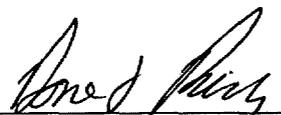


Five-Year Review Report

**Third Five-Year Review Report
For
Mountain View Mobile Home Estates, NPL Site, Globe, AZ**

September 2005

**PREPARED BY:
State of Arizona**

Approved by: 
Don Richey, Manager
Remedial Programs Section
Waste Programs Division
Arizona Department of Environmental Quality

Date: 9/28/05

Concurred by: 
Kathleen Johnson, Chief
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Superfund Division
U.S. Environmental Protection Agency, Region 9

Date: 9/28/05

Five-Year Review Summary Form

| SITE IDENTIFICATION | | |
|--|--|-------------------------------|
| Site name: Mountain View Mobile Homes Estates | | |
| EPA ID: AZD980735724 | | |
| Region: IX | State: AZ | City/County: Globe, AZ |
| SITE STATUS | | |
| NPL status: <input type="checkbox"/> Final <input checked="" type="checkbox"/> Deleted <input type="checkbox"/> Other (specify) | | |
| Remediation status (choose all that apply): <input type="checkbox"/> Under Construction <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete | | |
| Multiple OUs?* <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | Construction completion date: April 1986 | |
| Has site been put into reuse? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | |
| REVIEW STATUS | | |
| Lead agency: <input type="checkbox"/> EPA <input checked="" type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency | | |
| Author name: Ed Pond | | |
| Author title: Remedial Project Manager | Author affiliation: State of Arizona | |
| Review period: 09 /01 / 2004 to 07 /31/2005 | | |
| Date(s) of site inspection: 09/00/2004 | | |
| Type of review: | | |
| <input type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input checked="" type="checkbox"/> NPL State/Tribe-lead <input type="checkbox"/> Regional Discretion | | |
| Review number: <input type="checkbox"/> 1 (first) <input type="checkbox"/> 2 (second) <input checked="" type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify) _____ | | |
| Triggering action: | | |
| <input type="checkbox"/> Actual RA Onsite Construction at OU # _____ | <input type="checkbox"/> Actual RA Start at OU# _____ | |
| <input type="checkbox"/> Construction Completion | <input checked="" type="checkbox"/> Previous Five-Year Review Report | |
| <input type="checkbox"/> Other (specify) | | |
| Triggering action date : 12/10/1999 | | |
| Due date : 12/10/2004 | | |

Five-Year Review Summary Form, cont'd.

Issues:

Various maintenance issues were identified during the site inspection such as sediment and debris accumulation, excess vegetation, minor gaps in the fencing, etc.

The potential need for an institutional control on the property if the State transfers ownership was identified as an issue.

Recommendations and Follow-up Actions:

ADEQ is in the process of addressing these maintenance issues with the existing maintenance contractor and is seeking bids for a contractor to conduct the confined-space entry repair inspections, grating repairs / replacement, and sediment removal from the open channels and the subsurface drainage pipes.

The State Superfund Contract (SSC) for the site expires in March 2006. During the SSC amendment process, a clause should be added that an institutional control mechanism needs to be implemented if the State transfers ownership (for example, a DEUR) and EPA and ADEQ should ensure that the remedy decision document includes the institutional controls mechanism, and modify the decision documents accordingly. ADEQ will work with the State of Arizona Lands Department to ensure that land transfer does not occur.

Protectiveness Statement(s):

The remedial action selected in the ROD, signed June 2, 1983, for the Mountain View Mobile Home Estates Superfund site remains protective of human health and the environment as long as the State of Arizona is still the owner. Currently, there are no environmental exposure pathways that could result in unacceptable risks and none are expected as long as the engineered controls selected in the decision documents continue to be properly operated, monitored, and maintained, and the land use at the site allows for the integrity of the remedy to continue. The remedy remains protective in the short-term. In order for the remedy to remain protective in the long-term, follow-up actions may need to be taken. In the long-term, if the State of Arizona transfers the property, a DEUR or some sort of deed restriction will need to be implemented for the remedy to remain protective in the long-term.

