

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



August 11, 2014

Reply to Attn of: RE-14-094

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

Subject: WSTF Monthly Environmental Activity Report for July 2014

Enclosed is the WSTF Monthly Environmental Activity Report for July 2014. This reporting format includes an Executive Summary that provides important events/observations as Enclosure 1, a bound 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 Tim Davis at 575-524-5024.

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

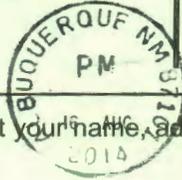
## **Executive Summary**

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The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in July 2014:

- NASA completed two shipments of hazardous waste and a shipment of recyclable electronic scrap in July 2014.
- NASA completed 29 of 32 groundwater sampling events and all required groundwater remediation system sampling scheduled for July 2014.
- The Plume Front Treatment System operated on 22 of 31 days in July 2014 at an average flow rate of 858 gallons per minute. The PFTS extracted and treated approximately 71.3 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 27 of 31 days in July 2014 and treated approximately 1.73 acre-feet of groundwater and investigation-derived waste.
- NASA continued fieldwork associated with Phase II of the 200 Area Investigation. Several soil borings and related monitoring wells were installed.
- NASA continued post-introduction sampling required for the 200/600 Area and MPCA groundwater dye tracer test and submitted samples to the off-site laboratory for analysis.
- NASA continued planning for the investigation and removal of several WSTF septic tanks and the investigation and closure of the WSTF wastewater lagoons.
- NASA completed and submitted to NMED the Historical Information Summary and Investigation Work Plan for SWMUs 1, 3, and 15.
- NASA submitted several documents to NMED in July 2014, including fee assessments for the first quarter PMR and 2014 GMP update, an informational abbreviated work plan for the 200 Area matrix diffusion evaluation, 2013 hazardous waste fees, the second quarter PMR, a 2014 RSMP update, and a request for additional time to implement the wastewater lagoon investigation.
- During July 2014, 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 July 2014.

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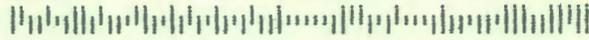


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 New Mexico Environmental Department  
 5500 San Antonia Drive NE  
 Albuquerque, NM 87109

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National Aeronautics and  
Space Administration

## Monthly Environmental Activity Report

July 2014

Submitted August 14, 2014

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

July 2014

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-Farrar  
Chief, Environmental Office



Date

### Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in July 2014:

- NASA completed two shipments of hazardous waste and a shipment of recyclable electronic scrap in July 2014.
- NASA performed sampling at 29 of 32 groundwater monitoring wells and completed all required groundwater remediation system sampling scheduled for July 2014.
- The Plume Front Treatment System operated on 22 of 31 days in July 2014 at an average flow rate of 858 gallons per minute. The PFTS extracted and treated approximately 71.3 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 27 of 31 days in July 2014 and treated approximately 1.73 acre-feet of groundwater and investigation-derived waste.
- NASA continued fieldwork associated with Phase II of the 200 Area Investigation. Several soil borings and related monitoring wells were installed.
- NASA continued post-introduction sampling required for the 200/600 Area and MPCA groundwater dye tracer test and submitted samples to the off-site laboratory for analysis.
- NASA continued planning for the investigation and removal of several WSTF septic tanks and the investigation and closure of the WSTF wastewater lagoons.
- NASA completed and submitted to NMED the Historical Information Summary and Investigation Work Plan for SWMUs 1, 3, and 15.
- NASA submitted several documents to NMED in July 2014, including fee assessments for the first quarter PMR and 2014 GMP update, an informational abbreviated work plan for the 200 Area matrix diffusion evaluation, 2013 hazardous waste fees, the second quarter PMR, the 2014 RSMP update, and a request for additional time to implement the wastewater lagoon investigation.
- During July 2014, 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 July 2014.

