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DEPARTMENT OF THE ARMY
HEADQUARTERS, U. S. ARMY GARRISON COMMAND
1733 PLEASANTON ROAD
FORT BLISS, TEXAS 79916-6812



ENTERED

27 September, 2006

TO: John E. Kieling, Manager
Permit Management Program NMED
State of New Mexico Environment
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

RE: Submittal of Work Plan Comment
Revised RFI Work Plan, Oro Grande Landfill (SWMU No. 20, FTBL-015)
Fort Bliss, Otero County, New Mexico



Dear Mr. Kieling:

Please accept for review the attached revised Work Plan comments for the Oro Grande Landfill (SWMU No. 20/FTBL-014) Site, Otero County, Fort Bliss. Solid Waste Management Unit (SWMU) No.20. This document contains revised comments and describes the technical approach for planned additional work at the site.

Please do not hesitate to contact Ron Baca at (915)- 568-7979 if you have any questions.

Sincerely,

Elza Cushing, Chief
Directorate of Environment

Comment 1 Section 1-2, p. 1-2, paragraph 5

The RFI Work Plan states, "Should the RFI indicate compliance with [this] closure criterion, NMED may approve the RFI and grant a No Further Action (NFA) for the landfill."

Once the revised RFI Work Plan has been approved and then implemented, Fort Bliss must submit to NMED an RFI Report in order to comply with its permit. NMED will then review the RFI Report to determine whether Fort Bliss has adequately characterized SWMU 25 or whether additional investigation and/or corrective measures are required. If further investigation or other corrective action is not required, NMED will recommend that Fort Bliss submit a petition for a Corrective Action Complete determination. NMED will then respond to the petition as appropriate.

Fort Bliss must revise the language of the Regulatory Framework Section to reflect an understanding of these requirements.

Response 1

The fifth paragraph of the Regulatory Framework Section will be revised to state:

Fort Bliss will submit the RFI Report resulting from the implementation of the approved RFI Work Plan to NMED in accordance with the Corrective Actions Only Permit. NMED will review the RFI Report to determine whether Fort Bliss has adequately characterized SWMU-25/FTBL-14. If further investigation or other corrective action is required, Fort Bliss will request additional funding to perform the required investigation/corrective action activities. If further investigation or other corrective action is not required, NMED will recommend that Fort Bliss submit a petition for a Corrective Action Complete determination. NMED will then respond to the petition as appropriate. Should NMED grant a No Further Action (NFA) status for the landfill, Fort Bliss will then seek to close the landfill as a small municipal landfill under 20 New Mexico Administrative Code (NMAC) 9.IV.502.

Comment 2 Section 2.2, p. 2-1, paragraph 5

The RFI Work Plan states, "Based on the landfill dimensions reported by TPG (1997), the landfill capacity would be approximately 18,000 cubic yards. Based on Wagner (2000), approximately 600 cubic yards of waste material was present in the landfill at the end of operation in 1994."

In paragraph 4 of the same Section, the dimensions reported by TPG (1997) are 370 feet long by 20 to 65 feet wide by 9 to 12 feet deep. Using the maximum length, width, and depth the capacity of the landfill would not exceed (370 feet x 65 feet x 12 feet) x (1 cubic yard/27 cubic feet) = 10,688 cubic yards. Using the mean width and mean depth, the capacity would equal approximately 6,100 cubic yards.

Using the dimensions reported by Wagner (2000), the landfill capacity would be (2 trenches) x (120 feet long x 22 feet wide x 15 feet deep) x (1 cubic yard/27 cubic feet) = 2,933 cubic yards.

Fort Bliss must revise Section 2.2 of the RFI Work Plan to accurately state how the two volumes of waste were derived, even if they are not in concurrence.

