



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

 ENTERED

REPLY TO  
ATTENTION OF

OCT 07 2010



Directorate of Public Works

Mr. James Bearzi  
New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303

**Subject: RCRA Facility Investigation Report for the Main Post POL AST Release Site (SWMU 219) and Response to the NMED's May 12, 2010 Notice of Disapproval of the RFI Work Plan Main Post POL AST Release Site (SWMU 219) White Sands Missile Range (WSMR), EPA ID No. NM 2750211235 HWB-WSMR-09-005**

Dear Mr. Bearzi:

Enclosed for your review is the report submittal titled: *RCRA Facility Investigation Report for the Main Post POL AST Release Site (SWMU 219) White Sands Missile Range, New Mexico, September 2010.*

In a letter dated May 12, 2010 the New Mexico Environment Department (NMED) issued a second notice of Disapproval (NOD) of the RCRA Facility Investigation (RFI) Work Plan and requested that a revised Work Plan be submitted addressing all comments by July 30, 2010. WSMR had already completed investigation activities based on the first NOD and therefore requested an extension to complete the investigation report in lieu of submitting another revised work plan. On a letter dated August 17, 2010 the NMED approved the extension for the submittal of the RFI report from July 30, 2010 to September 30, 2010 with the understanding that WSMR conducted the investigation at risk without an approved work plan. This report and the attached table are being submitted in accordance with the revised submittal schedule as required by the NMED's August 17, 2010 letter. The attached table provides specific responses to the May 12, 2010 letter containing NMED's comments to the *RCRA Facility Investigation Work Plan* (February 2010) for this site.

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the*

*information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

Should you have any questions regarding this matter, please contact Mr. Benito Avalos of our Environmental Compliance Branch at (575) 678-2225.

Copies furnished with enclosure (1 print copy w/CD) to Ms. Hope Monzeglio, NMED-HWB and, without enclosure to; Ms Kristen Van Horn, NMED-HWB; Mr. Dave Cobrain, NMED-HWB; Mr. John Kieling, NMED-HWB; Mr. Chuck Hendrickson, Region VI EPA; Mr. Robert Rowden, AEC; Ms. Laurie Rodriguez, ARCADIS.

Sincerely,



Thomas A. Ladd  
Director, Public Works

Enclosure

Table ES-1 – White Sands Missile Range Response to New Mexico Environment Department Comments			
Comment No.	NMED Comments	WSMR Response	Section/Page Reference
1	The objectives of this Work Plan, as identified by the Permittee in Section 1 (Introduction) are to investigate a fuel spill that occurred in December 2005 and determine if the spill has migrated to surrounding groundwater and soil. In addition to investigating the fuel spill, this Work Plan must also investigate the entire Solid Waste Management Unit (SWMU) 219 (Main Post POL) as required by the December 2009 Hazardous Waste Facility Permit (Permit). Appendix 8, Table 8-2 (SWMUs and AOCs Requiring Corrective Action) of the Permit requires the submittal of a Work Plan to investigate SWMU 219 no later than May 15, 2010. The Permittee must revise the Work Plan to propose investigation of the entire SWMU as well as the fuel spill in accordance with Permit Appendix 8, Table 8-2. The revised Work Plan must fulfill the aforementioned Permit requirement. Additional required revisions to the Work Plan are addressed in the comments below.	Section VI.H.1.a of the Permit states: "The Permittee shall submit to NMED Investigation Work Plans for the SWMUs and AOCs 27 identified in Permit Appendix 4 (SWMU, AOC, and Hazardous Waste Management Unit Tables) in 28 accordance with the schedule set forth in Permit Appendix 8 (Work Plan and Closure Plan Submittal 29 Schedule)." Appendix 4, Table 4-1 specifically notates SWMU 219 as the AST Release Site. No other releases have been identified at the Main Post POL; therefore, it is WSMR's position that investigation of the area outside the release is not warranted and is not required by the Permit. WSMR contends that the area described in the Work Plan and investigated constitutes the SWMU.	Executive Summary, page b and Section 1, page 1 of the RFI Report
2	In Section 1 (Introduction), page 1, the Permittee states "[t]his Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Work Plan was developed by ARCADIS on behalf of White Sands Missile Range (WSMR) pursuant to requirements of WSMR's Hazardous Waste Permit (No.NM2750211235) dated October 14, 1989." Since the initial submittal of this Work Plan, NMED has since renewed the Permit. The Permittee must revise the Work Plan to reference and adhere to the Permit.	The reference in the RFI Report has been revised to reflect the 2009 Permit. The requirements of the 2009 Permit have been met.	Executive Summary and Section 1, page 1 of the RFI Report

