

19th Avenue Landfill Superfund Site 2010 Five Year Review

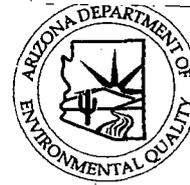
Appendix B - Explanation of Significant Difference (ESD) #3, June 2006



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Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

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19TH AVENUE LANDFILL

EXPLANATION OF SIGNIFICANT DIFFERENCE #3

April 2006

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EXPLANATION OF SIGNIFICANT DIFFERENCE
19th Avenue Landfill
Phoenix, Arizona

April 2006

I. INTRODUCTION

On September 21, 1989, the Arizona Department of Environmental Quality (ADEQ) signed a Letter of Determination (LOD) for the final remedy at the 19th Avenue Landfill site in Phoenix, Arizona. The United States Environmental Protection Agency (EPA) concurred with the remedy selected in the 1989 LOD through the issuance of a Record of Decision (ROD) on September 29, 1989. The EPA and ADEQ, by this document, are modifying the LOD/ROD to explain differences made to the established remedy.

Under Section 117 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendment and Reauthorization Act of 1986 (SARA), and pursuant to 40 C.F.R. Section 300.435(c) (2) (i) (55 Fed. Reg. 8666, 8852 (March 8, 1990)), the ADEQ is required, as the lead agency, to publish an Explanation of Significant Difference (ESD) when significant changes are being considered, or have been implemented to a final remedial action plan as described in a ROD. If the changes fundamentally alter the nature of the selected remedy, an amendment to the ROD is required [40 C.F.R. Section 300.435(c) (2) (ii)]. In this instance, significant changes have been made that modify the LOD/ROD requirements, but do not alter the hazardous waste management approach that the ADEQ and the EPA selected in the LOD and ROD respectively. Therefore, this ESD has been prepared to document these significant changes instead of a ROD amendment. The purposes of these changes are described in detail in Section III of this document.

This ESD modifies the 1989 remedy by requiring institutional controls (ICs) be added to the required remedy, which shall include a Declaration of Environmental Use Restriction (DEUR). Pursuant to this ESD, ICs are incorporated into the prescribed remedy and a DEUR, which is attached to the property deed, will be filed with the Maricopa County Records Office. This ESD and supporting documentation will become part of the 19th Avenue Landfill Administrative Record. Copies of the Administrative Record for the 19th Avenue Landfill site, including this ESD, will be placed at the following locations:

City of Phoenix Public Library
1221 N. Central Avenue
Phoenix, Arizona 85012

and

The Arizona Department of Environmental Quality
1110 W. Washington Street

Phoenix, Arizona 85007
and

U.S. EPA Records Center
75 Hawthorne Street, Suite 4035
San Francisco, CA 94105

The ADEQ has provided a fifteen (15) working-day comment period to the EPA in accordance with 40 C.F.R. Section 300.515 (h)(3). The EPA comments on this ESD are summarized in Section IV of this document, and included in the 19th Avenue Landfill Administrative Record file. Pursuant to 40 C.F.R. Section 300.435 (c)(2)(i), a formal public comment period is not required for this ESD.

II. BACKGROUND

The following provides a brief background of the 19th Avenue Landfill site, and a short summary of the original 1989 LOD/ROD. Additional background information can be found in the 1989 LOD/ROD and in the 19th Avenue Landfill Administrative Record.

A. Site Description

The 19th Avenue Landfill is located in an industrial area of Maricopa County, within the municipal boundaries of Phoenix, Arizona. The landfill covers 213 acres. The major part of the landfill, which covers approximately 200 acres and is referred to as Cell A, is located on the north side of the Salt River channel. This cell is bounded on the north by Lower Buckeye Road, on the east by the 15th Avenue storm drain outfall, on the west by 19th Avenue, and on the south by the river channel. The remainder of the landfill, Cell A-1, is bounded on the north by the Salt River channel, on the east by an active sand and gravel pit, on the south by industrial property, and on the west by an inactive sand and gravel pit. The Salt River bed adjacent to the landfill is normally dry. The site is located on alluvial fill and lies within the Basin and Range physiographic province. Groundwater flow direction is generally to the northwest.

