monthly inspections at Atlas to ensure site security and roads are maintained, repair fencing, photo document the remedy performance and any sedimentation that has occurred, and collect personal air monitoring samples during inspection activities.

In addition to routine inspections, emergency inspections are to be conducted when precipitation greater than 2 inches falls on the OU within a 24-hour period, as measured at the Spanish Lake Meteorological Station, or if seismic activity of magnitude 4.8 or greater on the Richter Scale occurs within 50 miles of the OU. Inspections triggered by rainfall or seismic events should occur within one week of the triggering event.

In a letter dated June 19, 2013, EPA temporarily waived the requirement for 2011 and 2012 site inspections until an exposure-based risk assessment could be performed. Therefore, no such inspections were performed when a magnitude 5.4 earthquake occurred approximately 20 miles from the Atlas Mine site on October 21, 2012. Northrop also did not conduct an inspection in 2013. Northrop conducted annual inspections in January 2014, October 2015, and July 2016. BLM has conducted monthly inspections at the Atlas site since 2011. Based on the observations made during monthly and annual site inspections, BLM and Northup Grumman concluded that the remedy continues to perform as intended.

During the 2014 annual site inspection, a large scarp in the road to Rover Pit was observed; the road damage occurred in the same area as the one observed during the 2007 and 2010 annual site

inspections. The continued settling of the downslope material is considered normal for previously disturbed material. Some sediment accumulation in Pond B was observed.

2.4.2 Johns-Manville Mill OU

Periodic inspections of the engineering systems were conducted by ARCADIS, a contractor to BNSF, the current owner every six months for the first three years after completion of remedial action construction and annually after the third year. In 2015, ARCADIS created a revised O&M plan, which states that annual inspections are to be performed by the owners of the ranch located adjacent to the OU. The ranch owners are also responsible for making minor repairs to the site access gates. In addition to periodic inspections, inspections are to be conducted when precipitation greater than three inches falls on the OU within a 24-hour period, as measured at the Birdwell Ranch rain gauge, or if seismic activity of magnitude 5 or greater on the Richter Scale occurs within 50 miles of the OU, as measured by the seismograph at West Hills College in Coalinga. Inspections triggered by rainfall or seismic events should occur within one week of the triggering event. Since the last FYR, there have been no seismic/rain events that have triggered an inspection of the OU.

Inspections of the OU include several components. The engineering systems that require inspection include the cross-canyon diversion channel and spillway, fencing, gates, signs, the sediment trapping dam, graded slopes, and the tailings pile drainage system. Maintenance items discovered during these inspections are repaired by the owner, as necessary, to maintain the integrity of the remedial action.

Annual O&M inspections are performed at the site by BNSF's contractor, ARCADIS. Overall, the inspections show that there were no issues that would call into question the effectiveness of the remedy.

2.4.3 City OU

Since the last FYR, O&M inspections at the City OU have been performed annually by Antea Group, which is a consultant for Union Pacific Railroad Company. Overall the remedy was found to be functioning as intended. The cap was in good condition, showing no significant depressions or mounding. Animal burrows were observed on the southeastern portion of the fenced site. It was unknown whether these are abandoned burrows or whether they are still active. The fence, perimeter metal sheeting, gate, locks, and warning signs were in good condition. The neutron probes were found to be in good condition with no evidence of groundwater intrusion. Mesh fencing was installed around the fencing subsurface to further discourage burrowing animals. Raptor and owl perches are installed on two sides of the WMU to encourage predation of any burrowing animals on the site. Bones of rodents were observed scattered around the perches.

3 Progress Since the Last Five-Year Review

3.1 Previous Five-Year Review Protectiveness Statement and Issues

The protectiveness statement from the 2011 FYR for the Atlas and Coalinga Sites stated the following:

> *The remedial actions at the Atlas Asbestos Mine Superfund Site and the Coalinga Asbestos Mine Superfund Sites are protective of human health and the environment in the short term. The remedy at the Atlas Mine Area OU is protective of human health and the environment due to the removal of contaminated material, stabilization of erosion prone areas, structural improvements and additions, the installation of access controls and warning signs, and regular inspections and maintenance. However, in order for the remedy to be protective in the long-term, aerial inspections of the Atlas Mine Area should be conducted previous to each Five-Year Review to determine whether migration of asbestos-laden sediments has occurred.*
>
> *The remedy at the Johns-Manville Mill OU currently protects human health and the environment because of the remedy in place: removal of contaminated material, diversion of water around erosion prone surfaces/materials, stabilization of erosion prone areas, structural improvements and additions, the installation of access controls and warning signs, and regular inspections and maintenance. However, in order for the remedy to be protective in the long-term, institutional controls, in the form of an enforceable deed restriction, must be placed on the property.*
>
> *The remedy at the City of Coalinga OU is protective of human health and the environment due to the removal and consolidation of contaminated soils and other materials beneath an on-site cap (the Waste Management Unit), restriction of future uses through a deed restriction, the installation of access controls and warning signs, and regular inspections and maintenance.*

The 2011 FYR included two issues and recommendations. Each recommendation and the current status are discussed below.

Table 3: Status of Recommendations from the 2011 FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description*	Completion Date (if applicable)
Atlas Mine OU	Currently, visual inspections of the Atlas Mine Area OU are conducted annually to verify the remedy is functioning as intended. Since a large portion within the boundary of the Atlas Mine Area OU in inaccessible by foot or by car, these annual visual inspections are unable to thoroughly identify the potential for migration of asbestos.	The O&M manual for the Atlas Mine Area OU should be revised to include a requirement for a minimum of one aerial inspection to be conducted during each FYR period. At least one aerial inspection should be performed no later than 1 year prior to the completion of the next FYR. Aerial inspections would allow for thorough examination of the OU boundary to determine whether migration of asbestos-laden materials is occurring. In order to provide a baseline for the next FYR, the first aerial inspection should be conducted 1 year from the completion of this report.	Completed	Google Earth® images, satellite photos, historic photos, inspection reports, and a visual inspection will be combined for a comprehensive Five Year Inspection Report to replace the need for aerial inspections. On July 26, 2016 EPA approved a Five Year Inspection Work Plan, submitted by Northrop Grumman Corp. Northrop Grumman Corp completed the first Five Year Inspection activities on July 29, 2016.	7/29/2016
JMM OU	A deed restriction was recorded for the JMM OU, but it is not legally enforceable and does not run with the land.	Record an enforceable deed restriction between the PCLC and DTSC with the Fresno County Recorder's Office. The deed restriction should be consistent with current DTSC regulations for ICs, be enforceable by DTSC (with EPA listed as a third-part beneficiary) and should run with the land. Parties responsible for O&M of the deed restriction should also be identified.	Completed	The deed restriction has been completed between the PCLC and DTSC.	9/23/2011

3.2 Work Completed at the Sites during this Five-Year Review Period

The only work performed during this FYR period was operation and maintenance which is described in Section 2.4.

4 Five-Year Review Process

4.1 Community Notification, Involvement and Site Interviews

A public notice was placed in *The Daily Journal* on August 12, 2016, stating that there was a FYR and inviting the public to submit any comments to the EPA. The results of the review and the final report will be added to information repositories at the Coalinga District Library, 305 N 4th St, Coalinga; CA; Kings County Library-Hansford Branch, 401 N Douty St, Hanford, CA; and Avenal Public Library, 501 E Kings St, Avenal, CA.

The final report will also be available online at http://www.epa.gov/superfund/atlasasbestos and http://www.epa.gov/superfund/coalingaasbestos.

4.2 Data Review

The Atlas Mine Area OU, JMM OU, and City OU do not require routine sampling and data analysis as part of their O&M activities. Personal air monitoring data is collected monthly at the Atlas Site by BLM during inspections to ensure compliance with Occupational Safety and Health Administration regulations in 29 CFR 1910.120 and 1910.1001. Personal air monitoring data was also collected at JMM on May 26, 2016 by DTSC during the 5YR site inspection, and all results are below OSHA criteria. This data is collected to ensure that the remedy is protective of human health during daily onsite activities and under normal working conditions.

Air sampling data for the Sites demonstrate that asbestos exposure does not exceed the cleanup standard of 1 area percent asbestos fibers. A table of air sampling data relevant to the FYR period can be found in Appendix D

4.3 Site Inspection

The inspection of the Atlas and Coalinga Sites was conducted on May 24 to 26, 2016. The purpose of the inspection was to assess the protectiveness of the remedy at each OU and area of interest. A detailed site inspection report and trip report are provided in Appendix C.

A summary of each area inspected is presented below.

In attendance at the site inspections were the following:

- Lynn Keller (EPA, Remedial Project Manager)

- Kayla Patten (U.S. Army Corps of Engineers, Site Inspection Lead)
- Greg Middleton (BLM, Project Manager/Geologist)
- Carolyn Yee (DTSC, Project Manager)
- Jim Rohrer (DTSC, Engineering Geologist)
- Peter Graves (BLM, Environmental Protection Specialist)
- Pete Phillips (Gilbane, Environmental/Senior Geologist)
- Jonathan Partsch (Gilbane, Project Geologist)
- Richie Hodges (Northup Grumman Corporation, Project Manager)
- Tara Bosch (Aetna Group, Project Professional)
- Mike Makerov (BNSF Railway Company, Manager of Environmental Remediation)
- Scott Davis (ARCADIS, Vice President)
- Maher Zein (ARCADIS, Senior Environmental Engineer)

4.3.1 Atlas Mine Area OU

The site inspection for the Atlas Mine Area OU was conducted on May 24, 2016.

The remedy at Atlas Mine OU was designed to prevent migration of asbestos-laden sediment from migrating off site. The remedy appears to be functioning as intended. Siltation within Channel A and B may cause sediment to be transported off site in the future; however no sedimentation was evident at the outlet areas. An unnamed drainage channel along the road to the Rover Pit as well as Channel A had some sedimentation covering the rock mattress. Pond A contained little evidence of sedimentation (only about 0.5 inches in the last 3 years). Fencing and water overflow structures were in good condition. Pond G and Pond C contained minimal sediment, and the outlets were in good condition.

The required signage was present; however, the BLM Field Office contact information was out of date, and yellow warning signs on the fencing were old and faded. There was some past evidence of trespassing by off-road vehicle users (tire tracks), but no damage or erosion was observed. Roads were largely in good condition. Small rills were observed, but these are not of concern. The landslide on the road to the Rover Pit was blocking the road, as noted in the 2014 inspection, and the landslide was still sloughing material. The landslide does not have an immediate impact on the remedy.

The monthly BLM inspections are adequate to maintain fencing, observe signs of illegal access to the OU, and to monitor siltation within the ponds and channels. Eventually, sediment removal should be done at the ponds and channels, but the remedy is functioning as intended for the foreseeable future. Signage should be replaced to include current BLM contact information and Spanish signs should be provided. No other deficiencies or other issues were noted at that impacted the performance of the remedy at the Atlas Mine Area OU.

4.3.2 Johns-Mansville OU

The site inspection for the JMM OU was conducted on May 26, 2016.

The remedy at Johns-Manville OU was designed to prevent migration of asbestos-laden sediment from migrating off site. The remedy appears to be functioning as intended. A handful of large cracks and deep fissures were observed in the tailings pile, appearing since October 2015. Small areas of erosion were also seen. Some sediment and debris were present in the trapping dam and dissipation pond. The levee behind the pond was in good condition. Energy dissipation pond outlets from the drainage system were in good condition and showed sediment discharge. There was no significant sediment in the dissipation pond. The large levee behind the pond was in good condition and showed no signs of overflow.

The asphalt road was in good condition; however, the bridge along this road is in disrepair and should be inspected by BNSF. The gates at the north and south ends of the asphalt road were in good condition but open and unlocked since the access road is private. The Site Manager indicated that this was always the case. This is likely because there is a hunting lodge further down the road. Cable fencing was in good condition. However, signs along the north end of the JMM OU were faded and in need of replacement and did not include Spanish versions. There was no indication of trespassing or vandalism.

No other deficiencies or other issues were noted that impacted the performance of the remedy at the JMM OU.

4.3.3 City OU

The site inspection for the City OU was conducted on May 25, 2016.

The remedy at the City OU includes maintenance of a Waste Management Unit. The cap on the WMU is functioning as intended. Vegetation on the cap was primarily grass and had been recently hydroseeded. Several small burrow holes were present on the cap surface. An owl box and two raptor perches were placed to help attract raptors and control burrowing rodents. This strategy seemed to be working as scat and bones were present below the owl box. A sprinkler system exists; however, the sprinkler heads were broken and it was clear that the system was not in working order. The gate to the landfill was locked upon arrival and damage to the fence had been repaired.

4.3.4 CCMA and Ponding Basin

The site inspection for the CCMA was conducted on May 25, 2016. A portion of the 75,000 acres that comprise the CCMA were inspected by vehicle, and all measures required to contain erosion were in-place and functioning as intended.

The Ponding Basin collects water from the Los Gatos Creek draining area. It appears, based on the inspection, that water has not reached this location in many years. The main gates to this area were unlocked and open but in good condition. Signs were present, but not all were in good condition. There was no fencing or signs near the entrance on Lassen Avenue. It was evident, from vehicle tracks and dumping, that the “No Trespassing” signs are not being heeded. Illegal dumping of trash was evident.

5 Technical Assessment

5.1 Question A: Is the Remedy Functioning as Intended by the Decision Documents?

5.1.1 Atlas Mine Area OU

Yes, the remedy at the Atlas Mine OU is operating as intended. The purpose of the remedy is to prevent material containing asbestos from leaving the site by air or surface water discharge. The remedy is functioning as intended by the ROD based on observations made during the annual site inspections, the FYR site inspection, and a review of relevant documents and applicable or relevant and appropriate requirement (ARARs).

Sediments containing asbestos are collected in several sedimentation ponds that have been constructed across the OU, resulting in a decrease in loadings of asbestos to surface water downstream of the OU. Fencing and signage prevent access to the OU. Paved roads at the entrance of the OU and within the site are maintained to further mitigate the potential for generation of airborne asbestos.

Annual inspections are performed by Northrop to identify any need for maintenance activities at the OU. Monthly inspections are performed by BLM. The remedy is expected to be protective in the future if routine inspections continue and maintenance activities are performed as necessary.

On September 15, 2010, EPA issued an ESD from the ROD to explain the status of ICs at the Atlas Mine Area OU and to clarify measures in place that ensure the Atlas Mine Area OU remains protective of human health and the environment. A comprehensive update on the background and status of ICs at the Atlas Mine Area OU are provided as Appendix B1.

5.1.2 Johns-Manville Mill OU

Yes, the remedy at JM MOU appears to be functioning as intended by the ROD based on observations made during the annual site inspections, the FYR site inspection, and a review of relevant documents and ARARs. Access controls at the JMM OU continue to effectively prevent exposure to asbestos. The fence is generally in good condition. Signage on the north end of OU is faded and should be replaced with Spanish and English versions that are weather and sunlight-resistant. The JMM OU and surrounding area appeared to be undisturbed and secure during the site inspection, with no evident signs of trespassing or vandalism.

There are no O&M issues that would call into question the effectiveness of the remedy.

5.1.3 City OU

Yes, the remedy at City OU appears to be functioning as intended by the ROD based on observations made during the annual site inspections, the FYR site inspection, and on a review of relevant documents and ARARs. Asbestos waste is capped at the WMU and is effectively preventing exposure to asbestos. O&M of the WMU has been effective in maintaining the remedy at the City OU. The Union Pacific Railroad Company's contractor conducts annual inspections of the WMU, notes any deficiencies at the site, and then performs routine maintenance activities to correct problems. There are no indications of any difficulties with O&M of the remedy.

A deed restriction between the owner of the WMU, the City of Coalinga (as per "Stipulated Judgment Quieting Title, APN: 900-700-12 [formerly APN 083-020-59SU]") and the DTSC was filed with the Fresno County Recorder's Office on September 24, 2010. The deed restriction prevents disturbance to the cap at the WMU, which will prevent the release of asbestos and nickel contaminants from the OU. This deed restriction is consistent with DTSC regulations for LUCs. The restriction is both enforceable and runs with the land. All of the ROD-required institutional controls for the WMU have been implemented successfully. A comprehensive update on the status of institutional controls at the City OU is provided as Appendix B3. A copy of the title search and deed restriction is also included in the appendix as an attachment.

Access controls at the WMU continue to prevent access to the cap. Fencing and signage are generally in good condition, but require some maintenance to prevent access to the site. Specifically, the signs around the WMU should include the correct DTSC phone number. Also, the smooth metal sheeting installed at the top of a section of tight mesh screen along the WMU perimeter fence to prevent animals from climbing over the fence into the site should be repaired, as it is torn and detached from the fence in several locations. Yearly inspections of the WMU should continue to note deficiencies to access controls, which should then be corrected through routine maintenance activities.

5.2 Question B: Are the Exposure Assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives (RAOs) Used at the Time of the Remedy Selection Still Valid?

The RAOs and factors to be considered at the time of the remedy selection are still valid. There have been no changes in ARARs and no new standards or factors to be considered affecting the protectiveness of the remedy.

The toxicity factors used in human health risk assessment at the time of the remedy selection have not changed and are still valid. The risk assessment methodologies and exposure assumptions that affect the protectiveness of the remedy have not changed and are still valid. A detailed risk assessment review and toxicity analysis for human and ecological health is provided in Appendix F.

According to the documents reviewed, site inspections, and interview, the remedial activities and subsequent inspections at the Atlas Mine Area OU, JMM OU, and City OU have achieved the RAOs of reducing the exposure to asbestos.

5.3 Question C: Has Any Other Information Come to Light That Could Call Into Question the Protectiveness of the Remedy?

There has been no other information that calls into question the effectiveness of the remedies at the Sites.

6 Issues/Recommendations

There are no issues or recommendations that affect protectiveness.

6.1 Other Findings

There are several O&M-related findings that were noted but do not affect current and/or future protectiveness. Recommendations to address these issues are detailed in the site inspection reports and generally include periodic sedimentation removal and road maintenance. At the Atlas Mine Area OU, a minor landslide and sedimentation covering rock mattress on the road to Rover Pit and gully formation on the south slope of the Regional Sediment Storage Area were noted in the inspection. At the Johns-Manville Mill, cracks were observed in the tailing pile slopes that need to be reworked to ensure the slope remains stable for the long term. The bridge on the road to access the site is dilapidated and should be inspected and repaired as needed. At the WMU in the City OU, fencing maintenance and monitoring of burrowing holes should continue. Sprinkler repair on the cap of the WMU would ensure consistent vegetation also. Atlas, JMM, and the City OUs are all in need of updated signage to replace faded text and incorrect phone numbers, as well as some signs in Spanish. These issues should be addressed through maintenance activities by the PRPs.

7 Protectiveness Statement

Table 4 Protectiveness Statement

Protectiveness Statement(s)		
Operable Unit: Atlas Mine Area OU	*Protectiveness Determination:* Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: The remedy at the Atlas Mine Area OU is protective of human health and the environment due to the removal of contaminated material; stabilization of erosion prone areas; structural improvements and additions; installation of access controls and warning signs; and regular inspections and maintenance.		

Operable Unit:	*Protectiveness Determination:*	*Planned Addendum Completion Date:*
JMM OU	Protective	

Protectiveness Statement:
The remedy at the Johns-Manville Mill OU protects human health and the environment due to removal of contaminated material; diversion of water around erosion prone surfaces/materials; stabilization of erosion prone areas; structural improvements and additions; installation of access controls and warning signs; and regular inspections and maintenance. A deed restriction was recorded in 2011 to ensure future protectiveness.

Operable Unit:	*Protectiveness Determination:*	*Planned Addendum Completion Date:*
City OU	Protective	

Protectiveness Statement:
The remedy at the City of Coalinga OU is protective of human health and the environment due to: the removal and consolidation of contaminated soils and other materials beneath an onsite cap (the Waste Management Unit); restriction of future uses through a deed restriction; the installation of access controls and warning signs; and regular inspections and maintenance.

Sitewide Protectiveness Statement	
Protectiveness Determination: Protective	*Planned Addendum Completion Date:* Click here to enter a date

Protectiveness Statement:
The remedy at Atlas Asbestos Mine and the Coalinga Asbestos Mine Superfund Sites is protective of human health and the environment because of the effectiveness of the following components: removal of contaminated material, diversion of water around erosion prone surfaces/materials; stabilization of erosion prone areas; structural improvements and additions; the installation of access controls and warning signs; and regular inspections and maintenance. Restrictions of off-road vehicle use in the CCMA continue to be protective of recreational users and out-tracking that would occur.

8 Next Review

The next FYR report for the Atlas Asbestos Mine and Coalinga Asbestos Mine Superfund Sites is required 5 years from the completion date of this review.

Appendix A: List of Documents Reviewed

Appendix A: List of Documents Reviewed

ALS Environmental. 2016. Sample analysis results for DTSC personal air monitoring at the Johns Manville Mill Coalinga Asbestos Mine Superfund Site. 9 June.

ARCADIS. 2011. Inspection Report for Engineering Systems, Johns-Manville Coalinga Mill Area Operable Unit, Fresno County, CA DTSC Site Code 100043. 7 November.

ARCADIS. 2012. Inspection Report for Engineering Systems, Johns-Manville Coalinga Mill Area Operable Unit, Fresno County, CA DTSC Site Code 100043. 17 October.

ARCADIS. 2013. Inspection Report for Engineering Systems, Johns-Manville Coalinga Mill Area Operable Unit, Fresno County, CA DTSC Site Code 100043. 30 October.

ARCADIS. 2015. Revised Operation and Maintenance Plan, Johns-Manville Coalinga Mill Area Operable Unit, Fresno County, California. 20 November.

ARCADIS. 2016. Site Specific Health and Safety Plan, Johns-Manville Coalinga Asbestos Mill Superfund Site for Burlington Northern Santa Fe Railway. 25 May.

CH2M Hill (2001). Five-Year Review Report for Atlas Asbestos Mine Site. 28 September.

CH2M Hill (2006). Five-Year Review Report for Atlas Asbestos Mine and Coalinga Asbestos Mine (Johns-Manville Mill) Superfund Sites, Fresno County, California. September.

City of Coalinga Redevelopment Agency. 2015. City of Coalinga Waste Management Unit (WMU) Annual Inspection Report. 16 December.

Department of Toxic Substances Control. 1991. Certificate of Waste Management Unit, City of Coalinga Asbestos Site. 25 June.

Department of Toxic Substances Control. 2011. Letter to Mr. David C. Clark of BNSF Railway Company concurring with the 7 November 2011 Inspection Report for Engineering Systems, Johns-Manville Coalinga Asbestos Mill Area, Fresno County, California. 10 November.

Department of Toxic Substances Control. 2012. Letter to Mr. David C. Clark of BNSF Railway Company concurring with the 17 October 2012 Inspection Report for Engineering Systems, Johns-Manville Coalinga Asbestos Mill Area, Fresno County, California. 24 October.

Department of Toxic Substances Control. 2013. Letter to Mr. Mike Makerov of BNSF Railway Company concurring with the 30 October 2013 Inspection Report for Engineering Systems at the Johns-Manville Coalinga Asbestos Mill Area, Fresno County, California. 31 October.

Department of Toxic Substances Control. 2015. Letter to Mr. Mike Makerov of BNSF Railway Company concurring with the 22 October 2015 Inspection Report for Engineering Systems at the Johns-Manville Coalinga Asbestos Mill Area, Fresno County, California. 30 October.

Department of Toxic Substances Control. 2015. Letter to Mr. Mike Makerov of BNSF Railway Company approving the 27 November 2015 Revised Operation and Maintenance Plan for the Johns-Manville Coalinga Asbestos Mill Area Operable Unit. 11 December.

Department of Toxic Substances Control. 2015. E-mail to Ms. Shannon Jensen, Assistant to the City Manager/Deputy City Clerk, City of Coalinga accepting the 16 December 2015 WMU Inspection Report. 17 December.

Department of Toxic Substances Control and Union Pacific Railroad Company Draft Operation and Maintenance Agreement. 2016. City of Coalinga Operable Unit, Coalinga, California. 14 April.

Ecology & Environment (1996). Five-Year Review for the City of Coalinga OU of the Atlas and Coalinga Superfund Sites, Coalinga, CA. 26 April.

Environmental Data Resources, Inc. (EDR). 2016. The 1940 EDR Chain of Title report for the UPRR-Coalinga Asbestos Landfill Site, 1245 West Elm Ave, Coalinga, CA 93210. 26 July.

Environmental Strategies Corporation (ESC). 1999. Remedial Action Completion Report For the Atlas Mine Superfund Site. 15 November.