EXECUTIVE SUMMARY

The remedy for the Mountain View Mobile Home Estates Superfund site in Globe, Arizona included permanent relocation of all residents, and onsite demolition, burial and capping of all physical structures and contaminated soils. The site achieved construction completion with the signing of the Remedial Action Report in April 1986. The trigger for the five-year review was the actual start of the remedial action – permanent relocation of residents in May 1983.

The assessment of this five-year review found that the remedy was constructed in accordance with the requirements of the Record of Decision (ROD). The remedy is functioning as designed. The present operation and maintenance program is adequate and being effectively managed by the Arizona Department of Environmental Quality (ADEQ). However, a few minor maintenance issues were identified as needing repair. The reviewers also suggested renegotiation of the State Superfund Contract that will expire in 2006.

The remedial action selected in the ROD, signed June 2, 1983, for the Mountain View Mobile Home Estates Superfund site remains protective of human health and the environment as long as the State of Arizona is still the owner. Currently, there are no environmental exposure pathways that could result in unacceptable risks and none are expected as long as the engineered controls selected in the decision documents continue to be properly operated, monitored, and maintained, and the land use at the site allows for the integrity of the remedy to continue. The State of Arizona, as owner of the property, has ensured that the engineering controls will be maintained. In the long-term, if the State of Arizona transfers the property, a Declaration of Environmental Use Restriction (DEUR) or some sort of deed restriction will need to be implemented for the remedy to remain protective in the long-term.

I. INTRODUCTION

The purpose of five-year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and recommendations to address them.

The Agency is preparing this Five-Year Review report pursuant to CERCLA §121 and the National Contingency Plan (NCP). CERCLA §121 states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgement of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

The Agency interpreted this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

The State of Arizona conducted this five-year review of the remedial actions implemented at the Mountain View Mobile Home Estates site in Globe, Arizona. This review was conducted from September 2004 through August 2005. This report documents the results of the review. ADEQ is preparing this five-year review pursuant to CERCLA §121 and the National Contingency Plan (NCP).

This is the third five-year review for the Mountain View Mobile Home Estates site. The triggering action for this review is the date of the last five-year review in December 1999. The five-year review is required because hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure.

II. SITE CHRONOLOGY

| Event | Date |
|--|---------------|
| Arizona Department of Health Services discovers that asbestos tailings are present at the Mountain View Mobile Home Estates site | 1979 |
| Final listing on EPA National Priorities List | July 1982 |
| Remedial Investigation/Feasibility Study (RI/FS) made available to public | May 1983 |
| Public Meeting on proposed remedy | May 16, 1983 |
| Permanent Relocation of Residents begins | May 1983 |
| ROD selecting the remedy is signed | June 1983 |
| Remedial Action Report | April 1986 |
| First Five-Year Review | 1991 |
| Second Five-Year Review | December 1999 |

III. BACKGROUND

The Mountain View Mobile Home Estates site was a 17-acre residential subdivision of about 130 people that was built in 1974 on graded asbestos tailings and contaminated soil, located in Globe, Arizona, about 75 miles east of Phoenix. Prior to 1974, the site was the Metate Asbestos Corporation mill, which processed asbestos ore from 1953 until it was closed in 1974 by permanent injunction of the Gila-Pinal Counties Air Quality Control District for failure to meet air quality standards.

The mobile home development was located within the Globe city limits, 1.5 miles east of the city center. The development contained about 45 mobile homes with paved roads, utilities, landscaping, a sewage treatment plant and lagoon, and miscellaneous improvements, including concrete patios, walls and storage sheds.

The subdivision became a concern of the officials at the State of Arizona Health Department in 1979 following the discovery of asbestos contamination in the underlying soils. In January 1980, the US Center for Disease Control (CDC) issued an advisory declaring that the subdivision should be evacuated.

The site was added to the amended Interim Priorities List in July 1983 as Arizona's highest priority site. In January 1983, Superfund monies were allocated for an RI/FS. The final draft RI/FS report was released May 6, 1983. On June 2, 1983, the EPA ROD selected permanent relocation of the residents and subsequent site closure, capping and maintenance as the remedial action for the site. In 1991 and 1999, EPA conducted Five-Year Reviews that concluded that the remedy remained effective and protective.