Response 2

Based on the dimensions reported in TPG (1997) the approximate landfill capacity was 10,700 cubic yards, calculated by (370 feet x 65 feet x 12 feet) x (1 cubic yard/27 cubic feet) = 10,688 cubic yards. In section 2.2 (p. 2-1) Paragraph 4 will be revised to read as follows:

The disturbed area of the landfill covered approximately two acres. TPG (1997) reported that the trench was approximately 370 feet by 20 to 65 feet wide with a depth of 9 to 12 feet bgs. The cover thickness was estimated to be 3 to 4.5 feet. Based on these landfill dimensions, the landfill capacity would have been approximately 10,700 cubic yards. TPG's dimensions were based on the data collected from a geophysical survey using frequency-domain electromagnetic, magnetometry, and ground penetrating radar (GPR) techniques followed by excavation of an exploratory trench (Section 3.2). Based on interviews, Wagner (2000) reported the landfill consisted of two parallel trenches, about 2 feet apart, and approximately 120 feet long by 22 feet wide by 15 feet deep (Section 3.4). Based on these dimensions the landfill capacity for the two trenches would have been approximately 2,900 cubic yards. This discrepancy in landfill capacities cannot be resolved without field verification. However, current surface conditions suggest that if two trenches were present, they were covered with the same layer of native soil. This is evident by inspection of **Figure 2-2**.

It is unknown how the approximate volume of waste material from the Wagner (2000) report was calculated since it was based on an interview. The estimated volume of waste that could potentially be in the trench based on the dimensions listed in the report is higher than what was reported as being present in 1994. However, it is unknown if the trench was completely filled with waste or if it was partially filled in combination with soil material. Section 2.2 (p. 2-1, paragraph 5) will be revised to state:

Neither TPG (1997) nor Wagner (2000) definitively states the total volume of waste placed in the landfill. Based on the landfill dimensions reported by TPG (1997), the landfill capacity was approximately 10,700 cubic yards while Wagner reported that the landfill capacity was approximately 2,900 cubic yards. Wagner (2000) further reported that approximately 600 cubic yards of waste material was present in the landfill at the end of operation in 1994. Thus, the estimated landfill capacities were both higher than what was reported as being present in 1994. It is unknown whether the remaining capacity was used for daily, intermediate, or final soil cover or the landfill was not at capacity at the end of operations in 1994.

Comment 3 Section 2.2, p. 2-4, paragraph 3

The RFI Work Plan states that "Tar material was disposed of to the ground surface in an arroyo to the west of the landfill." The tar was collected and disposed of in a permitted landfill in 2004.

The RFI Work Plan (pages 4 and 5) states that soil samples will be collected at a depth interval of 8-10 feet below ground surface (bgs) from the proposed soil borings at the Tar Material Area. If the tar material was disposed of on the ground surface, then the ground surface within the Tar Material Area needs to be sampled. NMED approves the target compounds listed in Table 4-1 for sample analysis.

Fort Bliss must revise the work plan to propose collection of a soil sample from each boring in the former Tar Material Area from native soil at the 0-1 foot interval.

Response 3

A sample will be collected from the surface at the 0-1 foot interval. Table 4-1 will be revised to show this change and Section 4.4.1 (p. 4-5, paragraph 4) text will be changed to state:

Soil samples will be collected at a depth interval of 0-1 feet bgs from F14-SB-7 and F14-SB-8. The 0-1 foot sample interval will determine if the tar material has released constituents at the surface. The boring will be continued to a depth of ten feet bgs. The soil samples at 4-5 feet bgs and 9-10 feet bgs will be screened in accordance with methods described below.

Comment 4 Section 4.1, p. 4-1

The RFI Work Plan addresses the potential risks to human and ecological receptors, which was not included in the 2004 version of the work plan; however, Comment 13 of the 2004 NOD directs Fort Bliss to revise its RFI Work Plan to include a Screening-Level Ecological Risk Assessment (SLERA) of SWMU 25 using NMED's current ecological risk assessment guidance. The RFI Work Plan identifies the exclusion of a SLERA as a data gap (p. 3-7) and further proposes that an exclusion criteria checklist will be completed prior to determining whether or not a SLERA is warranted.

NMED has determined that this is a reasonable compromise, provided that the exclusion criteria checklist is performed and that a SLERA is likewise performed, if necessary.

Response 4

No response is necessary.

Comment 5 Section 4.1, p. 4-1

One of the proposed objectives of the Field Sampling Plan is determined whether Contaminants of Concern (COCs) have been released and are present in soils at concentrations greater than residential New Mexico Soil Screening Levels (NMSSLs). Vertical soil borings advanced outside the perimeter of suspected backfill may not be adequate to determine whether COCs have been released to soils beneath the landfill trench.

In order to adequately achieve this objective, Fort Bliss must sample the soil directly underneath the debris trench as described by the hatched area in Figure 4-1 of the RFI Work Plan. Fort Bliss must revise its Field Sampling Plan to include advancing the proposed landfill borings as close to the landfill as possible.

