

National Aeronautics and  
Space Administration  
  
Lyndon B. Johnson Space Center  
**White Sands Test Facility**  
P.O. Box 20  
Las Cruces, NM 88004-0020



October 24, 2013

Reply to Attn of: RE-13-118

New Mexico Environment Department  
Attn: Mr. John E. Kieling, Chief  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, NM 87505

Subject: WSTF Monthly Environmental Activity Report for September 2013

Enclosed is the WSTF Monthly Environmental Activity Report for September 2013. This reporting format includes an Executive Summary that provides important events/observations as Enclosure 1, a paper copy of the report as Enclosure 2, and a CD-ROM with the report in PDF as Enclosure 3.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with 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 known violations. If you have any questions or comments concerning this submittal, please contact me at 575-524-5733.

A handwritten signature in black ink, appearing to read "Radel Bunker-Farrar".

Radel Bunker-Farrar  
Chief, Environmental Office

3 Enclosures

cc:

Mr. Dan Comeau  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, NM 87505

Mr. Baird Swanson (\*CD only)  
Ground Water Quality Bureau  
New Mexico Environment Department  
5500 San Antonio Drive NE  
Albuquerque, NM 87109

## Executive Summary

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The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in September 2013:

- NASA completed two shipments of hazardous waste to two Veolia facilities in September 2013.
- NASA completed 52 of 52 groundwater sampling events and all required groundwater remediation system sampling scheduled for September 2013.
- The Plume Front Treatment System operated on 26 of 30 days in September 2013 at an average flow rate of 1,012 gallons per minute. During September 2013, the PFTS extracted and treated approximately 110 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 18 of 30 days in September 2013 and treated approximately 1.3 acre-feet of groundwater.
- NASA completed installation of a replacement septic tank at Building 114/119 in preparation for the upcoming septic tank investigation. NASA also continued preliminary planning for the wastewater lagoon investigation, soil background study, and a groundwater tracer test.
- NASA completed plugging and abandonment work associated with the conversion of Westbay wells JP-3 and WW-2 to dual-zone conventional monitoring wells.
- NASA submitted several routine documents in September 2013 as well as review fees for four previous submittals to NMED.
- During September 2013, NASA continued a project to upgrade the sanitary sewer at WSTF and connect to the City of Las Cruces sewer system.
- There were no reportable non-compliance issues in September 2013.



National Aeronautics and  
Space Administration

# Monthly Environmental Activity Report

September 2013

Submitted October 24, 2013

NM8800019434

NASA Johnson Space Center White Sands Test Facility

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12600 NASA Road Las Cruces, New Mexico 88012

# NASA Johnson Space Center White Sands Test Facility Monthly Environmental Activity Report

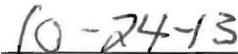
September 2013

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with 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.



Radel Bunker-Farrah

Chief, Environmental Office



Date

### Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in September 2013:

- NASA completed two shipments of hazardous waste to two Veolia facilities in September 2013.
- NASA completed 52 of 52 groundwater sampling events and all required groundwater remediation system sampling scheduled for September 2013.
- The Plume Front Treatment System operated on 26 of 30 days in September 2013 at an average flow rate of 1,012 gallons per minute. During September 2013, the PFTS extracted and treated approximately 110 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 18 of 30 days in September 2013 and treated approximately 1.3 acre-feet of groundwater.
- NASA completed installation of a replacement septic tank at Building 114/119 in preparation for the upcoming septic tank investigation. NASA also continued preliminary planning for the wastewater lagoon investigation, soil background study, and a groundwater tracer test.
- NASA completed plugging and abandonment work associated with the conversion of Westbay wells JP-3 and WW-2 to dual-zone conventional monitoring wells.
- NASA submitted several routine documents in September 2013 as well as review fees for four previous submittals to NMED.
- During September 2013, NASA continued a project to upgrade the sanitary sewer at WSTF and connect to the City of Las Cruces sewer system.
- There were no reportable non-compliance issues in September 2013.

## 1.0 Waste Management Activities

- 1.1 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on September 19, 2013. The shipment consisted of 11 containers with 766 lbs (348 kg) of hazardous waste.
- 1.2 NASA completed a shipment of hazardous waste to Veolia in Burley, Idaho on September 19, 2013. The shipment consisted of two intermediate bulk containers with 5,009 lbs (2,277 kg) of hazardous waste.
- 1.3 NASA continued development of a permit modification request to remove all permit conditions and/or requirements that meet the definition of 40 CFR 270.42- Appendix I, Section A(8): “Changes to remove permit conditions that are no longer applicable (i.e., because the standards upon which they are based are no longer applicable to the facility).” Examples of permit conditions include all references to the ETU; references to the 100, 200, 600, and STGT lagoons (SWMU 2, 8, 34, and AOC 51); references to SWMU 13- 400 Area Aspirator discharge pipe; and references to SWMU’s 21-27 (septic tanks). NASA expects to submit this permit modification request after receiving NMED approval of the Certification of Closure Report for the Evaporation Tank Unit.