Federal Register Vol 62 No. 223 (1997). National Oil and Hazardous Substances; Pollution Contingency Plan; National Priorities List. EPA Notice of Intent to delete Coalinga Asbestos Mine Site from the National Priorities List: request for comments. 19 November.

Fresno County Recorder. 2010. Covenant to Restrict Use of Property, Environmental Restriction Re. Fresno County Assessor Parcel Numbers 083-020-58 and 083-020-59, DTSC Site Code 100289. Recording requested by the Redevelopment Agency of the City of Coalinga. 24 September.

Fresno County Recorder. 2011. Covenant to Restrict Use of Property, Environmental Restriction Re. Fresno County Assessor Parcel Number 063-030-03, DTSC Site Code 100043. Recording requested by Pine Canyon Land Company. 23 September.

Harding Lawson Associates (HLA). 1993. Remedial Action Design Plan for Atlas Mine Superfund Site. December.

Harding Lawson Associates and Environmental Strategies Corporation. 1999. Remedial Action Completion Report for the Atlas Mine Superfund Site, Fresno County, California. 13 September.

ID Environmental Associates, Inc. 2011. Final 2010 Annual Site Inspection Report, Atlas Mine Operable Unit, Fresno County, California. September.

International Technology Corporation (IT). 1989. Design Report for the Asbestos Waste Management Unit, Coalinga, California. 15 August.

McCutchen, Doyle, Brown & Emersen, LLP. 1996. Coalinga Asbestos Mine Site Final Closeout Report. 5 September.

Northrop Grumman Corp. 2011. Final Atlas Asbestos Mine Site 2010 Annual Site Inspection Report. 22 September.

Northrop Grumman Corp. 2013. Letter to Ms. Lily Tavassoli, U.S. EPA re. Waiver of 2011 and 2012 Annual Site Inspection Requirement, Atlas Asbestos Mine Site, Coalinga, California. 19 June.

Northrop Grumman Corp. 2014. Draft Atlas Asbestos Mine Site 2014 Annual Site Inspection Report. May.

Northrop Grumman Corp. 2016. Five Year Inspection Program Work Plan-Atlas Mine Operable Unit. 19 July.

Northrop Grumman Corp. 2016. Final Atlas Asbestos Mine Site 2015 Annual Site Inspection Report. 23 August.

Northrop Grumman Corp. 2016. Draft 2016 Annual and Five Year Site Inspection Report-Atlas Mine Operable Unit. 31 August.

Southern Pacific Transportation Company. 1992. Operation and Maintenance Plan, Southern Pacific Transportation Company Waste Management Unit, Coalinga Operable Unit, Coalinga, California. January.

U.S. Department of the Interior, Bureau of Land Management, Hollister Field Office. 2014. Record of Decision & Approved Resource Management Plan for Clear Creek Management Area. February.

U.S. Department of the Interior Office of Occupational Health and Safety. 2008. BLM Employee Exposure to Naturally Occurring Asbestos at the Clear Creek Management Area and the Knoxville Management Area. May.

U.S. Environmental Protection Agency (U.S. EPA). 1987. EPA CERCLA Order to Southern Pacific Transportation Company regarding the City of Coalinga, CA. 21 August.

U.S. Environmental Protection Agency (U.S. EPA). 1989. EPA Superfund Record of Decision: Atlas Asbestos Mine, OU -2 Coalinga, CA. 19 July.

U.S. Environmental Protection Agency (U.S. EPA). 1989. EPA Superfund Record of Decision: Coalinga Asbestos Mine, OU -2 Coalinga, CA. 19 July 1989.

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U.S. Environmental Protection Agency (U.S. EPA). 1991. EPA Superfund Record of Decision: Atlas Asbestos Mine, OU-1 Coalinga, CA. 14 February.

U.S. Environmental Protection Agency (U.S. EPA). 1992. Public Notice - Status of Clear Creek Management Area and Arroyo Pasajero Ponding Basin. December.

U.S. Environmental Protection Agency (U.S. EPA). 1993. Certificate of Completion for City of Coalinga. 18 May.

U.S. Environmental Protection Agency (U.S. EPA). 1995. Preliminary Closeout Report for Coalinga Asbestos Mine Site. March.

U.S. Environmental Protection Agency (U.S. EPA). 1999. Preliminary Closeout Report for Atlas. 2 September.

U.S. Environmental Protection Agency (U.S. EPA). 2008. Clear Creek Management Area Asbestos Exposure and Human Health Risk Assessment. May.

U.S. Environmental Protection Agency (U.S. EPA). 2009. Atlas Asbestos Site – Coalinga City Site OU2, Protectiveness Evaluation Sampling Results, and Discussion and Recommendations Memorandum. 4 February.

U.S. Environmental Protection Agency (U.S. EPA). 2010. Explanation of Significant Differences to the 1991 Record of Decision for the Atlas Asbestos Mine Superfund Site, Atlas Mine Area Operable Unit EPA ID No. CAD980496863. August.

U.S. Environmental Protection Agency (U.S. EPA). 2011. Five-Year Review Report, Atlas Asbestos Mine Superfund Site and Coalinga Asbestos Mine Superfund Site, Fresno, County, California. August

U.S. Environmental Protection Agency (U.S. EPA). 2011. Draft Annual Site Inspection Report, Atlas Mine Operable Unit, Atlas Asbestos Mine Site, Fresno County, California. May.

U.S. Environmental Protection Agency (U.S. EPA). 2016. Letter to Mr. Richard Hodges, Northrop Grumman Corporation re. EPA Approval of Northrop Grumman Corporation's Final Five Year Inspection Work Plan for the Atlas Asbestos Mine Superfund Site. 26 July.

Appendix B Institutional Control Assessment

Appendix B1
Atlas Mine Area Operable Unit Institutional Controls

Appendix B1 summarizes the results of an assessment of the status of institutional controls (ICs) at the Atlas Mine Area Operable Unit 1 (Atlas Mine Area OU) of the Atlas Asbestos Mine Superfund Site. ICs are non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a response action.

A Record of Decision (ROD) was issued for the Atlas Mine Area OU on September 21, 1990 (EPA, 1990). A component of the remedy selected in the ROD included filing deed restrictions on privately held lands to limit future land use and prevent disturbance of the contaminated material at the OU. For the reasons below, the deed restrictions called for in the ROD could not be filed as originally intended. In Section VI1(A)(6) of the 1992 Consent Decree for the Atlas Mine Area OU, the United States specifically provided that "the Defendants [Atlas Corporation and Vinnell Mining and Minerals Corporation (Vinnell)] are not required to implement the deed restriction requirement of the Consent Decree other than as provided in Section VI (Notice of Obligations to Successors-in-Title)." Section VI only required the Defendants to file a copy of the Consent Decree with the Fresno County Recorder's Office, which the Defendants have done. Since Northrop Grumman Space & Mission System Corporation (Northrop) is the successor to Vinnell, it is also bound by the terms of the 1992 Consent Decree and is not required to file deed restrictions.

Accordingly, if Northrop sells its Atlas Mine Area OU property (San Benito and Fresno Counties, California, Parcel No. 030-250-004-0) to another entity, EPA should ensure that such future owner files a deed restriction that runs with the land for this privately owned portion of the site to prevent future disturbance of the contaminated material left on site.

Two additional privately owned parcels (Fresno County, California, Parcel Nos. 45-240-09 and 45-240- 12) that are part of the Atlas Mine Area OU list Wheeler Properties, Inc. (Wheeler), as the title owner. However, since Wheeler filed for bankruptcy in 1980, and was administratively dissolved in 1991, there is no discernible property owner for these parcels who could record a deed restriction. The State has not recorded any tax liens or initiated a tax sale to recover any, presumably, delinquent property taxes.

In place of the deed restrictions originally called for in the ROD, EPA issued an Explanation of Significant Differences (ESD) on September 15, 2010, in order to clarify the measures in place that ensure the Atlas Mine Area OU remains protective of human health and the environment. The ESD explained measures being implemented to ensure protectiveness while remaining consistent with the Consent Decree language.

ICs have been implemented at the Atlas Mine Area to the fullest extent practicable. There are no deficiencies or recommendations to be made with respect to ICs at the Atlas Mine Area OU.

Appendix B1, Attachment 1
Explanation of Significant Differences to the 1991 Record of Decision for the Atlas Asbestos Mine Superfund Site, Atlas Mine Area Operable Unit, August 2010

SDMS DOCID# 1122830

Explanation of Significant Differences

To the 1991 Record of Decision for the

Atlas Asbestos Mine Superfund Site

Atlas Mine Area Operable Unit
EPA ID No. CAD980496863

August 2010

I. Introduction

The United States Environmental Protection Agency (U.S. EPA or EPA) is completing this Explanation of Significant Differences (ESD) in order to document a significant post-Record of Decision (ROD) change to the selected remedy for the Atlas Mine Operable Unit (OU) of the Atlas Asbestos Mine Superfund Site. This change is being made in accordance with Chapter 7 of the guidance "A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents" (OSWER Directive 9200.1-23P, July 1999).

The purpose of the 2010 ESD is to clarify the measures in place that ensure the Atlas Mine Area OU remains protective of human health and the environment, and that institutional controls have been implemented to the fullest extent possible while still remaining consistent with the ROD and Consent Decree language.

EPA is the lead agency for oversight of the Atlas Asbestos Mine Superfund Site. The California Department of Toxic Substances Control (DTSC) is the supporting oversight agency. EPA is issuing this 2010 ESD to satisfy its responsibilities under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") Section 117(c) and the National Contingency Plan ("NCP") Section 300.435(c)(2)(i). This 2010 ESD and any comments regarding this 2010 ESD will become part of the Administrative Record for this

site pursuant to NCP Section 300.825(a)(2). Copies of the Administrative Record are available for review at the following locations:

EPA Region 9 Superfund Records Center
95 Hawthorne Street – Suite 403S
San Francisco, CA 94105
(415) 536-2000

Coalinga District Library
305 N. 4th Street
Coalinga, CA 93210
(209) 935-1676

Contact Information for any questions related to the Atlas Asbestos Mine Superfund Site:

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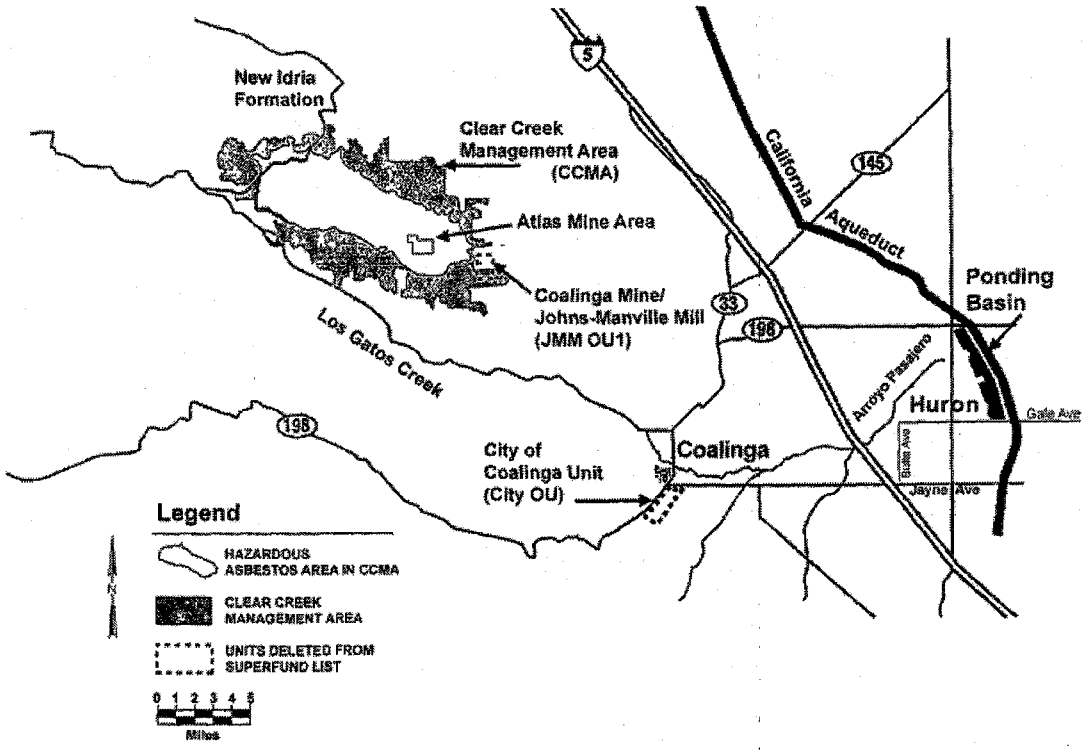
San Francisco, CA 94105
Telephone: (415) 972-3236 or (800) 231-3075
Fax: (415) 947-3526
E-mail: lane.jackie@epa.gov

II. Site Background

The Atlas Mine Area OU is an abandoned asbestos mine within the New Idria Formation located in Central California. It is approximately 20 miles northwest of the City of Coalinga in Fresno County, California. The mine area is approximately 140 acres and is located within the Bureau of Land Management's (BLM's) Clear Creek Management Area (CCMA), which includes approximately 75,000 acres of public land. See the figure below for location information of CCMA, Atlas Mine Area OU, and other areas associated with the Atlas Asbestos Mine Superfund Site.

Asbestos mining and milling at the Atlas Mine Area occurred from 1967 to 1979. The Vinnell Mining and Minerals Corporation (Vinnell), in a joint venture with California Minerals Corporation, owned and operated the mining and milling operation from 1967 until 1974, when they sold it to Wheeler Properties. Wheeler Properties operated the facility until 1979 and filed for bankruptcy shortly thereafter. The mining activity included digging the asbestos ore out of surface pits and then milling the ore. The byproducts of the milling process (mill tailings) were bulldozed into piles near the mill building. Approximately 3 million cubic yards of asbestos ore and asbestos tailings remain at the Atlas Mine Area OU.



III. Enforcement History and Selected Remedy

In 1976 and 1980, Atlas Asbestos Company and Wheeler Properties were cited for violating the National Emissions Standards for Hazardous Air Pollutants regulation regarding control of asbestos emissions. In 1980, the Metropolitan Water District of Southern California (MWD) determined that the Atlas Mine was one probable source of asbestos found in the California Aqueduct.

In October 1980, the Central Valley Regional Water Quality Control Board (Water Board) and the California Department of Health Services inspected the Atlas Mine Area to determine if waste discharges from these facilities were in compliance with state regulations. The Water Board concluded that additional corrective measures should be taken to prevent mine- and mill-generated asbestos from entering the drainage basins. The site was listed on the National Priorities List (NPL) in September 1984. Remedial Investigation / Feasibility Study (RI/FS) activities were initiated by the U.S. EPA in 1985.

The Record of Decision was signed on February 14, 1991. The ROD outlined the selected remedy, which aimed to control the release of asbestos into the air and local streams from the Atlas Mine Area and restrict access to the Atlas Mine Area using a combination of engineering and institutional controls. Specifically, the following measures were discussed in the ROD:

- Fencing or other appropriate controls to restrict access to the Atlas Mine Area.
- Paving the road through the Atlas Mine Area or implementing an appropriate road maintenance alternative.
- Constructing stream diversions and sediment trapping dams to minimize the release of asbestos into local creeks.
- Conducting a revegetation pilot project to determine whether revegetation is an appropriate means of increasing stability and minimizing erosion of the disturbed areas and implementing revegetation if it is found to be appropriate.
- Dismantling of the mill building and disposing of debris.
- Filing deed restrictions on privately held lands at Atlas Mine Area OU.
- Implementing an O&M program.

Atlas Minerals Division of the Atlas Corporation, Vinnell, Wheeler Properties Inc., the California Mineral Corporation, and the BLM were identified as potentially responsible parties (PRPs) at the Atlas Mine OU. General notice letters were sent on October 13, 1987 and June 23, 1988, notifying the PRPs of their potential liability.

IV. Cleanup and Operation and Maintenance

Remedial activities began on October 20, 1994, and were completed on November 14, 1996. The remedial action consisted of construction of stream diversions and sediment trapping dams, grading and other slope stabilization elements, performing a revegetation pilot study, road paving, mill dismantling, disposal of debris, implementing access restrictions, and implementing an O&M plan.

The Atlas Mine Area OU PRPs have conducted routine site inspections and Operation and Maintenance (O&M) activities at the Atlas Mine Area since 1996, when construction of the

remedy was completed. BLM entered into an agreement with Atlas Corporation and Vinnell to perform the operation, maintenance, and revegetation pilot study at the site. BLM is the designated O&M manager for the site and has been administering the O&M Plan. U.S. EPA is the regulatory agency responsible for oversight of the O&M work at the site.

V. 2010 Changes to the Selected Remedy

Although the 1991 ROD called for deed restrictions to be placed on the three privately owned parcels that comprise part of the Atlas Mine Area OU, the Consent Decree required only that the Defendants (Potentially Responsible Parties or PRPs) provide notice to successors-in-title by filing a copy of the Consent Decree with the Fresno County Recorder's Office. The Consent Decree further states at page 15 that "[i]n the event of any conflict between the ROD and the Decree, the Decree shall control." This ESD therefore aims to address this discrepancy between the ROD and Consent Decree and clarify the measures that are in place to maintain the site's current and future protectiveness of human health and the environment.

Current Status

On August 13, 1992, the U.S. District Court entered the Partial Consent Decree ("CD") between Defendants, Atlas Corporation and Vinnell, and the United States for implementation of the selected remedy from the 1991 ROD. Among other response actions, the selected remedy required deed restrictions on private parcels in order to "limit use of the privately held land and prevent disturbance of the contaminated material left at the Mine Area OU." In Section VI1(A)(6) of the 1992 Consent Decree, however, the United States specifically provided that "the Defendants are not required to implement the deed restriction requirement of the Consent Decree other than as provided in Section VI (Notice of Obligations to Successors-in-Title)." Section VI only required the Defendants to file a copy of the Consent Decree with the Fresno County Recorder's Office, which was done. Specifically, an online search of the Fresno County Recorder's website reveals that the Consent Decree has been recorded with Vinnell and Atlas listed as the Grantors and the USA listed as the Grantee. As discussed below, the other two privately held parcels are ostensibly owned by Wheeler Properties, Inc., which no longer exists as a corporate entity. Moreover, Wheeler was not a party to the Consent Decree, so its name does not appear when searching the County Recorder's office for a recorded Consent Decree.

There are three privately held parcels within the Mine Area OU. The first is Assessor Parcel Number (APN) 030-250-004-0, which consists of 200 acres that span both Fresno and San Benito Counties. However, only 39.4 acres of the parcel are within the Mine Area OU and within the fence-line of the Site and thus subject to land use restrictions. Northrop Grumman Space & Mission System Corporation (Northrop), the successor to Vinnell, is the current owner of this Parcel. As the successor to Vinnell, Northrop is a party to the 1992 Consent Decree and thus already fulfilled the deed restriction terms under the Consent Decree and is not obligated to do more. If Northrop sells this Parcel, EPA will ensure that the future owner records a land use covenant ("LUC") that prevents disturbance of the contaminated material left onsite, consistent with the ROD. As detailed below, any future owner would be obligated to record an LUC in order to maintain its status as a Bona Fide Prospective Purchaser ("BFPP") and avoid liability as a PRP. If the new owner refused, it would lose its BFPP status and EPA could then order the owner to record the deed restriction, as the new owner would not be a party to the Consent Decree that currently circumvents this ROD requirement.

The other two privately-owned parcels that comprise the Atlas Mine Area OU include Fresno County APNs 45-240-09 and 45-240-12, and list Wheeler Properties, Inc. as the record owner. Each parcel is approximately 5 acres. Because Wheeler filed for bankruptcy in 1980, and was administratively dissolved in 1991, there is no discernible property owner for these parcels who could record a deed restriction. Essentially these parcels have been abandoned and there is no owner available to record the LUC.

Given the explicit deed restriction requirements in the 1992 Consent Decree and the two abandoned Wheeler properties, EPA is presently unable to implement the deed restriction provisions of the ROD. If new owners take title to these parcels, however, EPA will implement the ROD's deed restriction requirement. The new owners would either voluntarily implement deed restrictions as a "reasonable step" to obtain BFPP status (discussed below), or they would be considered a Responsible Party and would be subject to Superfund enforcement authority. In the interim, however, EPA believes that the existing institutional and engineering controls sufficiently protect human health and the environment. As noted, while there is no mechanism to require Northrop Grumman, the remaining viable Defendant to the Consent Decree, to record a deed restrictions at this time, the existing deed

notice, i.e., the recorded Consent Decree in the Fresno County Recorder's Office, already provides notice to potential buyers regarding the remaining contamination at the Mine Area OU. Engineering controls, such as fencing and sign posting, also limit human exposure to the site contamination.

The privately owned parcels are further limited from human exposure given their location within the Clear Creek Management Area (CCMA), an approximate 63,000-acre recreational area managed by the Bureau of Land Management (BLM). As of May 1, 2008, BLM temporarily closed the CCMA to all forms of public use and entry due to increased concerns about asbestos exposure in the CCMA. Subsequently, BLM issued a Draft Resource Management Plan (RMP) and Draft Environmental Impact Statement (EIS) in December 2009 recommending the permanent closure of approximately 30,000 acres of serpentine soils high in asbestos fibers that has been designated as the Clear Creek Serpentine Area of Critical Environmental Concern within the CCMA. This closed area includes the Atlas Mine Area OU and, consequently, the three private parcels at issue. The public comment period for the Draft RMP and EIS ended April 19, 2010 and BLM is currently drafting a Proposed RMP/Final EIS for the CCMA, which will ultimately be followed by a final Record of Decision for the Approved RMP. Given the temporary closure and BLM's Draft RPM, it is likely the designated area will be permanently closed to the public due to unacceptably high asbestos levels. Physical exposure to the site contaminants at the Atlas Mine Area OU is, for these reasons, very unlikely.

Future Ownership

If in the future any of the private parcels on or within the site are transferred or sold to a new owner, a deed restriction would be required for the property. The purchaser would be obligated to meet the CERCLA requirements of a Bona Fide Prospective Purchaser ("BFPP"), or a party who knowingly purchases contaminated property but does not acquire CERCLA PRP responsibility for the cleanup of that site. In order to be a BFPP, the purchaser would have to establish the following as set forth in 42 U.S.C. §101(40)(A) through (H):

(A) Disposal at the facility occurred prior to acquisition

(B) The person made all appropriate inquiry into previous ownership and uses of the facility in accordance with generally accepted practices and in accordance with the new standards contained in section 101(35)(B)

(C) The person provides all legally required notices with respect to hazardous substances found at the facility

(D) The person exercises "appropriate care" with respect to the hazardous substances found at the facility by taking "reasonable steps" to:

   i. Stop any continuing releases

   ii. Prevent any threatened future release

   iii. Prevent or limit human, environmental or natural resource exposure to any previously released hazardous substance

(E) The person provides full cooperation and access to the facility to those authorized to conduct response

(F) The person is in compliance with any land use restrictions and does not impede the effectiveness or integrity of any institutional control

(G) The person complies with any information request or administrative subpoena under CERCLA; and

(H) The person is not potentially liable for response costs at the facility or "affiliated" with any such person through

   i. Direct or indirect familial relationship or

   ii. Any contractual, corporate or financial relationship (excluding relationships created by instruments conveying or financing title or by contracts for sale of goods or services)

The most pertinent of these provisions is Subpart (D), where the BFPP is required to exercise "appropriate care" to prevent both current exposure to existing releases, e.g., the managed waste piles, as well as prevent future releases, e.g., by using the land in a manner inconsistent with the selected remedy. EPA believes that recording the deed restriction requirement from the 1992 ROD would constitute a "reasonable step" and thus necessary to maintain BFPP status. Subpart (F) further supports implementation of the LUC, as it requires the BFPP to comply with any land use restrictions, including in this instance the deed restriction provision of the selected Remedy.

Since any future property owner would need to carry out the "reasonable step" of placing a deed restriction on the property in order to prevent CERCLA liability, it can be assumed that the site will remain protective in a situation where some or all of the private parcels in the Atlas Mine Area OU are transferred. In order to ensure that BFPP requirements have been met (i.e., a deed restriction will be implemented at the time of change in land ownership), the EPA will take steps to check on the ownership of the properties during its annual inspections of the site.

Conclusion

At this time, the EPA has implemented the full extent of available measures to ensure protectiveness at the site, consistent with the Record of Decision and Consent Decree. Future changes in property ownership will continue to be protective as any new owner will either be a BFPP required to record the LUC as a reasonable step, or a PRP subject to EPA's authority to unilaterally order the party to record an LUC.

VI. Supporting Agency Comments

The supporting agency for the Atlas Asbestos Mine Superfund Site is the California Department of Toxic Substances Control (DTSC). As required by 40 C.F.R. 300.515(h)(3), EPA has provided DTSC an opportunity to review and comment on the changes in the 2010 ESD. DTSC verified on August 25, 2010, that they would not be providing formal comments on the ESD.

