

National Aeronautics and
Space Administration

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



July 6, 2016

Reply to Attn of: RE-16-094

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 June 2016

Enclosed is the WSTF Monthly Environmental Activity Report for June 2016. 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 me at 575-524-5024.

A handwritten signature in black ink, appearing to read "Timothy J. Davis".

Timothy J. Davis
Chief, Environmental Office

3 Enclosures

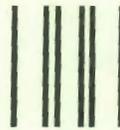
cc:

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

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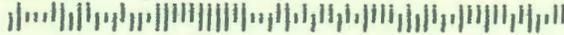


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**National Aeronautics and
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White Sands Test Facility
Post Office Box 20
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Gabriel Acevedo
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Bldg 1
Santa Fe, NM 87505

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Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in June 2016:

- NASA completed shipments of New Mexico Special Waste and hazardous waste in June 2016.
- NASA performed sampling at 30 of 31 groundwater monitoring wells scheduled for June 2016.
- The Plume Front Treatment System operated on 18 of 30 days in June 2016 and treated 64.6 acre-feet of contaminated groundwater.
- The Mid-plume Interception and Treatment System operated on 11 of 30 days in June 2016 and treated 0.79 acre-feet of contaminated groundwater and 1,364 gallons of IDW.
- NASA continued fieldwork associated with the investigation and closure of the WSTF wastewater lagoons (SWMUs 2, 8, and 34 and AOC 51).
- NASA continued work on a project to investigate and remove WSTF septic tanks (SWMUs 21-27).
- NASA continued investigation fieldwork at the hazardous waste transmission line (SWMU 10).
- NASA plugged and abandoned well NASA 1 and began work to plug and abandon the lower portion of monitoring well 600-D.
- NASA continued planning for the investigation of the 400 Area Closure in accordance with the NMED-approved work plan.
- NASA completed and submitted the investigation work plan and historical information summary for the First TDRSS Diesel Release (SWMU 50) on June 29, 2016.
- Post-introduction sampling required for the 200/600 Area and MPCA groundwater dye tracer test was performed and samples were submitted to the off-site laboratory for analysis.
- NASA extracted 219 gallons of perched contaminated groundwater from monitoring well 600-G-138 in June 2016 and continued development of a work plan to further investigate perched groundwater in the 600 Area.
- NASA continued project planning for the installation of a new groundwater monitoring well and for the reconfiguration of several Westbay monitoring wells.
- NASA submitted a variety of documents to NMED in June 2016, including the First TDRSS Diesel Release (SWMU 50) Investigation Work Plan and Historical Information Summary, a request for additional time to complete corrective action at the firing ranges, and several fee assessments for NMED document reviews.
- There were no reportable non-compliance issues in June 2016.



National Aeronautics and
Space Administration

Monthly Environmental Activity Report

June 2016

Submitted July 14, 2016

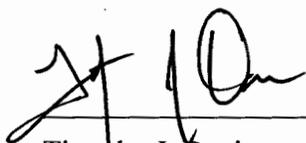
NM8800019434
NASA Johnson Space Center White Sands Test Facility

12600 NASA Road Las Cruces, New Mexico 88012

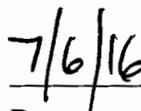
NASA Johnson Space Center White Sands Test Facility
Monthly Environmental Activity Report

June 2016

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.



Timothy J. Davis
Chief, Environmental Office



Date

Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in June 2016:

- NASA completed shipments of New Mexico Special Waste and hazardous waste in June 2016.
- NASA performed sampling at 30 of 31 groundwater monitoring wells scheduled for June 2016.
- The Plume Front Treatment System operated on 18 of 30 days in June 2016 and treated 64.6 acre-feet of contaminated groundwater.
- The Mid-plume Interception and Treatment System operated on 11 of 30 days in June 2016 and treated 0.79 acre-feet of contaminated groundwater and 1,364 gallons of IDW.
- NASA continued fieldwork associated with the investigation and closure of the WSTF wastewater lagoons (SWMUs 2, 8, and 34 and AOC 51).
- NASA continued work on a project to investigate and remove WSTF septic tanks (SWMUs 21-27).
- NASA continued investigation fieldwork at the hazardous waste transmission line (SWMU 10).
- NASA plugged and abandoned well NASA 1 and began work to plug and abandon the lower portion of monitoring well 600-D.
- NASA continued planning for the investigation of the 400 Area Closure in accordance with the NMED-approved work plan.
- NASA completed and submitted the investigation work plan and historical information summary for the First TDRSS Diesel Release (SWMU 50) on June 29, 2016.
- Post-introduction sampling required for the 200/600 Area and MPCA groundwater dye tracer test was performed and samples were submitted to the off-site laboratory for analysis.
- NASA extracted 219 gallons of perched contaminated groundwater from monitoring well 600-G-138 in June 2016 and continued development of a work plan to further investigate perched groundwater in the 600 Area.
- NASA continued project planning for the installation of a new groundwater monitoring well and for the reconfiguration of several Westbay monitoring wells.
- NASA submitted a variety of documents to NMED in June 2016, including the First TDRSS Diesel Release (SWMU 50) Investigation Work Plan and Historical Information Summary, a request for additional time to complete corrective action at the firing ranges, and several fee assessments for NMED document reviews.
- There were no reportable non-compliance issues in June 2016.