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3	In Section 1 (Introduction) of the Work Plan, page 1, the Permittee states that one of the primary objectives of the proposed activities is to "evaluate potential risks to human and ecological receptors exposed to the affected media" and in bullet here states "[p]erform Human Health and Ecological Risk Assessments, if needed (Appendices A and B, respectively)." The Permittee further discusses conducting human and ecological risk assessments in Section 7 (Risk Assessment). The Permittee may choose to conduct risk assessment(s), but only if the nature and extent of contamination for all of SWMU 219 have been fully defined; a risk assessment(s) cannot be performed on a portion of a SWMU (e.g., the spill area). The Permittee must revise the Work Plan as appropriate.	The nature and extent of the contamination for the MP POL AST Release Site (SWMU 219) have been fully defined and risk assessments were performed. As discussed in WSMR's Response to Comment 1, it is WSMR's position that the AST Release Site is the SWMU and that no further assessment outside the AST Release Site is required by the permit.	Not applicable.
4	The Permittee's NOD response (Response to Notice of Disapproval for the RCRA Facility Investigation Work Plan for the Main Post POL, SWMU 219), to Comment 1 indicates the risk assessment work plans were removed from the Work Plan; however, Section 1 (Introduction), page 1, bullet 3, the Permittee states "[p]erform Human Health and Ecological Risk Assessments, if needed (Appendices A and B, respectively)." Appendix A and B do not contain information pertaining to the risk assessments. The Permittee must revise the Work Plan to address this discrepancy.	The reference to Appendices A and B in Section 1 of the Work Plan should have been deleted. A revised Work Plan is not being submitted. The appropriate information regarding the procedures followed to conduct risk assessments is provided in the RFI Report, Section 4.4 and Appendix E.	Section 4.4, page 15 and Appendix E of the RFI Report.

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5	In Section 2 (Background Information), page2, the Permittee states "[o]n December 7, 2005, a release of approximately 1,730 gallons of gasoline occurred while transferring gasoline between one of the 25,000 gallon gasoline ASTs to one of the 6,000 gallon gasoline ASTs." Because there are several 6,000 gallon and 25,000 gallon gasoline aboveground storage tanks (ASTs) located within the SWMU, the Permittee must revise the text of this Section to reference an additional figure that specifically shows the location of where the release occurred.	The 6,000 gallon ASTs are filled simultaneously at an even rate by the transfer system. During the transfer, the tanks were overtopped and gasoline was released to the concrete secondary containment. A crack in the southeastern corner of the concrete containment allowed fuel to escape and be released to the subsurface below. Section 2.2 describes the location of the release and Figure 2 of the RFI Report indicates the area of the release.	Section 2.2 and Figure 2 of the RFI Report.
6	In Section 3 (Site Conditions), page2,the Permittee provides a very brief description of the current conditions at the Main Post POL and the location of the spill. The Permittee must expand this section in the revised the Work Plan to describe the current site conditions for the entire SWMU 219 (e.g., include ASTs, loading racks, storm drains and catch basins, all structures and their uses). See Appendix 7, Section 7.2.6 of the Pennit.	Section 2 of the RFI Report describes the current site conditions for the AST Release Site (SWMU 219). Figure 2 of the RFI Report provides details of the area surrounding the AST Release Site including the locations of underground piping, other ASTs in the Main Post POL and drainage features in the general vicinity.	Section 2, pages 2-5 and Figure 2 of the RFI Report.

Table ES-1 – White Sands Missile Range Response to New Mexico Environment Department Comments

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7	<p>In Section 1 (Introduction), page 1, bullet four, the Permittee states "[p]erform a statistical evaluation of analytical results and background levels," in Section 4 (Previous Investigations), page 8, states "[r]esults from this investigation will be used in this RFI to statistically compare background lead concentrations to site concentrations, "and in Section 6.2 (Evaluation of Data for Site Characterization), page 16, states "[l]ead data collected during the investigation will be compared with the background lead value established from the sitewide background study conducted for the Main Post Area (BAE Systems, 2004)." The Work Plan does not discuss how the statistical evaluation will be conducted, does not explain its purpose, nor address which statistical test will be used to compare background concentrations to site concentrations. The Permittee must revise the Work Plan to discuss the purpose of the statistical evaluation and describe how the statistical evaluation will be conducted and what test will be utilized. In addition, the Permittee must compare all inorganic constituents to the established background values and not limit the comparison to lead (RCRA 8 metals will be required as part of the chemical analyses; see Comment 8).</p>	<p>The Work Plan discussed the possibility of comparison of lead results from the investigation to background concentrations, with the intention of determining whether any elevated concentrations of lead were similar in nature to unimpacted soil. This comparison was not necessary because, as discussed in Section 4.3.3, the concentrations of lead in Site soils were below the Residential SSLs and no adverse impacts were noted.</p>	<p>Section 4.3.3, page 14 of the RFI Report.</p>