VII. Statutory Determinations

The selected remedy for the site, as modified by the issuance of this ESD, satisfies CERCLA §121. The remedy remains protective of human health and the environment and complies with all applicable or relevant and appropriate requirements (ARARs) identified from federal and state laws and regulations. The remedy is cost effective and utilizes permanent solutions and alternative treatment technologies to the maximum extent possible.

VIII. Public Participation Activities

Pursuant to 40 C.F.R. Section 300.435(c)(2)(i), a formal public comment period is not required for an ESD to a ROD when the difference does not fundamentally alter the remedial actions with respect to scope, performance or cost. This ESD does not propose a fundamental change to the remedies in the 1991 ROD with respect to scope, performance or cost, and therefore, no formal public comment period is required. EPA will make this ESD and supporting information available for public review through the Administrative Record and information repository for the Atlas Asbestos Mine Superfund Site. Additionally, EPA will publish a notice that briefly summarizes this ESD in a newspaper of general circulation in the Site community.

Kathleen Salyer 9/15/10

Kathleen Salyer
Assistant Director, Superfund Division
CA Site Cleanup Branch

Date

Appendix B2
Johns-Manville Mill OU Institutional Controls

Appendix B2 summarizes the results of an assessment of the status of institutional controls (ICs) at the Johns-Manville Mill Operable Unit (JMM OU) of the Coalinga Asbestos Mine Superfund Site. ICs are non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a response action.

A Record of Decision (ROD) was issued for the JMM OU on September 21, 1990 (EPA, 1990). A component of the remedy selected in the ROD included filing a deed restriction to restrict future land uses and to prevent disturbance of the contaminated material remaining at the site. A deed restriction was in fact recorded on July 2, 1993, and included a County Recorder's office stamp. The 1996 and 2001 Five-Year Review (FYR) reports found this deed restriction to be sufficient. However, as part of the 2006 FYR, a title search was run on the pertinent JMM OU (APN: 063-030-03) and it revealed no environmental restrictions on the parcel.

The deed restriction, which was signed in 1993, and is included in the *Revised Operations and Maintenance Plan* for the JMM OU (ARCADIS, 2015) was filed unilaterally by the property owner in the Fresno County Recorder's Office. The 2006 FYR concluded that the since the deed restriction did not convey a property interest to a grantee, it was not a legally enforceable agreement and did not run with the land. In the 2006 FYR, the recommendation was made to file a new deed restriction consistent with California land use covenant statutory and regulatory authorities.

The deed restriction signed in 1993 was not legally enforceable and did not run with the land. It was recommended that a new land use covenant (LUC) be drafted between the property owner and the California State Department of Toxic Substances Control (DTSC), with the U.S. Environmental Protection Agency (EPA) assigned as a third-party beneficiary. The new deed restriction was recorded with Fresno County in 2011 and is consistent with Title 22 of the California Code of Regulations, Section 67391.1 and any other DTSC regulations on LUCs. The deed restriction is included as Attachment 1 to this appendix. There are no deficiencies or recommendations to be made with respect to ICs at the JMM OU.

Appendix B2, Attachment 1
Johns-Manville Mill OU Institutional Controls Deed Restriction

18

RECORDING REQUESTED BY:

Pine Canyon Land Company
Attn: Mr. Mark D. Ude
2500 Lou Menk Drive
Fort Worth, Texas 76131-0101

WHEN RECORDED, MAIL TO:

ADDRESS ABOVE, and,

State of California
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento California 95826
Attention: Richard Hume, P.E., Chief
National Priorities List Unit

FRESNO County Recorder
Paul Dictos, C.P.A.
DOC- 2011-0127727
Check Number 123
Friday, SEP 23, 2011 12:39:45
Ttl Pd $69.00 Nbr-0003517336
CRR/R2/1-18

SPACE ABOVE THIS LINE RESERVED FOR RECORDER'S USE

COVENANT TO RESTRICT USE OF PROPERTY

ENVIRONMENTAL RESTRICTION

(Re: Fresno County Assessor Parcel Number 063-030-03)

DTSC Site Code 100043

This Covenant and Agreement ("Covenant") is made by and between the Pine Canyon Land Company (the "Covenantor") of property situated in the County of Fresno, State of California, described in Exhibit "A" attached hereto and incorporated herein by this reference (the "Property"), and the Department of Toxic Substances Control (the "Department"). Pursuant to Civil Code section 1471, the Department has determined that this Covenant is reasonably necessary to protect present or future human health, safety, or the environment as a result of the presence on the land of hazardous materials as defined in Health and Safety Code section 25260. The Covenantor and the Department, collectively referred to as the "Parties", hereby agree, pursuant to Civil

Code section 1471 and Health and Safety Code section 25355.5, that the use of the Property be restricted as set forth in this Covenant. The Parties further agree that the Covenant shall conform to the requirements of California Code of Regulations, title 22, section 67391.1. The provisions of this Covenant shall be for the benefit of, and shall be enforceable by, the United States Environmental Protection Agency (the "U.S. EPA"), as a third party beneficiary pursuant to general contract law, including, but not limited to, Civil Code Section 1559.

ARTICLE I

STATEMENT OF FACTS

1.01. The Property. The Property consists of all of fractional Section 1 of Township 19 South, Range 13 East, Mount Diablo Base and Meridian totaling approximately 557-acres and is more particularly described in Exhibit "A" (Legal Description) and illustrated in Exhibit "B" (Map), attached hereto and incorporated herein by this reference. The Property is also generally described as Fresno County Assessor's Parcel Number (APN) 063-030-03. The Property described as the Johns-Manville Coalinga Mill Area Operable Unit of the Johns-Manville Coalinga Asbestos Mill Superfund site is located 17 miles northwest of the City of Coalinga on the southern flank of Joaquin Ridge in upper Pine Canyon within the Diablo Range near the New Idria mining district.

1.02. Hazardous Substances. Hazardous substances, as defined in section 25316, Chapter 6.8, Division 20 of the California Health and Safety Code; Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. section 9601(14); and 40 Code of Federal Regulations parts 261.3 and 302.4; remain on portions of the Property. These substances are also hazardous materials as defined in Health and Safety Code section 25260 (d). These contaminants include asbestos in tailings generated from asbestos milling operations at the Property.

1.03. Remediation of the Property. The Property has been remediated pursuant to a Record of Decision ("ROD") issued by the U.S. EPA, dated September 21, 1990. The ROD is on file and available for review at the Coalinga District Library at 305 North 4th Street, City of Coalinga, the U.S. EPA Superfund Records Center at 75 Hawthorne Street, City of San Francisco, and the Department web site at www.dtsc.ca.gov. Engineering controls as described in the "Remedial System" definition below were implemented to stabilize and control the release of asbestos from the Property. This ROD requires a deed restriction/Land Use Covenant/Institutional Controls for the Property.

1.04. Land Use Covenant. The Property has been subject to recorded documents. On July 2, 1993, a "Deed Restriction and Notice of Obligation" was recorded at Fresno County as Document 93100411 of Official Records. A land use covenant is necessary to preclude potential user's exposure to hazardous substances which remain at the Property, and to preclude disruption of the response action and Remedial System components located at the site. U.S. EPA, with the concurrence of the Department, has concluded that the Property, remediated to the goals presented in the ROD, subject to the restrictions of this Covenant, and when used in compliance with such restrictions, does not present an unacceptable threat to human safety or the environment.

ARTICLE II
DEFINITIONS

2.01. Department. "Department" means the California Department of Toxic Substances Control and includes its successor agencies, if any.

2.02. U.S. EPA. "U.S. EPA" means the United States Environmental Protection Agency and includes its successor agencies, if any.

2.03. Owner. "Owner" means the Covenantor, its successors in interest, and their successors in interest, including heirs and assigns, which at any time hold title or an ownership interest to all or any portion of the Property.

2.04. Occupant. "Occupant" means Owner and any person or entity entitled by ownership, leasehold, or other legal relationship to the right to occupy any portion of the Property.

2.05. CERCLA Lead Agency. "CERCLA Lead Agency" means the governmental entity having the designated lead responsibility to implement response action under the National Contingency Plan ("NCP"), 40 C.F.R. Part 300. U.S. EPA or a state agency acting pursuant to a contract or cooperative agreement executed under CERCLA section 104(d)(1), 42 U.S.C. 9604(d)(1), or designated pursuant to a CERCLA Memorandum of Agreement entered into under subpart F of the NCP (40 C.F.R. 300.505) may be designated CERCLA Lead Agency. Because this site has already been delisted from the NPL, and the Department has agreed to perform oversight of the operations and maintenance activities for this operable unit, the Department shall be the "CERCLA Lead Agency" unless the site is re-listed. However, at any time, the Department and U.S. EPA may mutually agree in writing that either the Department or U.S. EPA may be selected as "CERCLA Lead Agency" for purposes of this Covenant.

2.06 Environmental Restrictions. "Environmental Restrictions" means all protective provisions, covenants, restrictions, prohibitions, and terms and conditions as set forth in any section of this Covenant.

2.07 Improvements. "Improvements" include, but are not limited to: buildings, structures, roads, driveways, improved parking areas, wells, pipelines, or other utilities.

2.08 Lease. "Lease" means lease, rental agreement, or any other document that creates a right to use or occupy any portion of the Property.

2.09 Remedial Systems. "Remedial Systems" shall mean the remedial equipment and systems located on the Property, including devices that may be installed in the future. The Remedial Systems as currently constructed include a cross canyon diversion channel and spillway, a sediment trapping dam, a tailings pile drainage system, a re-vegetation system, paved access roads, fences, gates and signs. Each of these items is a component of the implemented Remedial Systems on the Property.

ARTICLE III
GENERAL PROVISIONS

3.01. Restrictions to Run with the Land. This Covenant sets forth Environmental Restrictions, that apply to and encumber the Property and every portion thereof no matter how it is improved, held, used, occupied, leased, sold, hypothecated, encumbered, and/or conveyed. This Covenant: (a) Runs with the land pursuant to Health and Safety Code section 25355.5(a) and Civil Code section 1471; (b) Inures to the benefit of and passes with each and every portion of the Property; (c) Is for the benefit of, and is enforceable by the Department; and (d) Is imposed upon the entire Property unless expressly stated as applicable only to a specific portion thereof.

3.02. Binding upon Owners/Occupants. Pursuant to the Health and Safety Code, this Covenant binds all Owners and Occupants of the Property. Pursuant to Civil Code section 1471, all successive owners of the Property are expressly bound hereby for the benefit of the Department.

3.03. Written Notice of the Presence of Hazardous Substances. Prior to the sale, lease, assignment, or other transfer of the Property, or any portion thereof, the Owner,

lessor, or sublessor shall give the buyer, lessee, or sublessee written notice of the existence of this Covenant and its Environmental Restrictions.

3.04 Incorporation into Deeds and Leases. The Covenant and its Environmental Restrictions shall be incorporated by reference in each and every deed and lease for any portion of the Property.

3.05. Conveyance of Property. The Owner shall provide notice to the Department and U.S. EPA not later than thirty (30) days after any conveyance of any ownership interest in the Property (excluding mortgages, liens, and other non-possessory encumbrances). The written notice shall include the name and mailing address of the new owner of the Property and shall reference DTSC site code 100043. The notice shall also include the APN listed in Section 1.01. If the new owner's Property has been assigned a different APN, each such APN that covers the Property must be provided. The Department shall not, by reason of this Covenant, have authority to approve, disapprove, or otherwise affect proposed conveyance, except as otherwise provided by law or by administrative order.

3.06 Costs of Administering the Covenant to be paid by Owner. The Department has already incurred and will in the future incur costs associated with the administration of this Covenant. Therefore, the Covenantor hereby covenants for Covenantor and for all subsequent Owners that, pursuant to California Code of Regulations, title 22 section 67391.1(h), the Owner will pay the Department's costs in administering the Covenant.

ARTICLE IV
RESTRICTIONS

4.01. Prohibited Uses. The Property shall not be used for any of the following purposes:

(a) A residence, including any mobile home or factory built housing, constructed or installed for use as residential human habitation.

(b) A hospital for humans.

(c) A public or private school for persons under 21 years of age.

(d) A day care center for children.

4.02. Soil Management. Any contaminated soils brought to the surface by grading, excavation, trenching or backfilling shall be managed in accordance with all applicable provisions of state and federal law and will not be removed from the Property without a Soil Management Plan approved by the CERCLA Lead Agency.

4.03. Prohibited Activities. The following activities are specifically prohibited without prior written approval from the CERCLA Lead Agency:

(a) Drilling for drinking water, oil, or gas.

(b) Extraction of groundwater for purposes or uses other than site remediation.

(c) Alteration of existing drainage patterns as anticipated or constructed as part of the Remedial System.

(d) Activities that disturb the ground surface, including soil, waste rock, and vegetation at the Property (e.g. excavation, grading, drilling, removing, trenching, earth movement, or mining).

(e) Activities that affect the flow continuity of the engineered cross-canyon diversion channel.

(f) Activities that damage riprap of the cross-canyon diversion spillway system.

(g) Activities that damage the drainage benches on the tailings pile drainage system.

(h) Alteration of site access controls, such as gates or fencing.

4.04. Non-Interference with Remedial Systems. In addition to the non-interference covenant dated July 2, 1993, recorded in Fresno County records as document

number 93100411, agreed to and placed on land pursuant to the Consent Decree under Case number F-92-5374 in the United States District Court for the Eastern District of California, the Covenantor agrees that:

(a) The Owner and Occupant shall refrain from, and shall not permit, any activity that would interfere with the operation of the Remedial Systems or other site-wide response activities at the Property without prior written approval from the CERCLA Lead Agency.

(b) All uses and development of the Property shall preserve the integrity of the Remedial Systems.

(c) Owner shall provide a copy of this Covenant to all easement holders for all or any portion of the Property.

4.05. Access for Department. The Department shall have reasonable right of entry and access to the Property for inspection, monitoring, and other activities for the Remedial Systems on the Property consistent with the purposes of this Covenant as deemed necessary by the Department in order to protect the public health or safety, or the environment subject to the requirement that all such persons with access to the Property shall comply with all safety rules and requirements in place for Owner's or Occupant's own personnel, and that such persons provide their own personal protective equipment as required by those safety rules. Nothing in this instrument shall limit or otherwise effect the Department's right of entry and access, or authority to take response actions, under CERCLA; the 40 Code of Federal Regulations Part 300; Chapter 6.8, Division 20 of the California Health and Safety Code; California Civil Code, or other applicable State Law.

4.06 Access for Implementing Operation and Maintenance and Five Year Reviews. The entity, person or persons responsible for implementing the operation and maintenance and Five Year Review activities related to the Remedial Systems shall have reasonable right of entry and access to the Property for the purpose of

implementing these activities. Such right of entry and access shall continue until such time as the CERCLA Lead Agency determines that no further operation and maintenance or Five Year Review activities are required.

4.07. Access for U.S. EPA. Nothing in this instrument shall limit or otherwise affect U.S. EPA's right of entry and access, or U.S. EPA's authority to take response actions, under CERCLA; the National Contingency Plan, 40 Code of Federal Regulations Part 300; or federal law.

4.08. Inspection and Reporting Requirements. The Owner shall conduct an annual inspection and submit an Annual Inspection Report to the Department for its approval by January 15th of each year. The annual report shall describe how all requirements outlined in this Covenant have been met. The annual report, filed under penalty of perjury, shall certify that the Property is being used in a manner consistent with this Covenant. The annual report must include the dates, times, and names of those who conducted and reviewed the annual inspection report. It also shall describe how the observations were performed that were the basis for the statements and conclusions in the annual report (e.g., drive by, fly over, walk in, etc.) If violations are noted, the annual report must detail the steps taken to return to compliance. If the Owner identifies any violations of this Covenant during the annual inspections or at any other time, the Owner must, within ten (10) days of identifying the violation: determine the identity of the party in violation; send a letter advising the party of the violation of the Covenant; and demand that the violation cease immediately. Additionally, copies of any correspondence related to the enforcement of this Covenant shall be sent to the Department and U.S. EPA within ten (10) days of its original transmission.

ARTICLE V
ENFORCEMENT

5.01. Enforcement. Failure of the Covenantor, Owner or Occupant to comply with any of the Restrictions shall be grounds for the Department to require modification or removal of any Improvements constructed or placed upon any portion of the Property in violation of this Covenant. Violation of this Covenant, including but not limited to, failure to submit, or the submission of any false statement, record or report to the Department shall be grounds for the Department to pursue administrative, civil or criminal actions.

5.02 Enforcement Rights of U.S. EPA as a Third Party Beneficiary. U.S. EPA, as a third party beneficiary, has the right to enforce the Environmental Restrictions contained herein.

ARTICLE VI
VARIANCE, TERMINATION, AND TERM

6.01. Variance. Owner, or any other aggrieved person, may apply to the Department for a written variance from the provisions of this Covenant. Such application shall be made in accordance with Health and Safety Code section 25233 and a copy of the application shall be submitted to U.S. EPA simultaneously with the application submitted to the Department. No variance may be granted under this paragraph without prior notice to and an opportunity to comment by U.S. EPA.

6.02 Termination. Owner, or any other aggrieved person, may apply to the Department for a termination or modification of one or more terms of this Covenant as they apply to all or any portion of the Property. Such application shall be made in accordance with Health and Safety Code section 25234 and a copy of the application shall be submitted to U.S. EPA simultaneously with the application submitted to the Department. No termination may be granted under this paragraph without prior notice to and opportunity to comment by U.S. EPA.

6.03 Term. Unless ended in accordance with paragraph 6.02, by law, or by the Department in the exercise of its discretion, after providing notice to and an opportunity to comment by U.S. EPA, this Covenant shall continue in effect in perpetuity.

ARTICLE VII
MISCELLANEOUS

7.01. No Dedication or Taking Intended. Nothing set forth in this Covenant shall be construed to be a gift or dedication, or offer of a gift or dedication, of the Property, or any portion thereof to the general public or anyone else for any purpose whatsoever. Further, nothing in this Covenant shall be construed to effect a taking under State or federal law.

7.02. Recordation. The Covenantor shall record this Covenant, with all referenced Exhibits, in the County of Fresno within ten (10) days of the Covenantor's receipt of a fully executed original.

7.03. Notices. Whenever any person gives or serves any Notice ("Notice" as used herein includes any demand or other communication with respect to this Covenant), each such Notice shall be in writing and shall be deemed effective: (1) when delivered, if personally delivered to the person being served or to an officer of a corporate party being served, or (2) three (3) business days after deposit in the mail, if mailed by United States mail, postage paid, certified, return receipt requested:

To Owner: Pine Canyon Land Company
Attn: Mr. Mark D Ude
AVP Property & Facilities Management
2500 Lou Menk Drive
Fort Worth, Texas 76131-0101

also to:

BNSF Railway Company
Attn: Mr. David Clark
Director Environmental Remediation
920 SE Quincy
Topeka, Kansas 96612

To Department: Richard Hume, P.E., Chief
National Priorities List Unit
Brownfields and Environmental Restoration Program
California Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento CA 95826-3200

To U.S. EPA: U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901
Attn: JM Coalinga Mill Area OU Project Manager

Any party may change its address or the individual to whose attention a Notice is to be sent by giving written Notice in compliance with this paragraph.

7.04. Partial Invalidity. If this Covenant or any of its terms are determined by a court of competent jurisdiction to be invalid for any reason, the surviving portions of this Covenant, or the application of it to any person or circumstance, shall remain in full force and effect as if such portion found invalid had not been included herein.

7.05. Statutory and Regulatory References. All statutory and regulatory references include successor provisions.

7.06. Incorporation of Attachments. All attachments and exhibits to this Covenant are incorporated herein by reference.

7.07. California Law. This Covenant shall be governed, performed and interpreted under the laws of the State of California.

7.08. No Delegation. Nothing set forth in this Covenant shall be construed to be a delegation of any authorities of the Department under any statute or regulation.

IN WITNESS WHEREOF, the Parties execute this Covenant.

Pine Canyon Land Company:

By: _____ Date: 9/16/2011

Mark D. Ude
Assistant Vice President – Property and Facilities Management
Pine Canyon Land Company

Department of Toxic Substances Control

By: _____ Date: 9/20/2011

Richard Hume, P.E., Chief
National Priorities List Unit
Department of Toxic Substances Control

ACKNOWLEDGMENT

State of Texas

County of Tarrant

On September 16, 2011 before me,

TAMMY K. HERNDON, Notary, State of TX
(insert name and title of the officer)

personally appeared

Mark D. Vde, Assistant Vice President,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Tammy K. Herndon **(Seal)**

NOTARY PUBLIC STATE OF TEXAS
TAMMY K. HERNDON
Notary Public
STATE OF TEXAS
My Comm. Exp. 10/25/2011

ACKNOWLEDGMENT

State of California

County of Sacramento)

On 20 Sept 2011 before me,

Umesh Hasji, Notary Public
(insert name and title of the officer)

personally appeared

Richard B Hume,
who proved to me on the basis of satisfactory evidence to be the person(~~s~~) whose name(~~s~~) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she~~/~~they~~ executed the same in his/~~her~~/~~their~~ authorized capacity(~~ies~~), and that by his/~~her~~/~~their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ **(Seal)**

UMESH HASJI
Commission # 1808571
Notary Public - California
Sacramento County
My Comm. Expires Aug 7, 2012

Exhibit A
Legal Property Description
Property Subject to Environmental Restriction

LEGAL DESCRIPTION

Real property in the unincorporated area of the County of Fresno, State of California, described as follows:

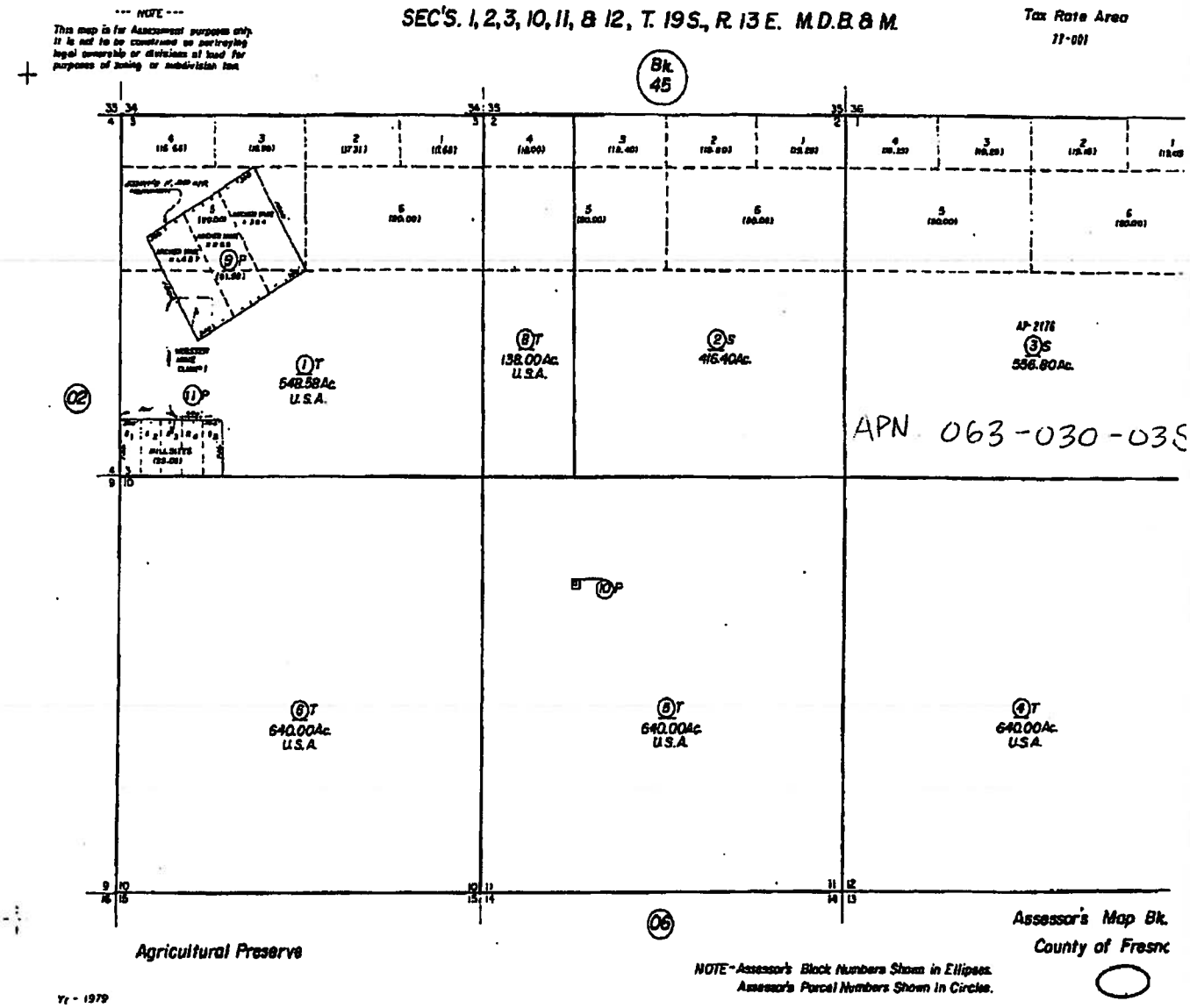
ALL OF FRACTIONAL SECTION 1, TOWNSHIP 19 SOUTH, RANGE 13 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE UNITED STATES GOVERNMENT TOWNSHIP PLAT APPROVED BY THE SURVEYOR GENERAL ON NOVEMBER 19, 1881;

EXCEPT THEREFROM THE TITLE AND EXCLUSIVE RIGHT TO ALL OF THE MINERALS AND MINERAL ORES.