1.0 Waste Management Activities

- 1.1 NASA completed a shipment of New Mexico Special Waste (asbestos) to the Otero County Landfill in Alamogordo, New Mexico on June 16, 2016. The shipment consisted of one container (Super Sack) with 148 kilograms of waste for disposal.
- 1.2 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on June 16, 2016. The shipment consisted of 13 containers with 1,210 kilograms of hazardous waste for disposal.

2.0 Environmental Monitoring

- 2.1 NASA performed sampling at 30 of 31 groundwater monitoring wells or zones scheduled for sampling in June 2016, including eight wells or zones rescheduled from May 2016 to June 2016 because of resource limitations imposed by several other ongoing field projects. One monitoring well had equipment issues requiring sampling postponement pending troubleshooting and repair.
- 2.2 Other regulatory groundwater sampling requirements (such as those included in the Remediation System Monitoring Plan and discharge plans) were performed as scheduled.

3.0 Corrective Actions/Investigations

3.1 Plume Front Treatment System

- PFTS Operation – The PFTS operated on 18 of 30 days in June 2016 at an average flow rate of 807 gallons per minute. The system extracted and treated approximately 64.6 acre-feet of groundwater, most of which was injected into the aquifer following treatment. Approximately 0.32 acre-feet of groundwater were discharged to the on-site Modu-tank system during system startup events. Approximately 0.43 acre-feet of groundwater were discharged to grade at the PFI wells during injection well backwashing and system startup activities.
- PFTS Shutdowns, Repairs, and Modifications – There was one planned shutdown of the PFTS in June 2016. On June 14, 2016, the system was shut down in order to replace the UV lamps. Delivery of the new lamps was delayed and the system was not restarted until June 27, 2016.

3.2 Mid-plume Interception and Treatment System

- MPITS Operation – The MPITS operated on 11 of 30 days in June 2016 and treated approximately 0.79 acre-feet of groundwater and 1,364 gallons of IDW. All treated water was discharged to the infiltration basin.
- MPITS Shutdowns, Repairs, and Modifications – There was one planned shutdown of the MPITS in June 2016. This was a continuation of the May 16, 2016 shutdown, where the system was taken offline to initiate a project to evaluate the MPE wells. This work continued into June. Well MPE-8 had a new flexible hose and a new pump/motor installed and tested. This testing went very well and this flexible piping is currently running in MPE-8. All pumps and motors are operational and running at the end of the month.

3.3 200 Area Investigation

- NASA continued project planning and preparation for 200/600 Areas vapor intrusion assessment fieldwork.

3.4 400 Area

- NASA continued project planning activities for investigation fieldwork, which will be performed in accordance with the NMED-approved *400 Area Closure Investigation Work Plan* (June 27, 2011). NASA anticipates performing investigation fieldwork in late 2016.

3.5 600 Area Perched Groundwater Extraction Pilot Test

- NASA continued extracting perched groundwater from monitoring well 600-G-138 in June 2016 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 219 gallons of perched groundwater were removed from 600-G-138 in June 2016.
- NASA continued development of a work plan to further evaluate perched groundwater in the 600 Area as directed in NMED's February 11, 2016 *Additional Work Plan Requirements to Evaluate Potential Source of 600 Area Contamination*.

3.6 SWMUs 1, 3 and 15 (100/600 Area Burn Pit and Container Storage Area)

- NASA began developing the response to NMED's approval with modifications of the *NASA WSTF SWMUs 1, 3, and 15 (100 Area Burn Pit, 100 Area Container Storage Area, and 600 Area Burn Pit) Investigation Report* (November 23, 2015). A response is due to NMED no later than August 31, 2016.

3.7 SWMUs 2, 8, and 34 and AOC 51 (Wastewater Lagoons)

- NASA finalized plans to collect sludge samples from the 100 Area lagoons after transferring approximately 900,000 gallons of wastewater to the 600 Area lagoons.
- NASA collected sludge samples at three locations located in the 100 Lagoon South Cell. The samples were collected at locations identified in the LIWP and submitted for laboratory analyses to confirm that the volumes will be adequate for the list of analytes identified in IWP.
- NASA delayed transferring additional wastewater from the 600 Area lagoons to the City of Las Cruces sanitary sewer while water from the East Cell was transferred to the West Cell. This was done to accelerate the drying of the East Cell and consolidate the water into one location prior to discharge to the City of Las Cruces sanitary sewer system.