B. Site History/ Selected Remedy

In 1955, the 19th Avenue Landfill site was relatively undisturbed except for a shallow 20-acre excavation in the northwestern portion of Cell A. In 1957, the City of Phoenix ("the City") extended an existing lease with the landowner to operate a municipal landfill. Sand and gravel pits were excavated to a depth of approximately 30 to 50 feet, and backfilled predominately with municipal refuse from the Phoenix area, and some solid and liquid industrial wastes.

Liquid industrial wastes were poured into unlined pits that were dug into areas of Cell A, previously filled with refuse. In addition to the municipal and industrial wastes, some medical wastes and materials containing low levels of radioactivity were deposited. It has been estimated that the Cell A landfill contained approximately nine million cubic yards of refuse. Cell A-1 was mined for sand and gravel prior to 1971, and completely filled with refuse by late 1972. Cell A-1

contained the same type of municipal refuse as in Cell A, and no evidence of liquid or solid special or hazardous types of materials were found. It has been estimated that the Cell A-1 landfill contains approximately one-half million cubic yards of refuse.

Parts of the landfill were covered with water by at least one flood event during 1965 and intermittently during the 1970's. Surface water runoff events in May 1978 washed refuse from the southwest part of Cell A and the northern third of Cell A-1. These were refilled; Cell A with refuse during the summer of 1978, and Cell A-1 with construction debris in 1979. River flows in the winter and spring of 1979 again washed out refuse in the southwestern part of Cell A. The next few years following the river flows, the area was covered with rubble, asphalt and dirt to prevent additional erosion.

The landfill was closed under a cease and desist order issued by the Arizona Department of Health Services (ADHS) in February 1979. The City and ADHS entered into a consent agreement in June 1979. The Consent Order was amended in December 1979. To comply with the first amended consent order, the City covered the site with fill material, stockpiled soil for final capping, installed groundwater monitor wells, built berms around the boundary of the landfill, installed a methane gas collection system and provided a 24-hour security guard until November 30, 1996, when the site was secured by a permanent fence with secured access points.

The landfill was placed on the EPA National Priorities List (NPL) in September 1983. A Remedial Investigation/Feasibility Study (RI/FS) was voluntarily conducted by the City. The RI/FS was prepared according to the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The RI/FS was submitted to ADEQ on June 9, 1988, and reviewed by the ADEQ, EPA and the Arizona Department of Water Resources (ADWR). Comments by these agencies were incorporated in the subsequent Remedial Action Plan (RAP).

In 1988, the EPA assigned the lead oversight responsibility for the site to the ADEQ. Since ADEQ became the lead agency, the City was required to prepare a RAP under the state Water Quality Assurance Revolving Fund (WQARF) rules. The RAP included options, ranging from excavation of the entire landfill to a no action option. These options were categorized into the four objectives for the 19th Avenue Landfill; *Refuse-Washout, Surface-Water Quality, Ground-Water Quality, and Landfill-Gas Accumulation*. Four options were developed for the Refuse-Washout objective, two for Surface-Water Quality, two for Ground-Water Quality, and one for Landfill-Gas Accumulation. The options surviving the screening in the feasibility study were assembled into four remedial alternatives that addressed all objectives for the 19th Avenue Landfill.

The ADEQ approved the final draft RAP along with the RI/FS for the 19th Avenue Landfill in a Letter of Determination (LOD) dated September 21, 1989. The LOD recorded approval of the preferred alternative A, with inclusion of a groundwater contingency plan (Appendix B of the RAP). The Record of Decision (ROD) issued by the EPA was dated September 29, 1989. This document served as the EPA concurrence of the remedy selected by the ADEQ for the 19th Avenue Landfill. The selected remedy, an engineered cap with groundwater monitoring, was

Alternative A in the RAP, as described in the LOD and the ROD.

