DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY AIR DEFENSE ARTILLERY CENTER AND FORT BLISS
1733 PLEASONTON ROAD
FORT BLISS, TEXAS 79916-6816

ENTERED

REPLY TO
ATTENTION OF

11 December 1995

Directorate of Environment

Mr. David Morgan
New Mexico Environment Department
Groundwater Protection and Remediation Bureau
1190 St. Francis Drive
Sante Fe, NM 87503

Dear Mr. Morgan:

In response to requests by Mr. Pullen of your office, Fort Bliss' Directorate of Environment submits the enclosed investigation plan for SWMUs 21 and 22 at the McGregor Range Camp.

The plan provides background information and outlines an approach to acquiring information needed by NMED to make a site closure determination. A funding request for this work has been made to our MACOM, however, implementation of the plan is subject to the availability of funds.

Questions regarding this transmittal should be directed to Mr. James Stefanov at (915)-568-4979, or Ms. Sheri Bone at (915)-568-1041.

Sincerely,

James R. Hartman PhD
Director of Environment

Encl
cc: w/encl
Steve Pullen, NMED

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INVESTIGATION WORK PLAN

McGregor Range - Fire Fighting
Training and Drum Storage Areas
Fort Bliss, Texas

11 December, 1995

1.0 INTRODUCTION

1.1 History

The McGregor Range Fire Fighting Training Area (SWMU 21) and McGregor Inactive Waste Drum Storage Area (SWMU 22) were investigated as part of a RCRA Facility Investigation (RFI) conducted in 1991. The RFI results indicated that Total Petroleum Hydrocarbons (TPH) exceeded the New Mexico standard (EIB/SWMR-4, Section 708) of 1000 ppm for soil in approximately half of the soil samples collected at the two adjoining sites, with the highest TPH concentration at 61,100 ppm. Regulators were not confident that the lateral and vertical extent of POL contamination had been defined by the 1991 RFI.

During a site visit by USEPA Region 6 and TNRCC on 12 October 94, and subsequent telephone conversations, regulators requested that the following actions be taken at the two sites so that a site closure determination could be made; (1) additional soil sampling to define the extent of contamination, (2) determine the depth and quality of groundwater underlying the site, (3) remove junk vehicles and scrap metal, and (4) remove soils with TPH concentrations greater than 1000 ppm.

1.2 Objectives

The primary objectives of this Preliminary Investigation Work Plan are: (1) define the lateral and vertical extent of TPH concentrations above 1000 ppm, (2) determine the depth and quality of groundwater underlying the site, (3) remove junk vehicles and scrap metal, and (4) make recommendations as to the need for further actions and/or interim measures required based on an assessment of the threat to human health and the environment.

2.0 SITE SUMMARY

2.1 Fire Fighting Training Area (SWMU-21)

SWMU No. 21, located at McGregor Range Camp, was used for training exercises related to fire fighting until 1983. A burned jet fuselage and automobile bodies remain on site.

Wastes released into the 75x30 foot area include waste oil, fuel, solvents, fog oil, and other flammable liquids.

2.2 Drum Storage Area (SWMU-22)

SWMU No. 22, located just east of SWMU No. 21, was used as a storage area for 55 gallon drums containing waste oil, fuel, solvents, and other flammable liquids. These materials were used to ignite the jet fuselage and automobile bodies for fire fighting training exercises. This less than one acre, fenced area was used until 1983 and excess drums of liquid were removed in 1991.

3.0 TECHNICAL PROGRAM

3.1 Task 1 - Cleanup of Surface Debris

All surface debris, including abandoned cars at the site will be removed and disposed of in an appropriate manner.

3.2 Task 2 - Characterization of POL Contamination

The proposed method for defining the extent of POL contamination is a cone penetrometer rig equipped with a Fuel Fluorescence Detector (FFD). The FFD has routinely been proven to detect concentrations as low as 100 ppm TPH in the laboratory. In-situ tests indicate that a detection limit of 200 ppm can be achieved in the field. The advantages of this method over conventional drilling are: (1) direct push methods produce no solid waste and minimal liquid waste (decon fluids), (2) continuous profiles of TPH concentrations are generated as opposed to discrete-depth data using conventional split-spoon sampling, (3) cone penetrometry is much faster than drilling, it is possible to push 20-25 holes per day to a depth of 25 feet, and (4) analytical costs will be reduced by using the FFD.

A sampling grid will be established at each SWMU. Probing will be conducted on 20-foot centers, starting near the center of the grid working outward. A 30-ton rig will be used to push the detector to a minimum depth of 25 feet. If at 25 feet concentrations are still detected above the detection limit (200 ppm), the push will continue until concentrations drop below the detection limit over at least a 5-foot interval. Laterally, probing will continue until two consecutive grid points have TPH profiles entirely below the detection limit. Probing will continue until the lateral and vertical extent of TPH contaminated soil is defined. Confirmatory soil samples will be collected with the cone penetrometer rig at selected locations in approximately 15% of the holes. This will facilitate the calculation of a level of confidence in the FFD data. After cone penetrometer probing is complete, the volume of soil with TPH concentrations above 1000 ppm will be calculated.

3.3 Task 3 - Groundwater Assessment

Depth to groundwater at the site will be determined through a Time-Domain Electromagnetic (TDEM) sounding. The electromagnetic sounding will also provide data on the quality of the groundwater underlying the site.

3.4 Task 4 - Report

A draft report will be prepared within 90-days of the completion of field work. All field and laboratory data will be tabulated in the report. The report will include a 3-dimensional map of the contaminant plume(s) and recommendations as to the need for further actions based on an assessment of the data collected and New Mexico cleanup standards for TPH.