## 2.0 Environmental Monitoring

- 2.1 In September 2013 NASA performed sampling at 52 of 52 scheduled groundwater monitoring wells, which includes the 12 previously rescheduled groundwater monitoring wells. Groundwater monitoring wells BLM-40-517, BLM-40-595, BLM-40-688, BLM-41-420, and BLM-41-670, which were originally scheduled for June 2013, were sampled following installation of the dedicated low-flow sampling systems. The six groundwater monitoring wells in the 700 Area that were delayed from August 2013 were sampled in conjunction with landfill post-closure care detection monitoring. One additional monitoring well planned for August 2013 was sampled.
- 2.2 Sampling of groundwater remediation system influent, effluent, and operational extraction wells was performed in accordance with applicable permits and approved plans.
- 2.3 NASA completed plugging and abandonment work associated with the conversion of two Westbay multiport groundwater monitoring wells to dual-zone conventional groundwater sampling systems. The bottom two monitoring zones of Westbay wells JP-3 and WW-2 were plugged and abandoned in accordance with the NMED-approved conversion plan. The top two zones of both wells were redeveloped using bailing, swabbing, and/or pumping. Dedicated dual-zone low-flow sampling systems for these wells were received in September 2013 and are scheduled for installation in the near future.

## 3.0 Corrective Actions

- 3.1 Plume Front Treatment System
  - PFTS Operation – The PFTS operated on 26 of 30 days in September 2013 at an average flow rate of 1,012 gallons per minute. The system extracted and treated approximately 110 acre-feet of groundwater, most of which was injected to the aquifer following treatment. Approximately 13,400 gallons of groundwater were discharged to the on-site Modu-tanks during routine PFTS startup operations. Approximately 2.88 acre-feet were discharged to grade at the PFI wells during backwashing and startup activities.
  - PFTS Shutdowns, Repairs, and Modifications – There were four system shutdowns in September 2013. On September 11, 2013 the system shut down automatically because of a lamp failure. The lamp was replaced and the system was restarted within an hour. On September 17, 2013 the system shut down automatically because of a failure in the UV reactor. Several maintenance requirements were addressed during this outage and the system was restarted on September 20, 2013. Shortly after startup on September 20, 2013 the system shut down automatically because of a communications failure. The system was restarted within

three hours. On September 28, 2013 the system shut down automatically because of a power interruption. Due to the federal government shutdown anticipated for October 1, 2013, the system was left off line and remains inactive.

### 3.2 Mid-plume Interception and Treatment System

- MPITS Operation – The MPITS operated on 18 of 30 days in September 2013 and treated approximately 1.3 acre-feet of groundwater, all of which was discharged to the infiltration basin. Extraction wells MPE-1, 8, and 9 operated throughout September 2013 while repairs required from damage resulting from lightning strikes in July 2013 continued on MPE-9, & 10. Because the treatment process itself was not significantly damaged, IDW was processed throughout September 2013 as required.
- MPITS Shutdowns, Repairs, and Modifications – Between September 1 and September 8, 2013 the system was not operational due to excessive humidity in the leak detection containment piping resulting from previous heavy rains. During this time, groundwater could not be extracted, though IDW was processed. Pipeline drying efforts were hampered due to high relative atmospheric humidity. The system was restarted on September 9, 2013. The system was shut down between September 13 and September 15, 2013 to monitor recharge in the extraction wells. On September 28, 2013 the system shut down automatically because of a power interruption. The necessary repairs were made and the system was restarted on September 30, 2013.

### 3.3 JP4 and JP5 Investigation

- NASA completed and submitted the *NASA White Sands Test Facility (WSTF) 600 Area JP4 and JP5 Investigation Work Plan and Historical Information Summary* on August 26, 2013. The abbreviated work plan is under NMED review. NASA expects to initiate final project planning and field work as quickly as possible following NMED approval of the work plan.

### 3.4 200 Area Investigation

- NASA received NMED's *Notice of Approval with Direction 200 Area Investigation – Phase I Status Report* on September 18, 2013. The Notice of Approval included the requirement for the preparation of a revised *200 Area – Phase II Investigation Work Plan*. NASA continued revising the Phase II IWP in preparation for submittal to NMED in October 2013.