The current land use for the surrounding area is a mixture of residential and non-residential. The site is adjacent to U.S. Forest Service property, former asbestos and copper milling operations, a light industrial manufacturing plant, a storage facility and one private residence.

The basis for action at the Mountain View Mobile Home Estates was the exposure to the residents of chrysotile asbestos fibers from the contaminated soil and the graded tailings. The exposure exceeded the national urban background levels and was associated with significant human health risks. The major concern was the resident children who were observed playing directly with tailings. Their life expectancy exceeded the prolonged latent period for asbestos-related disease (i.e., 30 – 40 years).

IV. REMEDIAL ACTION

Abandonment of the Mountain View Mobile Home Estates site was chosen as the most practicable and economical method of dealing with the asbestos contamination at the site. The permanent relocation of all subdivision residents eliminated the need for any extensive future air monitoring programs, while the onsite burial of mobile homes and all other physical structures (1) simplified the overall cleanup process, (2) economized site cleanup costs, and (3) achieved a greater degree of total decontamination.

The remedy called for onsite demolition and burial of all physical structures, posts, buildings and mobile homes. Their onsite containment, as well as the onsite containment of asbestos particles and fibers present in the soil, was accomplished with a permanent cap. The cap was constructed by first clearing and leveling the site, adding a white non-woven filter fabric liner on top of the leveled site to prevent re-exposure through erosion of the cover, placing 21 inches of clean fill on top of the liner that was compacted to a minimum density of 90 per cent. On top of this compacted layer was placed three inches of coarse (two-inch) aggregate rock compacted to 95 percent density. The liner was to serve not only as a barrier to the asbestos but also to be an early warning signal if erosion should occur in the future. The white fabric will serve as a highly visible sign that maintenance is required.

Storm drainage passing through the site was a major concern since the site contained three major washes and two of these drainages were relatively steep grades as they passed through the site. Drainage studies were performed to determine the stormwater runoff that would be anticipated. Two new underground drainage pipelines and one new open drainage channel were designed to carry storm runoff to reduce the likelihood of overflow and erosion.

The Record of Decision did not identify any specific form of Institutional Control to be implemented at the site. Nevertheless, a de facto institutional control has been implemented through the State Superfund Contract between EPA and the State of Arizona. The State Superfund Contract contains restrictions that protects the integrity of

the remedy and establishes maintenance and inspection requirements so that the potential for exposure to asbestos is abated.

The current long-term monitoring and maintenance activities according to the operation and maintenance (O&M) plan dated March 1984 (revised November 1986) are conducted with oversight by the ADEQ. The primary activities associated with O&M include the following:

- Visual inspection and taking corrective actions with regard to erosion, settlement, stability, etc;
- Repair of fence damage resulting from vandalism or animals;
- Removing debris that accumulates along the perimeter fence;
- Removing built-up silts or debris from the channel or inside drainage pipes; and
- Replacing or repainting warning signs on the perimeter fence.

Annual O&M costs for routine site maintenance tasks are approximately \$8,600.00.

V. PROGRESS SINCE THE LAST FIVE-YEAR REVIEW

The last five-year review conducted in 1999 found the site to be in excellent condition and had no recommendations or follow-up items. Since the last five-year review, the State of Arizona continued to inspect the site at least annually. No major repairs were needed.

VI. FIVE-YEAR REVIEW PROCESS

The Mountain View Mobile Home Estates Five-Year Review team was led by Ed Pond, Remedial Project Manager at ADEQ, with support from Cathy O'Connell, also from ADEQ, and included ADEQ staff with expertise in mining, geology, hydrology and biology. Cynthia Wetmore and Michael Montgomery of the U.S. EPA assisted in the review as the representatives for the support agency.

From September 1, 2004 to June 1, 2005, the review team performed a survey of the Record of Decision (ROD), the Site Close-Out Report, Applicable or Relevant and Appropriate Requirements (ARARs), the State/EPA Superfund Contract, the September 1991 and December 1999 Five-Year Reviews.