A Consent Decree between the State of Arizona and the City of Phoenix was signed by the United States District Court on June 18, 1992. The Consent Decree specified the capping of the landfill cells, removal and treatment of methane gas, monitoring of groundwater, flood control improvements and bank stabilization, and a contingency plan to treat groundwater if standards are exceeded. The Decree provided legal assurance to the public that the approved remedy would be implemented as described in the LOD and the ROD.

Remedy construction was completed in late 1996, and the City of Phoenix, EPA and ADEQ representatives conducted a final inspection on February 25, 1997. They determined that the contractors had constructed the landfill cap in accordance with remedial design plans and specifications. ADEQ prepared the Preliminary Close-out Report (PCOR) in January 1998. The report attests to the fact that the final remedy was well constructed, and protective of human health and the environment. The PCOR noted that no future end use plans for the site were being considered, and that the site will not be used for any purpose inconsistent with the protection of public health and the environment. Public access to the site will be prohibited by a perimeter security fence.

In December 15 1995, the first Explanation of Significant Difference (ESD) was completed to describe a change in the lining technology for the drainage canal. This ESD was established during the design of the drainage canal.

The first Five-Year Review of this site was conducted in September 2000, and led to the identification of the need to update new Applicable or Relevant and Appropriate Requirements (ARARs) for groundwater and air quality. The second ESD, signed in October 16, 2003, updated the maximum contaminant levels (MCLs) for specific constituents in groundwater to reflect EPA's changes in those standards, and to add the recently promulgated Arizona Ambient Air Quality Guidelines for volatile organic compounds (VOCs) as performance standards for air quality monitoring at the site.

Other issues identified in the 2000 Five-Year Review were related to the effectiveness of the methane gas collection system, the quarterly groundwater monitoring, monthly methane monitoring, inspections of the landfill cap, flood control structures and landscaping. A final engineering design of a system to enhance gas collection was approved by ADEQ during 2001, and construction was completed during May 2002. The initial performance test was made, and Maricopa County gave the City an Air Quality permit to operate the system during the fall of 2002. The remaining issues were resolved, and documented in the follow-up report to the Five-Year Review dated July 16, 2001.

III. DESCRIPTION OF SIGNIFICANT DIFFERENCE

Institutional controls (ICs) have been selected to be used to ensure the existing remedy will continue to be protective of human health and the environment in the long-term. The current remedy is not protective for all uses. The use and access to the landfill property and groundwater

need to be controlled. In addition to other uses, the site is not suitable for residential use. ICs are instruments that minimize the potential for human exposure to contamination. The purpose of implementing ICs is to maintain the integrity of the landfill remedy components (landfill cap, methane collection system, etc.) and to protect groundwater by controlling potential down-gradient migration of groundwater contamination. The specific IC mechanisms that will be used are the Declaration of Environmental Use Restriction (DEUR) and the Arizona Department of Water Resources (ADWR) statutes.

