



**DEPARTMENT OF THE ARMY**  
U.S. ARMY GARRISON WHITE SANDS  
100 Headquarters Avenue  
WHITE SANDS MISSILE RANGE, NEW MEXICO 88002-5000

June 16, 2006

REPLY TO  
ATTENTION OF

Directorate of Public Works

Ms. Cheryl Frischkorn  
New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303



**SUBJECT: ADMINISTRATIVE UPDATE FOR RCRA FACILITY INVESTIGATION AT THE HELSTF TECHNICAL SUPPORT AREA ON WHITE SANDS MISSILE RANGE**

Dear Ms. Frischkorn:

Enclosed are the administrative update documents for the RCRA Facility Investigation at the HELSTF Technical Support Area as well as appropriate reports for White Sands Missile Range.

White Sands Missile Range could not confirm that documentation for the subject projects were also provided to the New Mexico Environment Department Hazardous Waste Bureau (HWB). In our May 17, 2006 telephone conference with you, we stated that we were preparing to send the project documentation. In addition to these required records, we are providing the latest project report.

Copies of this correspondence are being furnished to Mr. John Kieling, NMED HWB; Mr. Chuck Hendrickson, Region VI EPA; Ms Yvonne B. Tyler, USARMY Installation Management Agency; and Mr. Edward Martinez, White Sands Technical Services, LLC.

Please contact Mr. Javier Mendoza of our office at (505) 678-1007 if you have any questions regarding this matter.

Sincerely,

Thomas A. Ladd  
Director, Public Works

Enclosure



White Sands Technical Services, LLC  
Bldg 126 3<sup>rd</sup> Floor  
PO Box 363  
WSMR, NM 88002  
Phone: (505) 678 - 0263  
Fax: (505) 678 - 6096

**11 April 2006**  
**WTS-06-076**

U.S. Army White Sands Missile Range  
100 Headquarters Avenue  
ATTN: IMSW-PW-E (Ms. Y. Romero)  
White Sands Missile Range, NM 88002-5000

**Subject: TO20, Ground Water Monitoring at the HELSTF TSA**

**Reference: Contract W9124Q-04-D-0012**

Dear Ms. Romero:

This is to submit the following letter report:

*Calendar Year 2006 Ground Water Monitoring at the HELSTF TSA Gasoline Spill.*

Should you have any questions or require additional information, please contact me at 678-7907 or Mr. John Mills at 678-0891.

Sincerely,  
**White Sands Technical Services, LLC**

Edward H. Martinez  
Program Manager

Encl/as

cc: Javier Mendoza, Technical Inspector, PW-E-EC, (w/enclosures)  
PW-E-ES Library, (w/enclosures)  
Bradley Davis, Task Coordinator, WTS, (w/o enclosures)

## LETTER REPORT

The following letter report was prepared under Contract W9124Q-04-D-0012, TO No. 20.

### 1. TITLE

Calendar Year 2006 Ground Water Monitoring at the HELSTF TSA Gasoline Spill

### 2. DATE

April 2006

### 3. INTRODUCTION

This report presents results of the calendar year 2006 ground water monitoring at the High Energy Laser Systems Test Facility (HELSTF) Technical Support Area (TSA) gasoline spill.

The New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) is the regulatory lead for investigation of this site under the Resource Conservation and Recovery Act (RCRA). The HELSTF TSA gasoline spill is listed as Solid Waste Management Unit (SWMU) 197. WSMR RCRA activities are governed by Hazardous Waste Permit NM2750211235, issued 24 October 1989, and amended 17 August 1992. The investigative efforts are pursuant to Module VIII, Section S, Task III of this permit. These efforts focus on source characterization and defining contaminant characteristics as stated under Task III.

### 4. BACKGROUND

The Technical Support Area (TSA) for HELSTF was constructed in 1987. TSA contains support facilities separate from the more hazardous HELSTF test facilities. A 3,000 gallon AST located at the TSA fueling station leaked an estimated 1,490 gallons of unleaded gasoline into the subsurface. The fueling station was shut down in March 2000.

