

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



November 8, 2017

Reply to Attn of: RE-17-136

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


NOV 8 2017
NMED
Hazardous Waste Bureau

Subject: WSTF Monthly Environmental Activity Report for October 2017

Enclosed is the WSTF Monthly Environmental Activity Report for October 2017. 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 Amanda Skarsgard at 575-524-5460.


Timothy J. Davis
Chief, Environmental Office

3 Enclosures

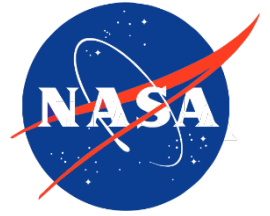
cc:
Mr. Gabriel Acevedo
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in October 2017:

- NASA completed shipments of hazardous and medical waste in October 2017.
- NASA sampled 45 of 49 groundwater monitoring wells scheduled for October 2017.
- The Plume Front Treatment System was operated on 28 of 31 days in October 2017 and treated 61.4 acre-feet of contaminated groundwater.
- The Mid-plume Interception and Treatment System was operated on 28 of 31 days in October 2017 and treated 1.17 acre-feet of contaminated groundwater and investigation-derived waste.
- NASA continued preparation of the 400 Area and Hazardous Waste Transmission Line (SWMU 10) investigation reports and continued revising the BLM Off-site Soil Pile (SWMU 16) investigation report, which was disapproved by NMED.
- NASA continued with the investigation and closure of the WSTF wastewater lagoons (SWMUs 2, 8, 34, and AOC 51).
- NASA installed and sampled the follow-on boring near the 800 Area below ground storage tank (SWMU 19) and performed additional sampling required at the SWMU 22 septic tank location.
- NASA extracted 250 gallons of perched contaminated groundwater from monitoring well 600-G-138 in October 2017.
- NASA submitted several documents to NMED in October 2017, including the annual fee payment, third quarter PMR, and several documents related to activities at the wastewater lagoons.
- There were no reportable non-compliance issues in October 2017.

National Aeronautics and Space Administration



Monthly Environmental Activity Report
October 2017

Submitted November 8, 2017

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

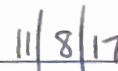
October 2017

NM8800019434

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

National Aeronautics and Space Administration

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1.0 Waste Management Activities

1.1 NASA completed the following waste shipments in October 2017.

Date	Shipped To	Type of Waste	No. of Containers	Amount of Waste	Disposition
10/4/17	EStrategy, Albuquerque, NM	Medical	1	2 kg	Sterilization
10/19/17	Veolia, Henderson, CO	Hazardous	9	308 kg	Disposal

1.2 Between September 26 and October 18, 2017, NASA shipped 45,670 kg of vegetation removed from the 100, 200, and 600 Areas wastewater lagoons to the Corralitos Regional Landfill in Las Cruces, NM for disposal as solid waste.

2.0 Environmental Monitoring

- 2.1 NASA performed sampling at 45 of 49 groundwater monitoring wells or zones scheduled for sampling in October 2017, including six wells rescheduled from September 2017. One groundwater monitoring well was rescheduled to November 2017 due to access issues and three monitoring wells were rescheduled to November 2017 due to resource issues.
- 2.2 Other regulatory groundwater sampling requirements (such as those included in the Remediation System Monitoring Plan, landfill post-closure care, and discharge plans) were performed as scheduled. Extraction well PFE-4A could not be sampled because it was not operational due to pipeline integrity issues. Extraction well MPE-1 was not sampled because of a failed pump that prevented operation during the month.

