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FACT SHEET
JANUARY 16, 2004

**NOTICE OF INTENT TO APPROVE AN AGENCY-INITIATED MODIFICATION
TO THE
HAZARDOUS WASTE FACILITY PERMIT
FOR
KIRTLAND AIR FORCE BASE
BERNALILLO COUNTY, NEW MEXICO
EPA ID NO. NMD9570024423**

ACTION: The New Mexico Environment Department (NMED) intends to approve, subject to public review and comment, an agency-initiated permit modification to add corrective measures for SWMU 6-1, Landfill 1 (LF-002); SWMU 6-2, Landfill 2 (LF-002); and SWMU 6-4, Landfills 4, 5, and 6 (LF-008) to Module IV of the KAFB RCRA Permit; hereinafter referred to as Landfills 1, 2, and 8. This action will also update contact information.

FACILITY: Kirtland Air Force Base (KAFB) is located in Albuquerque, Bernalillo County, New Mexico. KAFB covers 52,223 acres on a high, arid mesa approximately 5 miles east of the Rio Grande. As a result of the facility's operations and from approximately 1944 to the present, KAFB has generated, treated, stored, disposed of, and otherwise handled solid wastes, hazardous wastes, hazardous waste constituents, and radioactive wastes.

PERMITTEES: United States Department of Defense (DoD), owner and operator

PERMIT NO.: NMD9570024423

LANDFILL DESCRIPTIONS AND SITE INVESTIGATIONS

Below are brief descriptions of the landfills and the site characterization efforts conducted at each landfill.

Landfill 1 Description and Investigation

Landfill 1 is located on the west side of KAFB south of the main east-west runway and east of the former Federal Aviation Administration control tower. This site is relatively flat with surface elevations ranging from 5290 feet above mean sea level (msl) in the southern portion to

5310 ft msl along the northern boundary. It is bounded by Southgate Avenue on the north; an abandoned spur of the Atchison, Topeka, and Santa Fe Railroad on the south; Ammo Road on the east; and a utility line on the southwest corner of the landfill to a prominent turn in Southgate Avenue to the west. Albuquerque International Airport is approximately 100 feet (ft) from the northern edge of Landfill 1. KAFB Production Well No. 2 is located approximately 150 ft northeast of the landfill. Landfill 1 is not located within the 100-year floodplain of Tijeras Arroyo. Depth to ground water in the regional aquifer beneath the site is approximately 410 ft.

Although disposal activities date back to 1951, Landfill 1 was operated primarily between 1960 and 1975 for general use. No written records of the quantities or nature of the materials disposed of in the landfill have been recovered. Interviews conducted during previous investigations implied that the landfill contains general refuse, construction and demolition debris and, possibly, hazardous waste that included chemical drums, oil-soaked insulation, and numerous five-gallon cans containing unknown liquid. Photographs taken in 1971 show numerous 55-gallon drums at the site. These materials were buried at depths ranging from 10 to 30 ft, encompassing approximately 57 acres. Construction and demolition debris is exposed on the southern edge of the landfill. The volume of the landfill's contents was estimated to be 603,000 cubic yards (cy).

Characterization of Landfill 1 was conducted in six different phases during 1985-2002, which included electromagnetic and magnetometer surveys, the drilling and sampling of 16 deep and 6 shallow soil borings, the installation of 18 active and 56 passive soil-gas sampling locations, the excavation of 62 test pits, and the installation of 8 ground-water monitoring wells. Soil samples collected in the different phases of characterization were analyzed for various hazardous constituents, including metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, herbicides, polychlorinated biphenyls (PCBs); and radiological constituents. Ground-water samples have been analyzed for essentially the same potential contaminants as the soil samples. Soil-gas samples were analyzed for a variety of VOCs and SVOCs.

Low concentrations of VOCs, SVOCs, and metals have been detected in soil beneath the landfill; VOCs and SVOCs were detected in active and passive soil-gas samples. Ground-water quality has not been impacted by the landfill.

As part of a voluntary Interim Measure initiated in 2000, all uncovered concrete debris was crushed, consolidated, and stockpiled on the site, 150,000 cy of cover material was delivered and stockpiled on the site, the main north-south drainage channel was regraded to promote drainage, and demolition debris was transported to the KAFB Construction and Demolition Landfill (Landfill 268).

Landfill 2 Description and Investigation

Landfill 2 is located between the Trestle Aircraft Testing Facility and Advanced Research Electromagnetic Simulator facilities to the north and the active channel of the Tijeras Arroyo to the south. Landfill 2 ranges in elevation from 5,240 ft above msl on the western edge of the site

to 5,280 ft above msl on the eastern edge. Depth to ground water in the regional aquifer beneath the site is approximately 400 ft.