1. A Declaration of Environmental Use Restriction (DEUR) will be implemented, according to the Arizona Revised Statutes ARS §49-152.C. The DEUR will be implemented by the landowner, City of Phoenix, and will be attached to the property deed. The DEUR is a covenant that runs with the land and therefore, provides notification to future landowners of use restrictions to prevent human exposure to the landfill contamination. The DEUR is enforced by ADEQ against the property owner. Five-year reviews, groundwater monitoring and maintenance of the landfill cap would be required ad infinitum. Monitoring and inspection reports will be sent annually to ADEQ and EPA. If any person desires to cancel or modify the DEUR in the future, a prior written approval must be obtained from the ADEQ. In order for the DEUR to be canceled, the site would require clean up to unlimited use and unrestricted exposure. The DEUR is required to be filed with the Maricopa County Recorder's Office by the landowner (City of Phoenix).
2. The Arizona Department of Water Resources (ADWR) oversees groundwater use in the State of Arizona. Well siting, permitting, construction restrictions, and notices are distributed by ADWR. Although groundwater monitoring so far has not indicated off site migration of groundwater contamination, the ADWR requirements for installation or modification of production wells will prevent migration of the contaminated groundwater. The site is in an active management area, therefore, ADWR requires permits on non-exempt wells. ADWR checks every request to drill or modify a well against the ADEQ groundwater database and regularly communicate with ADEQ regarding these issues. The following guidance listed below could assist in the management of the groundwater in the area of the landfill.
 - Groundwater Withdrawal Permits: Arizona Revised Statutes (A.R.S.) §45-511 through 528 and Wells: A.R.S. §45-591 through 605. Except as provided in section 45-452, subsection H, section 45-513, subsection B and articles 5 and 6 of this chapter, a person may not withdraw groundwater from a nonexempt well in an active management area unless the person obtains a groundwater withdrawal permit from the ADWR director pursuant to this article. Licensed drillers may not legally drill a well without such a permit.
 - Arizona Well Spacing and Well Impact Rules: Arizona Administrative Code (A.A.C.) §R12-15-830 (temporary well rules). This statute regulates the placement of new production wells in the State of Arizona. New production wells may not be permitted within an area of groundwater contamination if it is determined that operation of such wells may cause groundwater contamination to migrate.
 - Arizona Well Notification: A.A.C. §R12-15-850. This statute describes ADWRs requirement to notify well permit applicants. If an application for a well permit is

submitted for an area within or near sites listed on the registry established under A.R.S. §49-287.01(D) the applicant shall be notified of the location of the contamination. ADWR tracks contaminated groundwater sites in the state using a GIS system. Data for this GIS system is provided by ADEQ.

ADWR does not have legal authority to obstruct the withdrawal of groundwater for a landowner with water rights, however, ADWR can require modification of well construction or pumping rates.

IV. SUPPORT AGENCY COMMENTS

The EPA concurred with the proposed ESD in a memo dated August 9, 2005, and provides concurrence of the final ESD via signature below.

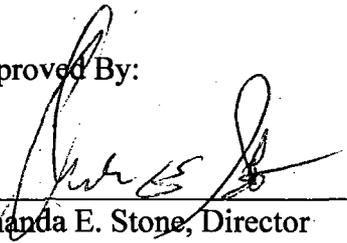
V. STATUTORY DETERMINATIONS

This ESD modifies the selected remedy by requiring ICs, including a DEUR, which is a vehicle to implement ICs. ADEQ believes that by these changes, the selected remedy for the 19th Avenue Landfill site will remain protective of human health and the environment, will continue to comply with federal and state requirements that are applicable or relevant and appropriate to this remedial action, and will continue to be cost-effective. The modified remedy satisfies CERCLA Section 121.

VI. PUBLIC PARTICIPATION ACTIVITIES

ADEQ has presented these changes to the remedy in the form of an ESD because the changes are significant but not fundamental in nature. No public notice or comment period is required for this ESD because the changes are not fundamentally altering the selected remedy. ADEQ has provided EPA with a fifteen (15) working-day comment period on this ESD. In accordance with 40 C.F.R. Section 300.435(c) (2) (ii), this final ESD and all documents will be contained in the Administrative Record for the 19th Avenue Landfill site.

Approved By:

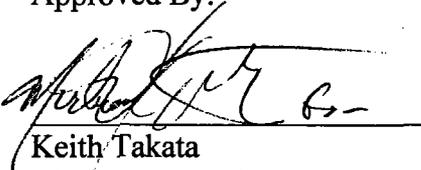


Amanda E. Stone, Director
Waste Programs Division
Arizona Department of Environmental Quality

9/14/06

Date

Approved By:



Keith Takata
Director, Superfund Division
U.S. EPA Region IX

6/29/06

Date