3.0 Corrective Actions/Investigations

3.1 Plume Front Treatment System Operations

Days Operated	Average Flow Rate (gpm)	Volume Extracted/Treated (acre-feet)	Volume Injected	Volume Discharged to Grade (acre-feet)	Volume Discharged to Modu-tank (acre-feet)
28 of 31	491	61.4	61.2	1.58	0.27

Shutdown Date	Restart Date	Shutdown Status	Discussion
10/1/17	10/4/17	Unplanned	This was a continuation of a September shutdown because of a communication error with PFI-2. All communications were verified and the system was restarted.
10/14/17	10/16/17	Unplanned	A computer memory cache failed to dump, clogging the communications to a fail point which shut the system down.
10/17/17	10/23/17	Unplanned	The system shut down automatically following several PLC alarms and a communication error. The error was traced to a broken optical fiber at the PFI-4 OLC junction. The fiber was fused and the system restarted without any other incident.

NASA White Sands Test Facility

3.2 Mid-plume Interception and Treatment System Operations

Days Operated	Average Flow Rate (gpm)	Volume of Groundwater Extracted and Treated (acre-feet)	Volume of Groundwater Discharged to Infiltration Basin (acre-feet)	Volume of IDW Treated and Discharged to the Infiltration Basin (gallons)
28 of 31	8.7	1.17	1.16	834

Shutdown Date	Restart Date	Shutdown Status	Discussion
10/19/17	10/23/17	Unplanned	The system shut down automatically because of an electrical power interruption caused by wildlife contact with overhead power distribution components over the weekend. The system was restarted the next workday.
10/25/17	10/25/17	Planned	Wildlife was removed from power transmission line.
10/31/17	10/31/17	Planned	Raptor protection was installed on power transmission line that caused power outage due to wildlife.

3.3 200 Area Investigation

- NASA continued receiving and reviewing analytical data from soil vapor and indoor air samples collected during the first of two semi-annual vapor intrusion assessment sampling events in the 200/600 Areas in accordance with the NMED-approved *200 and 600 Area Vapor Intrusion Assessment Work Plan* (February 25, 2016).

3.4 400 Area

- NMED approved NASA's September 25, 2017 *Request for Extension of Time for Submittal of 400 Area Investigation Report* on October 18, 2017, extending the due date for the investigation report to December 29, 2017.
- NASA continued development of the investigation report.

3.5 600 Area Perched Groundwater Extraction Pilot Test and Investigation

- NASA notified NMED that several factors had negatively impacted the project schedule for the planned geophysical survey consisting of refraction, reflection, and electrical resistivity as described in the *Abbreviated Investigation Work Plan for the 600 Area Perched Groundwater* (July 7, 2016; revised December 22, 2016). After reviewing the information NASA provided, NMED directed NASA to perform the planned geophysics and to submit a request for extension of time that would allow for the acquisition of the best possible data. NASA submitted the request on September 13, 2017. NMED approved the request on October 18, 2017 and directed NASA to complete the investigation and provide an investigation report by August 30, 2019.
- In September 2017, NASA extracted approximately 250 gallons of perched groundwater from monitoring well 600-G-138 in accordance with NMED's March 1, 2013, *Approval Time Extension for Implementation of the Perched Groundwater Extraction Pilot Test at the 600 Area*. Extracted groundwater was transported to the MPITS for treatment and disposal in accordance with DP-1255.

- In late October 2017, NASA personnel responsible for purging perched groundwater from monitoring well 600-G-138 noted a significant increase in groundwater production, a change in the measured electrical conductivity, and an odor likened to raw sewage emanating from the purged groundwater. For personnel safety and health reasons, and to avoid potential permitting issues, NASA suspended groundwater extraction pending an evaluation of the nearby sanitary sewer line.
- The *600 Area Perched Groundwater Extraction Pilot Test Interim Status Report – Project Year 4* (June 15, 2017), which included a recommendation to discontinue the extraction of perched groundwater from monitoring well 600-G-138, was approved by NMED with a modification requiring NASA to continue groundwater extraction. NASA is reviewing the required modification and preparing the necessary response.