In addition, a minimum of two angled soil borings on the east side and one angled soil boring in the west side of the debris trench must be advanced to minimum depths of 10 feet below, and laterally a minimum of 10 feet underneath the debris trench.

Soil samples must be collected from all soil borings at the surface and at five foot intervals thereafter, to the maximum depths of the borings.

Response 5

Hollow stem augur drilling techniques can typically attain a 30° angle from vertical. Fort Bliss proposes to drill three directional borings at locations eight feet outside the extent of waste as defined by the exploratory trenching. Figure 4-1 will be revised to show the preliminary locations of these directional borings. The borings will be installed to a depth of 17 feet below the reported depth of waste (12 feet bgs) at a lateral point approximately 10 feet inside the extent of waste. The following text in Section 4.4.1 (p. 4-4, starting second paragraph) will be revised to state:

Malcolm Pirnie will complete three soil borings at locations within five feet of the perimeter of the maximum extent of waste of the landfill defined by the exploratory trenches, three angled soil borings within eight feet of the extent of waste, and two soil borings within the Former Tar Material Area (**Figure 4-1**).

- One soil boring (F14-SB-1) will be installed to a depth of 30 feet bgs on the north side of the landfill.
- One soil boring (F14-SB-4) will be installed to a depth of 30 feet bgs on the southeast side of the landfill.
- Three soil borings (F14-SB-2, F14-SB-3, and F14-SB-5) will be installed at a 30° angle at a location eight feet outside the extent of waste as defined by the exploratory trenching. The soil sample located at a lateral point approximately 10 feet inside the extent of waste at a depth 17 feet below the reported depth of waste (12 feet bgs) will be selected for analysis.
- One deep soil boring (F14-SB-6) will be completed on the south side of the landfill to a maximum depth of 115 feet bgs to assess the subsurface geology and the potential for percolation to the regional groundwater aquifer. This soil boring will be completed five feet into the first clay layer penetrated below 30 feet bgs or 2 feet into the bedrock. Malcolm Pirnie assumes that the first significant clay layer will be encountered within 115 feet bgs. The maximum drilled depth at this location will not exceed 115 feet bgs. Saturated conditions are not expected to be encountered.
- Two soil borings (F14-SB-7 and F14-SB-8) will be installed to a depth of 10 feet bgs in the northern and southern portions of the Former Tar Material Area.

The text will be revised to indicated that soil samples will be collected and screened from soil borings at the surface and at five foot intervals thereafter (3-5 feet, 8-10 feet, 13-15 feet, etc.), to the maximum depths of the borings for both the continuous core sampling method on Pages 4-5 through 4-7 and split-spoon sampling method on Pages 4-7 through 4-8.

Comment 6 Section 4.4.1, p. 4-5, paragraph 3

The revised RFI Work Plan does not adequately address Comment 30 of the December 2004 NOD regarding the number and depth of soil borings except for the requirement that samples be collected every five feet from the ground surface to the total depth (30 ft bgs) in each boring.

NMED accepts the proposed depths of 0'-2', 13'-15', and 28'-30' bgs for collection of soil samples to be submitted for laboratory analysis; however, Fort Bliss must collect samples for field screening at the five foot intervals as directed for each of the five shallow soil borings, and, at a minimum, for the first 40 feet of the deep boring. If field screening evidence of contamination is observed in any of the samples, then those samples also must be submitted for laboratory analysis.

Response 6

The text will be revised to indicate that soil samples will be collected from the soil borings at the surface and at five foot intervals thereafter, to the maximum depths of the borings for soil screening for both the continuous core sampling method on Pages 4-5 through 4-7 and split-spoon sampling method on pages 4-7 through 4-8. The text under Step 5 (Page 4-7) and Step 7 (Page 4-8) will be revised to state:

A representative sample will be transferred to appropriate laboratory-supplied containers. If field screening indicates evidence of contamination in any of the samples, then the sample with the highest headspace reading will be submitted for laboratory analysis. The sample jars will be labeled with the site name, date, boring, and sample identification number.