## 1.0 Waste Management Activities

- 1.1 NASA completed a shipment of electronic scrap to UNICOR in Tucson, Arizona on July 1, 2014 to be recycled. The shipment consisted of 28 pallets with a total weight of 13,660 pounds (6,200 kg).
- 1.2 NASA completed a shipment of hazardous waste to Veolia's USE facility in Grand View, Idaho on July 24, 2014. The shipment consisted of one intermediate bulk container with 2,800 pounds (1,270 kg) of hazardous waste and one other container with 421 pounds (191 kg) of hazardous waste for a total shipment weight of 3,221 pounds (1,461 kg).
- 1.3 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on July 24, 2014. The shipment consisted of 19 containers with 1,866 pounds (848 kg) of hazardous waste.
- 1.4 NASA continued to manage significant quantities of potentially hazardous investigation-derived waste generated during 200 Area Phase II Investigation activities. IDW is being managed as hazardous waste while the analytical data required to fully characterize the waste are reviewed and the characterization can be completed.

## 2.0 Environmental Monitoring

- 2.1 NASA performed sampling at 29 of 32 groundwater monitoring wells scheduled for sampling in July 2014. Resource limitations imposed by two ongoing field projects (the 200 Area Phase II investigation and the groundwater dye tracer test) resulted in the postponement of sampling at three wells to August 2014.
- 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 initiated two field projects in June 2014 that will require the use of significant resources to perform. There remains the potential that insufficient field personnel will be available to complete all of the scheduled groundwater sampling in August 2014. NASA will closely monitor groundwater sampling, evaluate the impact of delayed sampling on the groundwater assessment program, and reschedule the sampling of less critical monitoring wells to ensure all project objectives can be accomplished without negative effects on groundwater monitoring.

## 3.0 Corrective Actions

### 3.1 Plume Front Treatment System

- PFTS Operation – The PFTS operated on 22 of 31 days in July 2014 at an average flow rate of 858 gallons per minute. The system extracted and treated approximately 71.3 acre-feet of groundwater, most of which was injected to the aquifer following treatment. Approximately 40,300 gallons of groundwater were discharged to the on-site Modu-tank system during system startup events and a test to characterize UV lamp performance. Approximately 1.49 acre-feet were discharged to grade at the PFI wells during injection well backwashing and system startup activities.
- PFTS Shutdowns, Repairs, and Modifications – There were four unplanned shutdowns of the PFTS in July 2014. On July 1, 2014 the system shut down automatically because of an unexpected interruption in the electrical power supply. The system was restarted the following day. On July 5, 2014 the PFTS shut down automatically due to another interruption in the electrical power supply. The system was restarted the following day. On July 8, 2014 the system shut down automatically because of a communications failure. The issue was resolved and the system was restarted the following day. On July 9, 2014 the PFTS again shut down automatically because of a failed communications system component. The component was replaced and the system was restarted the following day. There was one planned shutdown of the PFTS in July 2014. On July 15 the system was shut down to perform scheduled

maintenance activities. Maintenance was completed as required and the system was restarted on July 23, 2014.

### 3.2 Mid-plume Interception and Treatment System

- MPITS Operation – The MPITS operated on 27 of 31 days in July 2014 and treated approximately 1.21 acre-feet of groundwater and approximately 0.52 acre-feet of IDW. All treated groundwater was discharged to the infiltration basin.
- MPITS Shutdowns, Repairs, and Modifications – There were two unplanned shutdowns of the MPITS in July 2014. On July 19, 2014 the system shut down automatically because of an unexpected electrical power outage. The system was restarted the same day. On July 21, 2014 the MPITS shut down automatically when lightning struck nearby and caused a component of the leak detection system to fail. The system was operated during working hours only until the failed component was replaced on July 29, 2014.

### 3.3 JP4 and JP5 Investigation

- NASA completed and submitted the final investigation report to NMED on May 1, 2014. NASA received NMED's May 14, 2014 invoice for review of the report and submitted the \$7,500 review fee on June 4, 2014. NMED review of the report continues.