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

- NASA and the subcontractor completed removal of vegetation from the 100, 200, and 600 Areas wastewater lagoons. Vegetation was disposed of as solid waste in an appropriate landfill in accordance with direction from the NMED Solid Waste Bureau. The subcontractor also constructed access ramps and other project-related infrastructure at the lagoons.
- In order to complete waste characterization and disposal requirements, NASA collected sludge samples from the 100 and 200 Area lagoons for analysis by the paint filter liquids test and TCLP as directed by the NMED Solid Waste Bureau. The paint filter liquids test results were provided to the SWB on October 25, 2017. Results from TCLP analyses are pending.
- NASA refined the *100 Area Wastewater Lagoons Sludge Disposal Management Plan* and *200 Area Wastewater Lagoons Sludge Disposal Management Plan* to reflect the additional NMED sampling requirements and submitted them to the NMED Solid Waste Bureau on October 18, 2017 and October 25, 2017, respectively.
- NASA continued planning for removal of sludge from the 100 Area and 200 Area wastewater lagoons, pending approval of sludge analytical data by the NMED Solid Waste Bureau.
- NASA continued to monitor the water levels in the 600 Area (west) and STGT wastewater lagoons in anticipation of sludge sampling prior to sludge removal.

3.7 SWMU 10 (200 Area Hazardous Waste Transmission Line)

- NASA continued development of the HWTL investigation report, which is due to NMED by November 30, 2017.

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

- NASA continued developing the required response to NMED's June 27, 2017 *Disapproval 600 Area Bureau of Land Management Off-Site Soil Pile (SWMU 16) Revised Investigation Report*.

3.9 SWMU 19 (800 Area Below Grade Storage Tank)

- NMED approved NASA's request for additional time in which to perform required fieldwork and develop the revised investigation report for SWMU 19.
- NASA and the subcontractor drilling company completed installation and sampling of the additional soil boring described in the NMED-approved *800 Area Below Grade Storage Tank (SWMU 19) Abbreviated Investigation Work Plan for Additional Required Sampling* (November 16, 2016). Soil samples were submitted to the approved analytical laboratories.

3.10 SWMUs 21-27 (Septic Tanks)

- NASA installed two additional borings through the former Building 114 septic tank (SWMU 22) location and collected soil samples at the interface between the clean fill and native soil. Samples were shipped off site for cyanide analysis using an analytical preparation method to reduce potential nitrate interference during analysis.

3.11 SWMUs 29-31 (Small Arms Firing Ranges)

- NASA continued preparing the required response and revised report in accordance with NMED's September 7, 2017 disapproval of the *NASA WSTF Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report* (March 30, 2017).

3.12 SWMU 50 (TDRSS Diesel Release)

- *The Response to Disapproval of First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Work Plan* (July 27, 2017) is being reviewed by NMED.

3.13 Westbay Monitoring Well Reconfiguration

- NMED reviewed and approved several documents comprising the *Detections of NDMA and TCE in WSTF Groundwater Monitoring Wells BLM-30, PL-5, PL-6, PL-7, PL-8, PL-10, ST-5, and WW-3* (March 30, 2017). NMED directed NASA to submit work plans for the reconfiguration/replacement of BLM-30 and abandonment/replacement of PL-5 by December 29, 2017, a work plan for evaluating groundwater data representativeness by April 30, 2018, and a reconfiguration work plan for several Westbay wells by December 31, 2018.
- NASA's off-site vendor provided a replacement for the incorrectly sized inflatable packer previously provided for well BLM-28. However, the packer provided is incompatible with the existing low-flow sampling system and is being modified.

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 October 2017

- NASA submitted the *NASA WSTF Periodic Monitoring Report – Third Quarter 2017* on October 30, 2017.

5.2 Pertinent documents submitted to other NMED bureaus or entities in October 2017

- NASA submitted the *100 Area Wastewater Lagoon Sludge Disposal Management Plan* to the NMED Solid Waste Bureau on October 18, 2017.
- NASA submitted the *Paint Filter Liquids Test Results for NASA White Sands Test Facility (WSTF) 100 Area and 200 Area Wastewater Lagoons Sludge* to the NMED Solid Waste Bureau on October 25, 2017.