Landfill 2 was operated between 1942 and 1965; operations at the 57-acre landfill reportedly consisted of trench-and-fill operations. The volume of waste disposed of in the landfill is estimated to be 1,321,700 cy. No written records of the quantities or nature of the materials disposed of in Landfill 2 have been recovered. Informal, undocumented interviews conducted during previous investigations implied that the landfill contained general refuse, construction and demolition debris, and potentially hazardous materials such as 55-gallon drums containing liquid solvents and plastic wastes. The depths at which these materials are buried range from none to 20 feet over approximately 37 acres. A 1979 study conducted by Albuquerque District of USACE indicated that the Tijeras Arroyo 100-year flood plain at that time covered 80 percent of Landfill 2. The results of that study indicated that in the event of a flood of this magnitude, portions of the site would be covered with 2 to 3 feet of water.

Because the degree of inundation during a flood was unacceptable for the stability of Landfill 2, the Tijeras Arroyo channel was modified in 1999 to accommodate a 10-year-flood event. These improvements affected approximately 3,850 feet of reach along the Tijeras Arroyo, adjacent to Landfill 2. In addition to the channel modifications, a 1,500-foot training dike was constructed between the Tijeras Arroyo and Landfill 2 to prevent inundation of the landfill on the north side of the arroyo as a result of a 100-year flood event. With these Tijeras Arroyo improvements in place, flood waters from a 100-year event or smaller will be contained within the main channel. Any overflow from the main channel will be diverted across the south bank of the arroyo. The net result is that Landfill 2, which is situated north of the training dike, will be unaffected.

Landfill 2 was characterized in six different phases during the time period 1985-2002. The site investigations included geophysical surveys, the drilling and sampling of 11 deep and 22 shallow soil borings, the installation of 12 active and 60 passive soil-gas sampling locations, the excavation of 58 test pits, and the installation of 6 ground-water monitoring wells. Soil samples collected in the different investigative phases were analyzed for various hazardous constituents, including metals, VOCs, SVOCs, pesticides, herbicides, PCBs; and radiological constituents. Samples of ground water have been analyzed for essentially the same potential contaminants as the soil samples. Soil-gas samples were analyzed for VOCs and SVOCs.

Low concentrations of VOCs, SVOCs, and metals have been detected in soil beneath Landfill 2; VOCs and SVOCs were detected in active and passive soil-gas samples. Landfill 2 has not impacted ground-water quality.

Landfill 8 Description and Investigation

Landfill 8 is located on the northwest region of KAFB and is bounded by the Tijeras Arroyo on the north and the covered slope of the active landfill (about 150 feet east of Powerline Road) to the east. The elevation of this site at this time ranges from 5,340 ft above msl on the west side of the landfill to 5,440 ft above msl on the eastern boundary. The site is made up of three formerly contiguous landfills (Landfills 4, 5, and 6) and covers an area of approximately 65 acres. Based

on flood plain maps, the site is not located within but does lie adjacent to, the Tijeras Arroyo 100-year flood plain. The approximate depth to ground water in the perched aquifer beneath the site is 350 ft, while the depth to regional aquifer is 430 feet.

The City of Albuquerque and KAFB jointly operated part of Landfill 4 (part of Landfill 8) from 1964 to 1969 as a general refuse landfill, although no written records are available for confirmation of the type of refuse disposed of. Aerial photographs and KAFB documents indicate a two-part plan of operation. Construction and demolition debris and trash were placed in the northeastern part of the landfill, and general refuse was placed in two natural arroyos in the western part. On the basis of seismic work, the depth of Landfill 4 is variable and may average about 30 feet near an east-west centerline, tapering to a few feet near the north and south boundaries. The estimated volume of waste in Landfill 4 is about 600,000 cubic yards, encompassing an area of approximately 25 acres.

KAFB operated Landfills 5 and 6 (also part of Landfill 8), located north of Landfill 4, from mid 1960 through 1989. Construction and demolition debris (plywood scrap, roofing insulation, tree limbs, cardboard, and scrap metal) were placed in Landfill 5 and other refuse in Landfill 6. Hazardous materials such as arsenic, chromium, lead, benzene, and xylene were disposed of in Landfill 6 in 1985. The estimated volume of waste in Landfills 5 and 6 is about 1,746,000 cubic yards, covering an area of approximately 40 acres. The total Landfill 8 acreage is 65 acres and the total estimated waste volume is 2,346,000 cubic yards.