### 3.5 600 Area Investigation

- NASA continued extracting perched groundwater from monitoring well 600-G-138 in September 2013 in accordance with NMED's March 1, 2013 *Approval Time Extension for Implementation of the Perched Groundwater Extraction Pilot Test at the 600 Area*. Approximately 65 gallons of perched groundwater was removed from 600-G-138 in September 2013. The pump used to extract perched groundwater was also required at several other locations to support sampling, well evaluation, and development activities.

### 3.6 Wastewater Lagoon Investigation and Closure

- NASA continues to plan for the investigation and closure of the WSTF wastewater lagoons in accordance with the NMED-approved *Wastewater Lagoon Areas Closure Investigation Work Plan*. As indicated in NMED's August 7, 2013 *Approval Second Time Extension for Implementation of Closure Activities in Accordance with the Approved Wastewater Lagoon Areas Closure Investigation Work Plan (100, 200, 600 Area and STGT)*, NASA is to start the investigation by December 31, 2013 or notify NMED by December 1, 2013 if additional time is required to complete installation of the WSTF sewer system.

### 3.7 Septic Tank Investigation and Abandonment

- NASA submitted the *WSTF Septic Tanks (SWMU 21 – 27) Investigation Work Plan and WSTF Septic Tanks Historical Information Summary* to the NMED HWB on June 28, 2013. NASA received NMED's July 16, 2013 fee assessment for review of the reports and submitted the \$15,000 review fee on August 9, 2013. NMED review of the IWP and HIS is pending
- After receiving approval from the NMED Liquid Waste Program, NASA replaced the septic tank at Building 114/119 prior to removal and investigation of the existing tank.

### 3.8 Groundwater Tracer Testing

- NASA continued planning for a groundwater tracer test, which will be conducted in the WSTF 200/600 Areas and in the Mid-plume Constriction Area (MPCA). NASA's May 10, 2012 *Work Plan for Tracer Testing in the 200/600 Areas and Mid-plume Constriction Area*, approved by the NMED Hazardous Waste Bureau on July 20, 2012, provides specific information regarding the planned test. Though originally scheduled for as early as August 2012, the tracer test has been postponed until 2013 in order to allow sufficient time for the completion of work at the Mid-plume Interception and Treatment System. When steady-state operating conditions have been achieved in the MPCA, the groundwater tracer test can be performed as indicated in the May 10, 2012 work plan. NASA anticipates that field work associated with the tracer test will begin following an evaluation of Mid-plume extraction and exploration wells, currently scheduled for completion in late October 2013.

### 3.9 Soil Background Study

- NASA continued planning for a soil background study, which will be performed in accordance with the NMED-approved *Soil Background Study Investigation Work Plan*. All soil sampling sites were located and flagged in September 2013. Sample collection activities are scheduled for October 2013.

## 4.0 Non-compliance Issues

- The NASA Hazardous Waste Permit requires that other non-compliance conditions be reported to NMED. There were no instances of other non-compliance during this reporting period that require notification under the Permit. The criteria for non-compliance reporting in this report (as defined by 40 CFR 270.30(l)(10) and EPA interpretations at RCRA Faxbacks 13142 and 13686) would be any non-compliance with permit conditions that is not classified as minor recordkeeping, reporting, and similar oversights that were corrected once discovered. Additionally, there were no issues meeting the previously defined criteria (minor items immediately corrected) that were part of a repeating pattern of non-compliance.

## 5.0 Miscellaneous

### 5.1 Sanitary Sewer Upgrade

During September 2013 NASA continued the project to upgrade the sanitary sewer system at WSTF and connect to the City of Las Cruces (CLC) sewer system. The sewer upgrade includes a combination of both gravity and force main in addition to four lift stations. The delays with completing the sewer construction have not affected work on the ETU Closure project, though closure and investigation of the site wastewater lagoons will be impacted. NASA will continue to keep NMED informed about the status of the sewer project, and its potential impacts on other WSTF projects. Construction progress to date includes the following:

- NASA continues to negotiate Service and Transfer agreements with the City of Las Cruces. The Service Agreement addresses the cost of providing sewer service to WSTF. The Transfer Agreement addresses NASA's transfer of ownership of Line A to the City.
- Construction of Line A along Holman Road is substantially complete.
- Construction continues on the Holman Road lift station. The lift station pumps have been installed. Connection of piping and electrical power is pending. Installation of controls and instrumentation are also pending.
- Line B (from Holman Road to the WSTF 100 Area) is substantially complete. Manholes have been installed. Grouting and sealant coating of the inside of the manholes is in progress.
- Line C (the force main from the Second TDRSS Ground Terminal (STGT) to the WSTF 400 Area) is substantially complete. A boring under the STGT access road, and installation of pipe casing under the road, is complete. Installation of Lift Station #1 is in progress.
- Line D (the force main from the 400 Area to the 200 Area) is substantially complete.
- Line E (from the 800 Area to the 300 Area) is substantially complete. A pavement cut across Apollo Road, and installation of piping under the road, is pending.
- Line E (from the 100 Area to the 200 Area) is substantially complete. Manholes have been installed. A boring under STGT Road, and installation of pipe casing under the road, is complete.
- Line F (400 Area) is substantially complete.
- Lines G and H (from several buildings in the 100 Area to Line B) are substantially complete, but completion of several manholes is pending.
- Line I (from Lift Station #3 to Line E) is substantially complete. Lift Station #3 has been installed, but backfilling and installation of control panels are pending.
- Line J (from the Hypervelocity facility to Lift Station #3) is substantially complete.
- Line K (from Lift Station #3 to the 800 Area) is substantially complete.
- Line L (from various 400 Area buildings toward Lift Station #2) is substantially complete. A boring under Road L, and installation of pipe casing under the road, is complete. Lift Station #2 has been installed, but backfilling and installation of control panels are pending.

## **6.0 Documents Submitted**

### **6.1 Documents submitted in September 2013**

- NASA submitted the *Fee Assessment for Detailed Well Evaluation: 100-D-176, 600-C-173, BLM-3-182 and NASA2 (NMED invoice number HWB-NASA-13-013)* for \$2,000 on September 11, 2013.
- NASA submitted the *Fee Assessment for 2013 Remediation System Monitoring Plan Update (NMED invoice number HWB-NASA-13-012)* for \$2,500 on September 11, 2013.
- NASA submitted the *Fee Assessment for Periodic Monitoring Report – Second Quarter 2013 (NMED invoice number HWB-NASA-13-011)* for \$2,000 on September 11, 2013.
- NASA submitted the *Fee Assessment for the 600 Area JP4 and JP5 Remote Test Sites Abbreviated Investigation Work Plan (NMED invoice number HWB-NASA-13-014)* for \$10,000 on September 16, 2013.

6.2 Status of documents submitted in previous months

- NASA submitted the *Well Completion Reports for BLM-40 and BLM-41 Cluster Monitoring Wells* on June 25, 2013. NASA received NMED's July 12, 2013 fee assessment for review of the reports and submitted the \$1,000 review fee on August 27, 2013. NMED review is pending.
- NASA submitted the *NASA WSTF Septic Tanks (SWMU 21-27) Investigation Work Plan & WSTF Septic Tanks Historical Information Summary* on June 27, 2013. Copies of these documents were also submitted to the NMED Groundwater Quality Bureau and NMED Liquid Waste Program. NASA received NMED's July 16, 2013 fee assessment for review of the reports and submitted the \$15,000 review fee on August 9, 2013. NMED review is pending.
- NASA submitted the *Permit Modification Request for NASA White Sands Test Facility (WSTF) Hazardous Waste Permit No. NM8800019434* on July 8, 2013. This document proposed to update and clarify permit language related to two routine operations at the Fuel Treatment Unit.
- NASA submitted the *Detailed Well Evaluations: 100-D-176, 600-C-173, BLM-3-182, and NASA 2* on July 30, 2013. NASA received NMED's August 20, 2013 fee assessment for review of the report and submitted the \$2,000 review fee on September 11, 2013. NMED review is pending.
- NASA submitted the *NASA WSTF Remediation System Monitoring Plan Annual Update* on July 31, 2013. NASA received NMED's August 20, 2013 fee assessment for review of the updated plan and submitted the \$2,500 review fee on September 11, 2013. NMED review is still pending.
- NASA submitted the *Transmittal of the National Aeronautics and Space Administration (NASA) White Sands Test Facility (WSTF) Certification of Closure Report for the Evaporation Treatment Unit (ETU)* on August 1, 2013.
- NASA submitted the *NASA WSTF 200 Area Investigation – Revised Phase I Status Report* on August 6, 2013. NMED approved the report with direction on September 18, 2013.
- NASA submitted the *NASA White Sands Test Facility (WSTF) 600 Area JP4 and JP5 Investigation Work Plan and Historical Information Summary* on August 26, 2013. NASA received NMED's September 4, 2013 fee assessment for review of the plan and submitted the \$10,000 review fee on September 16, 2013.

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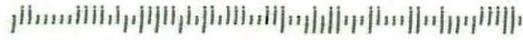


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New Mexico Environmental Department  
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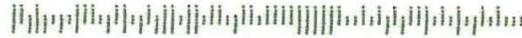
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New Mexico Environmental Department  
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2. Article Number

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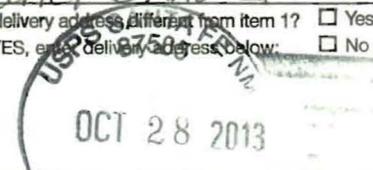
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