- NASA submitted the *200 Area Wastewater Lagoon Sludge Disposal Management Plan* to the NMED Solid Waste Bureau on October 25, 2017.
- NASA provided the *Environmental Assessment for Proposed Supplemental Solar Project* to entities on the Facility Mailing List on October 25, 2017.

5.3 Status of documents submitted in previous months

- 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 was disapproved by NMED on October 14, 2016. NASA submitted the *Response to Disapproval of NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile) Investigation Report* on January 26, 2017. NMED disapproved the revised investigation report on June 27, 2017 and directed NASA to address ten NMED comments and provide a revised investigation report by November 30, 2017.
- NASA submitted the *Groundwater Monitoring Plan Update for 2016* on May 9, 2016. NASA received NMED's June 24, 2016 fee assessment for review of the monitoring plan and submitted the \$2,500 review fee to NMED on August 23, 2016. NMED approved the GMP with modifications on October 6, 2016 and directed NASA to revise the GMP and submit replacement pages by December 30, 2016. NASA submitted the revised GMP on December 22, 2016. On April 12, 2017, NMED responded with the NMED Response to Permittee Comments on the Approval with Modifications of 2016 GMP Update. NMED directed NASA to revise the GMP update and provide replacement pages by May 31, 2017. NASA submitted revised pages in the *NMED Response to Permittee Comments on the Approval with Modifications of 2016 GMP (Groundwater Monitoring Plan) Update* on May 23, 2017.
- NASA submitted the *NASA WSTF First TDRSS Diesel Release (SWMU 50) Investigation Work Plan and Historical Information Summary* on June 29, 2016. NASA received NMED's July 27, 2016 fee assessment for review of the work plan and submitted the \$10,000 review fee to NMED on September 15, 2016. NMED disapproved the investigation work plan on January 25, 2017 and directed NASA to address several comments and submit a revised work plan. The response to NMED comments and the revised work plan were submitted to NMED on July 27, 2017.
- NASA submitted the *Abbreviated Investigation Work Plan for the 600 Area Perched Groundwater* on July 7, 2016. NASA received NMED's July 27, 2016 fee assessment for review of the report and submitted the \$5,000 review fee to NMED on September 15, 2016. NMED disapproved the work plan on November 30, 2016 and directed NASA to submit a revised work plan by December 30, 2016. NASA submitted the *Response to Disapproval of Abbreviated Investigation Work Plan for 600 Area Perched Groundwater* on December 22, 2016. NMED approved the revised work plan on March 31, 2017. After encountering technical and scheduling challenges, NASA submitted the *Request for Extension of Time for Performing 600 Area Perched Groundwater Investigation due to Geophysical Survey Implications* on September 13, 2017. NMED approved the request on October 18, 2017 and directed NASA to complete the investigation and provide an investigation report by August 30, 2019.
- NASA submitted the *NASA White Sands Test Facility Fuel Treatment Unit (FTU) Closure Plan* on January 30, 2017. NASA received NMED's February 22, 2017 fee assessment for review of the document and submitted the \$3,500 review fee to NMED on March 23, 2017. The submittal to NMED could not be located, so a replacement submittal and review fee was provided to NMED on May 31, 2017. NMED disapproved the report on June 9, 2017 and directed NASA to submit a revised closure plan that addresses NMED comments by August 31, 2017. NASA

submitted the *Response to Disapproval of NASA White Sands Test Facility Fuel Treatment Unit Closure Plan* on August 22, 2017.