APN: 063-030-03S

Exhibit B
Site Location Map
Property Subject to Environmental Restriction

(Page 16 from the March 22, 2006
Title Search Report prepared by First American Title)


--- NOTE ---
This map is for Assessment purposes only. It is not to be construed as portraying legal ownership or division of land for purposes of zoning or subdivision law.
SEC'S. 1, 2, 3, 10, 11, & 12, T. 19 S., R. 13 E. M.D.B. & M.
Tax Rate Area
77-001
Bk. 45
1 T 548.58 Ac. U.S.A.
8 T 138.00 Ac. U.S.A.
2 S 416.40 Ac.
AP-2176
3 S 556.80 Ac.
APN 063-030-035
6 T 640.00 Ac. U.S.A.
5 T 640.00 Ac. U.S.A.
4 T 640.00 Ac. U.S.A.
02
06
Agricultural Preserve
Assessor's Map Bk.
County of Fresno
NOTE - Assessor's Block Numbers Shown in Ellipses.
Assessor's Parcel Numbers Shown in Circles.
Yr - 1979

Appendix B3
City OU Institutional Controls

Appendix B3 summarizes the results of an assessment of the status of institutional controls (ICs) at the City of Coalinga Operable Unit 2 (City OU) of the Atlas Asbestos Mine Superfund Site and Coalinga Asbestos Mine Superfund Site. ICs are non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a response action.

A Record of Decision (ROD) for the City OU was signed on July 19, 1989 (EPA, 1989). One component of the remedy selected in the ROD included placement of a deed restriction at the location of the Waste Management Unit (WMU). The purpose of the deed restriction is to prevent disturbance of the cap at the WMU. Such disturbance would potentially release asbestos fibers and nickel contaminants from the site.

A deed restriction was recorded June 22, 1990, which was applicable to the WMU that was to be constructed as part of the remedy. On September 24, 1992, an amended deed restriction was recorded and provided a legal description of the area restricted under the June 22, 1990, deed restriction. The 1996 and 2001 Five-Year Review (FYR) reports found this deed restriction to be sufficient. However, the 2006 FYR made the recommendation to file a new land use covenant for the WMU. The report pointed out that the owner of the property unilaterally recorded the deed restriction, so there was no grantee designated with a legal interest in the property or power to enforce the provisions of the deed restriction and the deed restriction was not legally enforceable. The lack of an expressed property interest to a grantee also prevented the restriction from running with the land (did not legally bind future owners of the property to the restrictions). The deed restriction was not consistent with California's statutory and regulatory authority to impose land use restrictions to protect human health or safety or the environment as the result of the presence of hazardous materials on the land.

To correct these deficiencies, a new deed restriction was filed on the WMU (APNs: 083-020-58 and 083-020-59) with the Fresno County Recorder on September 24, 2010. An updated survey of the WMU was conducted in 2006 and used in the legal description of the property for the 2010 deed restriction. The property survey was included as an attachment in the 2006 FYR. The signatories to this deed restriction were the City of Coalinga, owner of the WMU pursuant to a "Stipulated Judgment Quieting Title, APN 900-700-12 (formerly APN 083-020-59SU)", issued by the United States District Court for the Eastern District of California on October 21, 2005 (Case: 1:05-CV-00210-OWW-SMS) and the California Department of Toxic Substances Control (DTSC), who is the agency responsible for oversight of the City of Coalinga OU. The United States Environmental Protection Agency (EPA) is listed as a third-party beneficiary of this agreement. This deed restriction is still in effect and is included as Attachment 1 of this appendix.

The 2010 deed restriction is consistent with Title 22 of the California Code of Regulations, Section 67391.1, runs with the land, and corrected all other insufficiencies pointed out in the last

FYR report. There are no deficiencies or recommendations to be made with respect to ICs at the City OU.

Appendix B3, Attachment 1
City OU Institutional Controls Deed Restriction

14

RECORDING REQUESTED BY:

The Redevelopment Agency of the
City of Coalinga
155 West Durian Avenue
Coalinga, California 93210
Attention: William Skinner
City Manager

WHEN RECORDED, MAIL TO:
ADDRESS ABOVE, and also to:

State of California
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, California 95826
Attn: Richard Hume, P.E.
National Priority List Unit
Brownfields and Environmental
Restoration Program

FRESNO County Recorder
Robert C. Werner
DOC- 2010-0126541
Friday, SEP 24, 2010 10:22:07
Ttl Pd $0.00 Nbr-0003295532
DJG/R6/1-16

SPACE ABOVE THIS LINE RESERVED FOR RECORDER'S USE

COVENANT TO RESTRICT USE OF PROPERTY

ENVIRONMENTAL RESTRICTION

(Re: Fresno County Assessor Parcel Numbers 083-020-58 and 083-020-59)
DTSC Site Code 100289

This Covenant and Agreement ("Covenant") is made by and between The Redevelopment Agency of the City of Coalinga (the "Covenantor"), the current owner of property situated in Coalinga, County of Fresno, State of California, described in Exhibit "A", attached hereto and incorporated herein by this reference (the "Property"), and the Department of Toxic Substances Control (the "Department"). Pursuant to Civil Code section 1471, the Department has determined that this Covenant is reasonably necessary to protect present or future human health, safety or the environment as a result of the presence on the land of hazardous materials as defined in Health and Safety Code section 25260. The Covenantor and Department, collectively referred to as the "Parties", hereby agree, pursuant to Civil Code section 1471 and Health and Safety Code section 25355.5, that the use of the Property be restricted as set forth in this Covenant. The Parties further agree that the Covenant shall conform to the requirements of California Code of Regulations, title 22, section 67391.1. The provisions of this Covenant shall be for the benefit of, and shall be enforceable by, the United States Environmental Protection Agency (the "U.S. EPA") as a third party beneficiary

pursuant to general contract law, including, but not limited to, Civil Code Section 1559. Resolution RA-271, authorizing the Redevelopment Agency of the City of Coalinga to enter into this Covenant, is attached as Exhibit C.

ARTICLE I
STATEMENT OF FACTS

1.01. The Property. The Property, totaling approximately 2.083 acres is more particularly described in Exhibit "A" (Legal Description), and illustrated in Exhibit "B" (Map), attached hereto and incorporated herein by this reference. The Property is located between 4th Street and the intersection of Lucille Avenue and Highway 198, County of Fresno, State of California. The entirety of the Property comprises the Waste Management Unit (WMU), an engineered landfill unit constructed on the property. This WMU was built to contain the hazardous substances contamination from uncontrolled hot spots of asbestos and nickel contamination over a 107 acre in the City of Coalinga, California. That contamination was collected and then consolidated and capped in this WMU.

1.02. Hazardous Substances. Hazardous substances, as defined in section 25316, Chapter 6.8, Division 20 of the California Health and Safety Code, Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. section 9601(14); and 40 Code of Federal Regulations parts 261.3 and 302.4, remain on portions of the Property. These substances are also hazardous materials as defined in Health and Safety Code section 25260 (d). These contaminants include asbestos ore waste and nickel-containing mining waste consolidated and contained in the WMU.

1.03. Remediation of the Property. The Property has been remediated pursuant to a Record of Decision ("ROD") issued by the U.S. EPA, dated July 19, 1989. The ROD is on file and available for review at the Coalinga District Library at 305 North 4th Street, City of Coalinga, the U.S. EPA Superfund Records Center at 75 Hawthorne Street, City of San Francisco, and the Department web site address at www.dtsc.ca.gov. Contaminated soil was excavated and disposed on-site under an installed engineered WMU. The ROD requires a deed restriction on the Property to prevent the disturbance of the cap and possible release of asbestos fibers or nickel contaminants, and this restriction is being imposed on the Property where the WMU and soil cover and fencing are located.

1.04. Land Use Covenant. The Property has been subject to recorded documents. On June 21, 1990 in the United States District Court for the Eastern District of California, a Consent Decree, Case number CIV S89-1081 EJG/JFM was recorded as Document No. 90072305. On June 22, 1990, a Deed Restriction was recorded at Fresno County as Document No. 90072506 of Official Records. On July 27, 1990, an amended Consent Decree was recorded in the United States District Court for the Eastern District of California's Document No. 90087770 of Official Records. On September 14, 1992, an amended Deed Restriction was recorded at Fresno County as Document No. 92146026

of Official Records. On January 17, 2008, the Covenantor acquired assessor's parcel number (APN) 083-020-59 that contains the Property pursuant to a Grant Deed that was recorded at Fresno County as Document No. 2008-0006487. A land use covenant is necessary to preclude potential residential user's exposure to hazardous substances which remain at the Property, and to preclude disruption of the response actions. U. S. EPA, with the concurrence of the Department, has concluded that the Property, remedied to the goals presented in the ROD, and subject to the restrictions of this Covenant, and when used in compliance with such restrictions, does not present an unacceptable threat to human safety or the environment.

ARTICLE II
DEFINITIONS

2.01. Department. "Department" means the California Department of Toxic Substances Control and includes its successor agencies, if any.

2.02. U.S. EPA. "U.S. EPA" means the United States Environmental Protection Agency and includes its successor agencies, if any.

2.03. Owner. "Owner" means the Covenantor, its successors in interest, and their successors in interest, including heirs and assigns, which at any time hold title or an ownership interest to all or any portion of the Property.

2.04. Occupant. "Occupant" means Owner and any person or entity entitled by ownership, leasehold, or other legal relationship to the right to occupy any portion of the Property.

2.05. CERCLA Lead Agency. "CERCLA Lead Agency" means the governmental entity having the designated lead responsibility to implement response action under the National Contingency Plan ("NCP"), 40 C.F.R. Part 300. U.S. EPA or a state agency acting pursuant to a contract or cooperative agreement executed under CERCLA section 104(d)(1), 42 U.S.C. 9604(d)(1), or designated pursuant to a CERCLA Memorandum of Agreement entered into under subpart F of the NCP (40 C.F.R. 300.505) may be designated CERCLA Lead Agency. Because this site has already been delisted from the NPL, and the Department has agreed to perform oversight of the operations and maintenance activities for this operable unit, the Department shall be the "CERCLA Lead Agency" unless the site is re-listed. However, at any time, the Department and U.S. EPA may mutually agree in writing that either the Department or U.S. EPA may be selected as "CERCLA Lead Agency" for purposes of this Covenant.

2.06. Environmental Restrictions. "Environmental Restrictions" means all protective provisions, covenants, restrictions, prohibitions, and terms and conditions as set forth in any section of this Covenant.

2.07. Improvements. "Improvements" include, but are not limited to: buildings, structures, roads, driveways, improved parking areas, wells, pipelines, or other utilities.

2.08. Lease. "Lease" means lease, rental agreement, or any other document that creates a right to use or occupy any portion of the Property.

2.09. Remedial Systems. "Remedial Systems" shall mean the remedial equipment and systems located on the Property, including equipment and systems installed as part of the construction and operation of the WMU and any devices that may be installed in the future. The WMU as currently constructed includes a fenced in engineered landfill unit. The landfill unit itself is approximately 20 feet deep and was engineered with an impermeable cap. Over the cap is approximately three feet of clean fill, and this is landscaped with natural vegetation to prevent erosion and deterioration of the engineered cap. The top surface area of the raised landscaped area measures approximately 220 by 270 feet. Each of these items are components of the remedial system that sits within another component of the remedial system, the fence that protects the entire area (approximately 300 feet on each side, see Exhibits A & B for details).

ARTICLE III
GENERAL PROVISIONS

3.01. Restrictions to Run with the Land. This Covenant sets forth Environmental Restrictions, that apply to and encumber the Property and every portion thereof no matter how it is improved, held, used, occupied, leased, sold, hypothecated, encumbered, and/or conveyed. This Covenant: (a) Runs with the land pursuant to Health and Safety Code section 25355.5(a) and Civil Code section 1471; (b) Inures to the benefit of and passes with each and every portion of the Property; (c) Is for the benefit of, and is enforceable by the Department: and, (d) Is imposed upon the entire Property unless expressly stated as applicable only to a specific portion thereof.

3.02. Binding upon Owners/Occupants. Pursuant to the Health and Safety Code, this Covenant binds all Owners and Occupants of the Property. Pursuant to Civil Code section 1471, all successive owners of the Property are expressly bound hereby for the benefit of the Department.

3.03. Written Notice of the Presence of Hazardous Substances. Prior to the sale, lease, assignment, or other transfer of the Property, or any portion thereof, the Owner, lessor, or sublessor shall give the buyer, lessee, or sublessee written notice of the existence of this Covenant and its Environmental Restrictions.

3.04. Incorporation into Deeds and Leases. The Covenant and its Environmental Restrictions shall be incorporated by reference in each and every deed and lease for any portion of the Property.

3.05. Conveyance of Property. The Owner shall provide notice to the Department not later than thirty (30) days after any conveyance of any ownership interest in the Property (excluding mortgages, liens, and other non-possessory encumbrances). The written notice shall include the name and mailing address of the new owner of the

Property and shall reference DTSC site code 100289. The notice shall also include the APN listed in Section 1.01. If the new owner's property has been assigned a different APN, each such APN that covers the Property must be provided. The Department shall not, by reason of this Covenant, have authority to approve, disapprove, or otherwise affect proposed conveyance, except as otherwise provided by law or by administrative order.

3.06. Costs of Administering the Covenant to be paid by Owner. The Department has already incurred and will in the future incur costs associated with the administration of this Covenant. Therefore, the Covenantor hereby covenants for Covenantor and for all subsequent Owners that, pursuant to California Code of Regulations, title 22 section 67391.1(h), the Owner will pay the Department's cost in administering the Covenant.

ARTICLE IV
RESTRICTIONS

4.01. Prohibited Uses. The Property shall not be used for any of the following purposes:

(a) A residence, including any mobile home or factory built housing, constructed or installed for use as residential human habitation.
(b) A hospital for humans.
(c) A public or private school for persons under 21 years of age.
(d) A day care center for children.

4.02. Soil Management. Any contaminated soils brought to the surface by grading, excavation, trenching or backfilling shall be managed in accordance with all applicable provisions of state and federal law and will not be removed from the Property without a Soil Management Plan approved by the CERCLA Lead Agency, such approval not to be unreasonably withheld.

4.03. Prohibited Activities. The following activities are specifically prohibited without prior written approval from the CERCLA Lead Agency:

(a) Drilling for drinking water, oil, or gas.
(b) Extraction of groundwater for purposes or uses other than site remediation.
(c) Alteration of existing drainage patterns as anticipated or constructed as part of the Remedial System.
(d) Creation of significant topographic low areas where water may pond, including accessory structures, swimming pools and spas.

4.04. Non-Interference with Remedial Systems. In addition to the non-interference covenant dated June 22, 1990, recorded in Fresno County records as document number 90072506, amended on September 24, 1992 as document number 92146026, agreed to and placed on land pursuant to the Consent Decree under Case number CIV

S89-1081 EJG/JFM in the United States District Court for the Eastern District of California, the Covenantor agrees:

(a) The Owner and Occupant shall refrain from, and shall not permit, any activity that would interfere with the operation of the Remedial Systems or other Site-wide response activities at the Property without prior written approval from the CERCLA Lead Agency, such approval not to be unreasonably withheld.
(b) All uses and development of the Property shall preserve the integrity of the Remedial Systems or other Site-wide response activities.
(c) Owner shall provide a copy of this Covenant to all easement holders for all or any portion of the Site.

4.05. Access for Department and the U.S. EPA. The Department shall have reasonable right of entry and access to the Property for inspection, monitoring, and other activities for the Remedial Systems on the Property consistent with the purposes of this Covenant as deemed necessary by the Department in order to protect the public health or safety, or the environment subject to the requirement that all such persons with access to the Property shall comply with all safety rules and requirements in place for Owner's or Occupant's own personnel, and that such persons provide their own personal protective equipment as required by those safety rules. Nothing in this instrument shall limit or otherwise affect U.S. EPA's right of entry and access, or U.S. EPA's authority to take response actions, under CERCLA; the National Contingency Plan ("NCP"), 40 Code of Federal Regulations Part 300; or federal law. Nothing in this instrument shall limit or otherwise effect the Department's right of entry and access, or authority to take response actions, under CERCLA; the NCP, 40 Code of Federal Regulations Part 300; Chapter 6.8, Division 20 of the California Health and Safety Code; California Civil Code; or other applicable State Law.

4.06. Access for Implementing Operation and Maintenance. The entity, person or persons responsible for implementing the operation and maintenance activities related to the Remedial Systems shall have reasonable right of entry and access to the Property for the purpose of implementing these operation and maintenance activities. Such right of entry and access shall continue until such time as the CERCLA Lead Agency determines that such activities are no longer required.

4.07. Inspection and Reporting Requirements. The Owner shall conduct an annual inspection and submit an Annual Inspection Report to the Department for its approval by January 15th of each year. The annual report shall describe how all requirements outlined in this Covenant have been met. The annual report, filed under penalty of perjury, shall certify that the Property is being used in a manner consistent with this Covenant. The annual report must include the dates, times, and names of those who conducted and reviewed the annual inspection report. It also shall describe how the observations were performed that were the basis for the statements and conclusions in the annual report (e.g. drive by, fly over, walk in, etc.) If violations are noted, the annual report must detail the steps taken to return to compliance. If the Owner identifies any

violations of this Covenant during the annual inspections or at any other time, the Owner must, within ten (10) days of identifying the violation: determine the identity of the party in violation; send a letter advising the party of the violation of the Covenant; and demand that the violation cease immediately. Additionally, copies of any correspondence related to the enforcement of this Covenant shall be sent to the Department and U.S. EPA within ten (10) days of its original transmission.

ARTICLE V
ENFORCEMENT

5.01. Enforcement. Failure of the Covenantor, Owner or Occupant to comply with any of the Restrictions shall be grounds for the Department to require modification or removal of any Improvements constructed or placed upon any portion of the Property in violation of this Covenant. Violation of this Covenant, including but not limited to, failure to submit, or the submission of any false statement, record or report to the Department shall be grounds for the Department to pursue administrative, civil or criminal actions.
5.02 Enforcement Rights of U.S. EPA as a Third Party Beneficiary. U.S. EPA, as a third party beneficiary, has the right to enforce the Environmental Restrictions contained herein.

ARTICLE VI
VARIANCE, TERMINATION, AND TERM

6.01. Variance. Owner, or any other aggrieved person, may apply to the Department for a written variance from the provisions of this Covenant. Such application shall be made in accordance with Health and Safety Code section 25233 and a copy of the application shall be submitted to U.S. EPA simultaneously with the application submitted to the Department. No variance may be granted under this paragraph without prior notice to and an opportunity to comment by U.S. EPA.

6.02. Termination. Owner, or any other aggrieved person, may apply to the Department for a termination or modification of one or more terms of this Covenant as they apply to all or any portion of the Property. Such application shall be made in accordance with Health and Safety Code section 25234 and a copy of the application shall be submitted to U.S. EPA simultaneously with the application submitted to the Department. No termination may be granted under this paragraph without prior notice to and opportunity to comment by U.S. EPA.

6.03. Term. Unless ended in accordance with paragraph 6.02, by law, or by the Department in the exercise of its discretion, after providing notice to and an opportunity to comment by U.S. EPA, this Covenant shall continue in effect in perpetuity.

ARTICLE VII
MISCELLANEOUS

7.01. No Dedication or Taking Intended. Nothing set forth in this Covenant shall be construed to be a gift or dedication, or offer of a gift or dedication, of the Property, or

any portion thereof to the general public or anyone else for any purpose whatsoever. Further, nothing in this Covenant shall be construed to effect a taking under state or federal law.

7.02. Recordation. The Covenantor shall record this Covenant, with all referenced Exhibits, in the County of Fresno within ten (10) days of receipt of a fully executed original.

7.03. Notices. Whenever any person gives or serves any Notice ("Notice" as used herein includes any demand or other communication with respect to this Covenant), each such Notice shall be in writing and shall be deemed effective: (1) when delivered, if personally delivered to the person being served or to an officer of a corporate party being served, or (2) three (3) business days after deposit in the mail, if mailed by United States mail, postage paid, certified, return receipt requested:

To Owner:

The Redevelopment Agency of the City of Coalinga
c/o Craig M. Mortensen
Attorney At Law
Bacigalupi, Neufeld & Rowley
1111 E. Herndon Avenue, Suite 219
Fresno, California 93720

and also to

The City of Coalinga
155 West Durian Avenue
Coalinga, California 93210
Attention: Coalinga City Manager

To Department:

Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, California 95826-3200
Richard Hume, P.E.
Supervising Hazardous Substances Engineer I
National Priority List Unit
Brownfields and Environmental Restoration Program

To U.S. EPA:

U.S. EPA, Region 9
75 Hawthorne Street
San Francisco, California 94105-3901
Attn: City of Coalinga Asbestos Project Manager

Any party may change its address or the individual to whose attention a Notice is to be sent by giving written Notice in compliance with this paragraph.

7.04. Partial Invalidity. If this Covenant or any of its terms are determined by a court of competent jurisdiction to be invalid for any reason, the surviving portions of this Covenant, or the application of it to any person or circumstance, shall remain in full force and effect as if such portion found invalid had not been included herein.

7.05. Statutory and Regulatory References. All statutory and regulatory references include successor provisions.

7.06. Incorporation of Attachments. All attachments and exhibits to this Covenant are incorporated herein by reference.

7.07. California Law. This Covenant shall be governed, performed and interpreted under the laws of the State of California.
7.08 No Delegation. Nothing set forth in this Covenant shall be construed to be a delegation of any authorities of the Department under any statute or regulation.

IN WITNESS WHEREOF, the Parties execute this Covenant.

The Redevelopment Agency of the City of Coalinga

By:_____ Date: 7-19-10
William Skinner
City Manager
City of Coalinga

Department of Toxic Substances Control

By:_____ Date: 7/27/2010
Richard Hume, P.E.
Supervising Hazardous Substance Engineer I
National Priority List Unit
Brownfields and Environmental Restoration Program
Department of Toxic Substances Control

ACKNOWLEDGMENT

State of California

County of FRESNO)

On July 19, 2010 before me,

Krystal M. Chojnacki, Notary Public
(insert name and title of the officer)
personally appeared

William Skinner,
who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity~~(ies)~~, and that by his/~~her/their~~ signature~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (Seal)

KRYSTAL M. CHOJNACKI
Commission # 1786443
Notary Public - California
Fresno County
My Comm. Expires Dec 16, 2011

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NOTARY SEAL CLARIFICATION

I certify under penalty of perjury that the "Notary Seal" on the document to which this statement is attached reads as follows:

Name of Notary: Krystal M. Chojnacki

Commission Number: 1785443

Date commission expires: December 16, 2011

State and County of Commission: Fresno, California

Date: July 19, 2010

Signature (Firm name, if any)

Govt. Code, Sec. 27361.7

ACKNOWLEDGMENT

State of California

County of Sacramento)

On July 27, 2010 before me,

Florence L. Howard, Notary

(insert name and title of the officer)

personally appeared

Richard Hume,

who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity~~(ies)~~, and that by his/~~her/their~~ signature~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

FLORENCE L. HOWARD
COMM. #1769942
NOTARY PUBLIC - CALIFORNIA
SACRAMENTO COUNTY
COMM. EXPIRES SEPT. 23, 2011

Signature Florence L. Howard **(Seal)**

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EXHIBIT A
Coalinga City Operable Unit
Legal Description

That certain parcel of land situated in the South Half of Section 5, Township 21 South, Range 15 East, Mount Diablo Base and Meridian, in the City of Coalinga, County of Fresno, State of California, the North line of said South Half of Section 5 being the Basis of Bearings for this description and taken as North 89 42' 30" East per Book 27 of Record of Surveys at Page 55, Fresno County Records, being more particularly described as follows:

Commencing at the most easterly corner of Parcel 2 as shown on Parcel Map No. 006, recorded in Book 29 of Parcel Maps at Pages 19 and 20, Fresno County of Records; said corner being on the westerly right-of-way line of the 200 foot wide railroad strip of Southern Pacific Transportation Company as abandoned on November 6, 1986, by Public Law 99-614; said corner also being South 72 41' 08" East a distance of 2807.00 feet from the West Quarter Corner of said Section 5; thence North 37 38' 42" East along the said westerly right-of-way line a distance of 122.95 feet to the TRUE POINT OF BEGINNING; thence the following courses;

1) thence North 54 20'52" West leaving said westerly right-of-way line a distance of 276.25 feet;
2) thence North 37 06'18" East a distance of 327.26 feet;
3) thence South 51 38'34" East a distance of 25.72 feet;
4) thence South 37 37'15" West a distance of 22.83 feet;
5) thence South 51 40'43" East a distance of 253.46 feet to said westerly right-of-way line of Southern Pacific Transportation Company,
6) thence South 51 40'43" East leaving said westerly right-of-way a distance of 27.15 feet;
7) thence South 38 15'28" West a distance of 290.36 feet;
8) thence North 54 20'52" West a distance of 24.06 feet to the said westerly right-of-way line of Southern Pacific Transportation Company and TRUE POINT OF BEGINNING.