Comment 7 Section 4.4.7, p. 4-15

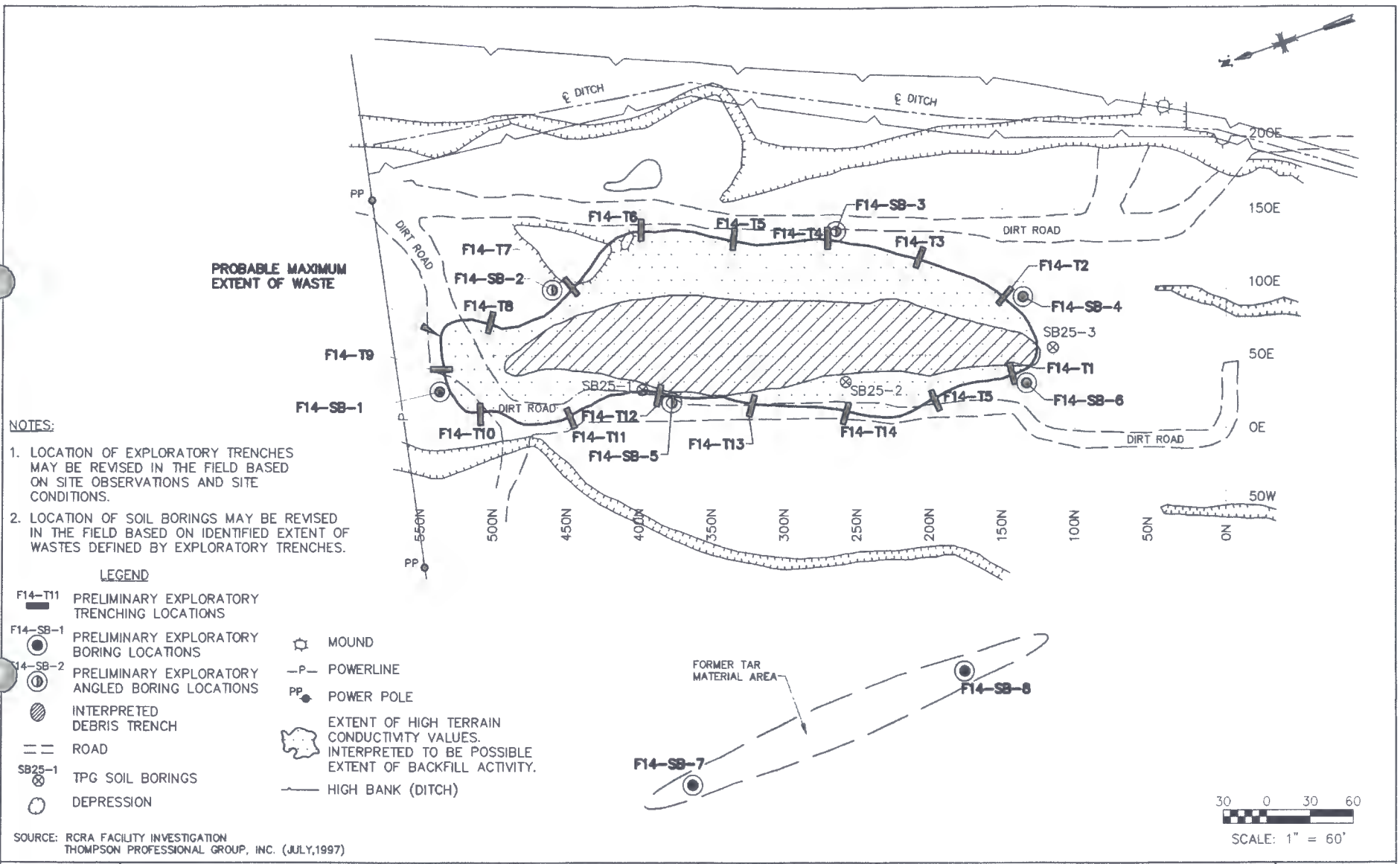
The RFI Work Plan states that both soil cuttings and decontamination water will be staged in 55-gallon drums and that if residential NMSSLs are exceeded then Fort Bliss DOE will be notified to arrange alternative disposal procedures. NMSSLs do not apply to aqueous samples. Fort Bliss must compare analytical results from the decontamination water to the lower of New Mexico Water Quality Control Commission (WQCC) Regulation standards and EPA Maximum Contaminant Levels (MCLs).

Prior to disposal of the Investigation Derived Waste (IDW), Fort Bliss must submit a letter to NMED for approval that includes the IDW characterization results and the proposed disposal alternatives for the soil cuttings and decontamination water. NMED will respond as appropriate.