Two site inspections were conducted on September 1, 2004, and September 22, 2004, by the ADEQ project manager, Ed Pond. The inspections consisted of:

1. A walking inspection of the entire perimeter of the site to look for damaged fence, missing warning signs, collected debris and checking the condition of the gates and locks;
2. Traversing the interior of the site from east to west looking for signs of erosion, settlement, exposed fabric liner, indications of pools of standing water, checking

- that drainage manhole covers are in place and undisturbed, noting weed and shrub growth, and looking for tree growth and animal burrows;
3. Inspecting the drainage system for signs of erosion, debris accumulation or rip rap displacement;
 4. Checking the concrete drainage channels for cracks, undercutting, settling or weed growth; and
 5. Photographing site features and conditions.

The inspection report is attached to this report. The site was found to be in generally good condition. There were a few maintenance items to be addressed (see section VIII); however none of the items impacted the protectiveness of the remedy.

Once this report is signed, a notice will be sent to the "Arizona Silverbelt", the local Globe newspaper, announcing that the Five-Year Review Report for Mountain View Mobile Home Estates Superfund site is available to the public at ADEQ's office. The notice will provide contact information to allow community members to provide comments or ask questions about the site. A summary of the public comments received, if any, will be provided as an appendix to the Five-Year Review report.

VII TECHNICAL ASSESSMENT

Question A: Is the remedy functioning as intended by the decision documents?

The review of documents, ARARs, and the results of the site inspection indicates that the remedy is functioning as intended by the ROD. The capping has prevented direct contact with the asbestos in the soil, debris and tailings.

Operation and maintenance of the cap and drainage structures has been effective. There were no areas or conditions of noncompliance with the goals of the remedial action at the site. While recent acts of vandalism have temporarily disturbed site fencing, the repair of drainage and site fencing should reduce future disruption.

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 Federal ARARs that apply to this site are found at 40 CFR Section 61.151, which is the "(s)tandard for inactive waste disposal sites for asbestos mills and manufacturing and fabricating facilities." This standard description was published after the remedial action. The remedy that is in place is in compliance with all requirements in this standard.

Section 61.151, paragraph (a)(3), describes an acceptable cap for asbestos waste: "Cover the asbestos containing waste material with at least 60 centimeters (2 feet) of

compacted clean material, and maintain it to prevent exposure of the asbestos containing waste.” This is accomplished by the present cap.

There have been no changes in these ARARs and any new standards or To Be Considered requirements (TBCs) affecting the protectiveness of the remedy. No new State ARARs have been promulgated since the last five-year review that would render the remedial action inadequate.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

At MVMHE, the site has been protected from inappropriate land uses by the State retaining ownership and the State Superfund Contract containing restrictions that protects the integrity of the remedy. The arrangement is currently protective. However, in the future, if the State transfers ownership, a control such as a DEUR will need to be implemented as long as waste remains at the site.

VIII ISSUES

The site was found to be in generally good condition. The following problems were noted:

| Issue | Currently Affects Protectiveness (Y/N) | Affects Future Protectiveness (Y/N) |
|---|--|-------------------------------------|
| Sediment and debris accumulation at the downstream end of the open channel. | N | N |
| Debris and brush accumulation on upstream side of grating in the open concrete channel. | N | N |
| Overhanging vegetation in open concrete channel. | N | N |
| Holes cut in perimeter fence and in interior fence/missing fence sections. | N | N |
| Vegetation growth in ADOT right-of-way channels, riprap in need of repair. | N | N |
| Trim mesquites to reduce root penetration of cap | N | N |
| Crawl spaces under perimeter fence. | N | N |
| Small piles of debris and trash accumulation | N | N |
| Sediment accumulation at inlet and outlet of Drainage Pipeline No. 1 | N | N |
| Animal burrows in cap. | N | N |

| Issue | Currently Affects Protectiveness (Y/N) | Affects Future Protectiveness (Y/N) |
|--|--|-------------------------------------|
| Evidence of trespassers (Skateboarders) | N | N |
| No formal Institutional Control on title; potential problem if the property is sold or transferred | N | N |
| ADEQ to work with State Land Department to ensure site is not sold | N | N |