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8	In Section 5.1 (Soil Sampling), page 9, the Permittee states "[s]oil samples will be analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) using United States Environmental Protection Agency (USEPA) Method 8021B; Gasoline Range Organics (GRO) using EPA method 8015; and lead using USEPA Method 6010A." Because past sampling has not been conducted at SWMU 219, the scope of work must be expanded to include the entire SWMU. Additionally, fuel lines are present at the site. Therefore, the sampling suite must be revised to include volatile organic compounds (VOCs) using EPA Method 8260, semivolatile organic compound (SVOCs) using EPA Method 8270, GRO, diesel range organics (DRO) extended, and RCRA 8 metals. The Permittee must revise the Work Plan to include this proposed work.	Section 2.5.2 of the NMED guidance document "Technical Background Document for Development of Soil Screening Levels" (NMED, August 2009) states that identification of constituents of potential concern (COPCs) "should begin with existing knowledge of the process, product, or waste from which the release originated." The release that occurred was gasoline and thus the analytical suite of GRO, BTEX and lead was selected and includes all of the chemical constituents that might be associated with the release. Additional analytical methods are not appropriate for assessment of the known gasoline release that constitutes SWMU 219.	Not applicable.
9	In Section 5.2 Groundwater Sampling, page 10, the Permittee states "[g]auging information from monitoring wells on the Main Post, specifically, T-12, OS-12, 0063MW-11, and 0063MW-12, indicate that groundwater is encountered greater than 200 ft bgs." The location of these monitoring wells within the Main Post area is not clear. The Permittee must identify the location of these monitoring wells in a figure and also include a table that presents the past two years of water depth measurements and associated water elevations. This information must be included in the revised Work Plan.	Figure 1 of the RFI Report shows the locations of the nearest monitoring wells. Table 1 of the RFI Report provides the most recent two years of water depth measurements and associated water elevations for the wells, where available.	Section 2.5, page 4 of the RFI Report.

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10	In Section 5.2 (Groundwater Sampling), page 10, the Permittee asserts that if groundwater is detected, a temporary monitoring well will be installed and a groundwater sample will be obtained and analyzed for BTEX and GRO. In the unlikely event that groundwater is encountered, the Permittee must contact NMED prior to the construction of any monitoring well(s) to consult with regard to the well installation(s) and the groundwater sample(s) chemical analyses. The Permittee must revise the Work Plan to discuss these changes.	Groundwater was not encountered during the investigation.	Not applicable.
11	In Section 5.6 (Decontamination Procedures), pages 11-12, the Permittee states "[d]econtamination of environmental sample collection equipment will follow the same procedure. For additional discussion of this process please refer to Standard Practices for Decontamination of Field Equipment Used at Waste Sites (ASTM 05088-02)." As addressed in Appendix 5 of the Permit, Permit Section 5.1 (Standard Operating Procedures), NMED requires a description of field methods in a Work Plan (see Permit Appendix 7, Section 7.2.8). The Permittee must remove reference to the guidance document and describe all relevant proposed decontamination information in the revised Work Plan.	Section 3.1.3 of the RFI Report describes the decontamination procedures followed during the investigation.	Section 3.1.3, page 7 of the RFI Report.



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12	The Permittee discusses investigation derived wastes (IDW) in Section 5.7, page 12 and states "[s]uch additional characterization may include collection of composite samples from soil drums and analysis of specific parameters required for disposal purposes only." As a reminder, composite samples cannot be used for VOC analysis; samples tested for VOCs must be discrete samples. The Permittee must describe how composite samples will be collected. The Permittee must revise the Work Plan accordingly.	The procedures followed for collection and analyses of IDW samples are described in Section 3.1.8 of the RFI Report. For the January 2010 sampling event, one of the normal samples with suspected impacts was selected and analyzed for full VOCs and SVOCs. For the April 2010 sampling event, a composite sample was collected from the soil drum and submitted for IDW analyses.	Section 3.1.8, pages 9-10 of the RFI Report.