Characterization of Landfill 8 was conducted in seven different phases during 1985-2001, which included geophysical surveys, the drilling and sampling of 8 deep and 16 shallow soil borings, the installation of 17 active and 64 passive soil-gas sampling locations, the excavation of 80 test pits, and the installation of 10 ground-water monitoring wells. Soil samples collected in the different characterization phases were analyzed for hazardous constituents, including metals, VOCs, SVOCs, pesticides, herbicides, and PCBs. Ground-water samples have been analyzed for essentially the same potential contaminants as the soil samples. Soil-gas samples were analyzed for a variety of VOCs and SVOCs.

Low concentrations of VOCs, SVOCs, and metals have been detected in soil beneath the landfill; VOCs and SVOCs were detected in active and passive soil-gas samples. Trichloroethene (TCE), a VOC often used as a solvent, has been detected during the Base's Long-Term Groundwater Monitoring Program in well TJA-2 installed by Sandia National Laboratories in the perched aquifer upgradient of Landfill 8. TCE was recently detected at a concentration of 3.9 µg/L (the EPA drinking water maximum contaminant level is 5 µg/L for TCE) and is believed to be migrating from an offsite source located west of the landfill. The extent of the contamination is currently being characterized by both KAFB and Sandia National Laboratories as part of a joint project known as the Tijeras Arroyo Ground-Water Investigation.

As part of a voluntary Interim Measure, construction of an evapotranspiration cover was initiated in 2001 and the final 36-inch thick monolithic soil cover (ET cover) with associated drainage

and erosion control structures was completed in January 2003. The site was seeded with native grass species in July 2003.

Update Contact Information

The proposed permit modification will update the contact information, for the submittals of deliverables and information, to the NMED and delete the contact information for the EPA.

REGULATORY BACKGROUND

The federal Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901 to 6992(k), provides for the regulation of hazardous waste. Congress waived the immunity of the United States for actions brought under state hazardous and solid waste laws as well as under RCRA. Pursuant to Section 3006 of RCRA, 42 U.S.C § 6926, the U.S. Environmental Protection Agency (EPA) delegated to NMED, on April 16, 1985 by delegation numbers 8-31 and 8-32, the authority to enforce the Hazardous Waste Act (HWA) and its implementing regulations, the New Mexico Hazardous Waste Management Regulations (HWMR), 20.4.1 NMAC, in lieu of EPA enforcement through RCRA. NMED has maintained its delegation from EPA over hazardous waste management in New Mexico and from time to time has amended its state program to conform to statutory or regulatory changes in RCRA. The HWMR require corrective action at solid waste management units (SWMUs) where releases of hazardous waste or hazardous constituents have occurred. KAFB must comply with the HWA and the HWMR.

NMED issued a Hazardous Waste Facility Permit for storage of hazardous waste at Kirtland Air Force Base (KAFB) on July 24, 1990. On January 24, 2000, KAFB applied to the NMED to renew its RCRA permit. The regulations at 20.4.1.900 NMAC incorporating 40 CFR 270.41 allow NMED to modify the Permit if the agency determines there is cause for modification. When a permit is modified, only the conditions subject to modification are reopened. Permits may be modified by the Secretary of the NMED (or his designee) if information was not available at the time of permit issuance, and the information would have justified the application of different permit conditions at the time of issuance.

On February 3, 2003, a letter was issued by NMED instructing KAFB to conduct a Corrective Measures Study (CMS) for Landfills 1, 2, and 8. Subsequently, a CMS report has been prepared by KAFB that identifies corrective measures alternatives, evaluates the best alternatives, and recommends a preferred remedy for the three landfills. Three corrective measure alternatives received detailed evaluation: the No Action Alternative, the Evapotranspiration (ET) Cover, and Removal Action with Combination Disposal. Each alternative was evaluated for technical, environmental, human health, and institutional concerns and for the cost of implementation. The recommended remedy for each landfill is an evapotranspiration cover, described as Alternative 4 in the CMS Report. This information, which is crucial to arrive at a final decision to complete corrective action for these three landfills, was not available to the NMED at the time of permit issuance. Therefore, NMED has determined, based on this new information, there is cause to modify the permit by adding corrective measures for Landfills 1, 2, and 8 to Module IV of the KAFB RCRA Permit.

PROPOSED ACTION

As mentioned above, the New Mexico Hazardous Waste Regulations, 20.4.1.900 NMAC (incorporating 40 CFR §270.41) provides a mechanism for NMED to modify an existing RCRA permit for cause. Based upon the foregoing background information and the administrative record, NMED believes there is sufficient basis to initiate a modification that adds corrective measures for Landfills 1, 2, and 8 to the KAFB RCRA permit.