IX RECOMMENDATIONS AND FOLLOW-UP

| Issue | Recommendations/ Follow-up Actions | Oversight Agency | Milestone Date |
|---|--|------------------|----------------------|
| Sediment and debris accumulation at the downstream end of the open channel. | Muck out sediment, trim vegetation, remove debris from grating, replace or repair grating, repair fence on top of grating. Haul debris and vegetation to landfill. Sediment can be spread over surface of ground within fenced area of site. | ADEQ | 10/30/2005 |
| Debris and brush accumulation on upstream side of grating in the open concrete channel. | Same as above | ADEQ | 10/30/2005 |
| Overhanging vegetation in open concrete channel. | Trim vegetation so it does not hang over edges of channel | ADEQ | Completed April 2005 |
| Holes cut in perimeter fence. | Replace sections of fence that contain holes and replace sections of previous fence patches that can allow easy site entry | ADEQ | Completed April 2005 |
| Holes cut in interior fence/missing fence sections. | Since the fence lies within the perimeter fence, replacement of missing sections is not required | ADEQ | No action necessary |

| Issue | Recommendations/ Follow-up Actions | Oversight Agency | Milestone Date |
|--|---|---------------------|----------------------|
| Vegetation growth in ADOT right-of-way channels, riprap in need of repair. | Trim vegetation and repair rip rap as needed | ADEQ | 10/30/2005 |
| Trim mesquites to reduce root penetration of cap | Keep trees trimmed to moderate heights. Cut them down when height exceeds 5 feet or so. | ADEQ | On-going |
| Crawl spaces under perimeter fence. | Fill crawl spaces with rock or soil. | ADEQ | On-going |
| Small piles of debris and trash accumulation | Remove debris and trash piles. | ADEQ | Completed April 2005 |
| Sediment accumulation at inlet and outlet of Drainage Pipeline No. 1 | Muck out sediment at outlet and spread on ground within the fenced area. Muck out channel entrance. Inspect the channel at the two manhole locations. | ADEQ | 10/30/2005 |
| Animal burrows in cap. | Conduct periodic inspections to monitor the number of animal burrows. | ADEQ | 10/30/2005 |
| Evidence of trespassers (Skateboarders) | Contract Globe Police Department about periodic drive by inspections. Repair fence to limit access. | ADEQ | 10/30/2005 |
| No formal Institutional Control on title; potential problem if the property is sold or transferred | At the time of the SSC amendment, EPA and ADEQ should ensure that the remedy decision document includes the institutional controls mechanism, and modify the decision documents accordingly (See discussion below). | ADEQ | March 2006 |
| ADEQ to work with State Land Department to ensure site is not sold | ADEQ will work with the State of Arizona Lands Department to ensure that land is not sold. | ADEQ | March 2006 |

ADEQ is in the process of addressing the maintenance issues with the existing maintenance contractor and is seeking bids for a contractor to conduct the confined-space

entry repair inspections, grating repairs / replacement, and sediment removal from the open channels and the subsurface drainage pipes.

The State Superfund Contract (SSC) for the site expires in March 2006. The State and EPA are required by statute to amend the SSC. Because waste remains in place at the Site, institutional controls should be used to protect the integrity of the remedy and prevent any exposure to the waste remaining on site. Since the State of Arizona owns the site and the SSC contains provisions to that the State must maintain the site to meet the objectives of the remedy, the SSC is considered currently to be an adequate control. Therefore, it has been determined that no further institutional controls are currently needed. However, during the SSC amendment process, a clause should be added that an institutional control mechanism needs to be implemented if the State transfers ownership (for example, a DEUR). At the time of the SSC amendment, EPA and ADEQ should ensure that the remedy decision document includes the institutional controls mechanism, and modify the decision documents accordingly.

XI PROTECTIVENESS STATEMENT

The remedial action selected in the ROD, signed June 2, 1983, for the Mountain View Mobile Home Estates Superfund site remains protective of human health and the environment as long as the State of Arizona is still the owner. Currently, there are no environmental exposure pathways that could result in unacceptable risks and none are expected as long as the engineered controls selected in the decision documents continue to be properly operated, monitored, and maintained, and the land use at the site allows for the integrity of the remedy to continue. The remedy remains protective in the short-term. In order for the remedy to remain protective in the long-term, follow-up actions may need to be taken. In the long-term, if the State of Arizona transfers the property, a DEUR or some sort of deed restriction will need to be implemented for the remedy to remain protective in the long-term.

XII. NEXT REVIEW

The next Five-Year Review will be conducted in 2010.