

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



February 10, 2014

Reply to Attn of: RE-14-020

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 January 2014

Enclosed is the WSTF Monthly Environmental Activity Report for January 2014. 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 knowing violations.

If you have any questions or comments concerning this submittal, please contact Tim Davis at 575-524-5024.

A handwritten signature in blue ink, appearing to read "Radel Bunker-Farrah".

Radel Bunker-Farrah
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

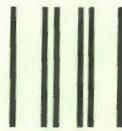
Mr. Baird Swanson (*CD only)
Ground Water Quality Bureau
New Mexico Environment Department
5500 San Antonio Drive NE
Albuquerque, NM 87109

Executive Summary

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

- NASA completed several shipments of universal and hazardous waste in January 2014.
- NASA completed 38 of 42 groundwater sampling events and all required groundwater remediation system sampling scheduled for January 2014.
- The Plume Front Treatment System operated on 28 of 31 days in January 2014 at an average flow rate of 860 gallons per minute. The PFTS extracted and treated approximately 92.4 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 30 of 31 days in January 2014 and treated approximately 2.38 acre-feet of groundwater and approximately 0.13 acre-feet of investigation-derived waste.
- NASA received analytical results from recent sampling of the sludge in the decommissioned Building 114/119 septic tank. NASA also continued preliminary fieldwork and worked with NMED to address the unexpected configuration of the SWMU 22 septic tank.
- NASA continued preliminary planning for the wastewater lagoon investigation and a groundwater tracer test.
- NASA plugged and abandoned six unneeded groundwater monitoring wells and one exploration well.
- NASA submitted several documents to NMED in January 2014, including a map with waste generation area locations, a request for additional time to initiate the wastewater lagoon investigation, and the comprehensive 2013 PMR.
- During January 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 January 2014.

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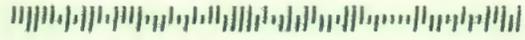
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Attn: Mr. Dan Comeau
New Mexico Environmental Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

2. Article Number

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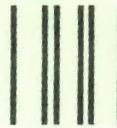
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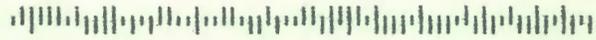


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**National Aeronautics and
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Mail Code: RE-14-020
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1. Article Addressed to:

Mr. Baird Swanson
Ground Water Quality Bureau
New Mexico Environmental Department
5500 San Antonia Drive NE
Albuquerque, NM 87109

2. Article Number
(Transfer from service label)

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National Aeronautics and
Space Administration

Monthly Environmental Activity Report

January 2014

Submitted February 13, 2014

NM8800019434

NASA Johnson Space Center White Sands Test Facility

12600 NASA Road Las Cruces, New Mexico 88012

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

January 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 January 2014:

- NASA completed several shipments of universal and hazardous waste in January 2014.
- NASA completed 38 of 42 groundwater sampling events and all required groundwater remediation system sampling scheduled for January 2014.
- The Plume Front Treatment System operated on 28 of 31 days in January 2014 at an average flow rate of 860 gallons per minute. The PFTS extracted and treated approximately 92.4 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 30 of 31 days in January 2014 and treated approximately 2.38 acre-feet of groundwater and approximately 0.13 acre-feet of investigation-derived waste.
- NASA received analytical results from recent sampling of the sludge in the decommissioned Building 114/119 septic tank. NASA also continued preliminary fieldwork and worked with NMED to address the unexpected configuration of the SWMU 22 septic tank.
- NASA continued preliminary planning for the wastewater lagoon investigation and a groundwater tracer test.
- NASA plugged and abandoned six unneeded groundwater monitoring wells and one exploration well.
- NASA submitted several documents to NMED in January 2014, including a map with waste generation area locations, a request for additional time to initiate the wastewater lagoon investigation, and the comprehensive 2013 PMR.
- During January 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 January 2014.

1.0 Waste Management Activities

- 1.1 NASA completed a shipment of universal waste batteries to the Big Green Box facility in Anaheim, California on January 16, 2014. The shipment consisted of two containers with 62 pounds (28 kg) of batteries.
- 1.2 NASA completed a shipment of universal waste to Veolia in Phoenix, Arizona on January 16, 2014. The shipment consisted of 19 containers with 1,905 pounds (866 kg) of universal waste.
- 1.3 NASA completed a shipment of PCB waste to Veolia in Phoenix, Arizona on January 16, 2014. The shipment consisted of two containers with 473 pounds (215 kg) of PCB waste.
- 1.4 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on January 16, 2014. The shipment consisted of seven containers with 999 pounds (454 kg) of hazardous waste.
- 1.5 NASA completed a shipment of P078 ADGAS Residual (water) to Veolia in Burley, Idaho on January 16, 2014. The shipment consisted of three containers with 5,680 pounds (2,582 kg) of hazardous waste.