- NASA submitted the *Well Reconfiguration Report for Westbay Wells JER-1, JER-2, ST-6 and ST-7* on March 22, 2017. NASA received NMED's April 28, 2017 and provided the \$2,000 review fee to NMED on June 20, 2017. NMED approved the report on July 7, 2017 with a modification requiring NASA to complete recovery of the lodged Westbay casing or submit a work plan for well abandonment and replacement by January 31, 2018.
- NASA submitted the *NASA WSTF Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report* on March 30, 2017. NASA received NMED's April 28, 2017 fee assessment for review of the report and submitted the \$6,500 review fee to NMED on May 31, 2017. NASA received NMED's September 7, 2017 disapproval of the report and began preparing the required response and revised report, which is due to NMED by December 29, 2017.
- NASA submitted *Detections of NDMA and TCE in WSTF Groundwater Monitoring Wells BLM-30, PL-5, PL-6, PL-7, PL-8, PL-10, ST-5, and WW-3* on March 30, 2017. NASA received NMED's April 28, 2017 fee assessment for review of the submittal and submitted the \$2,000 review fee to NMED on May 31, 2017. On October 4, 2017, NMED approved the submittal with modifications and directed NASA to submit two work plans (BLM-30 and PL-5) by December 29, 2017, a work plan for evaluating groundwater data representativeness by April 30, 2018, and a reconfiguration work plan for several Westbay wells by December 31, 2018.
- NASA submitted the *Well Completion Report for PL-11 Monitoring Well* on April 18, 2017. NASA received NMED's April 28, 2017 fee assessment for review of the report and submitted the \$500 review fee to NMED on June 20, 2017. NMED disapproved the report on July 7, 2017 and instructed NASA to submit a revised report no later than September 29, 2017. NASA submitted the *Response to Disapproval – Well Completion Report for PL-11 Monitoring Well* on September 28, 2017.
- NASA submitted the *600 Area Perched Groundwater Extraction Pilot Test Interim Status Report – Project Year 4* on April 26, 2017. NASA received NMED's June 15, 2017 fee assessment for review of the report and submitted the \$2,000 review fee to NMED on August 1, 2017. NMED approved the report with modifications on September 15, 2017 and directed NASA to provide a response and revised report by November 30, 2017.
- NASA submitted the *Groundwater Monitoring Plan Update for 2017* on April 27, 2017. NASA received NMED's June 15, 2017 fee assessment for review of the plan and submitted the \$2,500 review fee to NMED on July 11, 2017.
- NASA submitted the *Request for Deferral of Investigation of Subsurface at First TDRSS Diesel Release (SWMU 50)* on July 25, 2017.
- NASA submitted the *NASA WSTF Periodic Monitoring Report – Second Quarter 2017* on July 27, 2017. NASA received NMED's September 5, 2017 fee assessment for review of the report and submitted the \$2,000 review fee to NMED on September 27, 2017.
- NASA submitted the *NASA WSTF Remediation System Monitoring Plan Annual Update for 2017* on July 27, 2017. NASA received NMED's September 5, 2017 fee assessment for review of the report and submitted the \$2,500 review fee to NMED on September 27, 2017.
- NASA submitted the *Request for Extension of Time for Submittal of 800 Area BGST (SWMU 19) Revised Investigation Report* on September 5, 2017. NMED approved the request on September 29, 2017, extending the investigation report due date to January 31, 2018.

NASA White Sands Test Facility

- NASA submitted the *NASA White Sands Test Facility (WSTF) 100 Area and 200 Area Wastewater Lagoons Sludge Disposal Management Plans* on September 18, 2017.
- NASA submitted the *NASA White Sands Test Facility (WSTF) 100 Area Wastewater Lagoons Sludge Modified Disposal Management Plan* to the NMED Solid Waste Bureau on October 18, 2017.
- NASA submitted the *NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Sludge Modified Disposal Management Plan* to the NMED Solid Waste Bureau on October 25, 2017.
- NASA submitted the *Request for Extension of Time for Submittal of 400 Area Investigation Report* on September 25, 2017. NMED approved the request on October 18, 2017, extending the due date for the investigation report to December 29, 2017.
- NASA submitted the *Well Completion Report, 400 Area Monitoring Wells* on September 28, 2017.
- NASA submitted the *NASA JSC White Sands Test Facility (WSTF) 2017 Annual Fee Payment* on November 1, 2017.