3.8 SWMU 10 (200 Area Hazardous Waste Transmission Line)

- NASA continued work on this project through the month of June and is expected to finish in mid-July 2016.
- NASA excavated and removed approximately 660 feet of stainless steel HWTL on the southeast side of the 200 Area buildings. A total of approximately 1,100 feet of stainless steel HWTL has been excavated, cut, and removed from the 200 Area. The stainless steel pipe is being managed as hazardous waste pending decontamination and recycling.
- NASA excavated and removed the remaining 730 feet of PVC HWTL between the 200 Area Sewage Lagoon and Gardner Spring Arroyo and 840 feet of PVC HWTL between Gardner Spring Arroyo and the 600 Area Overflow Sewage Lagoon. A total of approximately 3,330 feet of PVC HWTL has been excavated, cut, and removed from between the 200 and 600 Areas.
- NASA collected the IWP-required soil samples from the designated locations adjacent to and beneath the excavated and removed portions of the HWTL. Samples were shipped to off-site analytical laboratories for analysis.
- Residual fluid has been discovered in several short sections of the pipeline during its removal. Approximately 52 gallons of fluid and approximately 42 gallons of soil impacted by minor releases of the fluid have been containerized and are being managed as hazardous waste.

3.9 SWMU 16 (600 Area BLM Off-site Soil Pile)

- The *SWMU 16 (600 Area BLM Off-Site Soil Pile) Investigation Report* (February 25, 2016) remains under NMED review.

3.10 SWMU 19 (800 Area Below Grade Storage Tank)

- The *SWMU 19 (800 Area Below Grade Storage Tank) Investigation Report* (February 17, 2016) remains under NMED review.

3.11 SWMUs 21-27 (Septic Tanks)

- NASA collected soil samples from the bottom of the SWMU 22 septic tank on June 9, 2016. Analytical results from these samples will be used to characterize the soil for waste characterization purposes.
- NASA continues to plan for the removal of several more septic tanks. Investigation of the SWMU 22 tank location will be performed after removal of the remaining septic tanks.

3.12 SWMUs 29-31 (Small Arms Firing Ranges)

- NMED approved NASA's *Request for Extension of Time for Small Arms Firing Ranges (SWMUs 29-31) Accelerated Corrective Measures* (April 16, 2016) on April 29, 2016. The approved due date for the final investigation report is September 30, 2016.
- NMED also approved the *Status Update for NASA WSTF Small Arms Firing Ranges (SWMUs 29-31) Accelerated Corrective Measures* (March 8, 2016) with modifications on May 11, 2016. After reviewing NMED's approval, NASA concluded that required modifications significantly expand the scope of the planned corrective action, requiring additional time to complete. NASA submitted another request for additional time on June 28, 2016.

3.13 SWMU 50 (TDRSS Diesel Release)

- NASA completed and submitted the investigation work plan and historical information summary for SWMU 50 on June 29, 2016.

3.14 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* (May 10, 2012). Four fluorescent dyes were introduced at four locations (two in the 200 Area and two in the Mid-plume area) in June 2014, and post-introduction groundwater monitoring continued through March 2016 in accordance with the plan.
- Groundwater tracer samples have been regularly collected since dye introduction and submitted to the off-site contracted analytical laboratory as described in the work plan. Data are being received and reviewed by NASA project personnel. Rhodamine WT, which was introduced in monitoring well BLM-14-327, has been detected at three monitoring wells in the Mid-plume area. Eosine, which was introduced in monitoring well BLM-15-305, has been detected at several monitoring wells to the southwest of the Mid-plume area and in one location to the northwest of the Mid-plume area. To date, there have been no confirmed detections of the tracer dyes released in the 200 Area.
- Additional sampling events will be performed that extend the duration of the testing originally described in the work plan in order to maximize the value of the program.

3.15 Westbay Monitoring Well Reconfiguration

- NASA continued project planning and procurement activities for the reconfiguration of five Westbay monitoring wells (BLM-37, JER-1, JER-2, ST-6, and ST-7) in accordance with the *Westbay Well Conversion Work Plan* (November 1, 2012) and the *Westbay Well Reconfiguration Work Plan for Wells JER-1, JER-2, and ST-7* (March 8, 2016). Fieldwork is planned for late summer 2016.
- NASA continues efforts to reconfigure previous Westbay monitoring well BLM-28. After a significant delay, the off-site vendor responsible for the construction of the dedicated low-flow bladder pump system (with packer) delivered the sampling system in late January 2016. The system was inspected and prepared for installation. However, attempts to install the system were unsuccessful. The partially installed sampling system was removed from borehole in March 2016 and it was determined that the inflatable packer supplied with the system is too large in diameter for installation in the open borehole. NASA continued working with the off-site vendor to modify or replace the packer in order to complete the reconfiguration of this well.