2.0 Environmental Monitoring

- 2.1 In January 2014, NASA performed sampling at five groundwater monitoring wells that were rescheduled from December 2013. NASA also performed sampling at 38 of the 42 groundwater monitoring wells scheduled for January 2014. The remaining four groundwater monitoring wells were rescheduled to February 2014.
- 2.2 In January 2014, NASA plugged and abandoned six groundwater monitoring wells (600-C-210, NASA 2, NASA 7, WB-4, WB-8, and WB-9) and one exploration well (IS-1) that were no longer needed. NASA will provide the required plugging records to the New Mexico Office of the State Engineer in accordance with the applicable regulations.
- 2.3 Sampling of groundwater remediation system influent, effluent, and operational extraction wells was performed in accordance with applicable permits and approved plans.

3.0 Corrective Actions

3.1 Plume Front Treatment System

- PFTS Operation – The PFTS operated on 28 of 31 days in January 2014 at an average flow rate of 860 gallons per minute. The system extracted and treated approximately 92.4 acre-feet of groundwater, most of which was injected to the aquifer following treatment. Approximately 710 gallons of groundwater were discharged to the on-site Modu-tanks during routine PFTS startup operations. Approximately 1.74 acre-feet were discharged to grade at the PFI wells during backwashing and startup activities.
- PFTS Shutdowns, Repairs, and Modifications – There were five unplanned shutdowns of the PFTS in January 2014. On January 11, 2014, the system shut down automatically because of a communication failure at PFI-4 that resulted from a faulty PLC. The part was replaced and the system was restarted on January 14, 2014. On January 20, 2014, the PFTS shut down automatically because of communication issues at PFI-4. Troubleshooting failed to determine the direct cause and the system was restarted on January 21, 2014. On January 22, 2014, the system shut down automatically because of a leak detection alarm. Operators located a small leak at PFE-4A and isolated this section of the pipeline before restarting the system later that day. This leak was reported to the NMED Hazardous Waste Bureau and Groundwater Quality Bureaus, in an email dated January 24, 2014. On January 24, 2014, the system automatically shut down when an engineer making adjustments on the communications system inadvertently created a communications failure. The adjustments were completed and the PFTS was restarted

that day. On January 25, 2014, a communications failure at PFI-4 resulted in an automated shutdown of the system. Repairs were performed and the system was restarted on January 27, 2014.

3.2 Mid-plume Interception and Treatment System

- MPITS Operation – The MPITS operated on 30 of 31 days in January 2014 and treated approximately 2.38 acre-feet of groundwater and approximately 0.13 acre-feet of IDW. All treated groundwater was discharged to the infiltration basin.
- MPITS Shutdowns, Repairs, and Modifications – There was one unplanned shutdown of the MPITS on January 27, 2014 because of an electrical power surge. The system was inspected and restarted on January 29, 2014. There was one planned shutdown of the MPITS on January 13, 2014. The system was allowed to shut down automatically in order to fully deplete the inline filters. The filters were replaced and the system was restarted the same day.

3.3 JP4 and JP5 Investigation

- NASA continued planning and procurement activities for the project and anticipates performing the investigation in early 2014.

3.4 200 Area Investigation

- NASA received NMED's January 22, 2014 approval of the 200 Area Phase II work plan. NASA adjusted the project schedule based on this approval and now plans to initiate fieldwork in April 2014. Project procurement and planning continues.

3.5 600 Area Investigation

- NASA continued extracting perched groundwater from monitoring well 600-G-138 in January 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 215 gallons of perched groundwater was removed from 600-G-138 in January 2014.

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*. A letter requesting an Extension for Implementation of Closure Activities in Accordance with the Approved Wastewater Lagoon Areas Closure Investigation Work Plan (100, 200, 600 Area and STGT) to February 28, 2014 was sent to NMED on November 26, 2013 and approved by NMED on December 19, 2013. The extension is required to complete the Sanitary Sewer Pipeline Project which will connect WSTF to the City of Las Cruces sewage treatment facilities and complete property transfer between NASA and the City of Las Cruces. Surveying of the lagoons to establish sample collection locations has been initiated to prepare for lagoon water and sludge sampling after discharge to the lagoons is terminated. NASA was to start the investigation by February 28, 2014 or notify NMED by February 1, 2014 if required to commence the investigation and closure of the lagoons. A request for additional time was submitted to NMED on January 30, 2014.

3.7 Septic Tank Investigation and Removal

- NASA received analytical results from the sewage sludge remaining in the decommissioned septic tank at Buildings 114/119 (SWMU 22) on January 6, 2014. The data are currently under internal review.
- NASA performed exploratory fieldwork on January 22, 2014 to confirm the locations of septic tanks at Buildings 272, 447, and 463.