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13	<p>There are discrepancies as to which New Mexico Soil Screening Levels (NMSSLs) will be compared to the soil chemical analytical results. In Section 6.2 (Evaluation of Data for Site Characterization), page 16, the Permittee states "[s]oil analytical data will be evaluated according to the guidance contained in the Technical Background Document for Development of Soil Screening Levels, Revision 4.0 (NMED, 2006). Specifically, soil data will be compared to the NM Soil Screening Levels published by the NMED and current at the time the field investigation is completed. Soil data will also be compared to the Dilution Attenuation Factor (DAF) 20 values published by the NMED to evaluate the potential for soils to leach." In Section 8 (Reporting), page 17, bullet 1, the Permittee states "[s]ummary tables of the analytical data compared to residential SSLs and background levels." The Permittee must apply the soil screening standards as specified in Appendix 3 of the Permit (i.e., the NMSSLs Revision 5.0 (2009) and use the residential and industrial land use scenarios). In addition, the Permittee must also compare the analytical results to the NMED Total Petroleum Hydrocarbon (TPH) Screening Guidelines (October-2006), Table 2a, for residential and industrial land use. The Permittee must revise the applicable sections of the Work Plan accordingly.</p>	<p>As described in Section 3.2.1 of the RFI Report, the most recent version (2009) of the NMED soil screening Guidance document was used, along with the most recent USEPA Regional Screening Levels and the NMED TPH Screening Guidelines to evaluate the soil data obtained during the investigation. As described in Section 4 and Appendix E of the RFI Report, both the residential and industrial land use scenarios were evaluated.</p>	<p>Section 3.2.1, pages 10-11 and Section 4, pages 15-16 of the RFI Report.</p>

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14	In Section 8 (Reporting), the Permittee discusses the information to be included in Investigation Report. In addition to what is listed in Section 8.0, the Permittee must refer to Appendix 7, Section 7.3 of the RCRA Permit for the reporting requirements for the Investigation Report. If the Permittee chooses to conduct human health and ecological risk assessments, the reporting requirements for a risk assessment are found in Permit Appendix 7, Section 7.5. The required information must be included as an Appendix to the investigation report. The Permittee must revise the Work Plan as applicable.	The RFI Report includes the information required for an Investigation Report, according to Appendix 7, Section 7.3 of the Permit. Appendix E of the RFI Report includes the information required by Appendix 7, Section 7.5 of the Permit.	RFI Report
15	In Appendix B (Data Quality Objectives), page 3/5, bullet one, under <i>Evaluation of Compliance</i> , the Permittee states "[a]ll chemistry data generated will undergo a Tier 2 validation (Section 7.2.2.1)." It is not clear what Section 7.2.2.1 is referring to because <u>this</u> Section is not included in the Work Plan. The Permittee must revise the Work Plan to refer to the correct section.	The reference to Section 7.2.2.1 was invalid in the Appendix and should have been removed. Section 3.2.2 and Appendix D of the RFI Report describe the data quality evaluation procedures.	Section 3.2.2, page 11 and Appendix D of the RFI Report.
16	In Appendix B (Data Quality Objectives), page 4/5, the Permittee discusses the "Evaluation of Completeness" and the use of EQUIS Data Qualification Module (DQM). NMED requires laboratory data to be provided in electronic form and the accompanying case narrative provided by the laboratory. NMED must be capable of reviewing the electronic format included in any submittal. It is expected the Permittee will provide a discussion of any data quality exceptions documented in the laboratory reports. No revision is necessary; this information must be included in the investigation report.	The EQUIS Data Qualification Module discussed is a data evaluation tool used to generate data validation reports, which are provided as narrative reports included in Appendix D of the RFI Report. All laboratory data are provided in "pdf" format as Appendix D to the RFI Report, and as such NMED should be capable of reviewing the reports.	Appendix D of the RFI Report.

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17	Figure 2, contains a "Lined Ditch" north of Aberdeen Avenue and an "unlined ditch" east of Wesson Street. The Permittee must describe the purpose of the lined and unlined ditches and include investigation of the ditches in the Work Plan, if applicable. The Permittee must revise the Work Plan to include this additional information as necessary.	The ditches referenced are stormwater ditches, as described in Section 2.3 of the RFI Report. Investigation of these ditches is not appropriate since they are well outside the area of the AST Release Site and the defined extent of contamination associated with the release.	Section 2.3, page 3 of the RFI Report.
18	The Permittee must revise Figure 2 (Main Post POL Storage Site Proposed Soil Borings) as follows: <ul style="list-style-type: none"> <li>a. Expand the figure to show the entire SWMU and not just the location of the gasoline spill.</li> <li>b. Identify and label the main post building, Building 1785, the POL station, storage locations, and the buildings west and southwest of the dispenser island.</li> <li>c. The Permittee may choose to include additional figures to convey the required information.</li> </ul>	It is WSMR's position that the AST Release Site constitutes the SWMU, as defined in the Permit (see Response to Comment 1). Additional information regarding surrounding areas, including other facilities associated with the Main Post POL is provided in Figure 2 of the RFI Report.	Figure 2 of the RFI Report



**White Sands Missile Range**

**RCRA Facility Investigation Report  
for the Main Post POL AST  
Release Site (SWMU 219)**

September 2010