Said parcel contains 2.083 acres, more or less.

End Description.

Exhibit 'B'

In the City of Coalinga, County of Fresno, State of California.
February 2006

Tri City Engineering
Engineers Surveyors
1630 W. Jennifer Ave. #101
Fresno, CA 93722-4115
PH: 559-447-9075
FAX: 559-447-9074
www.TriCityEngineering.com
102 E. Elm Ave., #102
Coalinga, CA 93210
PH: 559-935-6051
FAX: 559-935-6051

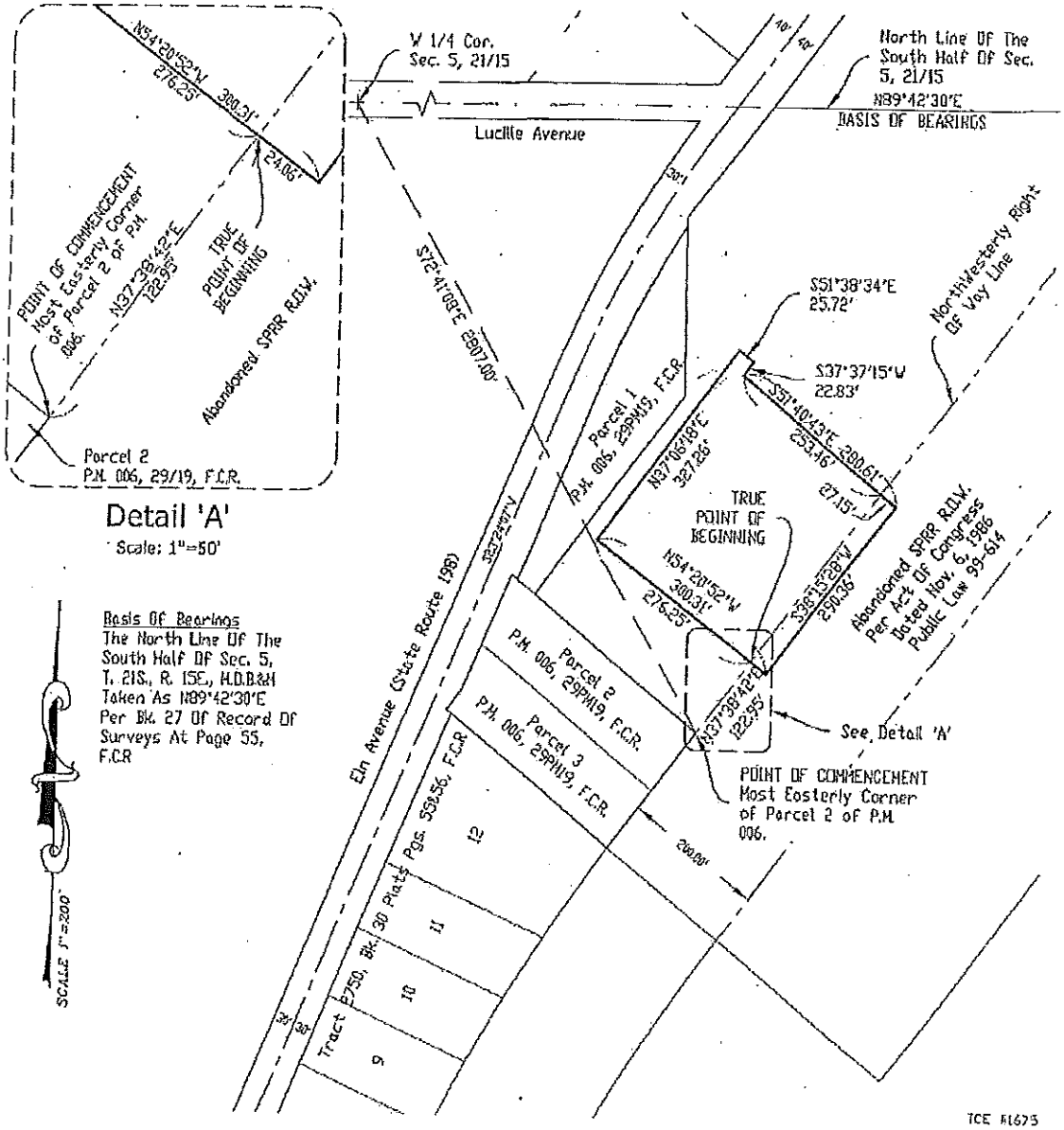

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EXHIBIT C

15

RESOLUTION NUMBER RA-271

RESOLUTION AUTHORIZING THE REDEVELOPMENT AGENCY OF THE CITY OF COALINGA TO COVENANT AND CONTRACT WITH THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL (DTSC) AND THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (U.S. EPA), AUTHORIZE THE EXECUTIVE DIRECTOR TO ENTER INTO AND EXECUTE ALL ASSOCIATED ENVIRONMENTAL RESTRICTIONS/COVENANTS AND CONTRACTS, AND ASSIGN RESPONSIBILITY FOR DTSC OVERSIGHT COSTS FOR THE COVENANT/RESTRICTIONS IN PERPETUITY UNTIL TERMINATION OF SUCH COVENAT.

WHEREAS, the Redevelopment Agency of the City of Coalinga determines and declares that it may enter into agreements with State and Federal agencies for 2010 and subsequent years as necessary; and

WHEREAS, the Redevelopment Agency of the City of Coalinga may take any actions that the Redevelopment Agency of the City of Coalinga determines are necessary and that are consistent with state and federal laws to remedy or remove a release of hazardous substances on, under, or from a property located in a Redevelopment Project Area if certain conditions are met.

THEREFORE, BE IT RESOLVED BY the Redevelopment Agency of the City of Coalinga that the Executive Director is hereby authorized to enter into and execute ENVIRONMENTAL RESTRICTIONS/COVENANTS and contracts for the Redevelopment Agency of the City of Coalinga, with the California Department of Toxic Substances Control and the U.S. EPA, subject to all conditions.

BE IT FURTHER RESOLVED THAT the Redevelopment Agency of the City of Coalinga, as Owner and Covenantor, will be responsible for DTSC oversight costs for the Covenant/Restrictions in perpetuity unless DTSC authorizes the termination of such Covenant.

PASSED AND ADOPTED by the City Council of the City of Coalinga on the 15th day of July 2010, by the following vote:

AYES: Garcia, Bourdeau, Oxborrow, Ramsey, Lander
NOES: None
ABSENT: None
ABSTAIN: None

RON LANDER, MAYOR

I HEREBY CERTIFY that the foregoing is a true and correct copy of a Resolution introduced and passed at a noticed meeting of the Redevelopment Agency of the City of Coalinga held on July 15, 2010.

Cindy Johnson

CINDY JOHNSON, DEPUTY CITY CLERK

Appendix C: Site Inspection Checklist

Appendix C: Site Inspection Checklist

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1. Site Rosters
2. Atlas Mine Site Inspection Checklist
3. Atlas Mine Map
4. Johns-Mansville Site Inspection Checklist
5. Johns-Mansville map
6. Coalinga City OU Site Inspection Checklist
7. Coalinga City OU Map
8. Site Inspection Trip Report (with photos)

Site Inspection Rosters

Atlas Mine & CCMA - 24 May 2016

Kayla Patten	USACE Seattle District, Env. Engineer
Lynn Keller	EPA Region 9, Remedial Project Manager
Carolyn Yee	DTSC, Project Manager
Jim Rohrer	DTSC, Engineering Geologist
Greg Middleton	BLM, Project Manger/Geologist
Peter Graves	BLM, Env. Protection Specialist
Peter Phillips	Gilbane, Env. Senior Geologist
Jonathan Partsch	Gilbane, Project Geologist
Richie Hodges	Northrup Grumman Corp., Project Manager

City OU Landfill - 25 May 2016

Kayla Patten	USACE Seattle District, Env. Engineer
Lynn Keller	EPA Region 9, Remedial Project Manager
Carolyn Yee	DTSC, Project Manager
Jim Rohrer	DTSC, Engineering Geologist
Peter Phillips	Gilbane, Env. Senior Geologist
Tara Bosch	Antea Group, Project Professional

Johns-Manville Mine - 26 May 2016

Kayla Patten	USACE Seattle District, Env. Engineer
Lynn Keller	EPA Region 9, Remedial Project Manager
Carolyn Yee	DTSC, Project Manager
Jim Rohrer	DTSC, Engineering Geologist
Peter Phillips	Gilbane, Env. Senior Geologist
Mike Makerov	BNSF Railway Co., Manager Env. Remediation
Scott Davis	ARCADIS, Vice President
Maher Zein	ARCADIS, Sr. Env. Engineer

Five-Year Review Site Inspection Checklist

I. SITE INFORMATION	
Site name: Atlas Mine Area OU; Atlas Asbestos Mine Superfund Site	**Date of inspection:** 24 May 2016
Location: Coalinga, CA; Region IX	**EPA ID:** CAD 980496863
Agency, office, or company leading the five-year review: USEPA Region IX	**Weather/temperature** Rain/hail. Temp in 60s

Remedy Includes: (Check all that apply)

- ■ Landfill cover/containment
- ■ Access controls
- ■ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ■ Other: Mine waste containment, surface water runoff diversion, sediment trapping, road paving, revegetation (pilot project only), site building dismantling, O&M program implementation
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls

Attachments: ■ Inspection team roster attached ■ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** Richie Hodges (Name) Proj. Manager, Env. Remed. (Title) 5/24/2016 (Date)
   Interviewed ■ at site ☐ at office ☐ by phone Phone no. 310-332-5559
   Problems, suggestions; ☐ Report attached _____

2. **O&M staff** _____ (Name) _____ (Title) _____ (Date)
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Bureau of Land Management
Contact Greg Middleton | Project Manager | 5/24/2016 | 310-332-5559
Name | Title | Date | Phone no.
Problems; suggestions; ☐ Report attached No significant sedimentation is occurring in ponds, no need to remove. Landslide on road to Rover Pit is still sloughing material. Can't repair road until that is complete. Illegal access to site by off-road vehicles is still a problem; have contacted leaders in the community to help stop access.

Agency Dept. of Toxic Substances Control
Contact Carolyn Yee | Project Manager | 5/24/2016 | 916-255-3671
Name | Title | Date | Phone no.
Problems; suggestions; ☐ Report attached

Agency
Contact
Name | Title | Date | Phone no.
Problems; suggestions; ☐ Report attached

Agency
Contact
Name | Title | Date | Phone no.
Problems; suggestions; ☐ Report attached

4. **Other interviews** (optional) ☐ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

☐ O&M manual	☐ Readily available	☐ Up to date	■ N/A
☐ As-built drawings	☐ Readily available	☐ Up to date	■ N/A
☐ Maintenance logs	☐ Readily available	☐ Up to date	■ N/A

Remarks Site is very remote, no documents maintained on-site. Site logs are kept at the BLM decontamination facility in the CCMA and at the BLM Marina office.

2. **Site-Specific Health and Safety Plan** ■ Readily available ■ Up to date ☐ N/A
☐ Contingency plan/emergency response plan ☐ Readily available ☐ Up to date ■ N/A
Remarks HSP was provided at the site inspection.

3.	**O&M and OSHA Training Records** Remarks	■ Readily available	☐ Up to date	☐ N/A
4.	**Permits and Service Agreements**			
	☐ Air discharge permit	☐ Readily available	☐ Up to date	■ N/A
	☐ Effluent discharge	☐ Readily available	☐ Up to date	■ N/A
	☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	■ N/A
	☐ Other permits_____ Remarks	☐ Readily available	☐ Up to date	■ N/A
5.	**Gas Generation Records** Remarks	☐ Readily available	☐ Up to date	■ N/A
6.	**Settlement Monument Records** Remarks	☐ Readily available	☐ Up to date	■ N/A
7.	**Groundwater Monitoring Records** Remarks	☐ Readily available	☐ Up to date	■ N/A
8.	**Leachate Extraction Records** Remarks	☐ Readily available	☐ Up to date	■ N/A
9.	**Discharge Compliance Records**			
	☐ Air	☐ Readily available	☐ Up to date	■ N/A
	☐ Water (effluent) Remarks	☐ Readily available	☐ Up to date	■ N/A
10.	**Daily Access/Security Logs** Remarks Not reviewed at site inspection. Logs are kept at the BLM decontamination facility in the CCMA and at the BML Marina office.	☐ Readily available	☐ Up to date	☐ N/A

IV. O&M COSTS

1. **O&M Organization**

☐ State in-house ☐ Contractor for State
☒ PRP in-house Annually ☐ Contractor for PRP
☐ Federal Facility in-house ☐ Contractor for Federal Facility
☒ Other Bureau of Land Management (monthly)

2. **O&M Cost Records**

☐ Readily available ☐ Up to date ☐ Funding mechanism/agreement in place
Original O&M cost estimate_____ ☐ Breakdown attached

Total annual cost by year for review period if available

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

No unusual O&M costs during the last five years. Typical costs include regular fence repair.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☒ Gates secured ☐ N/A

Remarks Site is accessed through several locked gates. Fence was in good condition.

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A

Remarks BLM sign at entrance includes old contact information; needs updating. Smaller yellow warning signs in fencing are old and faded; need replacement. BLM/PRP should consider adding similar signs in Spanish.

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☒ No ☐ N/A
Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) Car and foot / Car and foot
Frequency Annually / Monthly
Responsible party/agency Northrup Grumman / BLM
Contact Richie Hodges, Nothrup Grumman (Name) | Env. Remediation Project Manager (Title) | (Date) | 310-332-5559 (Phone no.)

Reporting is up-to-date ☒ Yes ☐ No ☐ N/A
Reports are verified by the lead agency ☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☒ Yes ☐ No ☐ N/A
Violations have been reported ☐ Yes ☐ No ☒ N/A
Other problems or suggestions: ☐ Report attached

Monthly inspections by BLM are completed regularly. Annual inspections by Northrup were not conducted in recent years; per a memo from EPA, Northrup was granted an exemption for a few years while EPA further researched human exposure scenarios. The 2010 ESD explains that ICs have been implemented to the extent possible due to property ownership changes. This ESD acts as an IC until the status of the property changes.

2. **Adequacy** ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A

Remarks ICs have been implemented to the the extent possible.

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ☐ No vandalism evident

Remarks Tire tracks were observed, likely from motorcycles and off-road vehicles. Greg indicated many were historic tracks, however it is likely many have been made within the last five years. Greg has made contacts within the off-roading community to try to stop illegal access to the site.

2. **Land use changes on site** ☒ N/A

Remarks

3. **Land use changes off site** ☒ N/A

Remarks

VI. GENERAL SITE CONDITIONS

A. Roads ☒ Applicable ☐ N/A

1. **Roads damaged** ☐ Location shown on site map ☒ Roads adequate ☐ N/A

Remarks Roads are gravel and largely in good condition. Small rills were observed but not of concern. The road to the Rover Pit area is closed to vehicular traffic due to an active landslide creating a ~5ft drop in the road. Greg has indicated plans to repair the road once the landslide has finished sloughing material. It is recommended to move this road to a new access location to avoid the active landslide and return vehicle access sooner.

B. Other Site Conditions

Remarks

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☒ Settlement not evident
Areal extent_____ Depth_____
Remarks

2. **Cracks** ☐ Location shown on site map ☒ Cracking not evident
Lengths_____ Widths_____ Depths_____
Remarks

3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident
Areal extent_____ Depth_____
Remarks Onsite, small erosional features are evident, however these drain into the Ponds and do not lead offsite. On the site boundary, runoff diversion structures are adequately collecting runoff and conveying it downslope.

4. **Holes** ☐ Location shown on site map ☒ Holes not evident
Areal extent_____ Depth_____
Remarks

5. **Vegetative Cover** ☐ Grass ☐ Cover properly established
☐ No signs of stress ☒ Trees/Shrubs (indicate size and locations on a diagram)
Remarks Vegetation is patchy. Greg indicated that many volunteer plants have established in past years, however these are still very slow growing. Vegetation present appear healthy. Large areas where previous revegetation occurred still remain barren. It was also noted that large barren areas are natural in this environment.

6. **Alternative Cover (armored rock, concrete, etc.)** ☒ N/A
Remarks

7. **Bulges** ☐ Location shown on site map ☒ Bulges not evident
Areal extent_____ Height_____
Remarks

8. **Wet Areas/Water Damage** ☐ Wet areas/water damage not evident

☐ Wet areas ☐ Location shown on site map Areal extent A few square feet

☒ Ponding ☐ Location shown on site map Areal extent_____

☐ Seeps ☐ Location shown on site map Areal extent_____

☐ Soft subgrade ☐ Location shown on site map Areal extent_____

Remarks Ponding was evident at the head of channel B. Sediment has accumulated here, along with volunteer vegetation. Sediment should be removed if it begins to impede energy dissipation.

9. **Slope Instability** ☒ Slides ☒ Location shown on site map ☐ No evidence of slope instability

Areal extent_____

Remarks A large slide is evident on across the road to Channel A. If this slope cannot be stabilized, the road should be rerouted to avoid this area.

B. Benches ☒ N/A ☐ Applicable

(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay

Remarks

2. **Bench Breached** ☐ Location shown on site map ☐ N/A or okay

Remarks

3. **Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay

Remarks

C. Letdown Channels ☒ Applicable ☐ N/A

(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** ☐ Location shown on site map ☒ No evidence of settlement

Areal extent_____ Depth_____

Remarks

2. **Material Degradation** ☐ Location shown on site map ☒ No evidence of degradation

Material type_____ Areal extent_____

Remarks

3. **Erosion** ☒ Location shown on site map ☐ No evidence of erosion

Areal extent_____ Depth_____

Remarks Erosion along the off-property edges of the outlet of Channel A.

4. **Undercutting** ☐ Location shown on site map ☒ No evidence of undercutting
Areal extent_____ Depth_____
Remarks

5. **Obstructions** Type_____ ☒ No obstructions ☐ Location shown on site map
Areal extent_____ Size_____
Remarks

6. **Excessive Vegetative Growth** Type_____
☒ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks No vegetation growth.

D. Cover Penetrations ☐ Applicable ☒ N/A

1. **Gas Vents** ☐ N/A ☐ Active ☐ Passive ☐ Properly secured/locked ☐ Functioning
☐ Routinely sampled ☐ Good condition ☐ Evidence of leakage at penetration
Remarks

2. **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks

4. **Leachate Extraction Wells**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks

E. Gas Collection and Treatment ☐ Applicable ☒ N/A

1. **Gas Treatment Facilities**
☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
☐ Good condition ☐ Needs Maintenance
Remarks

2. **Gas Collection Wells, Manifolds and Piping**
☐ Good condition ☐ Needs Maintenance
Remarks

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
☐ Good condition ☐ Needs Maintenance ☐ N/A
Remarks

F. Cover Drainage Layer ☐ Applicable ☒ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☐ N/A
Remarks

2. **Outlet Rock Inspected** ☐ Functioning ☐ N/A
Remarks

G. Detention/Sedimentation Ponds ☒ Applicable ☐ N/A

1. Siltation ☐ N/A ☐ Siltation not evident
Areal extent_____ Depth< 1 inch_____
Remarks Sedimentation is very slow and is monitored via markings on a wooden pole within the pond. Greg indicated in the last 3 years he has seen <1 inch of deposition.

2. **Erosion** Areal extent_____ Depth_____ ☒ Erosion not evident
Remarks

3. **Outlet Works** ☒ Functioning ☐ N/A
Remarks Overflow/outlet structures were in good condition.

4. **Dam** ☒ Functioning ☐ N/A
Remarks Pond B is the only pond with regular standing water. It is thought that Pond B may have interaction with local groundwater, creating the standing water.

H. Retaining Walls ☐ Applicable ☒ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
Horizontal displacement_____ Vertical displacement_____
Rotational displacement_____
Remarks

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
Remarks

I. Perimeter Ditches/Off-Site Discharge ☒ Applicable ☐ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
Areal extent_____ Depth 1 inch
Remarks Sedimentation continues within Channel A on the rock mattress. Sediment has covered much of the rock mattress which may impede the mattress's ability to slow flow. Removal of sediment should be considered. Ponding and siltation were evident at the head of Channel B.

2. **Vegetative Growth** ☐ Location shown on site map ☒ N/A
☐ Vegetation does not impede flow
Areal extent A few square feet Type_____
Remarks Volunteer vegetation has taken root at the siltation area in Channel B. However, vegetation may assist in slowing flow so removal is not necessary.

3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident
Areal extent_____ Depth_____
Remarks

4. **Discharge Structure** ☐ Functioning ☐ N/A
Remarks

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
Areal extent_____ Depth_____
Remarks

2. **Performance Monitoring** Type of monitoring_____
☐ Performance not monitored ☐ Evidence of breaching
Frequency_____ Head differential_____
Remarks

IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
☐ Good condition ☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
Remarks

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition ☐ Needs Maintenance
Remarks

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☐ N/A

1. **Collection Structures, Pumps, and Electrical**
☐ Good condition ☐ Needs Maintenance
Remarks

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition ☐ Needs Maintenance
Remarks

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks

C. Treatment System ☐ Applicable ☐ N/A

1. **Treatment Train** (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers
☐ Filters_____
☐ Additive (*e.g.*, chelation agent, flocculent)_____
☐ Others_____
☐ Good condition ☐ Needs Maintenance
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually_____
☐ Quantity of surface water treated annually_____
Remarks

2. **Electrical Enclosures and Panels** (properly rated and functional)
☐N/A ☐ Good condition ☐ Needs Maintenance
Remarks

3. **Tanks, Vaults, Storage Vessels**
☐ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
Remarks

4. **Discharge Structure and Appurtenances**
☐ N/A ☐ Good condition ☐ Needs Maintenance
Remarks

5. **Treatment Building(s)**
☐ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
☐ Chemicals and equipment properly stored
Remarks

6. **Monitoring Wells** (pump and treatment remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks

D. Monitoring Data

1. Monitoring Data
☐ Is routinely submitted on time ☐ Is of acceptable quality

2. Monitoring data suggests:
☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The remedy at Atlas Mine OU was designed to prevent migration of asbestos-laden sediment from migrating off-site. The remedy appears to be functioning as intended. Siltation was evident within Channels A and B showing that sediment has been trapped. No sedimentation was evident at the outlet areas.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

The monthly BLM inspections are adequate to maintain fencing, observe signs of illegal site access, and to monitor siltation within the ponds and channels. The signage should be replaced to include current BLM contact information.