### 3.4 100/600 Area Burn Pit and Container Storage Area Investigation

- NASA completed development of the Historical Information Summary and Investigation Work Plan for the 100 Area Burn Pit (SWMU 1), the 100 Area Container Storage Area (SWMU 3), and the 600 Area Burn Pit (SWMU 15) and submitted the two documents to NMED on July 30, 2014.

### 3.5 200 Area Investigation

- During July 2014 NASA completed the installation of multiport soil vapor and groundwater monitoring wells 200-LV-150 and 200-KV-150 in borings 200-SB-06 and 200-SB-07, respectively.
- Soil borings 200-SB-10, 200-SB-11, 200-SB-12, 200-SB-15, 200-SB-1, 200-SB-18, and 200-SB-19 were drilled to bedrock with the Air Rotary Casing Hammer rig. Soil samples were collected at specified intervals as allowed by the geological formation. NMED-approved soil vapor monitoring wells were installed within each boring.
- NASA began receiving analytical data from soil and bedrock core sampling performed in June 2014 and initiated data verification and validation in accordance with the work plan.

### 3.6 600 Area Investigation

- NASA continued extracting perched groundwater from monitoring well 600-G-138 in July 2014 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 285 gallons of perched groundwater were removed from 600-G-138 in July 2014.
- The *600 Area Perched Groundwater Extraction Pilot Test Interim Status Report*, submitted by NASA on April 17, 2014, remains under NMED review.

### 3.7 Groundwater Dye Tracer Test

- NASA continued a groundwater dye tracer test in accordance with the NMED-approved *Work Plan for Tracer Testing in the 200/600 Areas and Mid-plume Constriction Area*. Four fluorescent dyes were introduced at four locations in June 2014, and post-introduction groundwater monitoring continued throughout July 2014.

- Groundwater tracer samples were submitted to the off-site contracted analytical laboratory. Data are being received and reviewed by NASA project personnel. There have been no detections of tracer dye at the monitoring locations identified in the approved work plan.

### 3.8 Soil Background Study

- NASA continued development of the response to NMED's June 26, 2014 *Notice of Disapproval for the Soil Background Study Investigation Report*.

### 3.9 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*. NASA submitted a request for additional time to implement the investigation on July 30, 2014. In that request, NASA indicated that the investigation would be initiated by November 30, 2014 or NASA would notify NMED by November 1, 2014 if additional time is required.

### 3.10 Septic Tank Investigation and Removal

- NASA continues to plan for the removal of several septic tanks and the investigation of the SWMU 22 tank location.
- NASA anticipates removing several septic tanks that are not currently in use within the next two months. Septic tanks that are currently in use will be removed following completion of the WSTF sanitary sewer.

## 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(1)(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 July 2014, 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. 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 the Transfer Agreement with the City of Las Cruces. The Service Agreement was signed and approved by the City of Las Cruces on October 29, 2013. The Transfer Agreement addresses NASA's transfer of ownership of Line A and the Holman Lift Station (HLS) to the City.
- Construction of Line A along Holman Road is substantially complete. A final hydrostatic leak test and acceptance procedure with NASA and the City of Las Cruces was completed.
- Construction continues on the HLS. The lift station pumps have been installed. Connection of piping and electrical power is complete. Installation of controls and instrumentation is in

progress. Water service inside the HLS is complete. Grouting and sealant coating of the wet well is complete.