- NASA contacted the NMED HWB via telephone on January 23, 2014 to discuss the unexpected configuration of the SWMU 22 septic tank. NASA discovered that this septic tank has no leach field and that the tank integrity has been compromised. NASA will provide the NMED HWB a memo explaining the unexpected configuration of the SWMU 22 septic tank and propose deviations to the work plan to address the issue. This memo will be submitted in February in conjunction with a letter report summarizing the analytical results from sewage sludge samples collected from the SWMU 22 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 to allow sufficient time for the completion of work at the Mid-plume Interception and Treatment System. When consistent operational 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 early 2014. A preliminary activity of note is a fluorescent dye and low level NDMA analysis interference test. This test includes performing low level NDMA analysis of WSTF groundwater samples with and without fluorescent dye to determine if the presence of the dye impacts the low level NDMA analysis used to monitor groundwater quality at WSTF. Preliminary data are being evaluated.

3.9 Soil Background Study

- NASA continued development of the final investigation report in January 2014.

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 January 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.

NASA White Sands Test Facility

- 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 is in progress.
- Construction continues on the HLS. The lift station pumps have been installed. Connection of piping and electrical power is in progress. Installation of controls and instrumentation is in progress. Drainage control and 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 in progress, and setting and pouring of the manhole rings is complete. A final low pressure air leak test and acceptance procedure with NASA will be performed prior to activating the system.
- 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. A final hydrostatic leak test 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 in progress. A final low pressure air leak test and acceptance procedure with NASA will be performed prior to activating the system.
- Line E (from the 100 Area to the 200 Area) is substantially complete. Grouting, application of sealant coating, and setting of rings is in progress. A final low pressure air leak test and acceptance procedure with NASA will be performed prior to activating the system.
- Line F (400 Area) is substantially complete. A final low pressure air leak test and acceptance procedure with NASA will be performed prior to activating the system.
- Lines G and H (from several buildings in the 100 Area to Line B) are substantially complete, but completion of several manholes is pending. Grouting and sealant coating of the inside of the manholes is complete. A final low pressure air leak test and acceptance procedure with NASA will be performed prior to activating the system.
- 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.
- Line J (from the Hypervelocity facility to Lift Station #3) is substantially complete. A final low pressure air leak test and acceptance procedure with NASA will be performed prior to activating the system.
- Line K (from Lift Station #3 to the 800 Area) is substantially complete. A final low pressure air leak test and acceptance procedure with NASA will be performed prior to activating the system.
- 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 in progress. Lift Station #2 has been installed, and backfilling and installation of control panels is complete. A final low

pressure air leak test and acceptance procedure with NASA will be performed prior to activating the system.

6.0 Documents Submitted

6.1 Documents submitted in January 2014

- NASA submitted the *WSTF Annual Map with Locations of Waste Generation Areas* on January 14, 2014.
- NASA distributed a *Public Notice of a Class I Hazardous Waste Permit Modification* to individuals and entities on the NMED mailing list on January 22, 2014.
- NASA submitted the *Periodic Monitoring Report (PMR) – 2013 Comprehensive Report* on January 30, 2014.
- NASA submitted the *Request for Additional Extension of Time for Implementation of Lagoon Investigation Work Plan* on January 30, 2014.

6.2 Status of documents submitted in previous months

- 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. The NMED LWP indicated on December 5, 2013 that NASA's plan for removal of the non-SWMU tanks meets or exceeds regulatory requirements. The LWP directed NASA to provide proof of the abandonment/removal of each tank following completion of the work.
- 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. The operational changes to the FTU were formally approved by NMED as a Class I permit modification on January 8, 2014. NASA distributed a *Public Notice of a Class I Hazardous Waste Permit Modification* regarding the proposed changes to individuals and entities on the NMED mailing list on January 22, 2014.
- NASA submitted the *200 Area Investigation – Phase II Investigation Work Plan* on October 30, 2013. NASA received NMED's November 21, 2013 fee assessment which was a duplicate of a previously submitted invoice and did not require payment. NMED approved the work plan on January 22, 2014.
- NASA submitted the *IWP for Evaluating Anomalous Detections of NDMA in Monitoring Wells JER-1 and JER-2* on November 7, 2013. NASA received NMED's November 21, 2013 fee assessment for review of the plan and submitted the \$10,000 review fee on December 19, 2013. NMED review is pending.
- NASA submitted the *Periodic Monitoring Report (PMR) – Third Quarter 2013* on November 7, 2013. NASA received NMED's November 21, 2013 fee assessment for review of the report and submitted the \$2,000 review fee on December 19, 2013. NMED is reviewing the report.
- NASA submitted the *Well Completion Reports for the Conversion of Westbay Wells WW-2 and JP-3* on December 16, 2013. NASA received NMED's January 14, 2014 fee assessment and is processing the review fee payment.