C. Early Indicators of Potential Remedy Problems

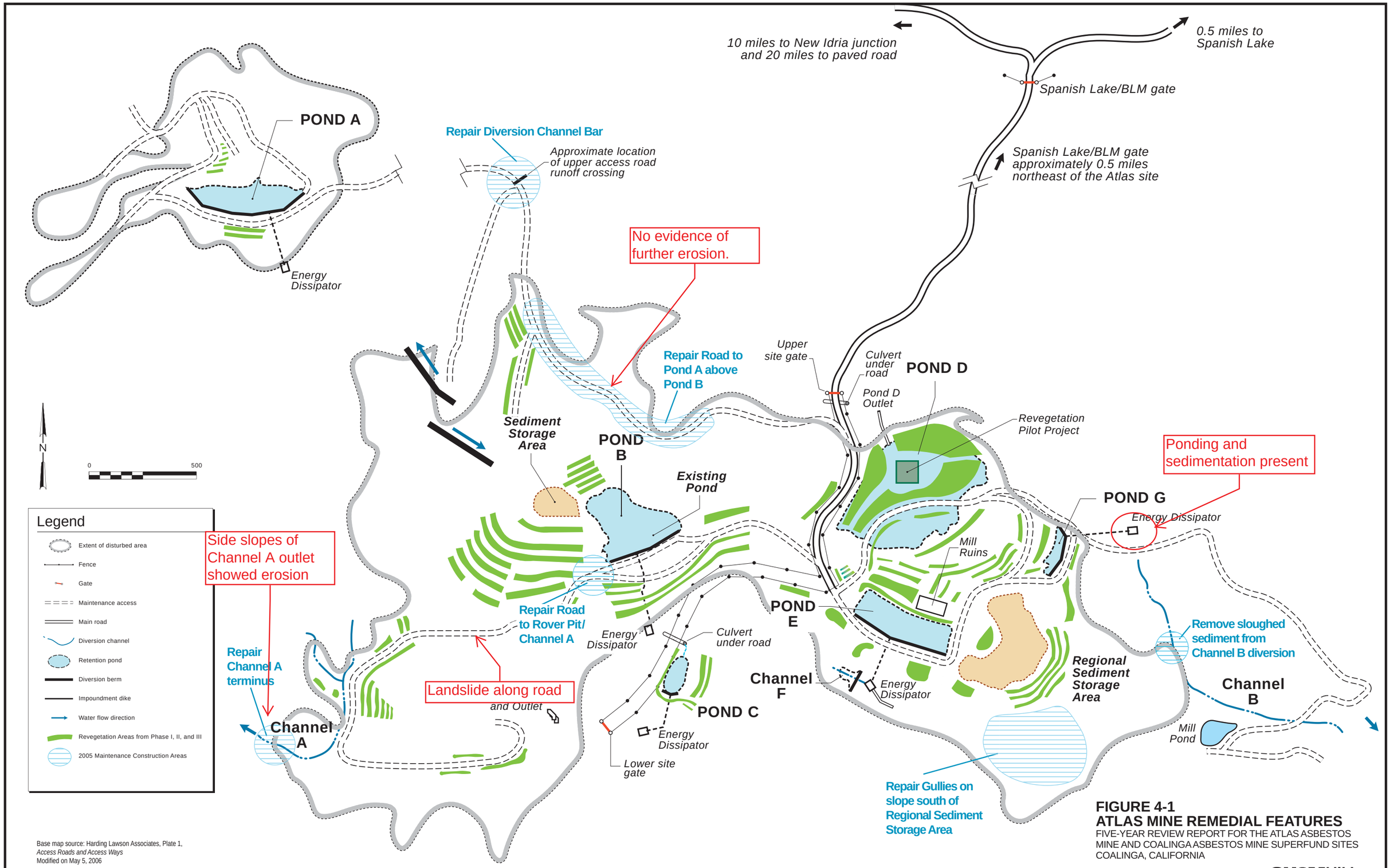
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

No early indicators were discovered.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Sediment removal should be considered, particularly within Channel A, and signage should be replaced and updated.



Base map source: Harding Lawson Associates, Plate 1, *Access Roads and Access Ways*
Modified on May 5, 2006

FIGURE 4-1
ATLAS MINE REMEDIAL FEATURES
FIVE-YEAR REVIEW REPORT FOR THE ATLAS ASBESTOS MINE AND COALINGA ASBESTOS MINE SUPERFUND SITES
COALINGA, CALIFORNIA

CH2MHILL

ES052006007BAO_FIG 4-1_AtlasMineRemedialFeatures_ai_082406_ll

Five-Year Review Site Inspection Checklist

I. SITE INFORMATION	
Site name: Johns-Manville (Coalinga) Mill OU Coalinga Asbestos Mine Superfund Site	**Date of inspection:** 26 May 2016
Location: Coalinga, CA: Region IX	**EPA ID:** CAD980817217
Agency, office, or company leading the five-year review: USEPA Region IX	**Weather/temperature** Sunny, 70s-80s

Remedy Includes: (Check all that apply)

- ☐ Landfill cover/containment
- ☒ Access controls
- ☒ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☒ Other: *e.g. Groundwater monitoring*
  Surface water diversion, erosion controls including contouring and revegetation, sediment trapping dam emplacement, mill building, road paving
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls

Attachments: ☒ Inspection team roster attached ☒ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** Mike Makerov, BNSF Railway (Name) Manager Env. Remediation (Title) 26 May 2016 (Date)
   Interviewed ☒ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

2. **O&M staff** Scott Davis / Maher Zein. (Name) Vice Pres. / Sr. Env. Engr. (Title) 26 May 2016 (Date)
   Interviewed ☒ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Dept. of Toxic Substances Control
Contact Carolyn Yee | Project Manager | 26 May 2016 | _____
Name | Title | Date | Phone no.
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ | _____ | _____ | _____
Name | Title | Date | Phone no.
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ | _____ | _____ | _____
Name | Title | Date | Phone no.
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ | _____ | _____ | _____
Name | Title | Date | Phone no.
Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

☐ O&M manual	☐ Readily available	☐ Up to date	■ N/A
☐ As-built drawings	☐ Readily available	☐ Up to date	■ N/A
☐ Maintenance logs	☐ Readily available	☐ Up to date	■ N/A

Remarks Site is very remote with no buildings on site, so no documentation is kept onsite. O&M manual was provided via email prior to site visit.

2. **Site-Specific Health and Safety Plan** ■ Readily available ■ Up to date ☐ N/A
☐ Contingency plan/emergency response plan ☐ Readily available ☐ Up to date ■ N/A

Remarks HSP provided at site visit.

3.	**O&M and OSHA Training Records**	☐ Readily available	☒ Up to date	☐ N/A
	Remarks Training records were not reviewed during site visit, but have since been verified by EPA RPM as up to date.			
4.	**Permits and Service Agreements**			
	☐ Air discharge permit	☐ Readily available	☐ Up to date	☒ N/A
	☐ Effluent discharge	☐ Readily available	☐ Up to date	☒ N/A
	☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	☒ N/A
	☐ Other permits_____	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
5.	**Gas Generation Records**	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
6.	**Settlement Monument Records**	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
7.	**Groundwater Monitoring Records**	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
8.	**Leachate Extraction Records**	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
9.	**Discharge Compliance Records**			
	☐ Air	☐ Readily available	☐ Up to date	☒ N/A
	☐ Water (effluent)	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
10.	**Daily Access/Security Logs**	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			

IV. O&M COSTS

1. **O&M Organization**

☐ State in-house ☐ Contractor for State
☐ PRP in-house ☒ Contractor for PRP
☐ Federal Facility in-house ☐ Contractor for Federal Facility
☐ Other

2. **O&M Cost Records**

☐ Readily available ☐ Up to date ☐ Funding mechanism/agreement in place
Original O&M cost estimate_____ ☐ Breakdown attached

Total annual cost by year for review period if available

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

No unusual O&M during last five years.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured ☐ N/A

Remarks Road access gates (outside fenced area) are kept unlocked and open. The access road is a private road.

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A

Remarks About half of signs were in good condition, and half were very faded and difficult to read.

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☒ No ☐ N/A
Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) Self
Frequency Annual
Responsible party/agency BNSF
Contact Mike Makerov | Manager Env. Remediation | | 909-386-4081
Name | Title | Date | Phone no.

Reporting is up-to-date ☒ Yes ☐ No ☐ N/A
Reports are verified by the lead agency ☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☒ Yes ☐ No ☐ N/A
Violations have been reported ☐ Yes ☒ No ☐ N/A
Other problems or suggestions: ☐ Report attached

2. **Adequacy** ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A

Remarks No indication of trespassing or vandalism.

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ☒ No vandalism evident

Remarks

2. **Land use changes on site** ☒ N/A

Remarks

3. **Land use changes off site** ☒ N/A

Remarks

VI. GENERAL SITE CONDITIONS

A. Roads ☒ Applicable ☐ N/A

1. **Roads damaged** ☐ Location shown on site map ☒ Roads adequate ☐ N/A

Remarks Paved road is in good condition. Bridge along road should be inspected for repair needs.

B. Other Site Conditions

Remarks

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

A. Landfill Surface (tailings pile)

1. **Settlement** (Low spots) ☐ Location shown on site map ☒ Settlement not evident
Areal extent_____ Depth_____
Remarks

2. **Cracks** ☒ Location shown on site map ☐ Cracking not evident
Lengths 3-6 ft Widths 2 in - 2 ft Depths 1 in - 4 ft
Remarks Significant cracks requiring repair. Cracks not seen at last annual inspection (Oct 2015). May indicate increased settling or significant rainfall runoff over winter months.

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
Areal extent 4 sq ft Depth <1 inch
Remarks Some small areas of erosion were seen.

4. **Holes** ☒ Location shown on site map ☐ Holes not evident
Areal extent Each about 1/4 sq ft Depth undetermined
Remarks Several deep holes (often near cracks).

5. **Vegetative Cover** ☒ Grass ☐ Cover properly established
☐ No signs of stress ☒ Trees/Shrubs (indicate size and locations on a diagram)
Remarks Vegetation primarily present in runoff benches. Primarily grasses, some shrubs and trees from previous revegetation efforts.

6. **Alternative Cover (armored rock, concrete, etc.)** ☒ N/A
Remarks

7. **Bulges** ☐ Location shown on site map ☒ Bulges not evident
Areal extent_____ Height_____
Remarks

8. **Wet Areas/Water Damage** ☒ Wet areas/water damage not evident

☐ Wet areas ☐ Location shown on site map Areal extent_____

☐ Ponding ☐ Location shown on site map Areal extent_____

☐ Seeps ☐ Location shown on site map Areal extent_____

☐ Soft subgrade ☐ Location shown on site map Areal extent_____

Remarks

9. **Slope Instability** ☐ Slides ☐ Location shown on site map ☒ No evidence of slope instability

Areal extent_____

Remarks

B. Benches ☐ N/A ☒ Applicable

(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** ☐ Location shown on site map ☒ N/A or okay

Remarks

2. **Bench Breached** ☐ Location shown on site map ☐ N/A or okay

Remarks One bench showed a gap where runoff likely passed.

3. **Bench Overtopped** ☐ Location shown on site map ☒ N/A or okay

Remarks

C. Letdown Channels ☐ Applicable ☒ N/A

(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** ☐ Location shown on site map ☐ No evidence of settlement

Areal extent_____ Depth_____

Remarks

2. **Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation

Material type_____ Areal extent_____

Remarks

3. **Erosion** ☐ Location shown on site map ☐ No evidence of erosion

Areal extent_____ Depth_____

Remarks

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks

5. **Obstructions** Type_____ ☐ No obstructions ☐ Location shown on site map
Areal extent_____ Size_____
Remarks

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks

D. Cover Penetrations ☐ Applicable ☒ N/A

1. **Gas Vents** ☐ N/A ☐ Active ☐ Passive ☐ Properly secured/locked ☐ Functioning
☐ Routinely sampled ☐ Good condition ☐ Evidence of leakage at penetration
Remarks

2. **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks

4. **Leachate Extraction Wells**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks

E. Gas Collection and Treatment ☐ Applicable ☒ N/A

1. **Gas Treatment Facilities**
☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
☐ Good condition ☐ Needs Maintenance
Remarks

2. **Gas Collection Wells, Manifolds and Piping**
☐ Good condition ☐ Needs Maintenance
Remarks

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
☐ Good condition ☐ Needs Maintenance ☐ N/A
Remarks

F. Cover Drainage Layer ☒ Applicable ☐ N/A

1. **Outlet Pipes Inspected** ☒ Functioning ☐ N/A
Remarks Some sediment and debris present in drainage pipes.

2. **Outlet Rock Inspected** ☐ Functioning ☒ N/A
Remarks

G. Detention/Sedimentation Ponds ☒ Applicable ☐ N/A

1. **Siltation** ☐ N/A ☐ Siltation not evident
Areal extent Each ~4 ft x 10 ft Depth 1-3 inches
Remarks Trapping dam and dissipation pond both show sediment buildup.

2. **Erosion** Areal extent_____ Depth_____ ☒ Erosion not evident
Remarks

3. **Outlet Works** ☒ Functioning ☐ N/A
Remarks Trapping dam outlet in good condition. Dissipation pond has no outlet.

4. **Dam** ☒ Functioning ☐ N/A
Remarks

H. Retaining Walls ☐ Applicable ☐ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
Horizontal displacement_____ Vertical displacement_____
Rotational displacement_____
Remarks

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
Remarks

I. Perimeter Ditches/Off-Site Discharge ☐ Applicable ☒ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
Areal extent_____ Depth_____
Remarks

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
☐ Vegetation does not impede flow
Areal extent_____ Type_____
Remarks

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
Areal extent_____ Depth_____
Remarks

4. **Discharge Structure** ☐ Functioning ☐ N/A
Remarks

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
Areal extent_____ Depth_____
Remarks

2. **Performance Monitoring** Type of monitoring_____
☐ Performance not monitored ☐ Evidence of breaching
Frequency_____ Head differential_____
Remarks

IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☒ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
☐ Good condition ☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
Remarks

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition ☐ Needs Maintenance
Remarks

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☐ N/A

1. **Collection Structures, Pumps, and Electrical**
☐ Good condition ☐ Needs Maintenance
Remarks

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition ☐ Needs Maintenance
Remarks

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks

C. Treatment System ☐ Applicable ☐ N/A

1. **Treatment Train** (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers
☐ Filters_____
☐ Additive (*e.g.*, chelation agent, flocculent)_____
☐ Others_____
☐ Good condition ☐ Needs Maintenance
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually_____
☐ Quantity of surface water treated annually_____
Remarks

2. **Electrical Enclosures and Panels** (properly rated and functional)
☐N/A ☐ Good condition ☐ Needs Maintenance
Remarks

3. **Tanks, Vaults, Storage Vessels**
☐ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
Remarks

4. **Discharge Structure and Appurtenances**
☐ N/A ☐ Good condition ☐ Needs Maintenance
Remarks

5. **Treatment Building(s)**
☐ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
☐ Chemicals and equipment properly stored
Remarks

6. **Monitoring Wells** (pump and treatment remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks

D. Monitoring Data

1. Monitoring Data
☐ Is routinely submitted on time ☐ Is of acceptable quality

2. Monitoring data suggests:
☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The remedy at Johns-Manville Mill is designed to prevent migration of asbestos-laden sediment away from the site. This was accomplished through a creek diversion channel, erosion control, and revegetation. The remedy appears to be functioning as intended, with the exception of some faded warning signs.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

The remedy is protective, however regular repair of cracks in the tailings pile slope need to continue to be made.

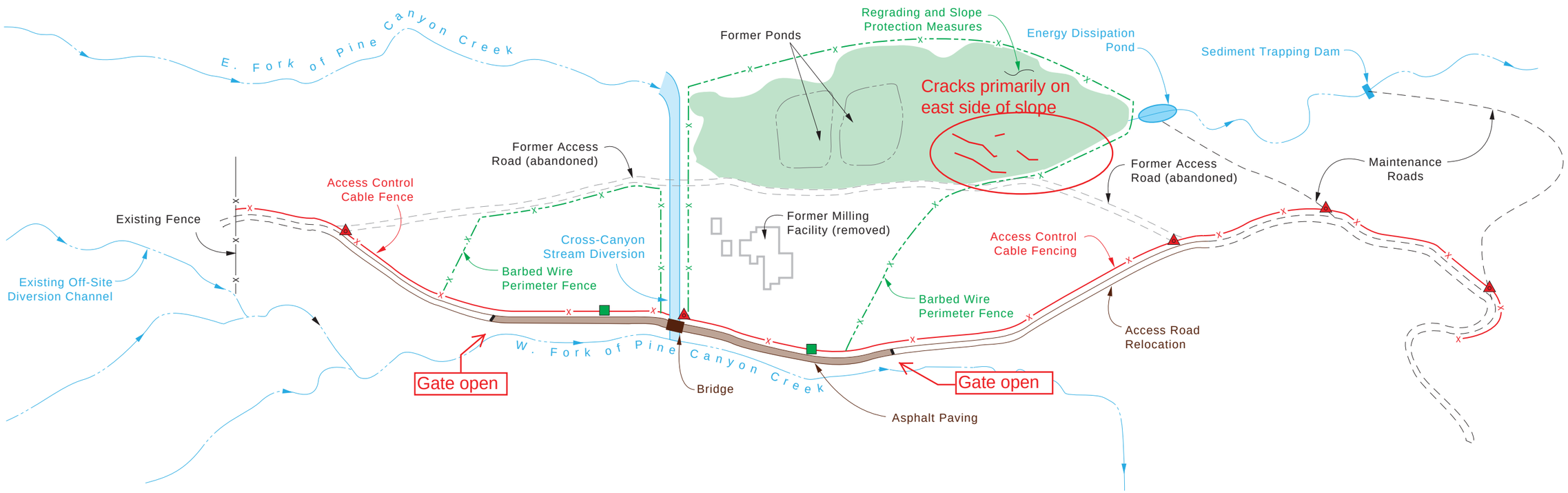
C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

The large cracks observed developed rather quickly (since the last inspection in Oct 2015). This may indicate site changes. If large crack formation begins to occur regularly, the site should be evaluated for a potential need to change the tailings pile remedy.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.



SYMBOLS

- Perimeter Fence Gate
- Cable Fence Access gate
- Tailings Pile

SCALE

0 150 300 600 FEET

1 INCH = 300 FEET

JM - COALINGA MILL AREA

SITE FEATURES

ARCADIS

FIGURE **2**

G:\ENVCAD\Irvine\ACT\CM002883\0012\000007\CM002883.0012 SITE.AI 11/23/2015 E.MURESAN

Five-Year Review Site Inspection Checklist

I. SITE INFORMATION	
Site name: Coalinga City OU; Coalinga Asbestos Mine Superfund Site & Atlas Mine Area Superfund Site	**Date of inspection:** 25 May 2016
Location: Coalinga, CA	**EPA ID:** CAD980817217; CAD980496863
Agency, office, or company leading the five-year review: Coalinga, CA; Region IX	**Weather/temperature** Sunny, Temp 70s-80s

Remedy Includes: (Check all that apply)

- ☒ Landfill cover/containment
- ☒ Access controls
- ☒ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other: *e.g. Groundwater monitoring*
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls

Attachments: ☒ Inspection team roster attached ☒ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** Lauren Mancuso, Union Pacific RR (Name) | Manager Env. Site Remediatio (Title) | not interviewed (Date)
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. 916-288-0155
   Problems, suggestions; ☐ Report attached _____

2. **O&M staff** Tara Bosch, Antea Group (Name) | Project Manager (Title) | 25 May 2016 (Date)
   Interviewed ☒ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Dept. of Toxic Substances Control
Contact Carolyn Yee | Project Manager | 25 May 2016 | 916-288-0155
Name | Title | Date | Phone no.
Problems; suggestions; ☐ Report attached

Agency
Contact
Name | Title | Date | Phone no.
Problems; suggestions; ☐ Report attached

Agency
Contact
Name | Title | Date | Phone no.
Problems; suggestions; ☐ Report attached

Agency
Contact
Name | Title | Date | Phone no.
Problems; suggestions; ☐ Report attached

4. **Other interviews** (optional) ☐ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

☐ O&M manual	☐ Readily available	☐ Up to date	■ N/A
☐ As-built drawings	☐ Readily available	☐ Up to date	■ N/A
☐ Maintenance logs	☐ Readily available	☐ Up to date	■ N/A

Remarks No buildings are located on site; no documents are kept on site. Draft O&M agreement, annual inspection reports (with DTCS approvals) were provided via email prior to site inspection.

2. **Site-Specific Health and Safety Plan** ☐ Readily available ☐ Up to date ☐ N/A
☐ Contingency plan/emergency response plan ☐ Readily available ☐ Up to date ☐ N/A
Remarks HSP not available at site visit.

3.	**O&M and OSHA Training Records** Remarks	■ Readily available	☐ Up to date	☐ N/A
4.	**Permits and Service Agreements**			
	☐ Air discharge permit	☐ Readily available	☐ Up to date	■ N/A
	☐ Effluent discharge	☐ Readily available	☐ Up to date	■ N/A
	☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	■ N/A
	☐ Other permits_____	☐ Readily available	☐ Up to date	■ N/A
	Remarks			
5.	**Gas Generation Records** Remarks	☐ Readily available	☐ Up to date	■ N/A
6.	**Settlement Monument Records** Remarks No records were available at site inspection.	☐ Readily available	☐ Up to date	☐ N/A
7.	**Groundwater Monitoring Records** Remarks	☐ Readily available	☐ Up to date	■ N/A
8.	**Leachate Extraction Records** Remarks	☐ Readily available	☐ Up to date	■ N/A
9.	**Discharge Compliance Records**			
	☐ Air	☐ Readily available	☐ Up to date	■ N/A
	☐ Water (effluent)	☐ Readily available	☐ Up to date	■ N/A
	Remarks			
10.	**Daily Access/Security Logs** Remarks No access logs were available at site inspection.	☐ Readily available	☐ Up to date	☐ N/A

IV. O&M COSTS

1. **O&M Organization**

☐ State in-house ☐ Contractor for State
☐ PRP in-house ☒ Contractor for PRP
☐ Federal Facility in-house ☐ Contractor for Federal Facility
☐ Other

2. **O&M Cost Records**

☐ Readily available ☐ Up to date ☐ Funding mechanism/agreement in place
Original O&M cost estimate_____ ☐ Breakdown attached

Total annual cost by year for review period if available

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

To preclude rodents from accessing the landfill surface for burrowing, chicken wire fencing was added around the entire fence, one owl perch, and two raptor perches were recently installed.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured ☐ N/A

Remarks Minor damage to chain-link fencing. Major and minor damage present to sheet metal fencing.

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A

Remarks Signs were in very good condition. Both English and Spanish.

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☒ No ☐ N/A
Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) Self Reporting
Frequency Annual
Responsible party/agency PRP via contractor
Contact Tara Bosch, Antea Group

Name Title Date Phone no.

Reporting is up-to-date ☒ Yes ☐ No ☐ N/A
Reports are verified by the lead agency ☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☒ Yes ☐ No ☐ N/A
Violations have been reported ☐ Yes ☒ No ☐ N/A
Other problems or suggestions: ☐ Report attached

The updated O&M Agreement has not been signed by the PRP. They are requesting clarification language regarding earthquakes requiring landfill re-inspection.

2. **Adequacy** ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A

Remarks

D. General

1. **Vandalism/trespassing** ☒ Location shown on site map ☐ No vandalism evident

Remarks Damaged fencing indicates potential trespassing.

2. **Land use changes on site** ☐ N/A

Remarks No.

3. **Land use changes off site** ☐ N/A

Remarks No.

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☒ N/A

1. **Roads damaged** ☐ Location shown on site map ☐ Roads adequate ☐ N/A

Remarks

B. Other Site Conditions

Remarks

VII. LANDFILL COVERS ☐ Applicable ☐ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☒ Settlement not evident
Areal extent_____ Depth_____
Remarks Settlement records were not available, but there was no evidence of settling.

2. **Cracks** ☐ Location shown on site map ☒ Cracking not evident
Lengths_____ Widths_____ Depths_____
Remarks

3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident
Areal extent_____ Depth_____
Remarks

4. **Holes** ☒ Location shown on site map ☐ Holes not evident
Areal extent_____ Depth_____
Remarks A few burrow holes were present. Approximately six holes were documented, each about an inch or two in diameter.

5. **Vegetative Cover** ☒ Grass ☐ Cover properly established
☐ No signs of stress ☐ Trees/Shrubs (indicate size and locations on a diagram)
Remarks Recent hydroseeding to provide more vegetations appeared mildly successful. Grass was predominate on the cap, small shrub seedlings were occasionally present.