The TSA site was investigated during May and June 2000 at which time three monitoring wells were installed. From this investigation, it was determined that contamination had reached approximately 30 feet below ground surface with maximum concentrations encountered near a depth of 17 feet. As an interim response, a soil vapor extraction (SVE) system was installed in October 2000 and operated for four months to remove fuel contamination from the subsurface. Results of this investigation are reported in the report titled "*HELSTF Technical Support Area Petroleum/Oil/Lubricant Station Investigation.*"

The SVE system consisted of four vapor extraction wells installed into the shallow impacted soils and perched water table. The SVE system removed an estimated 1,800 gal of product, which was in excess of the reported release.

An additional investigation was performed in August 2003. An additional ground water monitoring well was installed during this investigation. The additional groundwater and soil sampling analytical results obtained were used to determine the effectiveness of the interim remedial action on the existing subsurface conditions. The investigation determined that the SVE interim remedial action was effective in removing the contamination from the more porous upper sediments from 0 to 25 ft. The investigation showed that the human health and ecological exposure pathways relevant to the remaining contamination are all incomplete, leading to the conclusion of "no current or future human health or ecological risk." Results of this investigation are reported in the report titled "*RCRA Facility Investigation High Energy Laser Systems Test Facility Technical Support Area Fuel Spill, WSMR New Mexico.*"

Continued compliance monitoring of the existing monitoring wells was proposed by WSMR in the above titled report as a precautionary measure to assure early detection of impact to the regional aquifer. The annual sampling for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) will be conducted at all existing monitor wells completed in the regional aquifer and will be performed for a period of 10 years. This report presents data for the calendar year 2006 ground water monitoring for BTEX.

## 5. DISCUSSION

Ground water sampling was conducted at the HELSTF TSA on 8-9 March 2006. Monitoring wells HMW-48, -49, -50, and -52 were sampled using low-flow sampling techniques. HMW-51 was not completed as a monitoring well and therefore could not be sampled. An MP15 Micropurge® Control and Power Pack along with a Sample Pro® 1.75 inch stainless steel sampling pump w/ disposable polyethylene bladders were used for sample collection.

Using low flow sampling, between 5.2 and 5.5 liters of water was purged from each well prior to the stabilization of water quality parameters and sample collection. Drawdown of the water table was minimized to less than 0.5 feet during purge and sample collection at each well. Sample parameters taken at the time of sample collection are included in Table 1.

**Table 1. Water Quality Parameters, March 2006.**

Water Quality Parameter	HMW-48	HMW-49	HMW-50	HMW-52
Temp (°C)	19.81	20.47	20.74	20.05
TDS (g/l)	5.829	6.430	6.196	11.18
Oxidation Reduction Potential (mV)	161.1	125.2	125.0	63.3
Conductivity (ms/cm)	8.968	9.892	9.533	17.19
Dissolved Oxygen (mg/l)	0.52	1.91	1.51	2.47
Turbidity (NTU)	18.1	7.05	1.03	7.14
pH	7.64	7.52	7.53	9.20

Ground water samples were sent to Trace Analysis, Inc. in Lubbock, Texas. Sample results are listed in Table 2. Analytical results indicate that BTEX was not detected above a reporting limit of 0.00100 mg/l in monitoring wells HMW-48, -49, -50, and -52.

**Table 2. Analytical results of BTEX sampling at the HELSTF TSA, march 2006.**

Monitoring Well ID	Benzene mg/l	Toluene mg/l	Ethylbenzene mg/l	Xylenes mg/l
HMW-48	<0.00100	<0.00100	<0.00100	<0.00100
HMW-49	<0.00100	<0.00100	<0.00100	<0.00100
HMW-50	<0.00100	<0.00100	<0.00100	<0.00100
HMW-52	<0.00100	<0.00100	<0.00100	<0.00100
< Less than the indicated laboratory reporting limit.				

## 6. CONCLUSIONS

The HELSTF TSA monitoring wells were sampled using low flow sampling techniques in March 2006. Analytical results indicate that BTEX was not detected in any samples collected. This sampling event was the first annual BTEX monitoring event for the regional ground water wells at the HELSTF TSA gasoline spill. All previous investigations have indicated that regional ground water has not been affected by the gasoline spill.

## 7. RECOMMENDATIONS

Continue annual ground water monitoring at the HELSTF TSA for BTEX in calendar year 2007.

## 8. WTS TASK MANAGER AND TASK COORDINATOR / PHONE NO.:

The WTS Task Manager and Task Coordinator for this TO are Fred Bourger, 678-3426, and Brad Davis, 678-3397, respectively.