Response 7

The text will be revised to indicate that, after receipt of IDW characteristic results, Fort Bliss will submit a letter to NMED with the IDW characterization results, a comparison of the IDW solids results to the NMSSLs, and a comparison of the liquid results to the lower of the New Mexico WQCC Regulation Standards and EPA MCLs. If the constituent concentrations do not exceed the standards, Fort Bliss will request that it be allowed to spread the soils and/or liquids on the ground surface. Fort Bliss will request

that NMED respond within 30 days of receipt of the letter to minimize the amount of time IDW is left on-site and reduce any possible interference the IDW drums may have on Fort Bliss operations. If the standards are exceeded, Fort Bliss will notify NMED of the disposal location.



- NOTES:**
1. LOCATION OF EXPLORATORY TRENCHES MAY BE REVISED IN THE FIELD BASED ON SITE OBSERVATIONS AND SITE CONDITIONS.
 2. LOCATION OF SOIL BORINGS MAY BE REVISED IN THE FIELD BASED ON IDENTIFIED EXTENT OF WASTES DEFINED BY EXPLORATORY TRENCHES.

LEGEND

- F14-T11 PRELIMINARY EXPLORATORY TRENCHING LOCATIONS
- F14-SB-1 PRELIMINARY EXPLORATORY BORING LOCATIONS
- F14-SB-2 PRELIMINARY EXPLORATORY ANGLED BORING LOCATIONS
- INTERPRETED DEBRIS TRENCH
- ROAD
- SB25-1 TPG SOIL BORINGS
- DEPRESSION
- MOUND
- POWERLINE
- PP POWER POLE
- EXTENT OF HIGH TERRAIN CONDUCTIVITY VALUES. INTERPRETED TO BE POSSIBLE EXTENT OF BACKFILL ACTIVITY.
- HIGH BANK (DITCH)

SOURCE: RCRA FACILITY INVESTIGATION
THOMPSON PROFESSIONAL GROUP, INC. (JULY, 1997)

Table 4-1: Analytical Summary										
Target Assessment Area (Total depth in feet)	Total Number of Borings	Sample Depths in feet	Target Compounds							Indicator Compound
			VOCs	TPH-DRO	PCBs	RCRA Metals	Pesticides	Herbicides	SVOCs	BTEX
Shallow Landfill Borings (0-30')	5	0-2	5	5	5	5	0	0	0	0
		13-15	5	5	5	5	5	5	0	0
		28-30	5	0	5	5	0	0	5	0
Deep Landfill Borings (0-115')	1	0-2	1	1	1	1	0	0	0	0
		13-15	1	1	1	1	1	1	0	0
		28-30	1	0	1	1	0	0	1	0
		113-115	1	0	0	1	0	0	1	0
Former Tar Material Area (0-10')	2	0-2	2	2	2	2	2	2	2	0
Background Soil	30	1-2	0	0	0	30	0	0	0	30
Quality Control Blind Duplicates	2 (Near Landfill)	28-30	2	2	2	4	1	1	1	2
	1 (Near Former Tar Material Area)	8-10	1	1	1	1	1	1	1	1
Quality Assurance Field Duplicates	2 (Near Landfill)	28-30	2	2	2	4	1	1	1	2
	1 (Near Former Tar Material Area)	8-10	1	1	1	1	1	1	1	1
(IDW) Soil Composite Sample		Composite	1	1	1	1	1	1	1	0
Total Number of Soil Analyses			28	21	27	62	13	13	14	36
Rinsate Sample (Aqueous)			2	2	2	2	2	2	2	0
IDW Composite Sample (Aqueous)			1	1	1	1	1	1	1	0
Trip Blank (Aqueous)			1	0	0	0	0	0	0	0
Total Number of Aqueous Analyses			4	3	3	3	3	3	3	0

VOCs – Volatile organic compounds by EPA Method 8260

TPH-DRO – Total petroleum hydrocarbons Diesel Range Organics by EPA Method 8015 Modified

PCBs – Polychlorinated biphenyls by EPA Method 8082

RCRA Metals – arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver by EPA Methods 6020/7471

BTEX - benzene, toluene, ethylbenzene, and xylene EPA Method 8021

Pesticides by EPA Method 8081A

Herbicides by EPA Method 8151

SVOCs – Semi-volatile organic compounds by EPA Method 8270C