6. **Alternative Cover (armored rock, concrete, etc.)** ☒ N/A
Remarks

7. **Bulges** ☐ Location shown on site map ☒ Bulges not evident
Areal extent_____ Height_____
Remarks

8.	**Wet Areas/Water Damage**	■ Wet areas/water damage not evident	
	☐ Wet areas	☐ Location shown on site map	Areal extent_____
	☐ Ponding	☐ Location shown on site map	Areal extent_____
	☐ Seeps	☐ Location shown on site map	Areal extent_____
	☐ Soft subgrade	☐ Location shown on site map	Areal extent_____
	Remarks		
9.	**Slope Instability** ☐ Slides	☐ Location shown on site map	■ No evidence of slope instability
	Areal extent_____		
	Remarks		
B. Benches	■ N/A	☐ Applicable	
	(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
1.	**Flows Bypass Bench**	☐ Location shown on site map	☐ N/A or okay
	Remarks		
2.	**Bench Breached**	☐ Location shown on site map	☐ N/A or okay
	Remarks		
3.	**Bench Overtopped**	☐ Location shown on site map	☐ N/A or okay
	Remarks		
C. Letdown Channels	☐ Applicable	■ N/A	
	(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)		
1.	**Settlement**	☐ Location shown on site map	☐ No evidence of settlement
	Areal extent_____	Depth_____	
	Remarks		
2.	**Material Degradation**	☐ Location shown on site map	☐ No evidence of degradation
	Material type_____	Areal extent_____	
	Remarks		
3.	**Erosion**	☐ Location shown on site map	☐ No evidence of erosion
	Areal extent_____	Depth_____	
	Remarks		

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks

5. **Obstructions** Type_____ ☐ No obstructions ☐ Location shown on site map
Areal extent_____ Size_____
Remarks

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks

D. Cover Penetrations ☒ Applicable ☐ N/A

1. **Gas Vents** ☒ N/A ☐ Active ☐ Passive ☐ Properly secured/locked ☐ Functioning
☐ Routinely sampled ☐ Good condition ☐ Evidence of leakage at penetration
Remarks

2. ~~**Gas Monitoring Probes**~~ Neutron Probe Tubes
☒ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☒ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks The NPTs have not been sampled in many years. The tubes are secured and in good condition.

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☒ N/A
Remarks

4. **Leachate Extraction Wells**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☒ N/A
Remarks

5. **Settlement Monuments** ☒ Located ☐ Routinely surveyed ☐ N/A
Remarks The central monument man-hole was located but could not be opened. No settlement data was available.

E. Gas Collection and Treatment ☐ Applicable ☒ N/A

1. **Gas Treatment Facilities**
   ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
   ☐ Good condition ☐ Needs Maintenance
   Remarks

2. **Gas Collection Wells, Manifolds and Piping**
   ☐ Good condition ☐ Needs Maintenance
   Remarks

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
   ☐ Good condition ☐ Needs Maintenance ☐ N/A
   Remarks

F. Cover Drainage Layer ☐ Applicable ☒ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☐ N/A
   Remarks

2. **Outlet Rock Inspected** ☐ Functioning ☐ N/A
   Remarks

G. Detention/Sedimentation Ponds ☐ Applicable ☒ N/A

1. **Siltation** ☐ N/A ☐ Siltation not evident
   Areal extent_____ Depth_____
   Remarks

2. **Erosion** Areal extent_____ Depth_____ ☐ Erosion not evident
   Remarks

3. **Outlet Works** ☐ Functioning ☐ N/A
   Remarks

4. **Dam** ☐ Functioning ☐ N/A
   Remarks

H. Retaining Walls ☐ Applicable ☒ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
Horizontal displacement_____ Vertical displacement_____
Rotational displacement_____
Remarks

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
Remarks

I. Perimeter Ditches/Off-Site Discharge ☐ Applicable ☒ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
Areal extent_____ Depth_____
Remarks

2. **Vegetative Growth** ☐ Location shown on site map ☒ N/A
☐ Vegetation does not impede flow
Areal extent_____ Type_____
Remarks

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
Areal extent_____ Depth_____
Remarks

4. **Discharge Structure** ☐ Functioning ☐ N/A
Remarks

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
Areal extent_____ Depth_____
Remarks

2. **Performance Monitoring** Type of monitoring_____
☐ Performance not monitored ☐ Evidence of breaching
Frequency_____ Head differential_____
Remarks

IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
☐ Good condition ☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
Remarks

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition ☐ Needs Maintenance
Remarks

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☐ N/A

1. **Collection Structures, Pumps, and Electrical**
☐ Good condition ☐ Needs Maintenance
Remarks

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition ☐ Needs Maintenance
Remarks

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks

C. Treatment System ☐ Applicable ☐ N/A

1. **Treatment Train** (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers
☐ Filters_____
☐ Additive (*e.g.*, chelation agent, flocculent)_____
☐ Others_____
☐ Good condition ☐ Needs Maintenance
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually_____
☐ Quantity of surface water treated annually_____
Remarks

2. **Electrical Enclosures and Panels** (properly rated and functional)
☐N/A ☐ Good condition ☐ Needs Maintenance
Remarks

3. **Tanks, Vaults, Storage Vessels**
☐ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
Remarks

4. **Discharge Structure and Appurtenances**
☐ N/A ☐ Good condition ☐ Needs Maintenance
Remarks

5. **Treatment Building(s)**
☐ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
☐ Chemicals and equipment properly stored
Remarks

6. **Monitoring Wells** (pump and treatment remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks

D. Monitoring Data

1. Monitoring Data
☐ Is routinely submitted on time ☐ Is of acceptable quality

2. Monitoring data suggests:
☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The remedy at City OU landfill was designed to be protective by isolating asbestos-materials originally generated the Atlas Mine and Johns-Manville Mill OUs. The remedy is functioning as designed.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Regular maintenance of the fencing is required to maintain protectiveness.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

No early indicators were observed.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Installation of stronger sheet-metal fencing may reduce future maintenance needs.

North
W Elm Ave
Elm Ave
W Elm Ave
198
Damaged sheet-metal fencing
"North Side"
Raptor perch
"West Side"
Burrow holes
Torn sheet-metal fencing
Fence damage, sign of access
Gate
Owl box
Raptor perch
"East Side"
"South Side"
Broken sheet-metal fencing

Trip Report
Atlas Asbestos Mine Superfund Site & Coalinga Asbestos Mine Superfund Site
Coalinga, CA

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1. INTRODUCTION

a. Date of Visit: 23-25 May 2016

b. Location: Various remote sites near Coalinga, CA.

c. Purpose: A site visit was conducted to visually inspect and document the conditions of the remedy, the site, and the surrounding area for inclusion into the Five-Year Review Report.

d. Participants: *List all attendees*

Kayla Patten	USACE Seattle District, Env. Engineer	206-316-3855
Lynn Keller	EPA Region 9, Remedial Project Manager	415-947-4162
Carolyn Yee	DTSC, Env. Scientist	916-225-3671
Jim Rohrer	DTSC	916-255-3709
Greg Middleton	BLM, Project Manger/Geologist	831-582-2235
Peter Graves	BLM, Env. Protection Specialist	916-978-4985
Peter Phillips	Gilbane, Env. Senior Geologist	916-503-5475
Jonathan Partsch	Gilbane, Project Geologist	
Richie Hodges	Northrup Grumman Corp., Project Manager	
Tara Bosch	Antea Group, Project Professional	916-288-0155
Mike Makerov	BNSF Railway Co., Manager Env. Remediation	909-386-4081
Scott Davis	ARCADIS, Vice President	
Maher Zein	ARCADIS, Sr. Env. Engineer	

2. SUMMARY

Tuesday, 24 May 2016 – Atlas Asbestos Mine & Clear Creek Management Area (CCMA)

Atlas Asbestos Mine

Arrived at the lower gate to Atlas Mine at 10:00 am. Greg Middleton provided a safety briefing and summary of the site inspection schedule. Mr. Middleton wore an air sampler for the duration of the site visit at Atlas. Travel from the lower gate to the Atlas Mine was approximately 1 hour, during which we passed several locked gates, all of which were in good working condition (Photo 1). At the final gate before the entrance to Atlas, BLM's "Danger" sign was in good condition and visible, however included old contact information (Photo 2); the BLM field office recently moved from Hollister to Marina. Mr. Middleton indicated that there has not been any recent earthquakes that would require inspection. He has also been in contact with local off-roading leaders, in attempts to stop illegal trespassing onto the Atlas site.

The first stop was at the upper end of Atlas at Pond A, where we had a good view of the full Atlas Site (Photo 3). Some tire tracks were visible in Pond A and the surrounding slopes. Mr. Middleton indicated these were primarily historical tracks, he did not see any indication of new tracks (Photo 5). There was little evidence of sedimentation within the Pond. Tattle-tale poles have been installed in the pond to monitor sediment accumulation (Photo 4). In the last three

years (since Mr. Middleton began managing the site), there has been about one-half inch of sediment accumulation. The water overflow was in good condition (Photo 6). The last five year review indicated erosion along the road to Pond A; at this site there was no evidence of further erosion (Photo 7). Mr. Middleton said he has not seen erosion in the last three years. The fencing along the road to Pond A was in good condition, however the small yellow “Danger” signs are faded and worn (Photo 8). While at Pond A, the weather began to hail and rain and the temperature dropped significantly.

The second location visited was Channel A. The road to Channel A and the Rover Pit was inaccessible to vehicles, so the trucks were parked near Pond B and the site visit team hiked to Channel A. There was a small unnamed drainage channel along the road to the Rover Pit, which indicated significant sedimentation (Photo 9). The rock mattress was not visible through the sediment. The outlet let-down channel was in good condition. An active landslide is occurring on the road to Channel A creating a large drop in the road elevation. At the site visit this drop was approximately 4 ft tall (Photo 10). Mr. Middleton indicated that he would consider repairing the road, but not until the landslide had completed sloughing material. Channel A itself had significant sedimentation; the rock mattress was not visible in most of the Channel A (Photo 11). Some tire tracks were visible in Channel A. The outlet to Channel A was in fair condition. There were no signs of erosion or movement of the riprap in the outlet, however the side slopes (which are off-property) do show signs of erosion and sedimentation below the outlet (Photo 12). The slope adjacent to Channel A (opposite side of the road), the vegetation appeared healthy. Team members who had previously inspected the site agreed that vegetation was significantly more abundant than in previous years.

After Channel A we travelled back to the Pond B area. The vegetation appeared sparse, however other team members indicated there was more vegetation than in previous years. Pond B continually has standing water (Photo 13). Team members agreed that Pond B likely intercepts groundwater, which maintains this water within the pond. Based upon water marks along the pond edge, the current water level was fairly low. The high water mark was about 1-2 feet above the current level. The outlet was in good condition.

Then we traveled to the eastern side of Atlas toward the sediment storage area. At this point the rain had become significant, necessitating view of the site features primarily from the vehicles. Historic vehicle tracks were still visible on the south slope of the sediment storage area (Photo 14). The vegetation here was sparse, and in some areas appeared stressed (Photo 15). The drainage outlet was in good condition and contained significant sedimentation (Photo 16).

Next was Pond D and the main revegetation area. The stakes form the failed revegetation were still evident, with little to no vegetation in the vicinity (Photo 17). No water was present in Pond D, and the team could not get close enough to evaluate the sedimentation, however from afar it appeared very minimal as with the other ponds. We then proceeded to the energy dissipater at Channel B. Due to the current rain, water was present in this area. Although sediment was not visible below the water surface, it was clear significant sediment had accumulated (Photo 18), which was confirmed by Mr. Middleton. This energy dissipation area has effectively turned into a sedimentation pond. Volunteer manzanita plants had begun to establish in this area.

We then traveled to Pond G. Minimal sedimentation was apparent in Pond G. The outlet was in good condition. Some volunteer vegetation has begun to establish in, and on the slopes of, Pond G (Photo 19). We then visited Pond E and the old mill ruins (Photo 20). No water or sedimentation was apparent in Pond E. Revegetation (planted and volunteer) appears to have been successful in this area.

Just inside the entrance to Atlas is Pond C. Vegetation was well established in the stream drainage to Pond C (Photo 21). Due to the rainy conditions, water was present in the drainage down to Pond C, however appeared to have been absorbed by vegetation or infiltrated prior to reaching Pond C. The drainage water was slightly milky in color (Photo 22). Minimal sedimentation was present in Pond C and the outlet appeared to be in good condition. The inspection of Atlas Mine was completed around 12:00 pm.

Clear Creek Management Area

Upon leaving Atlas, the team visited portions of the Clear Creek Management Area (CCMA). Mr. Middleton led the team to a natural ponding and debris collection area that he discovered collects drainage from Atlas along with other areas including natural "barrens" (serpentinite outcrops with no vegetation). Mr. Middleton regularly visits this basin to see if there are changes that may indicate changes upstream at Atlas or the surrounding lands. This area showed significant sedimentation (Photo 23). This sediment appeared to contain serpentine along with gravel and sand. The basin was very large with no drainage outlet past the roadway (i.e. no culvert). Natural vegetation was present in the basin and surrounding slopes. Mr. Middleton did not notice any significant changes since his last visit. The team left the CCMA area around 1:00 pm. Vehicles used during the inspection then proceeded to a nearby BLM facility for decontamination.

Wednesday, 25 May 2016 – City OU Landfill & Ponding Basin

City OU Landfill

The inspection team arrived at the landfill at 1:00 pm, and met Tara Bosch the Union Pacific representative. The team accessed the landfill at the eastern gate (Photo 24); other gates were blocked due to recent chicken wire fencing improvements (described in more detail later). Once inside the gate, the inspection team walked around the landfill surface. Vegetation on the cap was primarily grass (Photo 25). Evidence of the recent hydroseeding was present, and some hydroseeded vegetation was beginning to grow (Photo 26). The neutron probe tubes appeared to be in good condition (Photo 27). Ms. Bosch indicated that they have not been used in many years, since the landfill was first closed. Some holes were noted around the neutron probe footings; it was unclear if these were new or historic animal burrows (Photo 27). Sprinkler heads were found around the perimeter of the cap top; many were broken, and it was clear the sprinkler system was not in working condition. Several small burrow holes were present on the cap surface (Photo 28); again, it was unclear if these were recent or historic burrows. In the center of the landfill cap, the settlement manhole was in good condition (Photo 29). The team did not have means to open the manhole, and it appeared that it had not been opened in many years. Drawings of the cap indicated this manhole may contain an apparatus to measure cap settlement. Ms. Bosch indicated that settlement was not measured. Throughout the cap surface there was no evidence of cap settlement.

The inspection team then walked the outer perimeter of the fence. Signage was present at several locations around the fencing, in very good condition, and written in both English and Spanish (Photo 30). Ms. Bosch indicated that chicken wire fencing was recently installed around the bottom of the fence, extending to the ground and outward, to help prevent rodent access (Photo 31). Sheet metal had also been installed at about chest-height to deter individuals from climbing the fence. This sheet metal was broken in one location which will require fixing, and had minor damage in a few other locations, potentially indicating attempted access to the site (Photo 32). There fencing itself was in good condition, only a few locations had minor damage (Photo 33). Most of the fencing and sheet metal damage was located on the eastern and northern portions away from the road and nearby buildings. An owl box and two raptor perches were also recently installed to help control small rodents that could potentially burrow into the landfill surface. The owl box installed outside the eastern fence has owl pellets below it, evidence that owls are using the box (Photo 34). The raptor perches also had droppings below them, indicating that they are being used (Photo 35). The City OU landfill inspection ended around 1:00 pm.

Ponding Basin

Following inspection of the City OU landfill, the inspection team traveled to the Ponding Basin. In previous years this basin could not be located, but upon further search with recent aerial photographs it was located east of Coalinga approximately 8 miles, adjacent to the California aqueduct. The Ponding Basin is the terminus of Los Gatos Creek, however during the site visit it was clear that water had not reached this terminus in many years. The ponding basin was accessed from Lassen Avenue; there was no fencing or signage at this location (Photo 36). Numerous recent vehicle tracks and dumped items were present; it was clear that this location is often utilized by people. The Ponding Basin is primarily a long, skinny leveed-in area (Photo 37). The site team was able to drive the perimeter levees around the larger area east of Lassen Ave, however the smaller area further east was impassable by vehicles so it is unknown if the end is open to the surrounding land or also a levee. Along Lassen Avenue, north of the Ponding Basin there are 'no trespassing' signs indicating the Department of Water Resources land (Photo 38).

Thursday, 26 May 2016 – Johns-Manville Mill

The team arrived at the Johns-Manville site around 9am, and met representatives from BNSF. The first stop was at the sediment trapping dam. The team hiked from the main road down to the sediment trapping dam (Photo 39). The trapping dam basin was largely vegetated, however some sediment was present (Photo 40). The basin outlet was in good condition and showed no signs that water had flowed through it recently (Photo 41).

The team then proceeded along the main road to the north end of the site. Along the road the cable fencing was in good condition (Photo 42). Many of the signs were in good condition, however closer to the north end of the site several of the signs were faded and in need of replacement (Photo 43). The main gates on the north and south ends of the asphalt road (outside the fenced area) were in good condition, however were unlocked and open (Photo 44). The site manager indicated that these gates have always remained open. There is a hunting lodge further along this private road, which is likely the reason these gates remain open. The paved road itself was in good condition (Photo 45).

On the north end of the site, the open area was heavily vegetated with brush (Photo 46). The cross-canyon stream diversion channel was also heavily vegetated, primarily with grasses, which made it difficult to determine if runoff had flowed through the channel (Photo 47). The outlet appeared to be in good condition; the riprap was in place and showed no signs of sedimentation (Photo 48). The bridge across the diversion channel appeared to be in poor condition (Photo 49), however the bridge footings showed no sign of aging. The central area of the site was also heavily vegetated with brush (Photo 50). The site managers indicated that the brush had grown significantly in the last year. The area of the former access road (which was rerouted as part of the remedy) was devoid of vegetation (Photo 51), however the adjacent north end of the tailings pile area was heavily vegetated (Photo 52).

The site visit team then hiked down the engineered slope of the tailings pile for inspection (Photo 53). The drainage shelfs showed significant sedimentation (Photo 54), however the drainage collection locations were in good condition and showed little sediment within the piping (Photo 55). The slope itself had several cracks; it was unclear if these were due to settling or due to erosion (Photo 56). These cracks ranged in size; the smaller cracks were about 2 inches wide and 1 inch deep, and the largest crack was about 1 foot wide and 4 feet deep. The inspection team that had attended the most recent annual inspection in October 2015, indicated that previously only small cracks were present. This indicates these large cracks had developed in the last few months.

The bottom of the tailings pile slope, the team next inspected the energy dissipation pond. The outlets from the drainage collection system were in good condition and did show sediment discharge (Photo 57), however the pond itself did not show significant sedimentation. There was no outlet from the dissipation pond. The large levee behind the pond was in good condition and showed no signs of overflow (Photo 58). The site inspection of the JMM site ended around 12:00 pm.

3. ACTIONS

The USACE will incorporate information obtained from the site visit into the Five Year Review report.

UP: fix fencing
BNSF: look for air quality data, check for needs to inspect bridge, fix cracks

Kayla Patten
Environmental Engineer
CENWS-EN-TS-ET

Photo 1. Locked Gate at Entrance to Atlas Site

Photo 2. Out-of-Date BLM Sign at Atlas Site Entrance

Photo 3. View of Atlas Pond B Area.

Photo 4. Atlas Pond A

Photo 5. Tire Tracks at Atlas Pond A

Photo 6. Atlas Pond A Outlet

Photo 7. Past Erosion along Road to Atlas Pond A.

Photo 8. Faded Danger Signage along Atlas Roads.

Photo 9. Drainage across Road to Atlas Rover Pit.

Photo 10. Active Landslide along Road to Atlas Rover Pit; ~4 foot drop.

Photo 11. Sedimentation in Atlas Channel A.

Photo 12. Erosion along Outlet to Atlas Channel A.

Photo 13. Atlas Pond B.

Photo 14. Tire Tracks at South Slope of Atlas Sediment Storage Area.

Photo 15. Sparse Vegetation near Atlas Sediment Storage Area.

Photo 16. Sedimentation at Drainage Outlet near Atlas Sediment Storage Area.

Photo 17. Atlas Pond D and Nearby Failed Revegetation.

Photo 18. Ponding at Atlas Chanel B Energy Dissipater; volunteer vegetation present.

Photo 19. Atlas Pond G.

Photo 20. Atlas Pond E and Mill Ruins.

Photo 21. Atlas Pond C and Vegetated Entrance Stream.

Photo 22. Water Draining into Atlas Pond C.

Photo 23. CCMA Natural Debris Basin.

Photo 24. City OU Landfill Eastern Gate.

Photo 25. City OU Landfill Surface.

Photo 26. Decayed Matting from Recent Hydroseeding at City OU Landfill, and New Vegetation Growth.

Photo 27. Neutron Probe Tube at City OU Landfill and Holes near Footings.

Photo 28. Burrow Holes at City OU Landfill.

Photo 29. City OU Landfill Cap Settlement Manhole.

Photo 30. Signage at City OU Landfill.

Photo 31. Newly Installed Chicken Wire Fencing to Exclude Rodents at City OU Landfill.

Photo 32. Damaged Sheet-metal Fencing at City OU Landfill; a) broken fencing, b) damaged fencing indicating potential attempted access, c) damaged fencing from intentional tearing, d) damaged fencing likely from accidental vehicle contact.

Photo 33. Minor Fencing Damage at City OU Landfill.

Photo 34. Owl Box at City OU Landfill, and Owl Pellets and Bones Indicating Use.

Photo 35. Raptor Perches at City OU Landfill.

Photo 36. Entrance to Ponding Basin from Lassen Road. Photo taken from inside the ponding basin, looking toward the road.

Photo 37. Ponding Basin.

Photo 38. No Trespassing Signs North of the Ponding Basin.

Photo 39. Trail to JMM Sediment Trapping Dam.

Photo 40. JMM Sediment Trapping Dam Basin and Sediment.

Photo 41. JMM Sediment Trapping Dam Outlet.

Photo 42. Fencing along Main Road at JMM.

Photo 43. JMM Warning Signs.

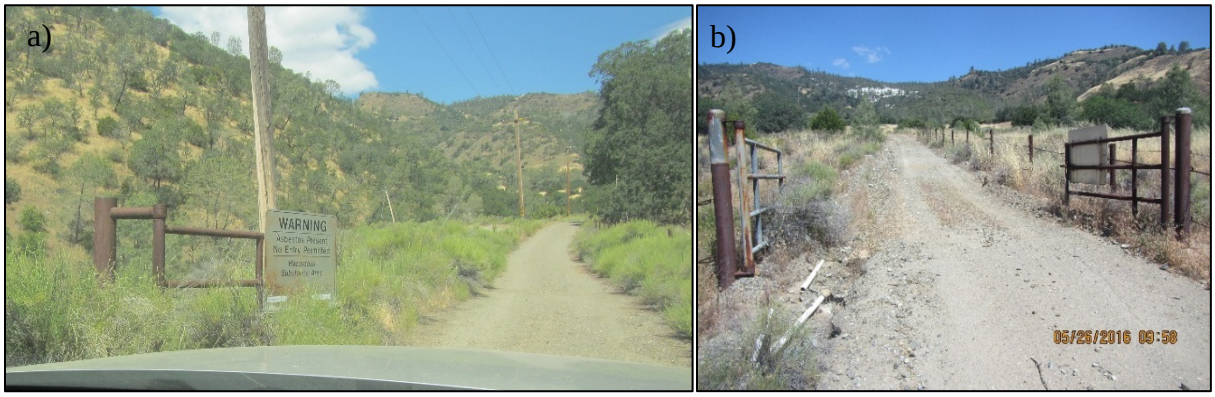

Photo 44. Main Site Gates at JMM; a) south entrance, b) north entrance.

Photo 45. Paved Road at JMM.

Photo 46. Open Area North of JMM Stream Diversion.

Photo 47. JMM Cross-Canyon Stream Diversion Channel.

Photo 48. JMM Cross-Canyon Stream Diversion Outlet.

Photo 49. Bridge across Stream Diversion at JMM.

Photo 50. Open Area South of JMM Stream Diversion.

Photo 51. Former Road at JMM.

Photo 52. Vegetation on the North End of the JMM Tailings Pile.

Photo 53. JMM Tailings Pile Slope.

Photo 54. Sediment Collected in JMM Tailings Pile Slope Benches.