- 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 complete and setting and pouring of the manhole rings is also complete. A final low pressure air leak test and cleaning of the line were completed.
- 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. Validation, testing, and checkout of Lift Station #1 is in progress. A final hydrostatic leak test of the line was completed.
- Line D (the force main from the 400 Area to the 200 Area) is substantially complete. A final hydrostatic leak test was completed.
- Line E (from the 800 Area to the 300 Area) is complete. Installation of connecting manholes, grouting, application of sealant coating, and setting of rings is complete. A final low pressure air leak test and acceptance procedure with NASA is complete.
- Line E (from the 100 Area to the 200 Area) is substantially complete. Grouting, application of sealant coating, and setting of rings is complete. A final low pressure air leak test and acceptance procedure with NASA is complete.
- Line F (400 Area) is substantially complete. A final low pressure air leak test was completed.
- Lines G and H (from several buildings in the 100 Area to Line B) are substantially complete, including the completion of the remaining manholes. Grouting and sealant coating of the inside of the manholes is complete. A final low pressure air leak test of the line was completed.
- Line I (from Lift Station #3 to Line E) is substantially complete. Lift Station #3 has been installed, and backfilling and installation of control panels is complete. A final hydrostatic leak test was completed. Backfilling and compaction around the lift station is complete.
- Line J (from the Hypervelocity facility to Lift Station #3) is substantially complete. A final low pressure air leak test was completed.
- Line K (from Lift Station #3 to the 800 Area) is substantially complete. A final low pressure air leak test was completed.
- 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. Installation of the 8-inch gravity line in the pipe casing is complete. Installation of connecting manholes, grouting, application of sealant coating, and setting of rings is complete. Lift Station #2 has been installed, and backfilling and installation of control panels is complete. A final low pressure air leak test of the line was completed. Application of the sealant coating is also complete.

## 6.0 Documents Submitted

### 6.1 Documents submitted in July 2014

- NASA submitted the *Fee Assessment for Periodic Monitoring Report – First Quarter 2014* (NMED Invoice Number HWB-NASA-14-005) on July 8, 2014.
- NASA submitted the *Fee Assessment for WSTF Groundwater Monitoring Plan – 2014 Update* (NMED Invoice Number HWB-NASA-14-006) on July 8, 2014.

- NASA submitted the *Abbreviated Investigation Work Plan for the 200 Area Bedrock Matrix Diffusion Supplemental Study* on July 11, 2014, which provided information on an internal NASA project to evaluate the potential for matrix diffusion in 200 Area bedrock.
- NASA submitted the *NASA Johnson Space Center White Sands Test Facility (WSTF) 2013 Annual Hazardous Waste Fees* on July 21, 2014.
- NASA submitted the *SWMUs 1, 3, and 15 (100 Area Burn Pit, 100 Container Storage Area, and 600 Area Burn Pit) Investigation Work Plan and Historical Information Summary* on July 30, 2014.
- NASA submitted the *Periodic Monitoring Report – Second Quarter 2014* on July 30, 2014.
- NASA submitted the *Remediation System Monitoring Plan 2014 Annual Update* on July 30, 2014.
- NASA submitted the *Request for Additional Extension of Time for Implementation of Lagoon Investigation Work Plan* on July 30, 2014.

6.2 Status of documents submitted in previous months

- NASA submitted the *Soil Background Study Investigation Report* on March 27, 2014. NASA received NMED's April 17, 2014 fee assessment for review of the report and submitted the \$2,000 review fee on May 7, 2014. NASA received NMED's June 26, 2014 Notice of Disapproval and continued developing the required response in July 2014.
- NASA submitted the *600 Area Perched Groundwater Extraction Pilot Test Interim Status Report* on April 17, 2014. NASA received NMED's May 1, 2014 fee assessment for review of the report and submitted the \$2,000 review fee on May 16, 2014. NMED review is pending.
- NASA submitted the *NASA White Sands Test Facility (WSTF) Solid Waste Management Unit 14: 600 Area JP4/JP5 Remote Testing Site Investigation Report* on May 1, 2014. NASA received NMED's May 14, 2014 fee assessment for review of the report and submitted the \$7,500 review fee on June 4, 2014. NMED review is pending.
- NASA submitted the *NASA WSTF Groundwater Monitoring Plan Update for 2014* on May 15, 2014. NASA received NMED's June 10, 2014 fee assessment for review of the plan and submitted the \$2,500 review fee on July 8, 2014. NMED review is pending.