NMED is therefore, issuing a draft permit that reflects this intent for public comment. NMED proposes to insert language into Module IV of the permit that

- a.) Incorporates the report (prepared by the Permittee) *Final Corrective Measure Study Report for SWMU 6-1, Landfill 1 (LF-001); SWMU 6-2, Landfill 2 (LF-002); and SWMU 6-4, Landfills 4, 5, and 6 (LF-008)*, dated November 2003, by reference;
- b.) Selects evapotranspiration caps (CMS Report Alternative 4) as the remedy for all three landfills;
- c.) Requires a Corrective Measures Implementation (CMI) Plan for each landfill that incorporates the final remedy. The plan is to be submitted to NMED for approval and will contain implementation schedules;
- d.) Requires a CMI Report for each landfill to be submitted to the NMED for approval within 180 days after implementation of the remedy is complete;
- e.) Requires, for each landfill, that KAFB submits to the NMED progress reports during implementation of the remedy;
- f.) Requires, for each landfill, a long-term monitoring and maintenance plan to be submitted by KAFB to the NMED for approval.

AVAILABILITY OF ADDITIONAL INFORMATION

The Administrative Record for this proposed action consists of this Fact Sheet, the Public Notice, the proposed draft Permit described above, the original Permit, and other relevant correspondence and documents. The administrative record may be reviewed from Monday through Friday 8:00 a.m. to 5:00 p.m. at the following location:

New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone: (505) 428-2500

A copy of the Fact Sheet, the Public Notice, and the draft Permit are also available on the NMED

website at www.nmenv.state.nm.us/HWB/kafbperm.html under Corrective Measure for Landfills. To obtain a copy of the Administrative Record or a portion thereof, in addition to further information please contact Mr. Will Moats at (505) 284-5086, or at the address given above. NMED will provide copies, or portions thereof, of the administrative record at a charge of \$0.25 per page.

PUBLIC COMMENT AND REQUEST FOR HEARING

NMED issued a public notice on January 16, 2004, to announce the beginning of a 45-day comment period that will end at **5:00 p.m., March 1, 2004**. Any person who wishes to comment on this action or request a public hearing should submit written or electronic mail (e-mail) comment(s) with the commenter's name and address to the respective address below. Only comments and/or requests received on or before **5:00 p.m., March 1, 2004** will be considered.

John E. Kieling, Program Manager
Hazardous Waste Bureau - New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303
Ref: Kirtland Air Force Base – Corrective Measures for Landfills
e-mail: hazardous_waste_comment@nmenv.state.nm.us

Written comments must be based on the administrative record. Documents in the administrative record need not be re-submitted if expressly referenced by the commenter. Requests for a public hearing shall provide: (1) a clear and concise factual statement of the nature and scope of the interest of the person requesting the hearing; (2) the name and address of all persons whom the requestor represents; (3) a statement of any objections to the proposed action, including specific references; and (4) a statement of the issues which such persons proposes to raise for consideration at the hearing. Written comment and requests for Public Hearing must be filed with Mr. John Kieling on or before 5:00 p.m., March 1, 2004 at NMED Hazardous Waste Bureau, 2905 Rodeo Park Drive East, Building 1, Santa Fe, New Mexico, 87505-6303. The NMED will provide a thirty (30) day notice of a public hearing, if scheduled.

ARRANGEMENT FOR PERSONS WITH DISABILITIES

Any person with a disability requiring assistance or auxiliary aid to participate in this process should contact Judy Bentley at the following address: New Mexico Environment Department, Room N-4030, P.O. Box 26110, 1190 St. Francis Drive, Santa Fe, New Mexico 87502-6110, (505) 827-2844. TDD or TDY users please access Ms. Bentley's number via the New Mexico Relay Network. Albuquerque users may access Ms. Bentley's number at (505) 275-7333.

FINAL DECISION

All written comments received during the public notice period and issues raised at a public hearing, if held, will become part of the administrative record and will be considered in formulating a final decision for this action. NMED may approve, or modify and approve the draft permit based on the comments received. The final decision for this action will be made according to applicable State and Federal laws.

If NMED modifies and issues the Permit, the Permittee shall be provided by mail a copy of the modified Permit and a detailed written statement of reasons for the modifications. The NMED Secretary will make the final Permit decision publicly available and shall notify the Permittee by certified mail. The final decision and supporting documentation will also be posted on the NMED website. All persons on the mailing list, or that provided written comments, or who requested notification in writing, will be notified of the final decision by mail. The Secretary's decision shall constitute a final agency decision and may be appealed as provided by the Hazardous Waste Act. The final decision will become effective thirty days after service of the decision, unless a later date is specified or review is requested under the New Mexico Hazardous Waste Management Regulations, 20.4.1 NMAC, Section 901.E., *Hearings*.