3.16 Installation of New Monitoring Well PL-11 and Plugging and Abandoning Existing Wells

- NASA continued project planning for the drilling and installation of new groundwater monitoring well PL-11 in accordance with the NMED-approved *Drilling Work Plan for Supplement Groundwater Monitoring Well (PL-11)* (February 10, 2016).
- NASA expects to initiate fieldwork in or early July 2016.
- NASA completed the plugging and abandonment of well NASA 1 in accordance with Permit Section 19.4 and applicable NMOSE regulations. The plugging and abandonment of the lower portion of previous monitoring well 600-D was initiated in June 2016.

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 Documents Submitted

5.1 Documents submitted to the Hazardous Waste Bureau in June 2016

- NASA submitted the *Fee Assessment for Status Update for NASA WSTF Small Arms Firing Ranges (SWMUs 29-31) (NMED Invoice Number HWB-NASA-16-006)* on June 8, 2016.
- NASA submitted the *Fee Assessment for Westbay Well Reconfiguration Work Plan for Wells JER-1, JER-2, and ST-7 (NMED Invoice Number HWB-NASA-16-007)* on June 9, 2016.
- NASA submitted the *Fee Assessment for BLM-32, WW-4, and WW-5 Well Reconfiguration Summary Reports (NMED Invoice Number HWB-NASA-16-008)* on June 9, 2016.
- NASA submitted the *Request for Extension of Time for NASA WSTF Small Arms Firing Ranges (SWMUs 29 – 31) Accelerated Corrective Measures* on June 28, 2016.
- NASA submitted the *NASA WSTF First TDRSS Diesel Release (SWMU 50) Investigation Work Plan and Historical Information Summary* on June 29, 2016.

5.2 Pertinent Documents submitted to other NMED Bureaus or entities in June 2016

- As part of the ongoing renewal of Discharge Permit (DP)-1255, NASA submitted public notice of the permit application to property owners within 1/3 mile of WSTF and posted public notice in a local newspaper and public locations as approved by the NMED Ground Water Quality Bureau.
- NASA submitted the NASA White Sands Test Facility (WSTF) 700 Area Landfill Detection Monitoring Analytical Results to the NMED Solid Waste Bureau on June 23, 2016.

5.3 Status of documents submitted in previous months

- NASA submitted the *SWMUs 1, 3, and 15 (100 Area Burn Pit, 100 Area Container Storage Area, and 600 Area Burn Pit) Investigation Report* on November 23, 2015. NASA received NMED's January 6, 2016 Fee Assessment for review of the report and submitted the \$9,500 review fee payment on February 8, 2016. NMED approved the report with modifications on May 24, 2016 and directed NASA to respond to several comments by August 31, 2016.
- NASA submitted the *SWMU 19 (800 Area Below Grade Storage Tank) Investigation Report* on February 17, 2016. NASA received NMED's March 8, 2016 fee assessment for review of the work plan and submitted the \$7,500 review fee to NMED on April 4, 2016. The investigation report remains under NMED review.
- NASA submitted the *SWMU 16 (600 Area BLM Off-Site Soil Pile) Investigation Report* on February 25, 2016. NASA received NMED's March 8, 2016 fee assessment for review of the work plan and submitted the \$7,500 review fee to NMED on April 3, 2016. The investigation report remains under NMED review.
- NASA submitted the *600 area Perched Groundwater Extraction Pilot Test Interim Status Report – Project Year 3* on April 14, 2016. NASA received NMED's May 24, 2016 fee assessment for the report and submitted the \$2,000 review fee to NMED on June 30, 2016.
- NASA submitted the *Westbay Well Reconfiguration Work Plan for Wells JER-1, JER-2, and ST-7* on March 8, 2016. NASA received NMED's April 18, 2016 fee assessment for the work plan and submitted the \$1,000 review fee to NMED on June 9, 2016. NMED approved the work plan on May 11, 2016.
- NASA submitted the *Well Reconfiguration Reports for Wells BLM-32, WW-4, and WW-5* on March 30, 2016. NASA received NMED's April 18, 2016 fee assessment for the report and submitted the \$1,500 review fee to NMED on June 9, 2016.
- NASA submitted the *NASA WSTF Groundwater Monitoring Plan Update for 2016* on May 9, 2016. The document remains under NMED review.