Photo 55. JMM Tailings Pile Drainage Collection Device

Photo 56. Cracks and Holes in the JMM Tailings Pile Slope

Photo 57. JMM Drainage System Outlet to Dissipation Pond

Photo 58. JMM Dissipation Pond Levee

Appendix D: Data Review

Appendix D: Data Review

Table D-1: Data Review Table

Sample Collection Date	8-hour TWA (area percent)	30 Minute (area percent)	Sample I.D.	Asbestos Fibers by PCM	95% Confidence Level	Activity During Sampling	Sampling Time Criteria
2011 Air Sampling Data							
2/20/2011	BLANK	BLANK	2/20/2011 Black	0	N/A	CCMA-Clear Creek	BLANK
2/20/2011		<0.020	2-20-2011 - 30 - 30	0	0.081	CCMA-Clear Creek	30 min
2/20/2011	0.003		2-20-2011 - 33 - TWA	5.5	0.014	CCMA-Clear Creek	8-hr TWA
5/19/2011	BLANK	BLANK	5-19-2011 Blank	2	N/A	CCMA-Clear Creek	BLANK
5/19/2011		<0.037	5-19-2011-33-30	1	0.106	CCMA-Clear Creek	30 min
5/19/2011	<0.002		5-19-2011-30-TWA	6.5	0.005	CCMA-Clear Creek	8-hr TWA
6/15/2011	BLANK	BLANK	6-15-11-B	NA	NA	Clear Creek Canyon	BLANK
6/15/2011		<0.001	93-30 min	<0.001	0.003	Clear Creek Canyon	93-30 min
6/15/2011	0.009		Dedicated	0.009	0.021	Clear Creek Canyon	Dedicated
6/21/2011	BLANK	BLANK	6-15-11-B	N/A	N/A	Clear Creek Canyon	BLANK
6/21/2011		<0.001	93-30 min	3	0.003	Clear Creek Canyon	93-30 min
6/21/2011	0.009		Dedicated	42	0.021	Clear Creek Canyon	Dedicated
2012 Air Sampling Data							
1/18/2012	0.071		1/18/2012-33-TWA	104	0.149	SUV Patrol	8-hr TWA
1/18/2012		<0.043	1/1/2012-30-30	1.5	0.118	SUV Patrol	30 min
4/4/2012		<0.004	04/04/2012-93-TWA	5	0.010	Stationary 1	8-hr TWA
4/4/2012		<0.052	04/04/2012-33-30	1	0.145	Stationary 1	30 min
4/4/2012	BLANK	BLANK	04/04/2012-Blank	0	0.000	Stationary 1	BLANK
5/2/2012	<0.001		5-2-12-93-TWA	1.5	0.001	Stationary 3	8-hr TWA
5/2/2012	<0.001		5-2-12-D-30	0	0.001	Stationary 3	30 min
5/2/2012	BLANK	BLANK	BLANK	0	---	Stationary 3	BLANK
5/10/2012	<0.001		5-10-2012-33-TWA	1	0.001	Stationary 1	8-hr TWA
5/10/2012		<0.001	5-10-2012-1-30	3	0.001	Stationary 1	30 min
5/10/2012	BLANK	BLANK	5-10-2012--B	0	---	Stationary 1	BLANK
5/10/2012		<0.001	5-10-2012-d-30	4	0.001	Staging Area / Backhoe	30 min

Sample Collection Date	8-hour TWA (area percent)	30 Minute (area percent)	Sample I.D.	Asbestos Fibers by PCM	95% Confidence Level	Activity During Sampling	Sampling Time Criteria
5/10/2012	0.003		5-10-2012-93-TWA	13.5	0.001	Staging Area / Backhoe	8-hr TWA
5/10/2012	BLANK	BLANK	5-10-2012-B	1	---	Staging Area / Backhoe	BLANK
5/15/2012	0.002		5-15-2012-D-TWA	7	0.001	Stationary 1	8-hr TWA
5/15/2012		0.002	5-15-2012-33-30	7.5	0.001	Stationary 1	30 min
5/15/2012	BLANK	BLANK	5-15/2012-B	100	---	Stationary 1	BLANK
5/15/2012	0.002		5-15-2012-D-TWA	7	0.001	Stationary 1	8-hr TWA
5/15/2012		0.002	5-15-2012-33-30	7.5	9.5	Stationary 1	30 min
5/15/2012	BLANK	BLANK	5-15-2012-B	0	---	Stationary 1	BLANK
7/5/2012	0.017		07-05-2012-22-TWA	24	0.004	CCMA	8-hr TWA
7/5/2012		<0.041	07-05-2012-30-30	0	0.041	CCMA	30 min
7/26/2012	<0.046		07-26-2012-30-TWA	1	0.046	CCMA	8-hr TWA
7/26/2012		0.007	07-26-2012-93-30	6.5	0.006	CCMA	30 min
8/14/2012	<0.001		8-9-2012-22 TWA	1	<7.0	Clear Creek	8-hr TWA
8/14/2012	<0.001		8-9-2012-D-30	1	<7.0	Clear Creek	30 min
8/14/2012	<0.001		8-13-2012-D-TWA	14.5	18.4	CCMA	8-hr TWA
8/14/2012	<0.001		8-13-2012-22-30	1.5	>7.0	CCMA	30 min
9/17/2012	0.017		09-17-2012-22-TWA	20.5	0.005	CCMA	8-hr TWA
9/21/2012		<0.037	09-17-2012-22-30	0	------	CCMA	30 min
9/21/2012	BLANK	BLANK	09-17-2012-B	0	------	CCMA	BLANK
2013 Air Sampling Data							
6/13/2013		<0.042	06-13-2013-50-30	1	0.042	Stationary	30 min
6/13/2013		0.017	06-13-2013-33 TWA	23.5	0.004	Stationary	8-hr TWA
6/13/2013	BLANK	BLANK	6-13-2013-BLANK	0.5	-	Stationary	BLANK
2014 Air Sampling Data							
3/10/2014	0.359		3/10/14/93/8 hr	101.5		Stationary	8 hr
3/10/2014		0.48	3/10/14/93/30 M	44.0		Stationary	30 min
3/10/2014	BLANK		3/10/14/93 blank	0.0	-	Stationary	BLANK
3/10/2014	0.029		3/10/14/30/8 hr	21.0		Stationary	8 hr
3/10/2014		0.418	3/10/14/30/30 M	43.5		Stationary	30 min

Sample Collection Date	8-hour TWA (area percent)	30 Minute (area percent)	Sample I.D.	Asbestos Fibers by PCM	95% Confidence Level	Activity During Sampling	Sampling Time Criteria
3/10/2014	BLANK		3/10/14/30 blank	0.0	-	Stationary	BLANK
4/10/2014	0.007		4/1/2014/95-TWA	12.5		Stationary	8 hr
4/10/2014		<0.0143	4/10/2014/22/30	<7.0		Stationary	30 min
4/10/2014	BLANK		4/10/2014/B	0.0		Stationary	BLANK
9/22/2014	N/A		9/22/2014-95-TWA	N/A		Atlas Inspection	8 hr
9/22/2014		0.04	9/22/2014-95-TWA	7.0		Atlas Inspection	30 min
9/22/2014	BLANK		9/22/2014-B	0.0		Atlas Inspection	BLANK
10/21/2014	0.004		10/21/2014-95-TWA	5.5		Atlas Inspection	8 hr
10/21/2014		<0.058	10/21/2014-50-30	1.5		Atlas Inspection	30 min
10/21/2014	BLANK		10/21/2014-B	0.0		Atlas Inspection	BLANK
11/13/2014	<0.005		11/13/14-95-TWA	2.0		Atlas Inspection	8 hr
11/13/2014		<0.042	11/13/14-50-30	0.0		Atlas Inspection	30 min
11/13/2014	BLANK		11/13//2014-B	0.0		Atlas Inspection	BLANK
12/18/2014	<0.003		12/18/14-95-TWA	4.0		Atlas Inspection	8 hr
12/18/2014		<0.042	12/18/14-93-30	2.0		Atlas Inspection	30 min
12/18/2014	BLANK		12/18/14-B	0.0		Atlas Inspection	BLANK
2015 Air Sampling Data							
1/7/2015	0.024		1-7-15-95-TWA	35.0		Atlas Asbestos Mine Insp.	8 hr.
1/7/2015		<0.042	1-7-15-93-30	1.5		Atlas Asbestos Mine Insp.	30 min
1/7/2015	Blank		1-7-15-B	0.0		Atlas Asbestos Mine Insp.	Blank -- travel
2/13/2015	<0.005		2-13-15-95-TWA	4.0		Atlas Asbestos Mine Insp.	8 hr
2/13/2015		<0.042	2-13-15-93-30	0.0		Atlas Asbestos Mine Insp.	30 min
2/13/2015	Blank		2-13-15-B	0.0		Atlas Asbestos Mine Insp.	Blank -- travel
3/6/2015	<0.003		3-6-15-95-TWA	1.5		Atlas Asbestos Mine Insp.	8 hr
3/6/2015		<0.043	3-6-15-93-30	0.0		Atlas Asbestos Mine Insp.	30 min
3/6/2015	Blank		3-6-15-B	0.0		Atlas Asbestos Mine Insp.	Blank -- travel
3/9/2015	0.048		03-09-15-95-TWA	42.5		Welding R11 CCMA	8 hr
3/9/2015		<0.043	03-09-15-93-30	5.5		Welding R11 CCMA	30 min
3/9/2015	Blank		03-09-15-B	0.0		Welding R11 CCMA	Blank -- travel

Sample Collection Date	8-hour TWA (area percent)	30 Minute (area percent)	Sample I.D.	Asbestos Fibers by PCM	95% Confidence Level	Activity During Sampling	Sampling Time Criteria
4/22/2015	0.048		04-22-15-95-TWA	13.5		Atlas Asbestos Mine Insp.	8 hr
4/22/2015		<0.043	04-22-15-93-30	3.5		Atlas Asbestos Mine Insp.	30 min
4/22/2015	Blank		04-22-15-B	0.0		Atlas Asbestos Mine Insp.	Blank -- travel
4/30/2015	<0.004		04-30-15-95-TWA	1.0		San Benito Peak -- Am. Twr.	8 hr
4/30/2015		<0.042	04-30-15-93-30	0.0		San Benito Peak -- Am. Twr.	30 min
4/30/2015	Blank		04-30-15-B	0.0		San Benito Peak -- Am. Twr.	Blank -- travel
5/5/2015	0.014		05-05-15-95-TWA	18.0		Atlas Asbestos Mine Insp.	8 hr
5/5/2015		<0.047	05-05-15-93-30	3.5		Atlas Asbestos Mine Insp.	30 min
5/5/2015	Blank		05-05-15-B	0.0		Atlas Asbestos Mine Insp.	Blank -- travel
5/28/2015	0.021		05-28-15-95-TWA	29.0		Atlas Asbestos Mine Insp.	8 hr
5/28/2015		<0.047	05-28-15-93-30	4.5		Atlas Asbestos Mine Insp.	30 min
5/28/2015	Blank		05-28-15-B	0.0		Atlas Asbestos Mine Insp.	Blank -- travel
6/8/2015	0.01		6-8-15-95-TWA	16.0		Atlas Asbestos Mine Insp.	8 hr
6/8/2015		<0.047	6-8-15-93-30	0.0		Atlas Asbestos Mine Insp.	30 min
6/8/2015	Blank		6-8-15-B	0.0		Atlas Asbestos Mine Insp.	Blank -- travel
7/14/2015	<0.006		7-14-15-95-TWA	0.0		Atlas Asbestos Mine Insp.	8 hr
7/14/2015		0.123	7-14-15-93-30	15.0		Atlas Asbestos Mine Insp.	30 min
7/14/2015	Blank		7-14-15-B	0.0		Atlas Asbestos Mine Insp.	Blank -- travel
8/3/2015	0.013		8-3-15-50-TWA	15.5		Atlas Asbestos Mine Insp.	8 hr
8/3/2015		<0.043	8-3-15-22-30	0.0		Atlas Asbestos Mine Insp.	30 min
8/3/2015	Blank		8-3-15-B	0.0		Atlas Asbestos Mine Insp.	Blank -- travel
9/10/2015	0.009		9-10-15-33-TWA	10.5		Atlas Asbestos Mine Insp.	8 hr
9/10/2015		0.064	9-10-15-93-30	8.0		Atlas Asbestos Mine Insp.	30 min
9/10/2015	Blank		9-10-15-B	0.0		Atlas Asbestos Mine Insp.	Blank -- travel
10/20/2015	0.004		10-20-15-95-TWA	7.0		Atlas Asbestos Mine Insp.	8 hr
10/20/2015		<0.043	10-20-15-33-30	0.0		Atlas Asbestos Mine Insp.	30 min
10/20/2015	Blank		10-20-15-B	0.0		Atlas Asbestos Mine Insp.	Blank -- travel

Sample Collection Date	8-hour TWA (area percent)	30 Minute (area percent)	Sample I.D.	Asbestos Fibers by PCM	95% Confidence Level	Activity During Sampling	Sampling Time Criteria
11/13/2015	<0.003		11-13-15-93-TWA	0.0		CCMA	8 hr
11/13/2015		<0.044	11-13-15-50-30	0.0		CCMA	30 min
11/13/2015	Blank		11-13-15-5	0.0		CCMA	Blank – travel
2016 Site Inspection Air Sampling Data							
5/21/2016	0.009		5-24-16-33-TWA	19.1		CCMA	8 hr.
5/21/2016		0.043	5-24-16-95-30	<7.0		CCMA	30 min
5/21/2016	Blank		5-24-16-B	0.0		CCMA	Blank -- travel

CCMA = Clear Creek Management Area
PCM = phase contrast microscopy
SUV = sport utility vehicle
TWA = time-weighted average

Appendix E: ARAR Analysis

Section 121(d)(1)(A) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires that remedial actions at CERCLA sites attain (or justify the waiver of) any Federal or State environmental standards, requirements, criteria, or limitations that are determined to be legally applicable or relevant and appropriate requirements (ARARs). Federal ARARs may include requirements promulgated under any Federal environmental laws. State ARARs may only include promulgated, enforceable environmental or facility-siting laws of general application that are more stringent or broader in scope than Federal requirements and that are identified by the State in a timely manner. ARARs are identified on a site-specific basis from information about the chemicals at the site, the remedial actions contemplated, the physical characteristics of the site, and other appropriate factors. ARARs include only substantive, not administrative, requirements and pertain only to onsite activities. There are three general categories of ARARs: chemical-specific, location-specific, and action-specific.

Chemical-specific ARARs identified in the selected remedy within the 1989 and 1991 Records of Decision (RODs) (EPA, 1989, 1991) for this Site and considered for this Five Year Review (FYR), are shown in Table E- 1. Contaminants with decision document cleanup standards that exceed their current regulatory standard are indicated the right column of Table E- 1.

Table E- 1: Summary of Chemical-Specific ARAR Changes

Contaminants of Concern	ROD Cleanup Standard	State Standard	Federal Standard	Is the ROD Cleanup Standard above the Current Federal or State Standard?
PM10	30 µg/m^3 (annual average) or 50 µg/m^3 (24 hour period)	20 µg/m^3 (annual average) or 50 µg/m^3 (24 hour period)*	N/A (annual average) or 50 µg/m^3 (24 hour average)	Yes (annual average)
PM2.5	N/A	12 µg/m^3 (annual average)*	12 µg/m^3 (annual average) or 35 µg/m^3 (24 hour average)	PM2.5 is a new standard

PM = particulate matter
PM2.5 =ambient levels of particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 µm
PM10 -ambient levels of particulate matter with an aerodynamic diameter less than or equal to a nominal 10 µm
Fiber -a particulate form of asbestos 5 micrometers or longer, with a length-to-diameter ratio of at least 3 to 1
µg = micrograms
m =meter m^3 cubic meters
g =gram
cc =cubic centimeter
*The original ARAR references California Air Resources Act (Health and Safety Code, Division 26, Section 3900 et seq.; 17 California Code of Regulations (CCR), Division 3, Chapter 1, specifically the Fresno County Air Pollution Control District). Regulatory authority now rests with the San Joaquin Valley Air Pollution District per California Health and Safety Code Division 26, Part 3, Chapter 2, Article 1

Asbestos now has ambient air quality standards (AAQS) more stringent than those established in the 1989 ROD. Specifically, the California AAQS for PM10 has been reduced from 30 $\mu g/m^3$ to 20 $\mu g/m^3$ (annual average). In addition, a new standard has been established for PM2.5 in response to the most current science on particulate matter risks. If implemented, these changes would increase protectiveness. However, because the current remedy is protective for the long term, EPA does not recommend revising the cleanup standards for the mine area at this time.

There has been one location-specific ARAR change pursuant to State regulations under Title 22 that impacts land use controls. Title 22, CCR, Division 4.5, Chapter 39, Section 67391(a), (d), (g), and (i) requires all land-use covenants to be signed by the California State Department of Toxic Substances Control and the landowner and to be recorded in the county where the land is located (April 19, 2003). It was acknowledged in the 2006 and 2011 FYRs that this new relevant and appropriate ARAR applied to Atlas Mine Area OU, JMM OU, and the City OU and the LUCs recorded in 2010 and 2011 are consistent with this standard.

The California Air Resources Board (CARB) issued the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (July 29, 2002). EPA has determined that the current remedies selected at the Atlas Mine Area, JMM, and the City OU are all protective and therefore does not recommend revising the respective underlying decision documents to select this standard as a new ARAR. However, EPA does recommend that the respective O+M health and safety plans be updated to ensure that all road construction and maintenance activities that trigger these standards be done in compliance with CARB ATCM, Section 93105(d) pursuant to the California Health and Safety Code, Section 39666(d) and the CARB ATCM for construction and surfacing applications.

The following ARARs have not changed since the last FYR, and therefore, do not affect protectiveness:

- The Endangered Species Act of 1973, 16 United States Code (USC), Section 1536 (A-D)
- U. S. Fish and Wildlife Service Mitigation Policy (46 Fed. Reg. 7644-7663. January 1981)
- Clean Air Act (Asbestos NESHAPS, 40 Code of Federal Regulations (CFR) SS 61.152 AND 40 CFR SS 61.156, 40 CFR SS 61.153)
- Federal Water Pollution Control Act, Section 404(B)(1), 33 USC, Section 1344(B)(1)
- California Administrative Code Title 27, Division 2, Chapter 7, Subchapter 1, Article 1 (Formerly California Administrative Code, Title 22, Chapter 30, Section 66740 (A))
- California Porter Cologne Water Quality Act, 23 CCR, Chapter 3: Subchapter 15, Article 7 – Mining Waste Management, Sections 2570-2574 (repealed), Specifically 23 CCR, Section 2572(B), 23 CCR, Section 2572(H)(1)(A), 23 CCR, Section 2572(H)(3), 23 CCR, Section 2546(D) and 23 California Code of Regulations Section 2546(E)
- 42 USC, Section 101(40)(A) through (H)

ARARs identified from the 1989 and 1991 RODs that are no longer pertinent, now that the response action has transitioned from construction to long-term O&M phase work are listed below:

- Toxic Substances Control Act pursuant to Asbestos Hazard Emergency Response Act (52 CFR SS 42826 (1987))
- Clean Air Act pursuant to NESHAPS (40 CFR SS 61.152 AND 40 CFR SS 61.15)
- California Hazardous Waste Control Laws, Health and Safety Code, Div. 20, Chapter 6.5. Section 25220-25241 et seq.
- 22 CCR, Div. 4, Chapter 30, Section 66001 et seq.

Appendix F: Human Health and Environment Risk Assessment Review

1. Human Health Risk Exposure and Site Conditions

At the Atlas Asbestos Mine Superfund Site and the Coalinga Asbestos Mine Superfund Site (Sites), there are generally two routes of exposure to asbestos: inhalation and ingestion. Inhalation of asbestos-laden dust and fibers is the exposure pathway of greatest concern to human health because this pathway has been positively linked to cancer in humans. While not confirmed, there has been one animal study which suggested that ingestion of asbestos fibers may also be associated with an increased risk of cancer (EPA, 1991). The exposure pathways have not changed since the last Five-Year Review.

There is an additional potential route of exposure (ingestion of water) from the Atlas Mine Area Operable Unit (Atlas) and Johns-Manville Mine Operable Unit (JMM), areas which drain into intermittent streams feeding the Arroyo Pasajero Ponding Basin (Ponding Basin). In the past, Ponding Basin water has overflowed into the California Aqueduct, which is a drinking water supply. The Ponding Basin has since been expanded and has had no further releases into the aqueduct. Because water in the California Aqueduct historically contained high levels of dispersed asbestos fibers, municipalities are required to treat drinking water to a maximum contaminant level of less than 7 million fibers per liter of asbestos under the Safe Drinking Water Act. EPA has determined that the California Department of Water Resources and U.S. Bureau of Reclamation are adequately addressing this exposure route.

EPA's Risk Assessment determined that potentially exposed populations to asbestos inhalation hazards from the Sites include the following groups: 1) individuals who use the Atlas Mine Area OU and Johns-Mansville Mill OU for recreational off-highway vehicle driving, hiking, camping, hunting, ranching and other public uses; 2) individuals who live in close proximity to the Atlas Mine Area OU and the Johns-Mansville Mill OU; and 3) the populations of California communities in Fresno and San Benito Counties such as Huron, Coalinga, Idria, Five Points, Stratford, Kettleman City, Priest Valley, Lonalk, Panoche and Avenal. If asbestos fibers from the Sites entered the nearby California Aqueduct, populations receiving the water from the Aqueduct downstream could also be exposed to an asbestos ingestion hazard. Exposed populations have not changed since the last FYR.

Lands within the Atlas Mine Area OU and Johns-Mansville Mill OU are not suitable for any recreational, commercial, or residential uses now or at any time in the future. The only suitable use for the site is open space and ecological habitat. Access to these sites is prevented by engineering controls (fencing, signage, and locked gates) as required by the 1991 Atlas OU1 Record of Decision and 1990 Coalinga OU1 Record of Decision.

Institutional Controls are in place at the Johns-Manville Mill OU via a deed restriction filed with Fresno County on October 30th, 2011 at the request of Pine Canyon Land Company; EPA was named as a third party beneficiary. This deed restriction encumbers the JMM site and prohibits the site from ever being used as a residence, hospital for humans, public or private school for persons under 21 years of age, or a day care center for children. The deed

restriction requires that any contaminated soils be managed according to State and Federal laws and that soil material cannot be removed from the site unless a Soil Management Plan is approved by the CERCLA Lead Agency. Several other activities are prohibited by the deed restriction including drilling wells, extracting groundwater for any other purpose besides remediation, alteration of existing drainage patterns or engineered contours, and alteration of site access controls.

The Atlas site consists of three privately held parcels of land. One of the parcels is owned by Northrop Grumman, the successor to Vinnell and a party to the 1992 Consent Decree, which states that Defendants are not required to implement the deed restriction requirement of the Consent Decree. Defendants (including Northrop) were only required to file a copy of the Consent Decree with the Fresno County Recorder's Office, which was completed. If Northrop sells this parcel of land, EPA will require the future owner to file an LUC consistent with the ROD. The other two privately held parcels of land at Atlas are owned by Wheeler Properties, Inc., which no longer exists as a corporate entity. Wheeler was not a party to the 1992 Consent Decree, which therefore required that LUCs be placed on the two Wheeler parcels. However, deed restrictions cannot be recorded for abandoned parcels of land. The 2010 Explanation of Significant Differences for Atlas requires future owners of these parcels to record LUCs at the sites or lose their BFPP status. The 2010 ESD notes that human exposure at Atlas is further limited given its location within the CCMA, which is managed by BLM and has limited access and use restrictions to protect the public from asbestos exposure.

The City of Coalinga Operable Unit (City OU) contains the Waste Management Unit (WMU) as prescribed by the two 1989 RODs for Atlas OU2 and Coalinga OU2. Land use at the WMU is controlled by a 2010 deed restriction recorded by Fresno County in September 2010 at the request of the Redevelopment Agency of the City of Coalinga; EPA was named as a third party beneficiary. This deed restriction encumbers the WMU and prohibits it from ever being used as a residence, hospital for humans, public or private school for persons under 21 years of age, or a day care center for children. The deed restriction requires that any contaminated soils be managed according to State and Federal laws and that soil material cannot be removed from the site unless a Soil Management Plan is approved by the CERCLA Lead Agency. Several other activities are prohibited by the deed restriction including drilling wells, extracting groundwater for any other purpose besides remediation, alteration of existing drainage patterns or engineered contours, and creation of topographically low areas where water may pond—including accessory structures, swimming pools, and spas. Other portions of the City OU where asbestos was handled, stored, and transported have been remediated without use restrictions, removed from the National Priority List, and redeveloped. Current and expected land use in these areas has not changed since the 2011 FYR.

The routes of exposure, receptors, and risk assessment methodology identified in the risk assessment have not changed since the last FYR. Therefore the remedies are still protective.

2. Changes in Toxicity Values

EPA's Integrated Risk Information System (IRIS) has a program to update toxicity values used by the agency in risk assessment when newer scientific information becomes available. Review of IRIS information on asbestos continues to show that there is no reference dose for chronic oral or chronic inhalation exposure, and no reference dose for noncarcinogenic effects. In the past 5 years, there have been no changes to the toxicity values for asbestos. Therefore, the cleanup level is still protective.

3. Ecological Risk

In 1991, ecological risk assessments were performed for the Atlas Mine Area OU, City OU (EPA, 1991) and JMM. The CCMA risk assessment was performed in 2008 (EPA, 2008). In the last 5 years, there have been no changes to the land use of the site or the areas surrounding the site, no new ecological receptors, and no changes in exposure pathways. It is not necessary to update the ecological risk assessment during this FYR.